

Starry Night Lab I

Your name: _____; Points: _____ (20 possible)

This document provides information for a Starry Night Lab for Professor Mattox's [Astronomy Class](#). Print this before you come to the lab.

This Lab has been extracted from the [Starry Night Exercise Book](#). Exercise one in that book (Using Starry Night) is of limited utility because it corresponds to a prior version of the program. Detailed information about the use of your version of the program can be found in the Pro Manual (User's Manual) and Companion Book that should have been added to your Program Menu when you installed the software.

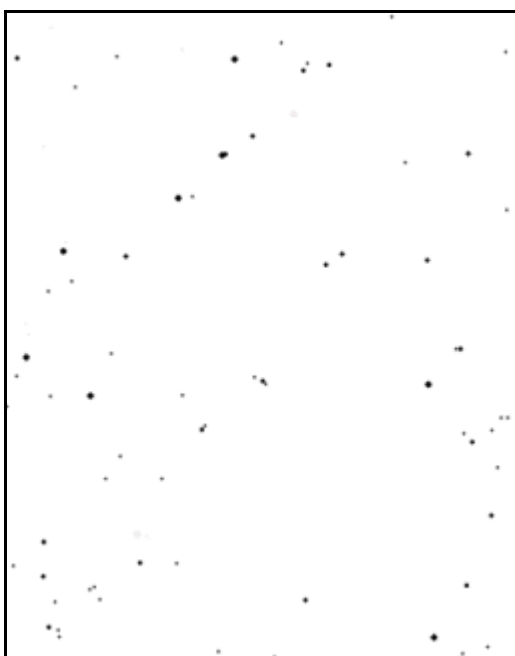
Complete all items below. Feel free to call on your instructor for help. You are also encouraged to use Starry Night in lab to prepare for night observing sessions.

Exercise 2: The Constellations

On a clear night, far away from city lights, the number of stars you can see in the sky seems to be unlimited. They are scattered in random fashion but careful observation soon shows that the brighter stars at least seem to form easily recognizable patterns.

Throughout history sky observers have joined the brighter stars into patterns that represented animals, objects or heroes from their various mythologies.

In the absence of movies or television, a storyteller could simply point to the sky as to illustrate the story being told.



These patterns eventually formed the 88 constellations of our modern skies even though most people have a great deal of trouble seeing a “horse” or a “dog” or a “hunter” in the star patterns.

1. Ursa Major and Ursa Minor

One of the most easily recognized star patterns is the Big Dipper. The Dipper is part of the constellation Ursa Major.

- Outline the Big Dipper on the chart, above.
- The Little Dipper is part of Ursa Minor. Can you find the Little Dipper on the diagram? It's a little more difficult since some of the stars aren't as bright.

Action: Open the file Constellations.

c) Check your diagram of the two Dippers with the ones shown. Label Polaris on your diagram.

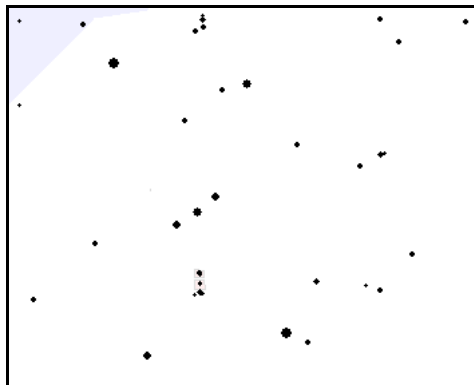
Action: Let time flow forward continuously for some time.

d) Describe the motion of the constellations with respect to Polaris.

e) Notice that some constellations never go below the horizon. Such constellations are called circumpolar. List two or three circumpolar constellations.

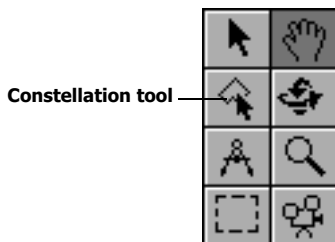
2. Orion

The stars shown at the right form a very obvious pattern in our winter skies – Orion, the mighty hunter of Greek mythology.



Action: Open the file Orion

- a) Outline the accepted pattern of Orion (or make up your own!) on the diagram above.
- b) Use the Object Selection Tool (the arrow) to find and label the following two stars of Orion on your diagram:
- Rigel
 - Betelgeuse

3. Winter Constellations

- a) List three other constellations near Orion that may also be seen in our winter skies. What does each constellation represent? Use the constellation tool (found on the Tool Palette) to highlight each constellation and a picture will appear. Double-click on the picture if you need extra information.

4. Spring Constellations**Action: Open the file Spring**

- a) List and describe 4 constellations seen in the spring. (Again, use the Constellation Tool and double-click on the picture for more information.)

5. The Stars of Northern Summers

Action: Advance the time a single step forward

Note: One step is equivalent to about three months.

- a) List and describe four constellations that are visible at this time. Remember to use the constellation tool to help you.

6. Summary

You have now examined some circumpolar and some seasonal constellations.

- a) Why do you think some constellations can not be seen in the summer?

7. Extensions

- a) Is it possible to live somewhere on earth where *all* constellations are circumpolar? Where would this be?

