PRELAB FOR GENERAL OBSERVING

Use your Audobon Guide and/or a general astronomy textbook to answer the following questions:

1. What is a galaxy?

2. What is a star cluster?

3. What is a nebula?

4. How are these three types of objects different?

GENERAL OBSERVING

What will you learn in this Lab?

The night sky is full of a wide variety of objects: planets, moons, stars, comets, nebulae, galaxies, etc… Tonight you will use telescopes and binoculars to look at a variety of objects, some not visible with the naked eye. You will also use your field guide to learn more about the observed objects.

What do I need to bring to the Class with me to do this Lab?

For this lab you will need:

- A copy of this lab script
- A pencil
- Audubon Sky Guide
- SC sky maps (both of them)
- Star wheel
- Red Flashlight

Introduction

At this point you have been introduced to the layout of the night sky and how it moves. In addition you have been shown how astronomers find things in the sky using a variety of different coordinate systems depending on the job at hand. The night sky contains many beautiful objects that you have been learning about in the lecture course. This exercise will allow you to write a description of the various celestial objects, based on the information you can find on your star charts and in your field guide, and then play with the telescopes in order to observe them!

Procedure

If the skies are clear you will complete both Parts I and II of the procedure. If the weather is poor you will complete Part I only.

I. You will use your field guide and star charts to learn about the various (8 – 10) celestial objects to be observed tonight. Fill in the following information on the provided data sheets (p. 3-7):
   a. Object name – catalog designation and any other common names that the object is known by
   b. Object type – be specific. If a nebulae, say “emission nebulae” or “reflection nebulae”. If a star, list “binary”, “red giant”, etc…
   c. Definition of the determined object type.
   d. Right Ascension and declination
   e. Constellation
   f. At what time today would the object be at its highest point in the sky?
   g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

II. You will then be asked to point the telescopes to these celestial objects. You will sketch some of those that you see through the binoculars or telescope eyepiece on the attached sheets (p. 8-15). When making your observations, be certain to record whether you are observing one or multiple objects, brightness, clarity, and color (Note: When asked if an object appears “point-like”, this simply refers to the object being clear, crisp, sharp, or “in-focus”. Haziness is simply the opposite – like when an object has an extended halo around it or appears “out-of-focus” because of surrounding gas or dust.)

OBJECT 1:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

OBJECT 2:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

OBJECT 3:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

OBJECT 4:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

OBJECT 5:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

OBJECT 6:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

OBJECT 7:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

OBJECT 8:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

OBJECT 9:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

OBJECT 10:

a. Object name:_____

b. Object type:_____

c. Definition of the determined object type:

d. Right Ascension:_____ Declination:_____

e. Constellation:_____

f. At what time today would the object be at its highest point in the sky?

g. At what time of year (month, day) would the object be visible on the meridian at 9:00 pm?

Observation Sheet 1

Object Name:_____

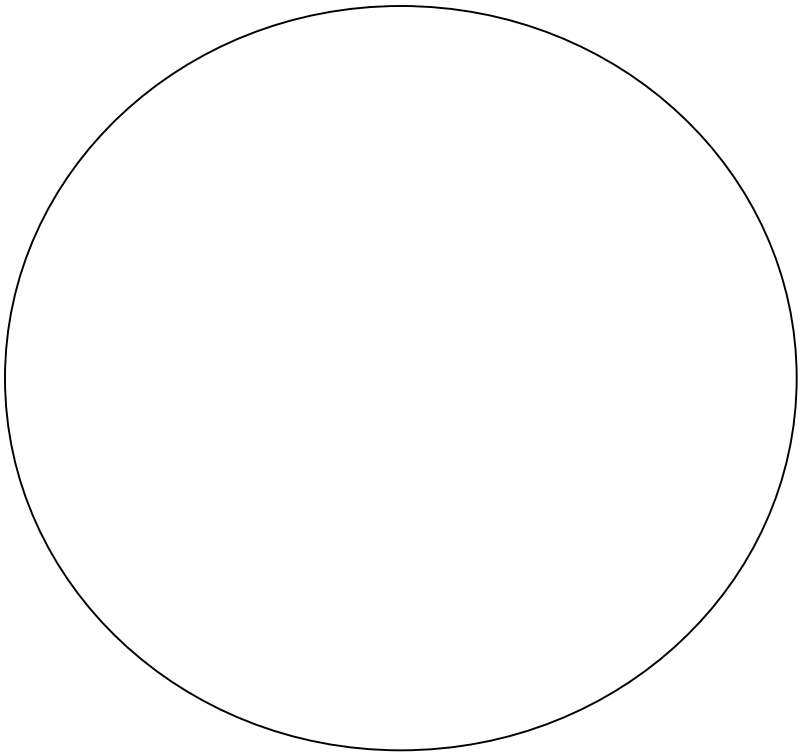
Single object or multiple objects?_____

Brightness (bright, moderate, dim)_____

“Point-like” or hazy?_____

Color_____

Drawing of object as seen through the telescope:



Observation Sheet 2

Object Name:_____

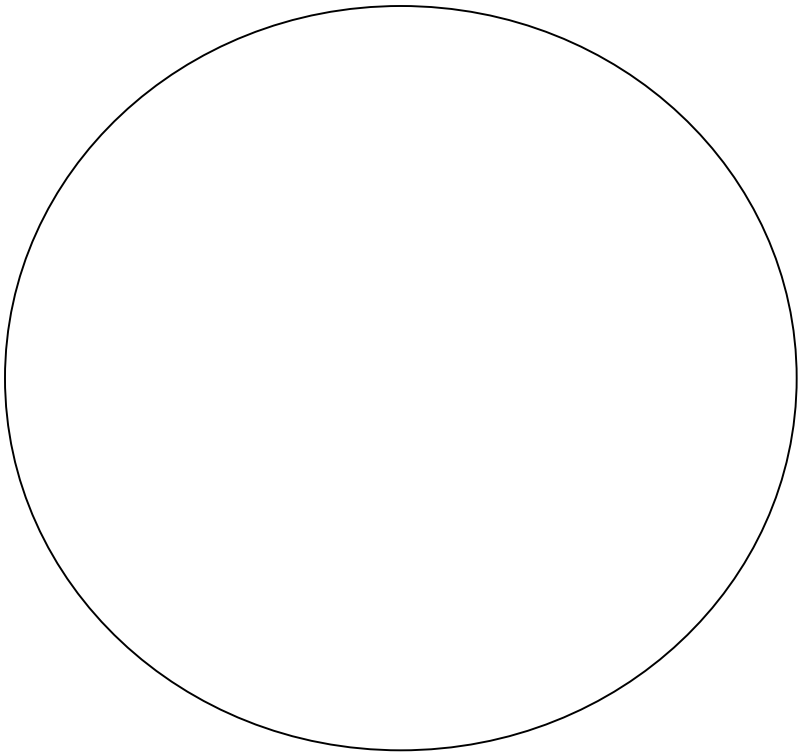
Single object or multiple objects?_____

Brightness (bright, moderate, dim)_____

“Point-like” or hazy?_____

Color_____

Drawing of object as seen through the telescope:



Observation Sheet 3

Object Name:_____

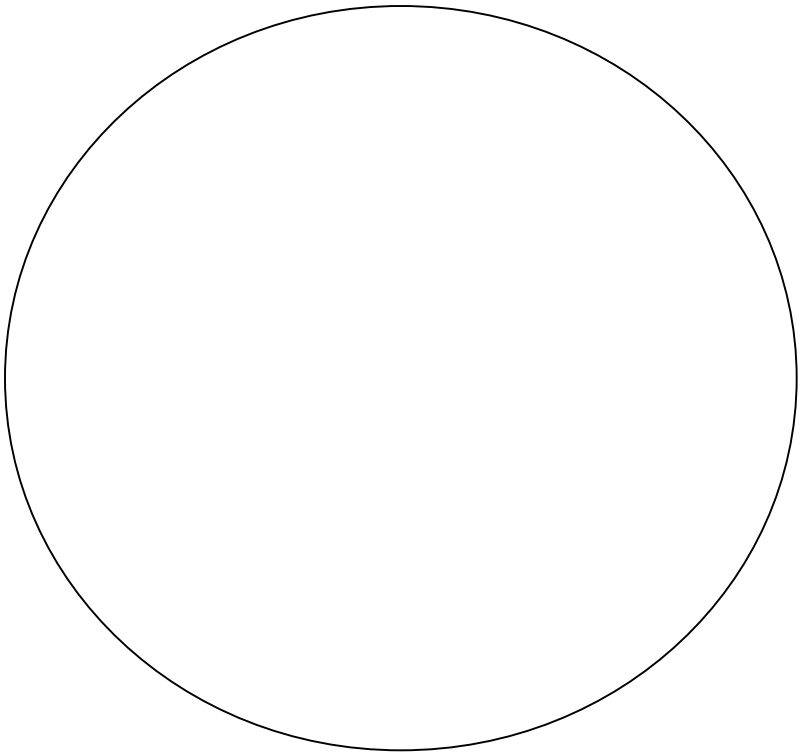
Single object or multiple objects?_____

Brightness (bright, moderate, dim)_____

“Point-like” or hazy?_____

Color_____

Drawing of object as seen through the telescope:



Observation Sheet 4

Object Name:_____

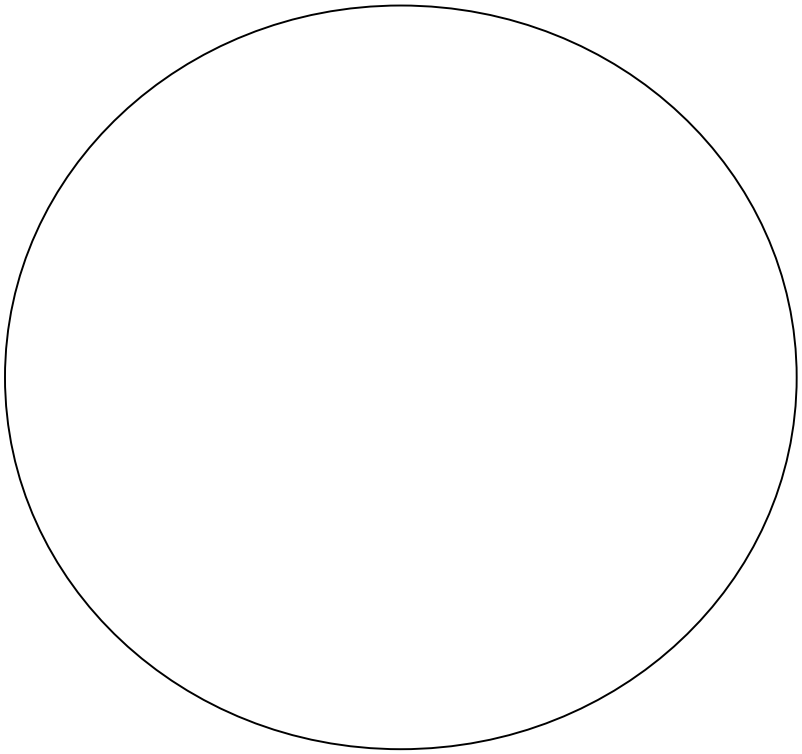
Single object or multiple objects?_____

Brightness (bright, moderate, dim)_____

“Point-like” or hazy?_____

Color_____

Drawing of object as seen through the telescope:



Observation Sheet 5

Object Name:_____

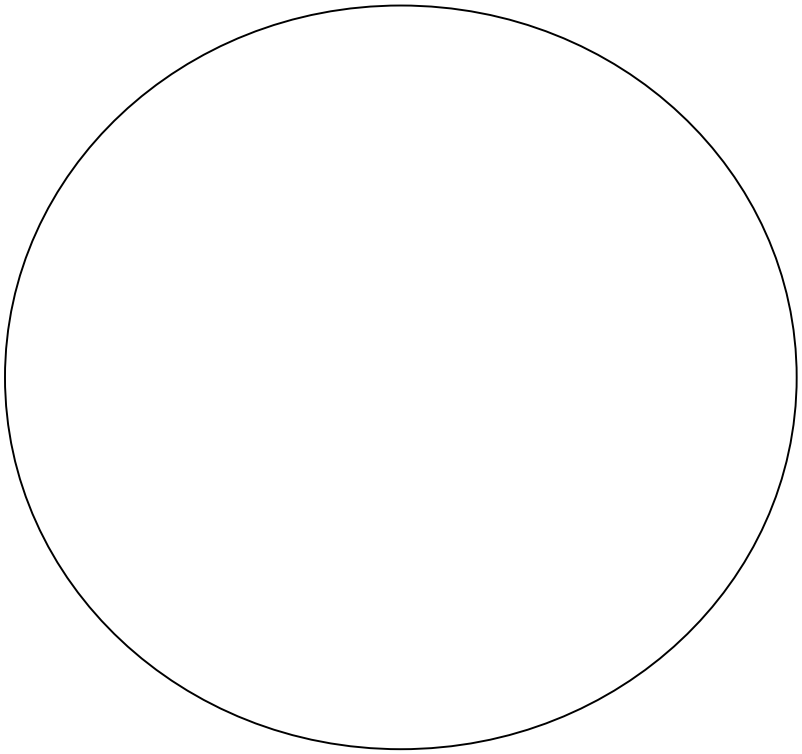
Single object or multiple objects?_____

Brightness (bright, moderate, dim)_____

“Point-like” or hazy?_____

Color_____

Drawing of object as seen through the telescope:



Observation Sheet 6

Object Name:_____

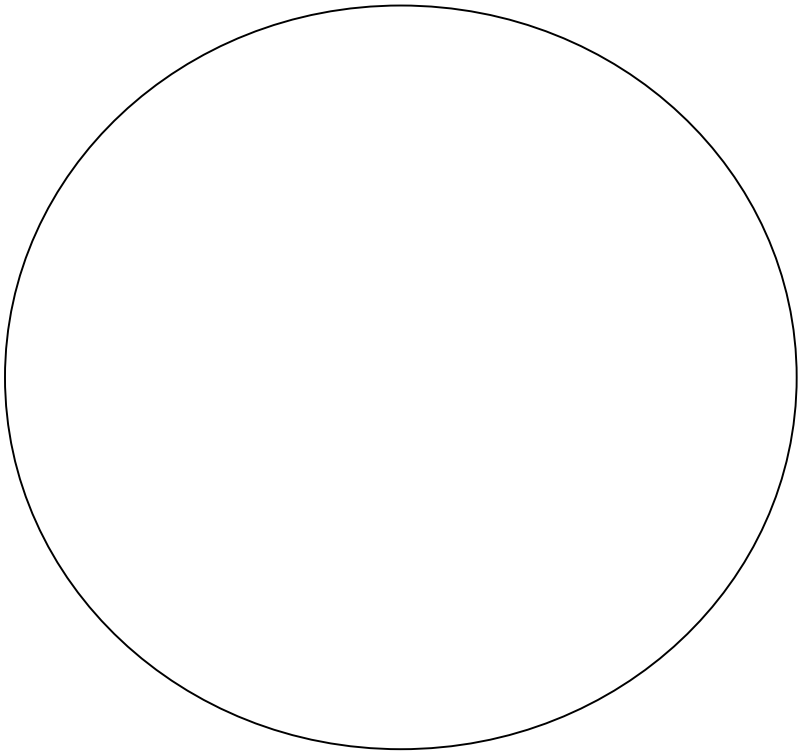
Single object or multiple objects?_____

Brightness (bright, moderate, dim)_____

“Point-like” or hazy?_____

Color_____

Drawing of object as seen through the telescope:



Observation Sheet 7

Object Name:_____

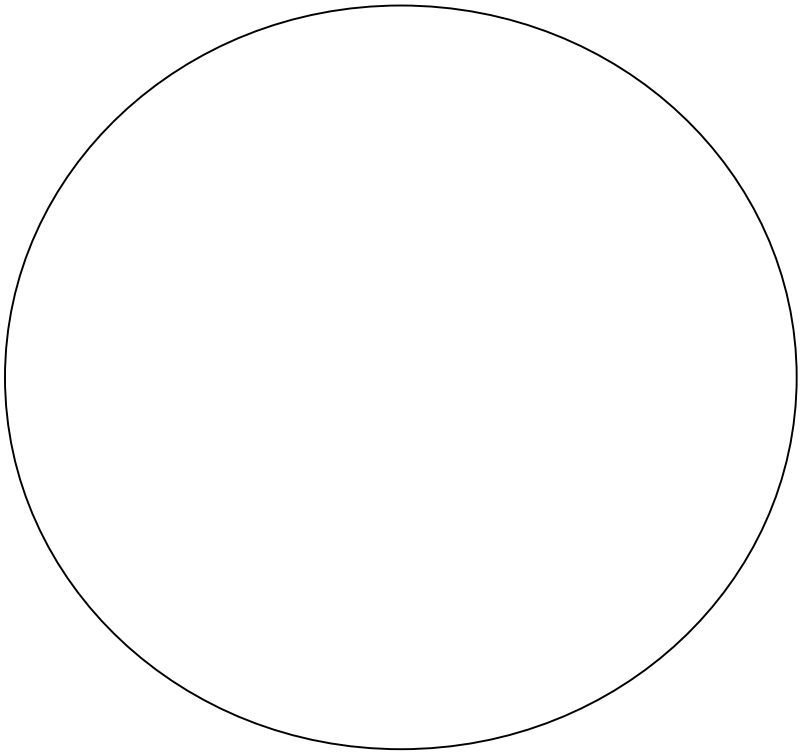
Single object or multiple objects?_____

Brightness (bright, moderate, dim)_____

“Point-like” or hazy?_____

Color_____

Drawing of object as seen through the telescope:



Observation Sheet 8

Object Name:_____

Single object or multiple objects?_____

Brightness (bright, moderate, dim)_____

“Point-like” or hazy?_____

Color_____

Drawing of object as seen through the telescope: