

NAME: _____

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

I. 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 observe various celestial objects and write a description of the object, based on the information you can find on your star charts and in your field guide.

II. The Experiment**Part I: Outdoor Observations**

The binoculars and telescopes will be pointed at 8 – 10 celestial objects. Your TA will give you a common catalog or some other familiar designation for each object.

- Using the observation sheets, sketch everything you see through the binoculars or telescope eyepiece.
- Record the instrument type (telescope or binoculars) and, if applicable, the eyepiece size.

- When making your observations, be certain to note the following:
 - Color
 - Fuzzy or sharp
 - Bright or dim
 - Single object or multiple objects

(Note: When asked if an object appears “point-like”, this simply refers to the object being clear, crisp, sharp, or “in-focus”. “Fuzzy” 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.)

Part II: Audubon Guide, Star Wheel, and Star Charts

Use your field guide, star charts, and star wheel to complete your observation sheets by filling in the following information:

- a. Object name – catalog designation and any other common names that the object is known by.
- b. Object type – be specific. If it’s a nebulae, say “emission nebulae” or “reflection nebulae”. If a star, list “binary”, “red giant”, etc...
- c. Definition of the determined object type. Again, be specific!
- d. Right Ascension and Declination of the object.
- e. Constellation where the object can be found.
- f. An object reaches its highest point in the sky when it crosses the meridian – the imaginary line connecting the North Pole to the South Pole through your zenith. Align the star wheel so the object is on the meridian. At what time today would the object be at its highest point in the sky?
- g. On what date (month, day) would the object on the meridian at 8:00 pm?

III. Conclusion:

Observation Sheet 1:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
Declination: _____
- e. Constellation: _____
- f. Time today object will be at its highest point in the sky: _____
- g. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

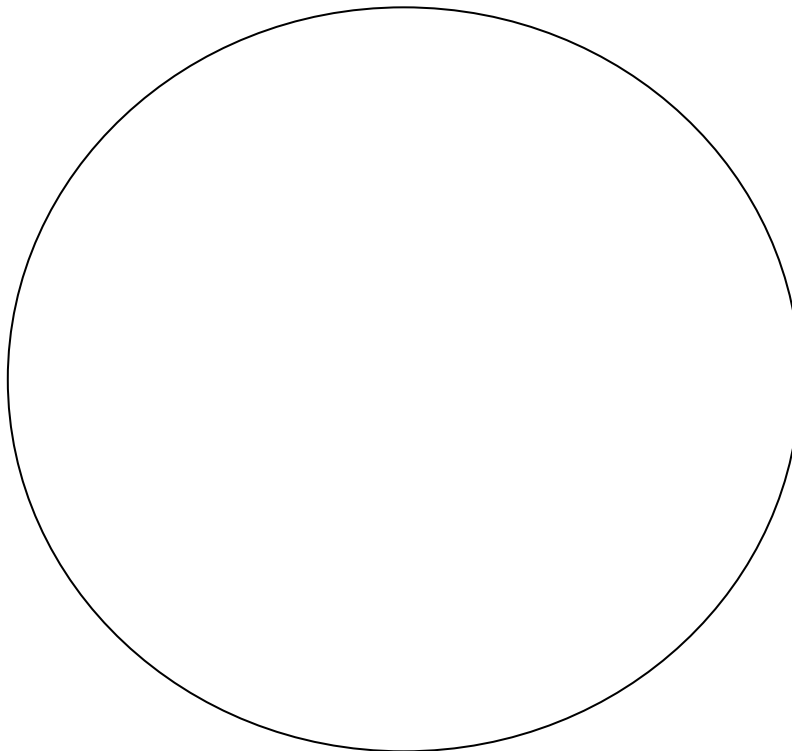
- a. Brightness (bright, moderate, dim) _____
- b. "Point-like" or extended (fuzzy)? _____
- c. Single object or multiple objects? _____
- d. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm



Observation Sheet 2:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
Declination: _____
- e. Constellation: _____
- f. Time today object will be at its highest point in the sky: _____
- g. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

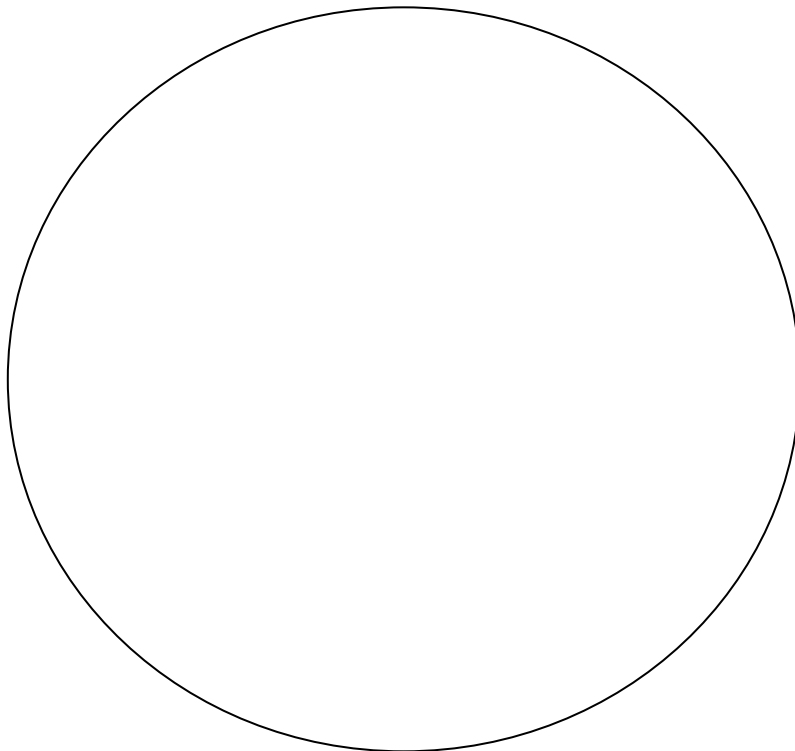
- a. Brightness (bright, moderate, dim) _____
- b. "Point-like" or extended (fuzzy)? _____
- c. Single object or multiple objects? _____
- d. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm



Observation Sheet 3:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
Declination: _____
- e. Constellation: _____
- f. Time today object will be at its highest point in the sky: _____
- g. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

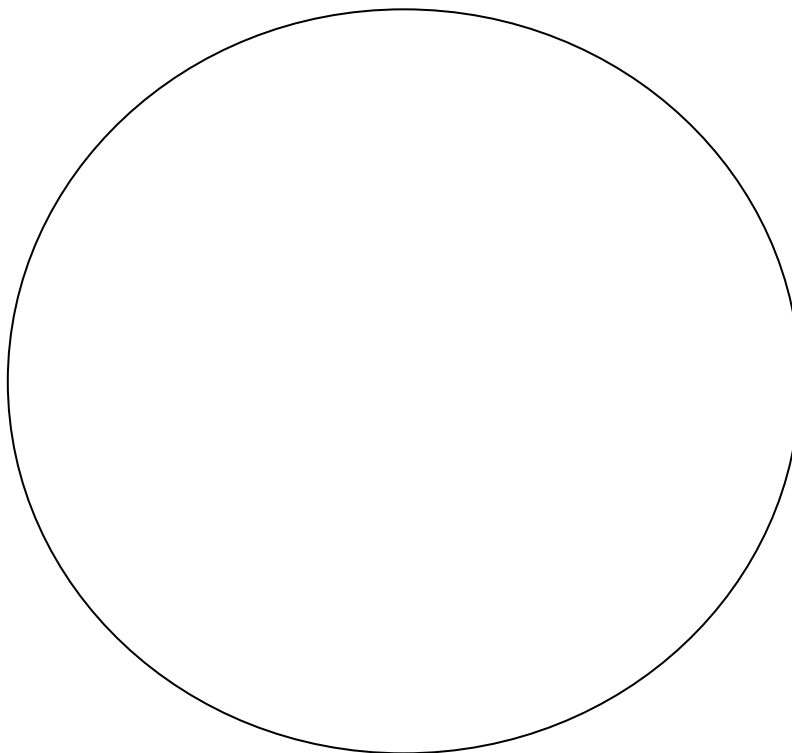
- a. Brightness (bright, moderate, dim) _____
- b. "Point-like" or extended (fuzzy)? _____
- c. Single object or multiple objects? _____
- d. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm



Observation Sheet 4:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
- e. Declination: _____
- f. Constellation: _____
- g. Time today object will be at its highest point in the sky: _____
- h. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

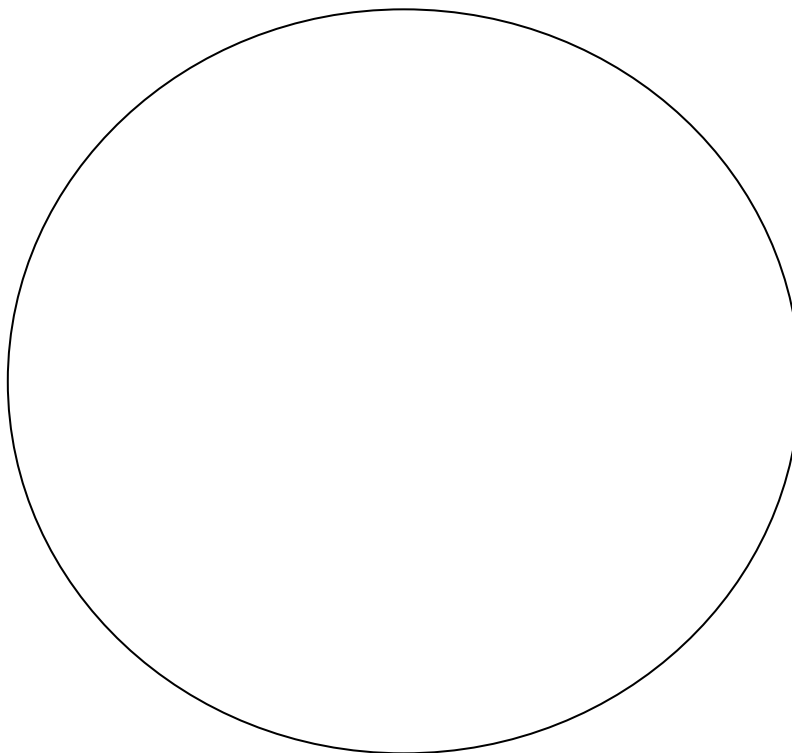
- a. Brightness (bright, moderate, dim) _____
- b. "Point-like" or extended (fuzzy)? _____
- c. Single object or multiple objects? _____
- d. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm



Observation Sheet 5:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
Declination: _____
- e. Constellation: _____
- f. Time today object will be at its highest point in the sky: _____
- g. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

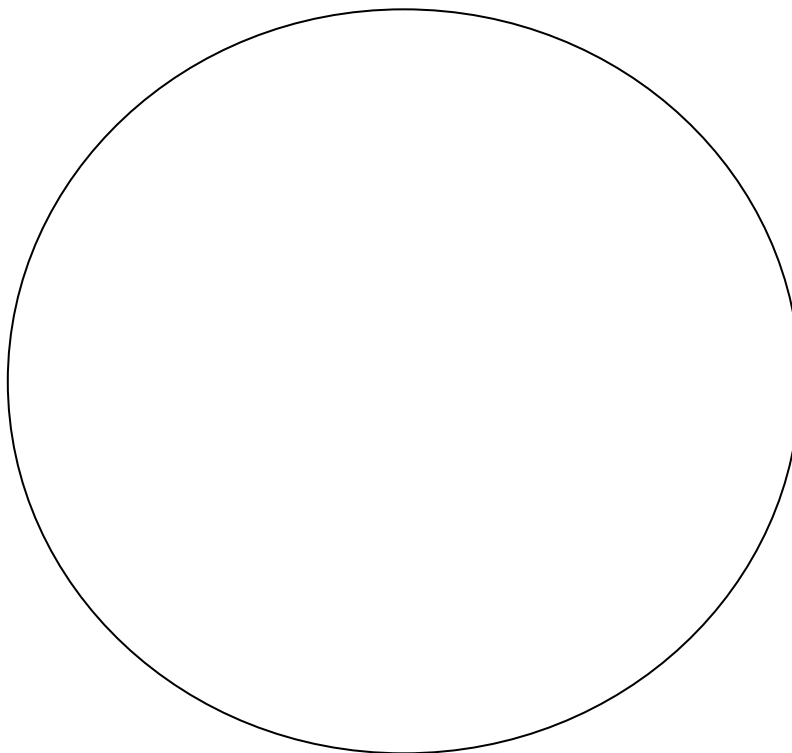
- a. Brightness (bright, moderate, dim) _____
- e. "Point-like" or extended (fuzzy)? _____
- f. Single object or multiple objects? _____
- g. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm



Observation Sheet 6:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
Declination: _____
- e. Constellation: _____
- f. Time today object will be at its highest point in the sky: _____
- g. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

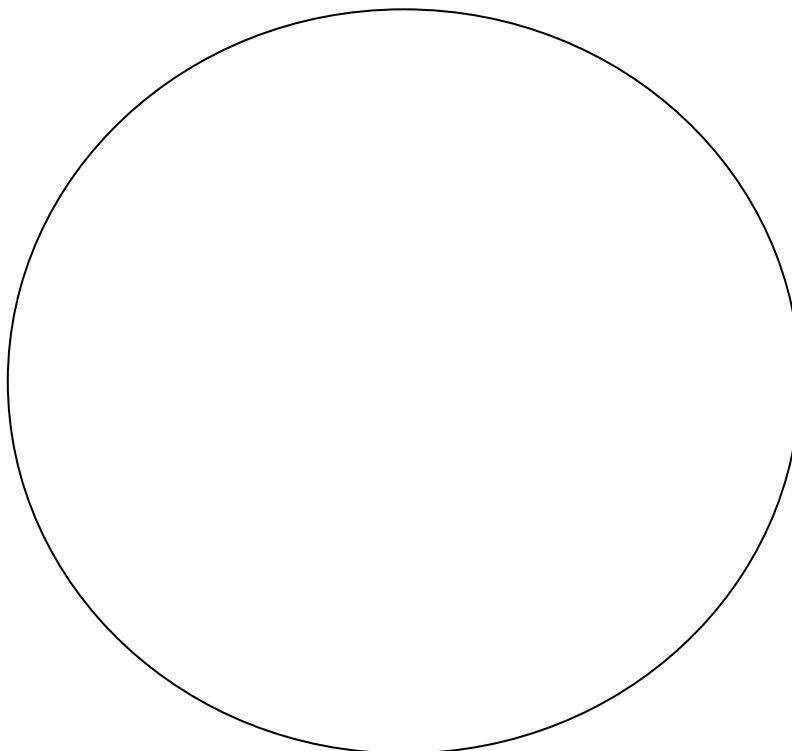
- a. Brightness (bright, moderate, dim) _____
- b. "Point-like" or extended (fuzzy)? _____
- c. Single object or multiple objects? _____
- d. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm



Observation Sheet 7:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
Declination: _____
- e. Constellation: _____
- f. Time today object will be at its highest point in the sky: _____
- g. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

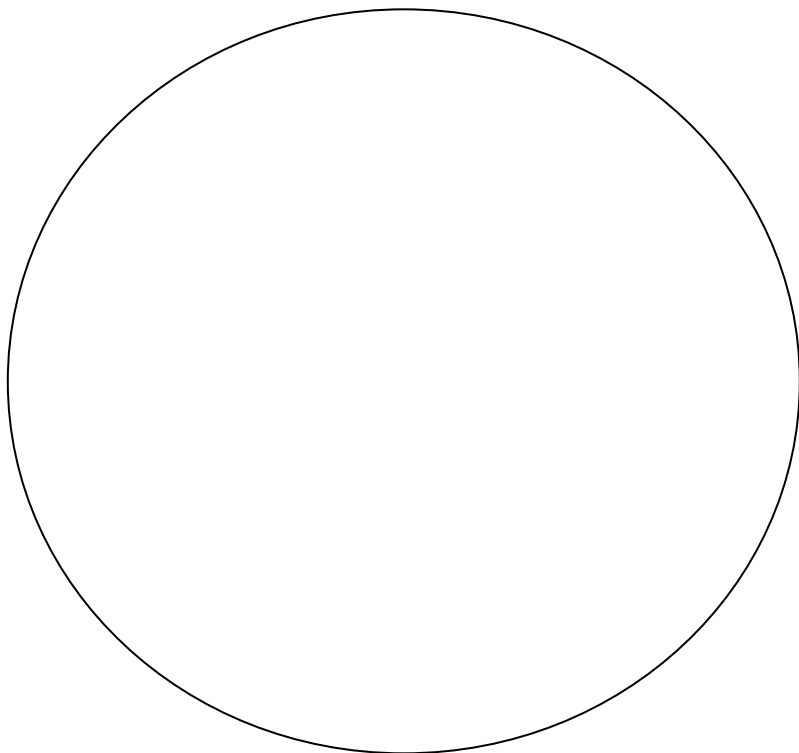
- a. Brightness (bright, moderate, dim) _____
- b. "Point-like" or extended (fuzzy)? _____
- c. Single object or multiple objects? _____
- d. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm



Observation Sheet 8:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
Declination: _____
- e. Constellation: _____
- f. Time today object will be at its highest point in the sky: _____
- g. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

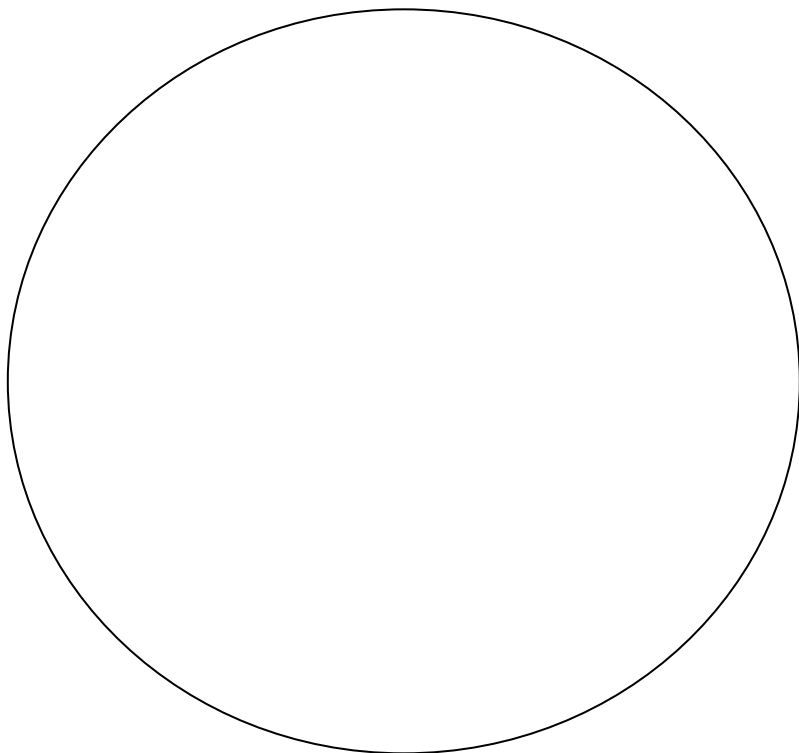
- a. Brightness (bright, moderate, dim) _____
- b. "Point-like" or extended (fuzzy)? _____
- c. Single object or multiple objects? _____
- d. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm



Observation Sheet 9:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
Declination: _____
- e. Constellation: _____
- f. Time today object will be at its highest point in the sky: _____
- g. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

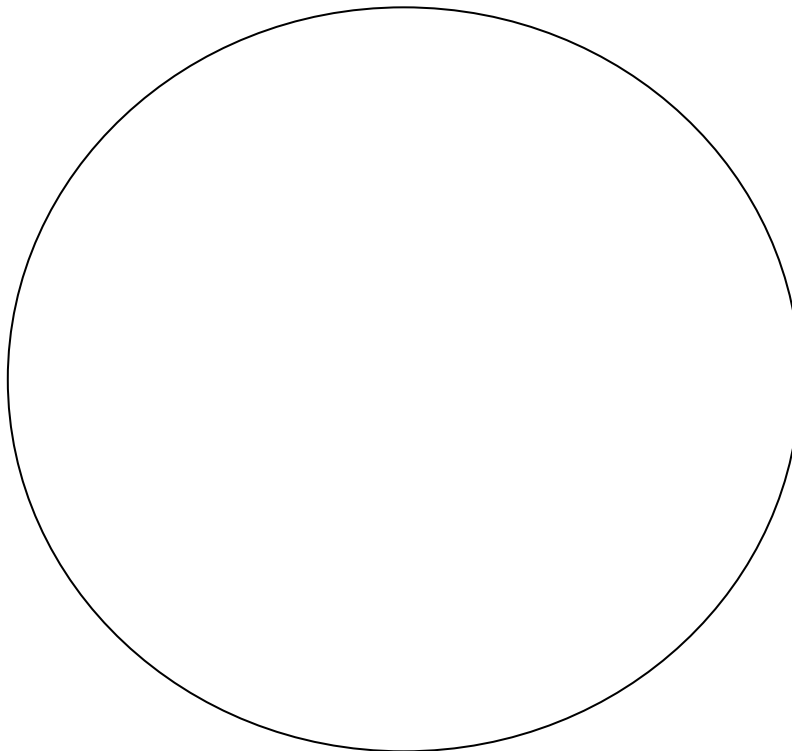
- a. Brightness (bright, moderate, dim) _____
- b. "Point-like" or extended (fuzzy)? _____
- c. Single object or multiple objects? _____
- d. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm



Observation Sheet 10:

Part II. Information

- a. Object Name: _____
- b. Object Type: _____
- c. Definition of Object Type: _____

- d. Right Ascension: _____
Declination: _____
- e. Constellation: _____
- f. Time today object will be at its highest point in the sky: _____
- g. Date when object would be visible on the meridian at 8pm: _____

Part I. Observations

- a. Brightness (bright, moderate, dim) _____
- b. "Point-like" or extended (fuzzy)? _____
- c. Single object or multiple objects? _____
- d. Color: _____

Drawing of object as seen through telescope or binoculars

Instrument type:

Eyepiece size:

_____ mm

