ASTR 101 Introduction to Astronomy Laboratory Telescopic Observing Project

Purpose

The goal of this assignment is to learn about how a variety of astronomical objects look through a large observatory telescope. Objects you can observe include ones that are visible to the naked eye (e.g. the Moon, or a bright star) and many that are not (e.g. the moons of Jupiter, Saturn's rings, Orion's nebula, and various double stars and star clusters).

Procedure

You will be using the telescopes at **Chabot Space and Science Center**; the telescopes here are very nice! Be sure to **call ahead** to see if, and when, they are open; currently Fridays and Saturdays 19:30 – 22:30 depending on weather and events. You will observe **three** different objects with one or more of the telescopes at the observatory. You will be using the three major telescopes at the observatory; you can only use one of the smaller telescopes if there is a technical problem and they shut down one of the major telescopes while you are there (this is your back up plan). While you are at the observatory **take a picture of yourself** in front of the sign in the science center lobby (across from the information desk).

You must use the following pages to record your observations and they must be printed one to a regular size sheet of paper (full size). The big circle represents the view through the telescope. Try to make your drawing "to scale" (the actual size of the object as seen through the telescope). For each object, do the following:

1. Observe the object carefully through the telescope. The attendant will take care of pointing the telescope; your job is to do the observing. Take sufficient time (e.g. a minute at least) to make your observation, and look for as many details in the object as you can find. Experiment with the best focus for your eyes. Ask the attendant for assistance.

2. Make a pencil sketch of the object in the circle on the "Telescope Observation" sheet. Take your time; a carefully drawn sketch will be worth more points than a rush job! Do not redraw your sketch. Good science demands that you must turn in what you recorded at the time of your observation.

3. Identify any special things you notice that the sketch may not represent fully (e.g. colors). Fill out all the information at the bottom of the "Telescope Observation" sheet completely.

4. Type up a report with five to eight paragraphs about your visit to the observatory. Write an introduction with your first impressions, one or two descriptive paragraph about each of the three observations (total of 3 descriptive portions of 1-2 paragraphs **each**), and a summary about your experience. You descriptive paragraphs should tell me your impression about what you saw as well as some general information about what you observed; do some simple research for this. You can tell me what it is, how old is it, where is it, how big is it, how far away is it, who first discovered it, etc.

On your coversheet, in the lower right hand corner, you must include a clear image of yourself in front of the lobby sign; about 3x5 is a good size; see you instructor for help on how to do this if you don't know how. Be sure to staple your report together with your three (3) completed "Telescope Observations" sketches. **Do not include this instruction sheet.**

Name of object			
Telescope Used			
Focal Length (f.l.) of telescope	f.l. of ey	epiece	
Magnification = f.l. (telescope)/f.l. (eyepiece)	=		_
Focal ratio = f.l. (telescope)/diameter of prima	ary lens or mirror =		
Sky Condition (clear, hazy, etc)			
Comments			
Signature of attendant/stamp			
Print name of attendant	Date	Time	

Telescope Observation

Name of object		
Telescope Used		
Focal Length (f.l.) of telescope	f.l. of eyep	iece
Magnification = f.l. (telescope)/f.l. (eyepiece	e) =	
Focal ratio = f.l. (telescope)/diameter of pri	mary lens or mirror =	
Sky Condition (clear, hazy, etc)		
Comments		
Signature of lab attendant/stamp		
Print name of attendant	Date	Time

Name of object		
Telescope Used		
Focal Length (f.l.) of telescope	f.l. of eyepi	ece
Magnification = f.l. (telescope)/f.l. (eyepiece	e) =	
Focal ratio = f.l. (telescope)/diameter of prin	mary lens or mirror =	
Sky Condition (clear, hazy, etc)		
Comments		
Signature of lab attendant/stamp		
Print name of attendant	Date	Time