**Astronomy 51 Introduction to Astronomy** **Fall 2016**

**Lab #4: Second Observing Session with the Celestron C6 Telescope.**

1. Set up the telescope as you did in Lab #3. REVIEW: install mount on pier with N towards Npole star, install telescope on mount (make sure it is seated well), insert eyepiece, check balance about both axes, check alignment of finderscope. (For this lab, you don’t need to be so well aligned with N. pole.)

2. With a low-power eyepiece (longer focal length), point the telescope at Saturn. Studying Saturn for a short bit with lower-magnification. Can you see its rings clearly? Do you see Titan, the largest moon of Saturn? Draw a sketch of what you see.

3. Center Saturn in the field of view, switch to the higher power eyepiece, and re-focus. Study Saturn for a short bit under higher power. Is the image clearer with the greater magnification? Note that because Saturn is low in the sky, the light from Saturn passes through a lot of the Earth’s atmosphere to get to your telescope. In your lab report, discuss briefly whether Saturn looks better with higher or lower magnification and why.

4. Put the lower power eyepiece back in, refocus, and move the telescope to point at the Moon. Explore the Moon’s surface for a bit. Find a favorite part of the Moon, center it in the field of view, switch to higher power and study the Moon’s surface some more. Discuss what you see in your report. What do you notice about the craters? What contrasting statements can you make between the dark surfaces and lighter surfaces (other than the different shades)?

5. With a low-power eyepiece, point the telescope at the Double Cluster. How does the image of these clusters compare with what you saw on your photographs taken with a camera? Look at the clusters with binoculars. Which of the three situations gives you the best view? Why?

6. Try to find M13 (if it is still high enough in the sky). M13 is the “cluster” shown on the Star and Planet Locator (and its coordinates are listed below). What do you see? What is M13, as explained in your text? Mention any significant pieces of information regarding this object.

7. Using the attached star chart, find and study M15 (in Pegasus).

8. Try finding the Ring Nebula (M57). It is labeled on the star map, but not on the Star-and-Planet finder. This is a challenging object to identify, so ask your instructor for help if you don't find it within 10 minutes. When you first get it in your scope it may look like a star, but when you study it carefully with a high power eyepiece you will see that it is clearly not a star and has a noticeable size and shape**.** Describe what you see. What is the Ring Nebula? (check your book).

Lab Report:

1. Give the names of your lab partners, the date, and describe the observing conditions.

2. Describe your observations of Saturn, the Moon, M13, M15, the Double Cluster, and M57.

3. Find out what these objects are (look in textbook, or Google it). Write at least one sentence on each.



