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The Location and Time of Sunset

Background

Science depends on observations – particularly careful, well-documented observations. This exercise requires that you make a series of observations and collect them systematically in a notebook that will be handed in at the end of the semester.

Equipment

Camera; notebook; pencil; compass (recommended)

Objectives

You will track the seasonal changes in the time and location of the sun over the course of the semester by observing sunset (or sunrise) at least **once every other week** for at least **eight consecutive weeks (a total of 4 observations)** and photographing your observations.

Background

At this very moment, you might be nice and relaxed, sitting in a comfortable chair, reading this lab manual. You are probably completely unaware that you are literally hurtling throug

night sky while Sagittarius makes its debut in July when the Earth is on the other side of the Sun. There are, however, some less obvious changes that occur due to the tilt of the Earth's rotational axis relative to the plane traced out by its orbit about the Sun. This little "accident" of nature results in the seasons experienced (and enjoyed!) north and south of the equator. More specifically, the tilt causes the Sun to rise and set at different locations and times depending on the time of year and your location (latitude) on the Earth. The purpose of this lab is to get you to observe this phenomenon yourself. You are the scientist. The question you will investigate is: "where and when does the Sun set (or rise) each day (week)?"

As a precaution, you should not look directly at the Sun (even through a camera lens) before it sets as it could cause serious eye damage.

Interpreting Your Results

At the end of the semester, summarize your findings regarding sunset (sunrise) on a page in your observing notebook. As you describe your findings, **answer the following questions:**

1) How many TOTAL degrees did the position of sunset (sunrise) move between your first and eighth week of observation. Was the position of sunset moving northwards or southwards during the 8 weeks of observations?

2) How did the time of sunset change over the course of the semester (i.e. was it setting earlier or later)? How many total hours or minutes did it change from the first observation to the eighth week? To do this correctly, you must consider whether or not your time measurements were in STANDARD or DAYLIGHT time and subtract or add a Tc -0.d (c)Tj 0.446 0 Td (t)Tj 0.283 0 Td ( )Tj

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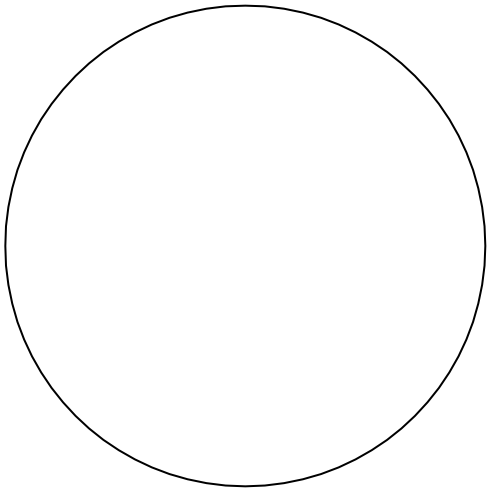
Instructor's or Volunteer's Signature and Date: _____



Object 1:

Object Name:_____

Date/Time :_____

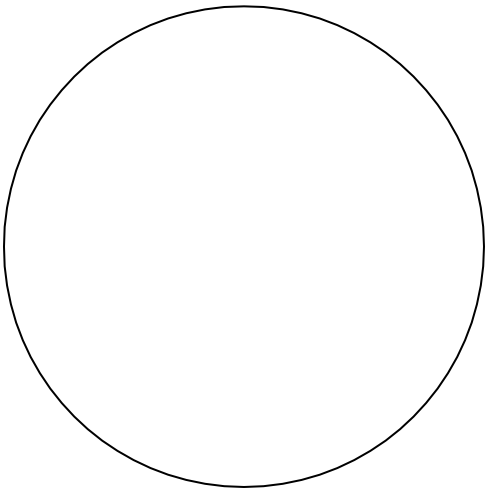
Telescope Diameter:_____

Draw what you see through the telescope above.
Describe in words what you see here:

Extra Credit:
Focal Length – Objective:_____

– Eyepiece:_____

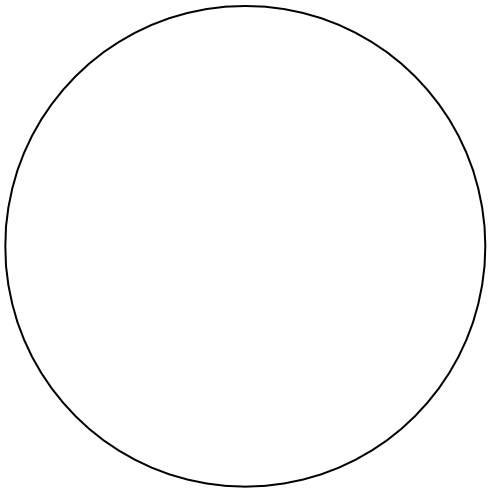
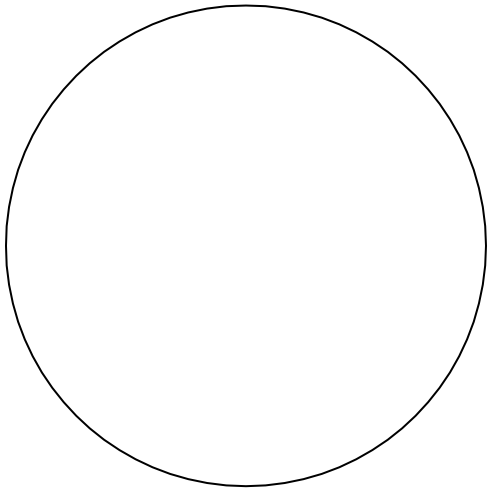
Magnification=Fobj/Feye:_____



Object 2:

Object Name:_____

Date 1Tj ET Q q 329.16 195.12 222.84 194.4 r

	**Object 3:** Object Name:_____ Date/Time :_____ Telescope Diameter:_____
Draw what you see through the telescope above. Describe in words what you see here:	**Extra Credit:** Focal Length – Objective:_____ – Eyepiece:_____ Magnification=Fobj/Feye:_____
	**Object 4:** Object Name:_____ Date/Time :_____ Telescope Diameter :_____

Draw what you see through the telescope above.
Describe in wo