

<b>SIERRA COLLEGE OBSERVATIONAL ASTRONOMY LABORATORY EXERCISE</b>		
<b>NUMBER</b>	<b>O.1.</b>	<b>TITLE: Celestial Roadmaps Observing Assignment</b>
<b>DATE-</b>	<b>PRINT NAME/S AND INITIAL BELOW:</b>	<b>GROUP</b> <input type="checkbox"/>
<b>DAY-</b>		
<b>LOCATION</b>		

**OBJECTIVE:**

- To become familiar with the night sky by actually observing with one's eyes
- Become familiar with some basic constellations and stars
- Make telescopic observations of several different types of objects (e.g. planets, galaxies, globular and open clusters, double stars, nebulae).
- Observations will be done in the course of one evening.

**DESCRIPTION:**

In any astronomy class, one should have an opportunity to view the nighttime sky. A carefully planned observing session will make the experience more enjoyable. Both telescopic and non-telescopic observations can give one an appreciation of the night sky. In this lab each student will do a night of telescopic observations.

Before going out to look at the sky, each student will prepare an observing list and star chart appropriate to the observing session. This should include a variety of celestial objects, including stars, constellations and any visible solar system objects. Telescopic objects will also include nebulae, galaxies and star clusters on their list.

# OBSERVATION LOG for

- visual at Observing Site

put date above

Names \_\_\_\_\_ Group \_\_\_\_\_ Date \_\_\_\_\_

Names \_\_\_\_\_ Location \_\_\_\_\_

Standard Time at Start/End of Observations \_\_\_\_\_ Sidereal Time at Start/End of Observations \_\_\_\_\_

Weather/Sky Conditions \_\_\_\_\_

Name	OK	Time	Constellation	Type	m	RA	DEC	Eyepiece	Comments
Constellations			choose 5 stars and 5 constellations						Non-telescopic observations!
Ursa Minor			n/a		n/a			eye	
Ursa Major			n/a		n/a				
Cassiopeia			n/a		n/a				
Lyra			n/a		n/a				
Aquila			n/a		n/a				
Cygnus			n/a		n/a				
Orion			n/a		n/a				
Canis Major			n/a		n/a				
Canis Minor			n/a		n/a				
Gemini			n/a		n/a				
Taurus			n/a		n/a				
Delphinus			n/a		n/a				
Leo			n/a		n/a				
Perseus			n/a		n/a				
Hercules			n/a		n/a				
Andromeda			n/a		n/a				
Sagittarius			n/a		n/a				
Böotes			n/a		n/a				
Scorpius			n/a		n/a				
Auriga			n/a		n/a				
Pegasus			n/a		n/a				
other			n/a		n/a				
			n/a		n/a				

Name	OK	Time	Constellation	Type	m	RA	DEC	Eyeiece	Comments
STARS									Non-telescopic observations!
Polaris								eye	
Kochab									
Alkaid									
Carb									
Vega									may choose only one of these 3
Altair									may choose only one of these 3
Deneb									may choose only one of these 3
Arcturus									
Capella									
Betelgeuse									<i>may choose only one of these 3</i>
Situs									<i>may choose only one of these 3</i>
Procyon									<i>may choose only one of these 3</i>
Regulus									
Algol									
Denebda									
Albireo									
Alcor/Mizar									Mizar much brighter than Alcor
Alpheratz									
Aldebaran									
Mirfak									
Castor									
Pollux									
Dubhe									
Fomalhaut									
other									

m = visual magnitude; RA = Right Ascension (use The Sky/Star Chart);  
Dec = Declination (use The Sky/Star Chart); Eyepiece = focal length of eyepiece used

**PROCEDURE (Telescopic Observations):**

**1. In Class Activity**

- Using the Star and Constellation Observing Lists in this lab, select at least 5 bright stars and 5 constellations as naked eye targets. Using the Astronomy App specified by the instructor, make sure the targets are in a good viewing position (well above the horizon) on the specified observing date and time.
- Mark the location of the selected stars and constellations on the Observing Starchart handed out in class and record their names in Table A.
- Record the altitude and azimuth of each of the 5 stars in Table A
- A list of at least one object of each major type (planet, globular cluster, open cluster, double star, nebula) will be provided by the instructor on the evening of the Observing Session.
- In the laboratory class on the evening scheduled for observing with telescopes, the instructor will review the planet and deep sky objects that will be observed, and how to operate the telescope controller prior to leaving for the observing site.

**2. Observing Session**

- The Meade telescopes will be set-up and aligned by the Astronomy Technician.
- Locate the deep sky objects with the telescope using the automated GOTO feature. Show the instructor each object viewed.
- Sketch the object specified by the instructor in the Bluebook and record the corresponding information.
- Locate and identify to the instructor the selected 5 constellations and 5 bright stars without the assistance of any starchart or astronomy App.

**3. Observing Targets**

**TABLE A** Date (        ) Time = (        )

<b>Objects located with Astronomy App</b>					
<b>Constellation #</b>	<b>Constellation name</b>	<b>Star #</b>	<b>Star name</b>	<b>App AZIMUTH</b>	<b>App ALTITUDE</b>
<b>1</b>		<b>1</b>			
<b>2</b>		<b>2</b>			
<b>3</b>		<b>3</b>			
<b>4</b>		<b>4</b>			
<b>5</b>		<b>5</b>			

**4. Observing Report (in Bluebook)**

- Complete the Bluebook page with observing information and sketch