

SCORE   
(5 pts max)

ASTRONOMY 5  
THIRD HOUR SESSION "J"  
ACTIVITY: *More Starry Nights*

NAME

DATE  ID#

For all questions below, unless stated otherwise, all observations are from Sacramento and the year is assumed to be the current year.

1. Set the date to \_\_\_\_\_ November 29 \_\_\_\_\_ and 12:00 noon. Select the "S" button in the toolbar so as to present a view of the southern sky. Use the scroll keys to bring the Sun into view (if necessary). Open Sun's information box (by double-clicking on the Sun). What time does the Sun rise and set (give the answer to the nearest minute)?

7:04 am	4:42 pm
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2. Set the time to the sunset time given as your answer to Question #1. and select the "W" button in the toolbar so as to present a view of the western sky at sunset (the SW and NW horizon points should just be in your 100-degree field of view). List the Messier objects (by number) that occupy the western sky (Note: Messier labels must be on and the daylight setting must be off).

M 3,5,6,8,11,13,16,17,20,23,25 or something like this...
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3. Set the time to the sunrise time and select the "E" button in the toolbar to present a view of the eastern sky at sunrise (with a 100-degree field of view). List the Messier objects (by number) that occupy the eastern sky (Note: Messier labels must be on and the daylight setting must be off).

M 5,10,12,13,57,92,104 or something like this
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4. Now step back in time to midnight and select the "S" button in the toolbar so as to present a 100-degree view of the southern sky. List the Messier objects (by number) that occupy the southern sky.

M 41, 42, 43, 47, 50, 77, 78, 79, 93 or something like this
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5. What time does the Moon rise and set? Time should be set at 1 am one day later than #1.

11:56 pm	1:18 pm (next day)
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6. If you wanted to observe deep sky objects with your telescope, from what you have discovered in the previous questions, what would be the best timeframe to make your observations (sunset-to-midnight or midnight-to-sunrise)?

sunset-to-midnight

7. If you wanted to observe the moon with your telescope, , what would be the best timeframe to make your observations (sunset-to-midnight or midnight-to-sunrise)?

midnight-to-sunrise

8. Set the date to today (use the “Now” button in the Time box) and find the North Star, Polaris. Select the “N” button on the toolbar and make sure the screen is set with a 100-degree field-of-view. Turn the daylight off so that the background stars can be seen. Under the Guides menu item, turn on the Constellation/Asterism lines and turn on the Equatorial/Grid. Notice where the red lines converge is the North Celestial Pole (NCP). Using the Angular Selection Tool to find the angle between Polaris and the NCP. You should zoom in to make the measurement easier.

0° 40' (± 10')

9. Continuing from the previous problem, set the time-step to 366 *sidereal* days. Make sure you have a 100-degree field-of-view. Hit the forward time button and watch Polaris move slowly towards and the away from the NCP. This is showing the effect of the precession of the Earth’s axes. Stop the time when you reach the year 7000 AD . What is the angle between Polaris and the NCP now? After the time is stopped, zooming in will help.

26° (± 1 °)

10. If a pair of binoculars has a Field of View (FOV) of 5° and a telescope with a particular eyepiece has a FOV of 0.5°, which will give the best view of M31 . Which will give the best view of M1 ?

binos

telescope

11. Locate the star at RA 05<sup>h</sup> 55<sup>m</sup> and DEC +07° on your SC001 chart. What is the name of the star? Using Starry Night, is the star above the horizon at 9 PM on the date in question 1?

Betelgeuse

Yes

12. Using the Planisphere, is Pollux above the horizon at 9 pm on December 15, 2018? Using Starry Night, what time does this object rise and set on this date? Use 9 pm as time for Starry Night and set it to standard time...

Yes

6:29 pm

9:54 (9:58) am