ASTRONOMY 2
THIRD HOUR SESSION "J"

ACTIVITY: More *Starry Night*s

NAME	KEY-J

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 time and date to _____April 27 @ 10:00 pm PDT_____ (and press the stop [■]). Select the ____W_____ directional button. Go to "Labels" under the Sky menu and select "All"? List all planets that can be seen (make sure the field of view is set at 100º, use the ⊕ and ⊖ icons, if necessary. If the date is during DST, make sure DST button (Sun icon in the Time Box) is set on.**

Mars

2. **Now go back to where you started in question #1. We can change location by clicking on the button with the red flag or by double-clicking on the "Sacramento, U.S.A." button in the lower left corner. Up comes the "Viewing Location" dialogue box. Select the Lookup button and choose _Cape Town, South Africa _ as your new location. What is the latitude for our new location?**

33° 47.994' S

3. **Now click on the Set Location button. Things will move around on the screen until you "land" at the new location. Make sure the time and date are the same as in question # 1. Now find the Sun. How long is it above the horizon (i.e. the time between rising and setting) for the date in question #1? (you may have to hide the horizon)?**

10 hours and 50 minutes

   For the remainder of the questions, one should turn off all labels except Planet/Sun.

4. **Return the location to Sacramento by selecting Return Home in the "Viewing Location" dialogue box. Change the time and date as stated in question #1. Select the Look South (S) button and make sure the horizon and the daylight mode is turned off. Find ____Mercury__. Zoom in or out to set the field of view between 25º and 5º. What day does this object start its next retrograde motion (you'll need to go forward in time with a time step of one *sidereal* day)? You may want to zoom in further to more easily see the start of the retrograde motion.**

July 7, 2019 (±7 days)

5. Starting with the date (and time) in question #1, determine when _____Mars_____ and _____Mercury_____ will next be in conjunction (nearest to each other in the sky). To do this, Find (Ctrl-F) the first planet and go forward in time with a time step of one *sidereal* day until the second object gets close. The field of view should be initially set between 50° to 100° and then one should zoom in closer as the conjunction nears. When you find their conjunction, what is their angular separation? What is the date?

17' (±10')	June 18, 2019

6. Find _____Venus_____. Set the field of view to 100°. By using the angular measuring device and time step feature, find when this planet will have its next greatest elongation. Start on Date and Year given in #1. Hint: First find the planet, make sure the field of view is 100°. Then change the view to Settings>Orientation>Equatorial. Next right-click on the Sun and Centre/Lock it. Now use the step button (|►) in the Time Box (one *sidereal* day steps) and see the planet change its distance from the Sun When the planet then reaches its greatest elongation, use the Step buttons (|►or◄|) and the angular measure to get the exact date.

March 24, 2020 (±4 days)

7. 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

8. Locate the star at RA _05^h 55^m _ 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

9. Using the Star Gazers Almanac (SGA) what planets are above the horizon at _ 11:00 pm PST_ on _May 19_ . Using Starry NIght, how many planets are above the horizon at at _4:00 am PDT_ on _June 24___

Jupiter, Saturn	4, Uranus, Neptune, Jupiter, Saturn

10. Using the Planisphere, is _____Pollux_____ above the horizon at __10 pm __ on ___ May 20, 2019_? Using Starry Night, what time does this object rise and set on this date? Use 10 pm the as time for Starry Night and set it to standard time…

Yes	8:15 am	11:40 pm