**ASTR 503 Homework 1 : Stellarium activity**

Note: use the [shortcut list for Stellarium controls](http://mst.rice.edu/ASTR503/Stellarium_controls.pdf)

1. (1 pt) First, install Stellarium from [stellarium.org](http://www.stellarium.org/) - there are downloads for both Mac and PC (and Linux).

Write here the version you installed (e.g. 0.21.3) : \_\_\_\_\_\_\_\_\_.

Does it start up as a fisheye view, or as a horizon view? \_\_\_\_\_\_\_\_\_\_\_

(note - if you have previously installed Stellarium, update as needed. You may not need to set your location again.)

2. (3 pt) Notice the popouts at the left and at the bottom (they show up when you move your cursor over them). The top one on the left sets your location. What is the default location?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(It might read your computer's location. If so, great!!)

Set your location if needed (use the top left popout or function 6)

Many locations can be set by typing in the name of your city in the Question box (to the right of the magnifying glass icon). Or select on the map. Or set the lat and long: for Houston, use -93 degrees longitude, and 30N latitude, or use your own GPS to set it more accurately. Check the box to "use as default", so the next time it opens, it knows where you are.

Does it give you a bright sky or a dark sky? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(it should use your computer's clock to give it the time of day). If you are in daylight, select "A" to get rid of the atmosphere. Move the time forwards (by pressing "L" repeatedly, each time you press it goes faster, then "K" to return to sidereal time. To go backwards, press "J" repeatedly and then again K to stop. Stop when the Sun is in your field of view, facing south, around local noon. Click-and-drag the horizon to move to face south, or use the left and right arrow keys

Turn on the Constellation art by pressing "R", the constellation boundaries by pressing "B" and the constellation labels by pressing "V". What constellation is the Sun in right now?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. (1 pt) (still near noon) Now turn on the ecliptic line (hit the "comma" key). Which constellations

are along the ecliptic near the Sun? \_\_\_\_\_\_\_\_\_\_\_\_ (left) and \_\_\_\_\_\_\_\_\_\_\_\_\_ (right).

Which planets are near the Sun? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Note any star/planet to the LEFT of the Sun in this view will be an EVENING object and any star/planet to the RIGHT of the sun will be a MORNING object.

4. (1 pt) Now let time advance until the evening, about 7:30 pm. Advance the date to Feb 11 (use = or - key). Go to full fisheye view (180 degree FOV), by hitting CONTROL\_ALT\_1 on Windows or OPTION\_COMMAND\_1 on Mac.

What direction is the Constellation of Orion ?\_\_\_\_\_\_\_\_\_\_\_\_\_

Turn on the Altitude/Azimuth grid (hit "Z"). What Altitude / Azimuth = is Sirius? \_\_\_\_\_\_\_\_\_ degrees altitude and \_\_\_\_\_\_\_\_ degrees azimuth. (estimate from the grid, and then check by selecting it and looking at the information list on the left).

The six bright stars that are surrounding the Moon are the "winter Hexagon": Aldebaran, Capella, Pollux, Procyon, Sirius and Rigel .

5. (1 pt) Hit "n" to turn on nebulas. List two nebulas (or other deep sky objects) which will be visible in mid February: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. (1 pt) How far away does Stellarium say Betelgeuse is? \_\_\_\_\_\_\_ LY. What does it give for

its apparent Magnitude (shown as just "Magnitude")\_\_\_\_\_and Absolute Magnitude\_\_\_\_\_\_?

7. (1 pt) What does Stellarium say is distance \_\_\_\_\_\_\_LY and apparent \_\_\_\_\_ and absolute magnitude \_\_\_\_\_\_\_ for Rigel?

8. (1 pt) Set the time to your next birthday. What day is that? \_\_\_\_\_\_\_\_\_\_ What constellation

is the Sun REALLY in on your birthday? \_\_\_\_\_\_\_\_\_\_ What is the closest planet to the Sun on that day? \_\_\_\_\_\_\_\_\_\_\_

(turn on the constellation BORDERS "B" to find which constellation a star or the Sun is in)

Last updated 1/19/2022