**ASTR 502 Homework 2 : Stellarium activity**

(Due 9/8, 8 points)

Note: use this <http://mst.rice.edu/ASTR502/Stellarium_controls.pdf> shortcut list for Stellarium controls

1. (1 pt) First, install Stellarium from <http://www.stellarium.org/> stellarium.org

- there are downloads for both Mac and PC (and Linux).

Write here the version you installed (e.g. 0.12.6) : \_\_\_\_\_\_\_\_\_.

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

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? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Set your location (use the 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 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. (Use your right and left arrow keys to rotate the sky so

you face south; if the cardinal directions "N" "S" are not labeled on your horizon, press Q to toggle them on).

Click on the Sun to center it. You can zoom in a bit by pressing "Page up" (for Macs, use

command and up arrow).

When the Sun is due South, what time is it for you? \_\_\_\_\_\_\_\_\_\_\_\_\_ (your solar noon)

What is your longitude? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What day are you doing this? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(use "8" to return to today)

Are the Planets labeled? If not, press "p". Some planets may be near the Sun.

Think... which ones (left or right of the Sun) will be morning planets? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

which ones (if any) will be morning planets for you today? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

which ones (if any) will be evening planets for you today? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Which one(s) (if any) are too close to the Sun to see right now?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Move ahead to midnight... which planet(s) are nearly overhead at midnight? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. (1 pt) Back to local noon, facing south, centered on Sun. Move the days ahead by

one day at at time by pressing "=" or back by pressing "-".

Go forward a (solar) week at a time by pressing "]" or back by pressing "[".

Watch how the planets move relative to the Sun. Which planet will be in conjunction with

the Sun next (the same direction as the Sun)? \_\_\_\_\_\_\_\_\_\_\_\_

What day will that occur? \_\_\_\_\_\_\_\_\_\_

Which one after that? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ when? \_\_\_\_\_\_\_\_\_\_

4. (1 pt) Mercury doesn't stray very far from the Sun. What day will it be farthest from

the Sun, on the left of the Sun? \_\_\_\_\_\_\_\_\_\_\_ roughly how many degrees away? \_\_\_\_\_\_\_\_\_\_

*(hint: look at the “elongation” in the Mercury information).* What day will it next be farthest from the Sun, on the right side of the Sun?\_\_\_\_\_\_\_\_\_\_

Roughly how many degrees away? \_\_\_\_\_\_\_\_

5. (1 pt) Find and center Venus. What are its celestial coordinates today?

RA \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DEC \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

What is its apparent magnitude today? \_\_\_\_\_\_\_

6. (1 pt) When will Venus next be brightest? *(minimum magnitude)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

What will its apparent magnitude be? \_\_\_\_\_\_\_\_\_\_

What is its distance from Earth then? \_\_\_\_\_\_\_\_AU

7. (1 pt) When next will Venus be full? (approximately) \_\_\_\_\_\_\_\_\_\_\_

What will its apparent magnitude be? \_\_\_\_\_\_\_\_\_\_

What is its distance from Earth then? \_\_\_\_\_\_\_\_AU

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

What constellation is the Sun REALLY in on your birthday? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(show the constellation boundaries “b” and labels “c”.)

What is the closest planet to the Sun on that day? \_\_\_\_\_\_\_\_\_\_\_

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