

Due December 4

10 points total

AST101 Take-home #10/11

For full credit, be sure to include proper units, as well as E, W, a.m., p.m. when appropriate with your answers. Note that some questions may contain extraneous information.

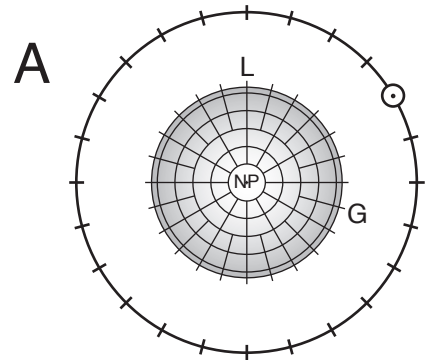
Name _____

G = Greenwich

☉ = sun (mean)

L = local position (you)

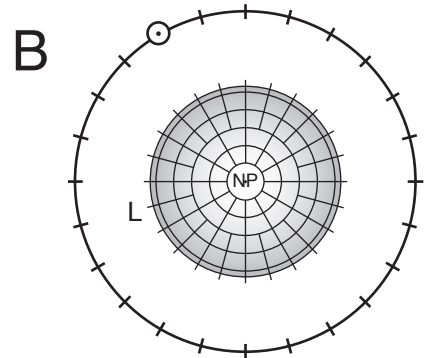
1. Using diagram A at right, what is the Local Mean Solar Time (LMT)? Remember to use a.m. or p.m.



2. Using the same diagram, what is the Greenwich Mean Solar Time (GMT)?

3. From the same diagram, what is your longitude (local position)? Be sure to indicate East or West.

4. Using diagram B at right, what is the Local Mean Solar Time (LMT)? Remember to use a.m. or p.m.



5. Using the second diagram, place a "G" so that the Greenwich Mean Solar Time (GMT) is 10 p.m.

6. From the second diagram, what is your longitude (local position)? Be sure to indicate East or West.

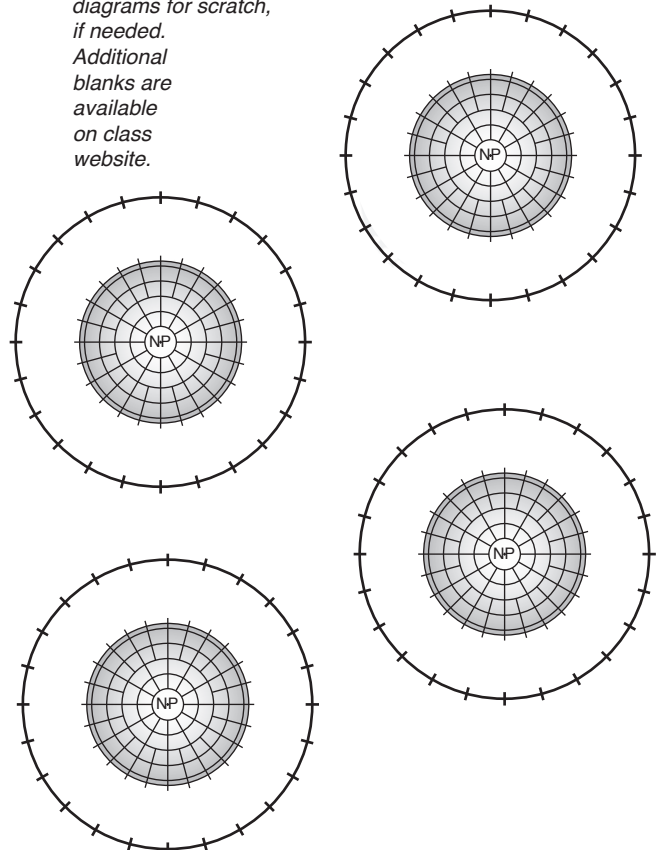
7. What is the longitude of a location where the LMT is 2 p.m. and the GMT is 11 a.m.? (Longitude must be between 0 and 180°E or W.)

8. What is the longitude of a location where the LMT is 7 p.m. and the GMT is 10 a.m.?

9. The GMT is 12 noon. What is the LMT at longitude 60°W?

10. On March 21, what time (LMT) does the sun transit for longitude 60°W?

Use the following blank diagrams for scratch, if needed. Additional blanks are available on class website.



OVER

AST101 Takehome Quiz, continued

For full credit, be sure to include proper units, as well as E, W, a.m., p.m. when appropriate with your answers.

G = Greenwich
VE = vernal equinox
☉ = sun (mean)

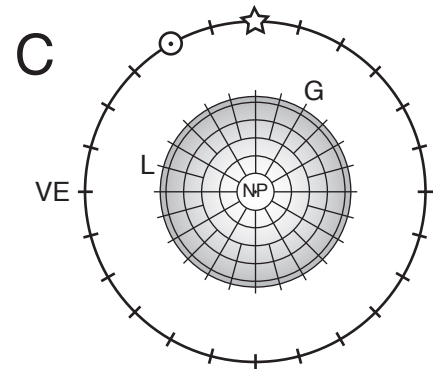
☆ = star
L = local position (you)

11. Using diagram C at right, what is the Local Sidereal Time (sidereal time at the local position)?

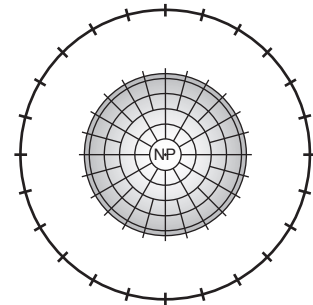
12. Using the same diagram, what is the Greenwich Sidereal Time (GST)?

13. Using the same diagram, what is the Right Ascension of the star?

14. Using the same diagram, what is the Right Ascension of the Sun?



15. What is the longitude of a location where the LST is 2 hours and the GST is 6 hours? Answer must be between 0 and 180 E or W.



16. What is the LST at longitude 60E if the GST is 5 hours? Your answer must be between 0h and 24h.

