AST101 Take-home #10

Due December 6

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

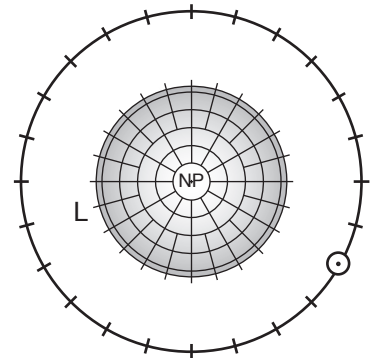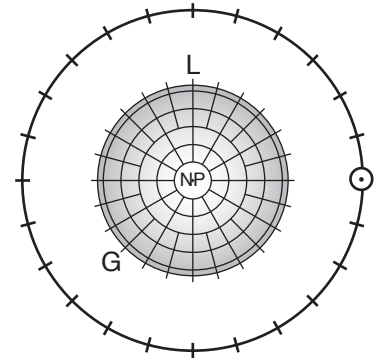5. Using the second diagram, place a "G" so that the Greenwich Mean Solar Time (GMT) is 10 p.m.

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

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

7. What is the longitude of a location where the LMT is 3 a.m. and the GMT is 7 a.m.? (Longitude must be between 0 and 180°E or W.)
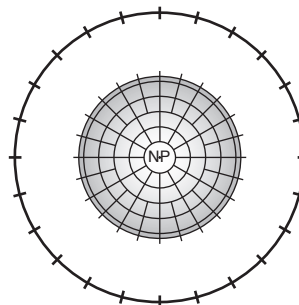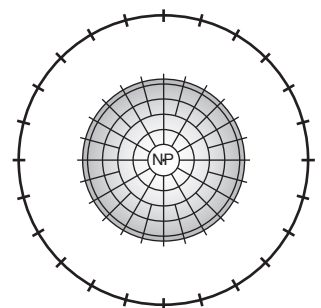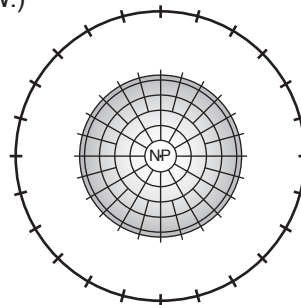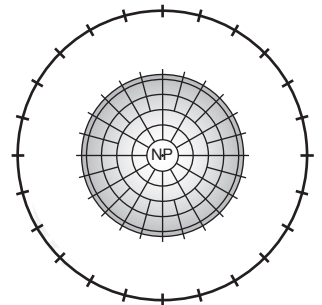
8. What is the longitude of a location where the LMT is 8 p.m. and the GMT is 11 p.m.?

9. The GMT is 12 noon. What is the LMT at longitude 50°E?

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

AST101 Takehome Quiz, continued

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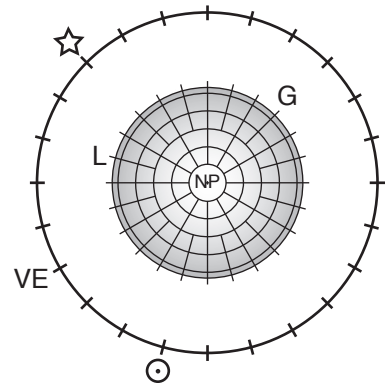VE = vernal equinox
⊙ = sun (mean)

☆ = star
L = local position (you)

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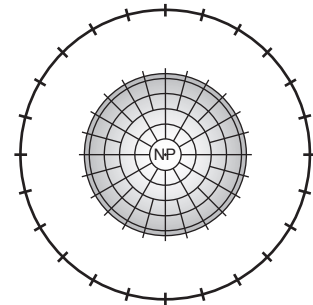
12. Using the diagram, what is the Greenwich Sidereal Time (GST)?

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

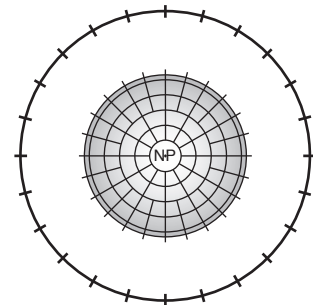14. Using the diagram, what is the Right Ascension of the sun?

15. What is the longitude of a location where the LST is 3 hours and the GST is 11 hours? Answer must be between 0 and 180 E or W.

For scratch

16. What is the LST at longtude 90W if the GST is 3 hours? Your answer must be between 0h and 24h.

For scratch