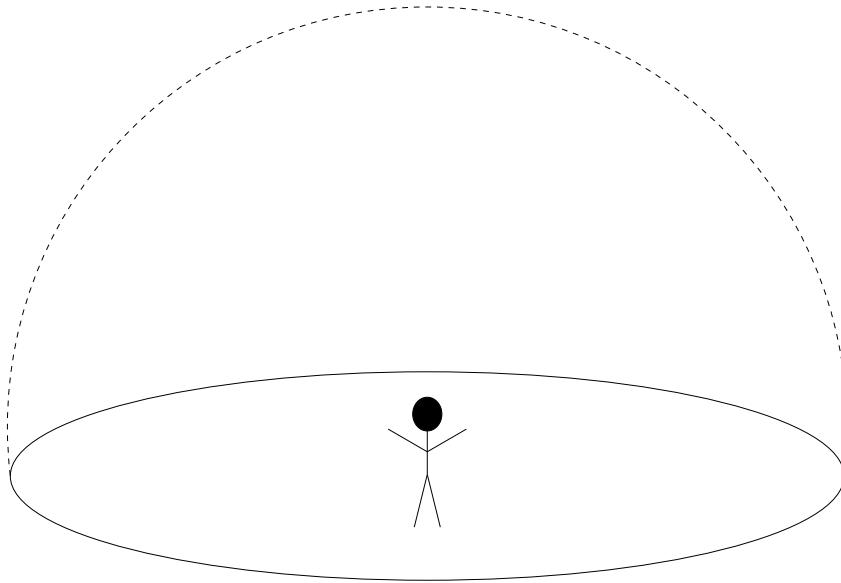


Name: \_\_\_\_\_ Date of Session: \_\_\_\_\_

### Staerkel Planetarium Session

Attend the Staerkel Planetarium sessions and answer the questions below.

1. Below is a celestial sphere for an observer in Champaign-Urbana (latitude of  $40^\circ$  N). Mark the following points and great circles on your drawing:
  - (a) zenith, horizon, the cardinal directions (N,S,E,W) on the horizon plane;
  - (b) north celestial pole, south celestial pole, celestial equator, and celestial meridian.



2. On which great circle are the zodiac constellations located? On which great circle would you find the apparent location of the Sun?
3. Where is the north star, Polaris, located?
4. What are circumpolar stars?

5. Chambana is located at latitude  $40^\circ$  north. From Chambana, is it possible to see *any* stars in the southern celestial hemisphere? Briefly explain.
  
6. What direction does the Sun set on the vernal and autumnal equinoxes?
  
7. Where on the Earth can one see the largest fraction of the celestial sphere over the course of a year? What is this fraction?
  
8. Where on the Earth can one see the smallest fraction of the celestial sphere over the course of a year? What is this fraction?