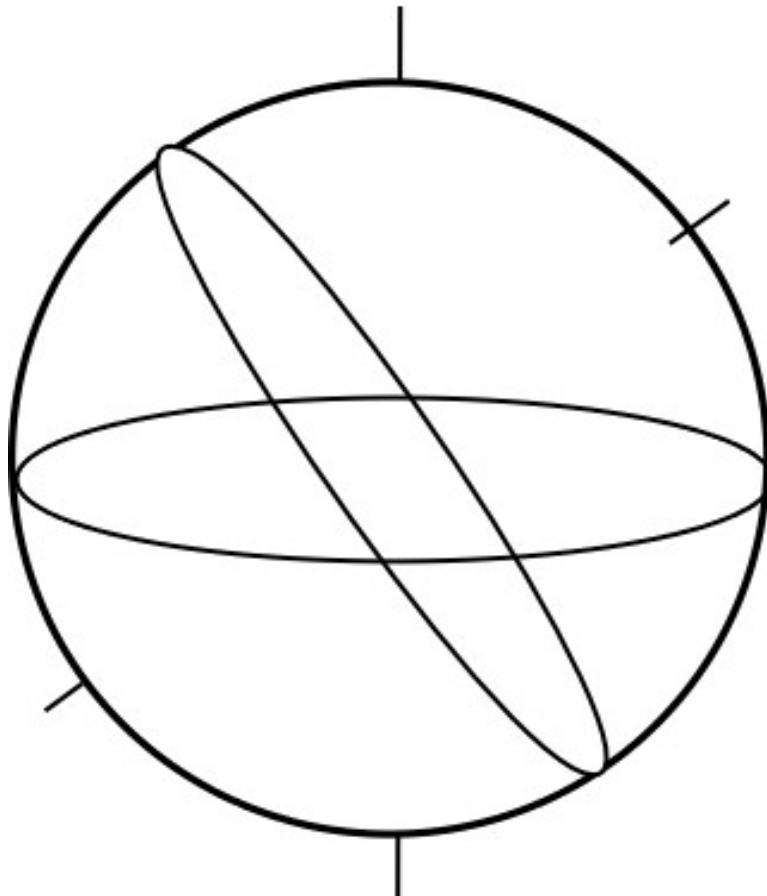


Exercise: *The Celestial Sphere*

- I. Draw a celestial sphere with all of the following labeled:
1. a horizon (orient it horizontally)
 2. the North Celestial Pole (NCP) for a person at about 40° latitude
 3. the celestial equator (CE) (again for $\text{lat}=40^\circ$)
 4. the SCP
 5. a stick figure representing the person
 6. a star with an arrow showing its motion in an hour.
 7. the zenith (Z) and nadir (N)
 8. the celestial meridian (CM)
 9. the cardinal points (N,S,E,W)



II. Describe how the celestial coordinate systems work.

1. How many coordinates are needed to describe a star's position? _____
2. What are the names of these coordinates for the equatorial coordinate system? _____ and _____.
For the altazimuth coordinate system? _____ and _____.
3. What are the units of these coordinates?
1st Equatorial: _____ 2nd Equatorial _____
1st Altazimuth: _____ 2nd Altazimuth _____
4. Using the Cel. Sphere below, draw on the CE, NCP and ecliptic.
Label where RA, DEC are (0,0), and
Label where Alt, Az are (0,0).

