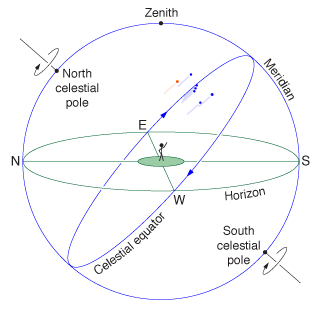
**Your Local Sky, the Celestial Sphere, and Paths of the Sun**

Figure 1, below, shows a sketch of the Celestial Sphere for an observer at mid-Northern latitudes.



On your plastic hemisphere kit, you are going to draw major points and coordinates in the sky as if you were observing the sky from **40 degrees North latitude**. The flat part of the hemisphere represents the plane of your horizon.

**Part 1:**

1. First, mark a “z” at your **zenith**, and the letters “N”, “S”, “E”, and “W” to mark the north, south, east and west points on your **horizon**.
2. Draw a dashed line along your **meridian**. (- - - - - - )
3. Estimate the position of the **North Celestial Pole** in your sky (from 40°N) and mark it “NCP”.
4. Estimate the position of the **Celestial Equator** in your sky (from 40°N). Draw a solid line showing the path of the Celestial Equator. (~~–-––-–---~~)
5. Pick a location for one star in your sky (from 40°N). Draw a line with arrows showing how that star will travel during the course of the entire night in your sky. (→ → → → )
6. Draw a dotted circle showing the region of your sky (from 40°N) within which the stars will be **circumpolar**. (. . . . . . . )
7. Put the full names of everyone in your group on the index card provided, and have the instructor check your marked plastic hemispheres to see if everything is drawn correctly.

**Part 2:**

1. On your index card, write the angle between the Celestial Equator and the southern horizon.
2. On your plastic hemispheres, draw two more solid lines showing the path of the Sun across the sky at the **summer solstice** and at the **winter solstice**. (~~–-––-–---~~)
3. On your index card, write the angle between the Celestial Equator and the summer solstice path.
4. On your index card, write the angle between the summer solstice path and the southern horizon.
5. Have the instructor check your plastic hemispheres again and turn in your index card.