

- The celestial sphere
- Celestial pole, cardinal points, zenith, nadir, and all that stuff
- Altitude and azimuth; zenith distance
- Declination and hour angle
- Culmination (upper/lower), depression, local meridian, object meridian
- Rise/set/visibility
- Circumpolar stars
- Examples and problems:
  - (i) When will the minute hand and the hour hand overlap again after mid-day?
  - (ii) What is the correction between the sidereal and synodic time?
  - (iii) Observing from Villanova, a star culminates at 19:30. At that time it is  $33^{\circ}57'23''$  above the horizon. When will that star set? At what azimuth?
  - (iv) Pick a star that is visible from Villanova. Get its equatorial coordinates. How long is the star on the sky? How high does it get on the sky? In what direction? Where does it rise, and where does it set?