Celestial Observation

the best time to observe objects are when they are high in the sky
↓highest

an object's culmination can be predicted by finding the 'half way' time between rising and setting times

Dark Adaptation:
- this takes about 20 - 30 min of darkness
- cones are colour sensitive
- rods are not bit are for night vision and need time to adapt
  ↓
  sensitive to light intensity

Averted Vision:
- if object too dim, cones are not stimulated
- need to stimulate rods located outside of optical axis
- ~~looks~~ look slightly to the side of object allows its light to fall on rods

Factors that affect seeing conditions:
- rising and setting times
- light pollution (skyglow and local glare)
- weather conditions
- landscape (trees, high buildings)
- seeing conditions relating to 'steadiness' of atmosphere : I - V Antoniadi Scale

Diurnal Motion - apparent motion of stars as a result of Earth rotating on its axis

Culminate at observer's meridian due N/S

one sidereal day = 23h 56min so stars **rise 4 min earlier each day**

Local sidereal time (LST) is the RA of a star that lies on an observer's meridian at any given time
- e.g. star with RA 14h 45 min lies on meridian so LST is 14:45

Hour angle:
- time since an object last crossed the meridian
- negative hour angle is how much time before object will cross meridian

hour angle = LST - RA

cardinal points: N, S, E, W

Altitude of NCP/SCP = latitude of Observer

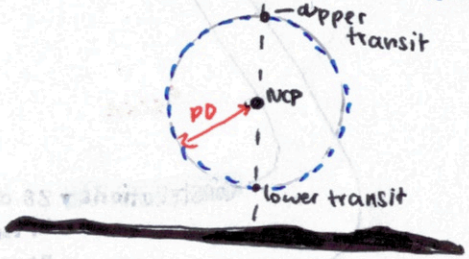
∴ ≈ altitude of Polaris = latitude of observer

Circumpolar Stars - when the polar distances is so small a star never rises and sets in horizon and always remains in the sky
- its polar distance must be less than the altitude of NCP

90° - declination < lat. of observer

Polar Distance / Co-declination:
- angular distance of a star from NCP
- since dec. of NCP = 90°:

polar distance = 90° - declination



altitude at upper and lower transits = latitude ± polar distance