

Lecture Notes 9/13

• Historical Astronomy •

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Prehistoric - 500 B.C.

- the celestial sphere (Ancients understood this and put it all into perspective).
- Constellation (asterism =
(Big Dipper, Small Dipper, Sigmas, Summer Triangle, Sagittarius)
• These mapped the sky
- Diurnal (daily) Motion = daily cycle
- Annual Motion =
Ecliptic
- Seasons (Fig. 1.8 - 1.10)
* tilt of the earth → why the seasons change.
↳ on its axis

- Geocentric Universe (Eudoxus)
- Geocentric Universe w/ retrograde motion?
- Hipparchus (150 B.C.) Epicycles - magnitude system = powers of ten
precession = wobble of earth
- Ptolemy (150 B.C.)

~~Almagest~~
Almagest -

Renaissance = (A.D. 1650)

Last major figure who believed that universe was heliocentric

- Copernicus (1473 - 1543) rebirth of the heliocentric theory
 - Good political connections / Good relations w/ Pope
 - * Explained retrograde motion more compactly
- Tycho (Danish Nobleman) (1546 - 1601)
 - Very meticulous and accurate observational data.
- Kepler (1571 - 1630) (pg. 49 Fig. 1.28)
 - 3 laws?
- Galileo (1564 - 1642)
 - First extensive use of telescope for study of the heavens.
 - Studied motion
 - Contradicted the pope and his teachings
 - house arrest / end of his life
- Huygens (contemporary of Sir Isaac Newton)
 - stood up to ~~Kepler's~~ Newton
 - wave theory of light
- Newton
 - Invented calculus