

ASTRO 1010, Fall 2015, Chapters 1-3 & S1

Study Guide

Review chapter slides (course website), summary and practice questions

These are the definitions and concepts you have to master:

Chapter 1:

- Our “address” in the universe
- What is a: Star, Planet, Moon, Asteroid, Comet, Solar System, Nebula, Galaxy, Universe, Cosmos
- Far away is back in time
- Light year, approximate magnitude
- Astronomical Unit
- Number of stars in our galaxy
- Number of galaxies in the Universe
- Size and age of the Universe
- Expansion of the Universe

Chapter 2

- What are: Constellations, the Celestial Sphere? The Milky Way
- Why do stars rise and set? Which one doesn't?
- Seasons, tilt of Earth's axis
- What are eclipses, what causes them?
- What are the phases of the Moon, what causes them?
- What is parallax? Why did the Greeks see none?

Chapter 3:

- Scientific thinking: How is modern science rooted in ancient astronomy?
- Ancient astronomical observations
- Contributions to Science: Ancient World, Renaissance
- Eratosthenes, Ptolemy, Copernicus, Brahe, Kepler, Galileo,

- Planetary motions, retrograde motion
- What is an ellipse, eccentric, foci?
- Kepler's three laws
- Phases of Venus
- Heliocentric model
- What is a scientific theory and what is a hypothesis?
- Role of observations in science
- Occam's razor

Chapter S1:

- Sidereal and Solar time
- Lunar orbit
- Time zones, international date line
- Leap years, leap year rule
- Celestial coordinates
- Daily motion of celestial objects
- Arctic Circles, Tropics, Sun's path
- Latitude and longitude, celestial navigation, time keeping