

ASTRO 1010, Summary of Chapters 10-12

Review notes, chapter slides (online), practice questions (online).

Chapter 10:

- Sources and losses of terrestrial planet atmospheres
- Example of Earth's atmosphere: composition, temperature, pressure
- Planetary albedo and temperature
- Greenhouse effect and temperature
- Weather, circulation patterns, clouds, precipitation, climate change
- Atmosphere of Mars: composition, seasons, ice caps, dust storms, evidence of surface water
- Atmosphere of Venus: composition, cloud layers, runaway greenhouse effect
- Exosphere of other terrestrial planets
- Atmosphere of Earth: interaction of light and atmosphere in different layers,
- Carbon Dioxide Cycle and temperature stability mechanisms
- Carbon Dioxide and global warming

Chapter 11:

- Jovian planets: Jupiter, Saturn, Uranus, Neptune
- Spacecraft missions

- Composition, density, sizes
- Interior structure, magnetic fields
- Atmospheres: colors, bands, spots
- Jupiter's large moons: Io, Europa, Ganymede, Callisto
- Saturn's large moon: Titan (atmosphere) and Huygens probe
- Neptune's Triton (Pluto look-alike)
- Saturn's rings: composition, resonances, formation
- Rings of Jupiter, Uranus, Neptune

Chapter 12:

- Asteroid properties and orbits, failed planet, resonances
- Meteors and meteorites (primitive, processed)
- Comets: "dirty snowballs"
- Comet nucleus, halo, plasma tail, dust tail; changes with heating
- Comet debris and meteor showers
- Comet origins in Oort Cloud and Kuiper Belt
- Kuiper Belt Objects: Eris and Pluto
- Collision of Comet SL9 with Jupiter
- Collisions and impacts on Earth (extinction of the dinosaurs)