

ASTR1: Exam 2 Review (PartIII)

CH6 Summary: Formation of the Solar System

- What makes up the S.S.
- Size of S.S. 1:10 billion scale
- 3 clear patterns of composition and motion
- Explain nebular theory (Hint: elaborate on Contraction, Condensation, Accretion, Clearing)
- What caused the orderly patterns of motion? (Hint: elaborate on heating, spinning and flattening)
- Why are there two major types of planets
- What are planetesimals?
- What is accretion?
- How is condensation affected on each side of the frost line?
- How did the nebula get cleared of remaining gasses?
- Where did asteroids and comets come from?
- What three distinct regions in the S.S. are Asteroids and comets concentrated in?
- How do we explain exceptions to patterns in the S.S.?
- How do we think our moon formed?
- How old is the S.S. and how do we know the age?
- What is half life?

CH7 Summary: Terrestrial Worlds

- What drives geological activity?
- What are 3 sources of internal heating? And which one currently contributes to heating.
- What are the 4 major geological processes?
- What are 2 crucial effects of our atmosphere?
- What type of geological activity did mercury and the moon have? What features confirm this.
- Why is the moon and mercury geologically dead?
- What geological activity did mars have? What features confirm this?
- What caused mars geological activity to change?
- What geological activity does Venus have?
- What is the temperature on Venus? What contributes to its temperature?
- Describe the 4 unique features important for life on Earth.
- What condition allows for liquid water on earth?

CH8 Summary: Jovian Planets

- How do Saturn and Jupiter differ in composition from Uranus and Neptune?
- What is the density of Saturn?
- What are weather conditions like?
- What is the great red spot? Great dark spot?
- How did the jovian planets get most of their small moons?
- What is the geological activity on medium moons? Why?
- Match the following large moons.
Io, Europa, Ganymede, Callisto, Titan & Triton.
 - Most volcanically active object is S.S?
 - Largest moon in S.S.
 - Which moon is a water world with a liquid ocean below the surface?
 - Which moon has an old surface with large magnetic field?
 - Thick atmosphere with liqued methane lakes
 - Orbits backwards and was captured
- Describe tidal heating
- Describe orbital resonance
- Why are Jovian moons easily heated?
- What are Saturn's rings made of? And why do they have gaps?
- Why do the jovian planets have rings?

CH9 Summary: Asteroids, comets and Dwarf Planets

- What are asteroids made of?
- Why is there an asteroid belt?
- What are meteorites?
- Why do meteor make trails?
- What are comets made of?
- Why do comets have tails?
- What 2 places do comets come from?
- How did the Oort cloud form?
- Pluto and other dwarf planets are most likely very large _____ rather than planets.
- This object is larger and beyond the orbit of Pluto.
- What killed the dinosaurs? What evidence do we have for this?
- How do the Jovian planets affect the rate of great impacts.

CH10 Summary: Other Planetary Systems

- Describe each of the following ways we can detect planets outside our S.S.
 - Gravitational tugs “wobble”
 - Doppler shift
 - Transits
 - Gravitational lensing
- What 5 properties of extra solar planets can we measure? (hint: they are mass,size,density,orbital period)
- What are 3 surprising characteristics
- What are “hot Jupiter’s”?
- How do we explain hot Jupiter’s?
- What is planetary migration?

Specifications from table 6.1

(Look at power point)

- Know all 8 planets
- Know order near to far from the Sun
- Know distance (AU)
- Know temperatures
 - Mercury Hot/day Cold/night
 - Venus 900F
 - Rest hot or cold
- Composition
- Saturn density
- Venus slow rotation (why)
- Venus, Uranus axis tilt (why)
- Rings yes/no