

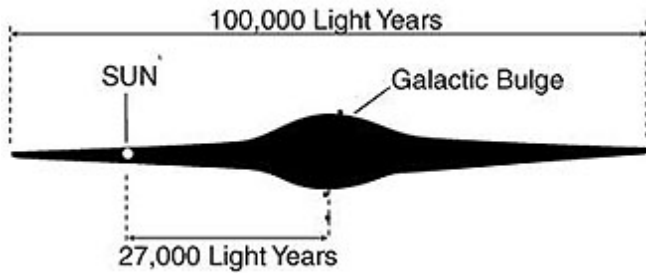


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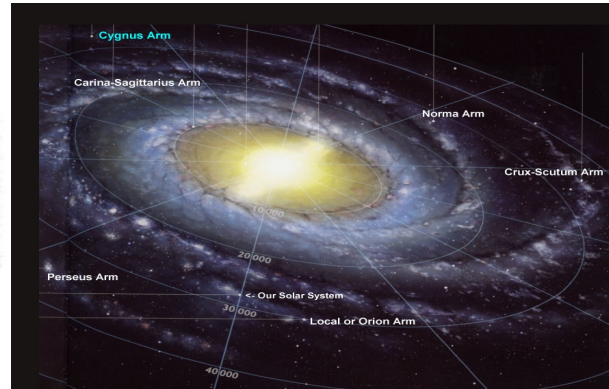
Chapter 25 & 26 Notes: Space

1. Everything that we can see and observe and is known to exist is called the _____.
2. Universe is still _____ and _____.
 - a. **Hubble's Law**: says that the _____ at which a galaxy is moving away is proportional to its _____ from us.
 - i. Galaxies _____ to us are moving away from us _____.
 - ii. Galaxies _____ from us are moving away _____.
 - b. Observations of _____ show a shift in their spectra
 - i. **Redshift** means the galaxy is moving _____ and _____ the light waves
 - ii. **Blueshift** means the galaxy is moving _____ us and _____ the light waves
3. If galaxies are continually moving away, then if we _____ their movement, it takes us back to a single _____ in space and time.
 - a. The single point is called a _____ **singularity** or _____ **singularity**.
 - b. Contained all _____ and _____ ever to exist.
 - c. This point expanded rapidly, suddenly, like an explosion. This sudden expansion is called the **B B Theory**.
 - i. H _____ and h _____ atoms formed first as universe cooled
 - ii. Hydrogen forms into _____, and starts fusion
 - d. **Dark Energy** is the force that is causing our universe to e _____ and a _____.
4. Galaxy: a huge group of individual _____, star systems, star clusters, _____, and _____ bound together by _____.
 - a. We live in the M _____ W _____ Galaxy

- i. _____ - _____ Billion stars in our galaxy
- ii. Diameter is _____ light years
- iii. Takes _____ million years for our sun to complete _____ orbit
- iv. We are a _____-spiral galaxy



Side View of MWG



Top View of MWG

- b. Galaxy classification is by shape, there are 4 types.
 - i. Spiral, Barred-Spiral, Elliptical, and Irregular

4 Types of Galaxies	
<u>Spiral</u>	<u>Elliptical</u>
<u>Barred-Spiral</u>	<u>Irregular</u>

5. Star Life Cycle:

- a. Born in a **Nebula** (Hydrogen ____ and ____ cloud)
 - i. Gravity pulls it together. The gas gets so compressed that it _____, this is called a **p**_____.
 - ii. Gravity keeps compressing until Hydrogen atoms are _____ into H_____.
 - iii. A star is formed when n_____ f_____ begins.
- b. Adult Star- different s_____, temp, c_____ and luminosities.
- c. A star dies when run out of _____ (run out of atoms to fuse, can't fuse past Iron)
 - i. If they are ____ solar masses or less, die as **white dwarf**
 - ii. If they are _____ solar masses, die as **neutron star**
 - iii. If they are greater than ____ solar masses die as **black hole**

6. Solar System Formation- **The Nebular Theory:**

- a. Star is born from _____ and _____ coming together
- b. Most of the mass (99%) goes into the center to form the _____
- c. The left over matter _____ together around the star

Formation of Our Solar System		
<u>Nebula comes together</u>	<u>Flattens into disk</u>	<u>Protostar is formed, planetessimals form</u>
<u>Protoplanets accrete & solar winds blow less dense material out</u>		<u>Planets finish morning with 8 planets. Still left over material</u>

7. Facts about planets in our solar system:

<i>Mercury</i>	
Size:	
Location:	
Orbital plane	
Atmosphere:	
Primary Elements:	
Planet made of:	

<i>Venus</i>	
Size:	
Location:	
Orbital plane	
Atmosphere:	
Primary Elements:	
Planet made of:	
<i>Earth</i>	
Size:	
Location:	
Orbital plane	
Atmosphere:	
Primary Elements:	
Planet made of:	

<i>Mars</i>	
Size:	
Location:	
Orbital plane	
Atmosphere:	
Primary Elements:	

Planet made of:	
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<i>Jupiter</i>	
Size:	
Location:	
Orbital plane	
Atmosphere:	
Primary Elements:	
Planets made of:	

<i>Saturn</i>	
Size:	
Location:	
Orbital plane	
Atmosphere:	
Primary Elements:	
Planets made of:	

<i>Uranus</i>	
Size:	
Location:	
Orbital plane	
Atmosphere:	
Primary Elements:	
Planets made of:	

<i>Neptune</i>	
Size:	
Location:	
Orbital plane	
Atmosphere:	

Primary Elements:	
Planets made of:	

8. Other objects in our solar system:

- a. **Comets:** dusty pieces of _____ and _____ that partially vaporize when they pass near the sun.
- b. **Meteoroids:** pieces of _____, usually less than a few hundred _____ in size, that travel through the solar system.
 - i. **Meteor:** when its falling through _____.
 - ii. **Meteorite:** when it's on the _____.
- c. **Asteroids:** small, rocky solar-system bodies, most of which are found orbiting the sun in a region between M_____ and J_____.
 - i. These unaltered remnants show us the _____ of the solar system and what it originally was _____ from.

Standards to know for the test:

H1E1: Classify bodies in Solar System (properties & composition)
Describe attributes of our galaxy & evidence of multiple Galaxies.

(Sun, rock & gas planets, asteroids, comets, moons)
(Size, location, orbital path/plane, atmosphere, elements, % comp)
(Relative stellar mass, galaxy size/shape)

H2E3: Describe how the universe, galaxies, stars, and planets evolve over time.

(Big Bang, expanding still, H and He formed 1st)
(Accretion, star life cycle, fusion cycle)
(Solar system formation, meteor evidence)