

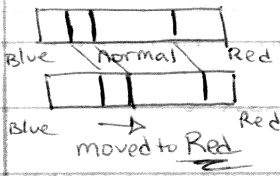
Formation of the Universe + Solar System

- ① Big Bang - 14 billion years ago the Universe was created.
It (EVERYTHING!) has been expanding ever since.

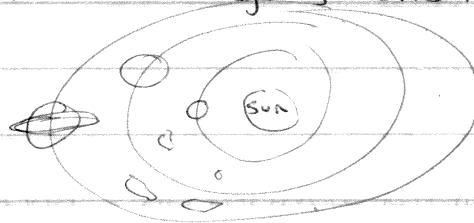
Proof - Distant stars/galaxies have a Red Shift, moving away.

spectral lines Cosmic background radiation shows universe is growing.

Red Spreads



2. Solar System = 4.6 billion years ago the Sun, Planets, Asteroids, Moon + Comets formed. These objects ORBIT/revolve around the Sun.



↳ Solar system

3. Sun = 4.6 billion years old. Average Star. Main Sequence.
Produces energy/light by Nuclear Fusion
of Hydrogen + Hydrogen = Helium ($H+H=He+Energy$)

4. Planets = Terrestrial and Jovian ESRT p. 15 ^{solar system} data table

Terrestrial = earth/rock-like

Jovian = jupiter/gas-like

Rocky

Gaseous

Solid

Less Dense

More Dense

Far from Sun (colder)

Closer to Sun (hotter)

Larger Size

Smaller Size

Hydrogen-rich atmosphere

ex. mercury venus earth mars*

Rings

*jupiter, saturn, uranus, neptune

Many Moons

Venus = Hottest Temp. due to intense Greenhouse Effect,
lots of Carbon Dioxide = Traps heat from Sun!

Earth = Life + Water

Saturn = Rings + Moons

5. Asteroids - Solid, rocky objects orbiting between
Mars + Jupiter (Asteroid Belt)

~ 65 million years ago Asteroid struck Earth → Extinction of Dinosaurs



⑥ Meteoroids / Meteors / Meteorites = Rocks floating in
space / entering atmosphere + burning up (shooting star /
landing to Earth as meteorite.

Impact Crater - large hole formed when meteor lands on earth

⑦ Comets - Rocky, icy objects orbiting Sun in highly elliptical orbits
Comet's 'tail' always points AWAY from the Sun.

very long
period of
Revolution;
highly
eccentric orbit.

