Astronomy Intro & Big Bang Foldable

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Astronomy Intro

Astronomy- is the study of space- ALL OF IT

Cosmology: study of the origin and development of the universe.

Tools: light telescopes, radio telescopes,

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Astronomy Intro

Universe- includes ALL matter, energy and forces

Galaxies are the key unit that make up the universe

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Astronomy Intro

Big to small:

Universe- all matter, energy and forces. Made up of Galaxies

Galaxies- made of millions of stars

Stars- massive objects, made of gases that PRODUCE their own light

Some stars have objects orbiting them (planets, asteroids, etc.)

Our star- SUN is one of those stars

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Universe: The Big Bang

Key Vocabulary:

Light year- It is a measure of distance. It is the distance that light travels in one year. One light year is equal to:

9,460,800,000,000 kilometers!

Expansion (also known as inflation)- is the constant "spreading out" of all the galaxies in the Universe

Big Bang Foldable

Box 1

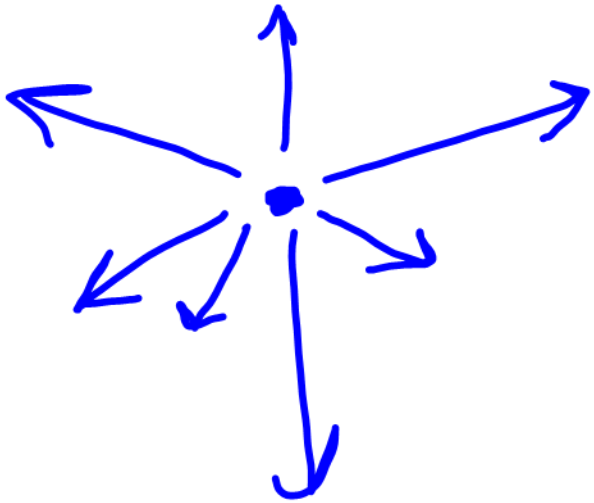
All was in one point

- **Hot, small, massive**

No atoms, molecules- NO MATTER
14 BILLION y.a.

Box 2

"Explosion" occurs stuff shoots out in all directions (but not evenly). Still, no matter exists



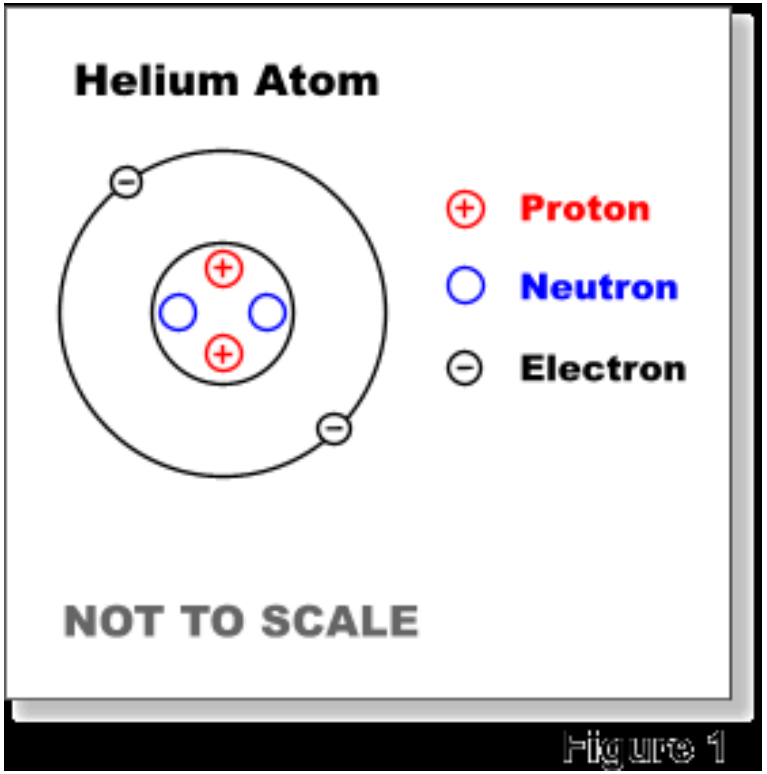
Box 3

Basic Subatomic particles form:

electrons (-)

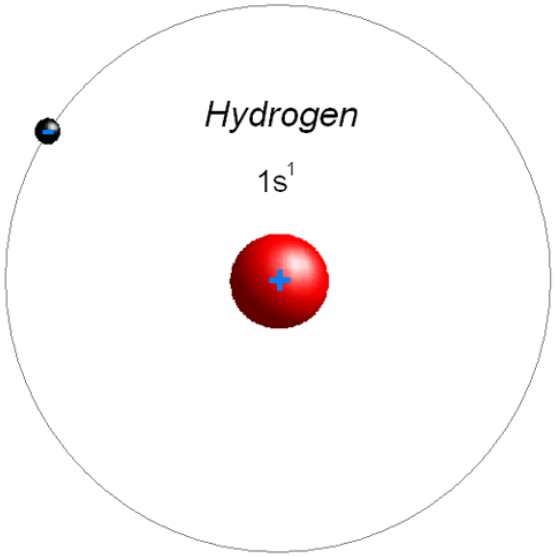
Protons (+)

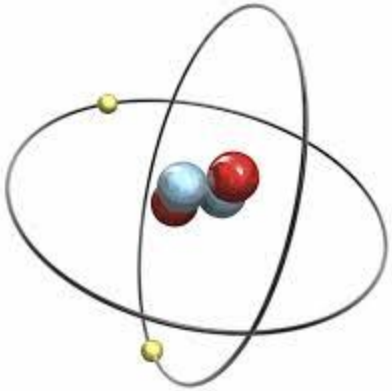
Neutrons



Box 4

First atoms/elements form:
The two smallest atoms-
hydrogen (H) and helium (He)



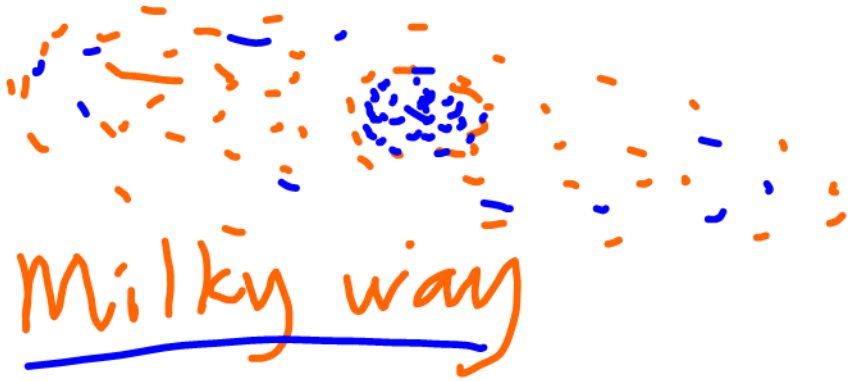


Box 5

Enough atoms were around so…the bunch of atoms could be pulled together (by gravity) to form stars

Box 6

Millions of stars in an area were held together by gravity and formed GALAXIES



Galaxies: Three types

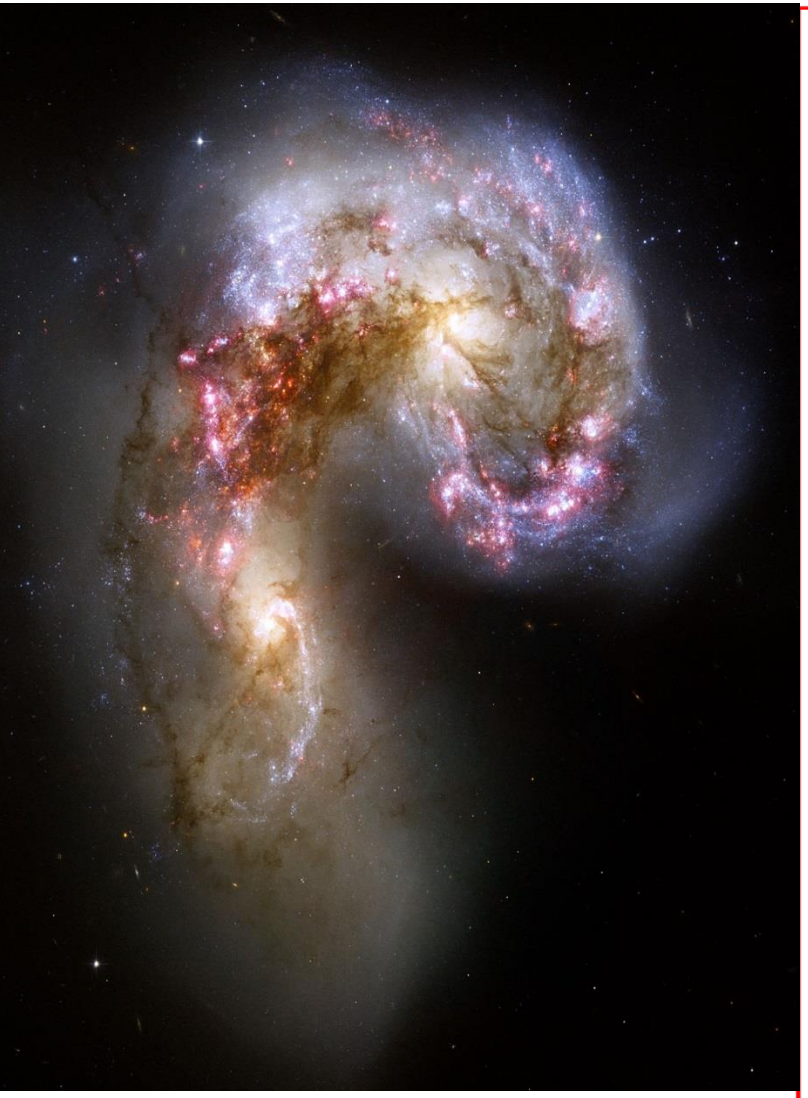
There are basically three types of galaxies:

Elliptical-are basically all bulge with no disk. They can range from spherical to elongated, football-like shapes

Galaxies: Three types

Spiral- are spiral-shaped. Spiral galaxies have three main components: a bulge, disk, and halo

Galaxies: Three types



Irregular galaxies have no regular or symmetrical structure.

8th Anchor Questions Week 7 (Oct. 13-17)
Questions Due: Assigned daily, due complete Thursday Assessment date: none

1. What is the universe composed of?
2. What evidence exists for the Big Bang? What does "red shift" show about the Universe?
3. List the three types of galaxies according to shape
4. What are galaxies made up of? What is the size range of galaxies?
5. What are nebulae made up of?
6. Explain how our solar system formed
Recap from Week 5:
7.Explain how carbon cycles in Earth's system
8.Explain how nitrogen cycles in Earth's system

Vocabulary
Nebula
Galaxy
Light-year
Super nova
Nebula
Spiral galaxy
Elliptical galaxy
Irregular galaxy
Star

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Galaxies

- **Galaxies formed about 500 million years after the Big Bang**
- **Galaxies are made up of billions or trillions of stars, dust, gases and dark matter that are held together by gravity**

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Galaxies

- **Galaxy facts:**
- **Three shapes of galaxies- elliptical, spiral, irregular**
- **Diameters: range from 100,000 light-years (ly) across to 1,500,000 ly across**

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Galaxies

- **Milky Way- 100,000 ly across**
- **Largest Elliptical galaxy: Hercules A-1,500,000 ly across. (Distance away- 2,100,000,000 ly)**
- **Largest Spiral galaxy: NGC 6872- 520,000 ly across. (Distance away- 220,000,000 ly)**

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Nebula

- **The remains of an exploded star. The explosion is called a supernova.**
- **The left-over materials are mostly gases, dust and other materials**
- **New stars may form from this**