Solar System & More

Big Bang

- A large explosion (Big Bang) began the universe.
- $E = mc^2$ is Einstein's formula

  E = energy

  m = mass

  c = speed of light 300 000 000 m/s !!

  This says energy can convert (=) into mass!

  Big bang = big energy = birth of mass!!

Distances in space are very far!

We measure with

1) Light year = distance light travels in a year * we use this outside our solar system
2) Astronomical Unit (A.U.) = distance between earth and the sun.

   1 A.U. = 150 million kilometers

   * Use this inside our solar system

Why isn't Pluto a planet?

- Its now demoted (not a planet). Now it's a 'dwarf planet'
- Rules for being planet:

1) orbit a star (sun) √
2) dominate your orbit (no other big mass in your path) X Pluto p. 314 – Neptune crosses it's path
3) Massive enough to have stable shape (elliptical = egg-shaped) √

Smaller Stuff in Space

- Asteroids – rock and debris in space
- Asteroid belt – high concentration of asteroids – between Mars and Jupiter.
- Meteoroids – smaller bits of rock

- Meteor – bit of rock burns up as it falls to earth.

  'shooting star'

- Meteorite – bit of rock that ends up on earth (doesn't burn up)

- Comets – dirty snowballs in space

  - have a 'tail' because sun melts snow and have a steam 'tail' and a dust 'tail' as it moves around sun.

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