
Our Solar System

Journal

- Can you name the 8 planets in our Solar System? This includes Earth…

Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune

Do you know any ways to remember all 8?

- My Very Excellent Mother Just Sold Us Nuggets!

Galaxies

- Our sun is 1 of trillions of stars in the universe. Stars are found in groups held together by gravity.
- A huge group of stars is called a **galaxy.**
- Our entire universe is made up of thousands of galaxies.
- The images below show you how small we are compared to the entire universe.

UNIVERSE
The entire universe is made of thousands of galaxies

GALAXY
A huge group of stars held together by gravity.

SOLAR SYSTEM
A system of planets & stars that are found throughout galaxies

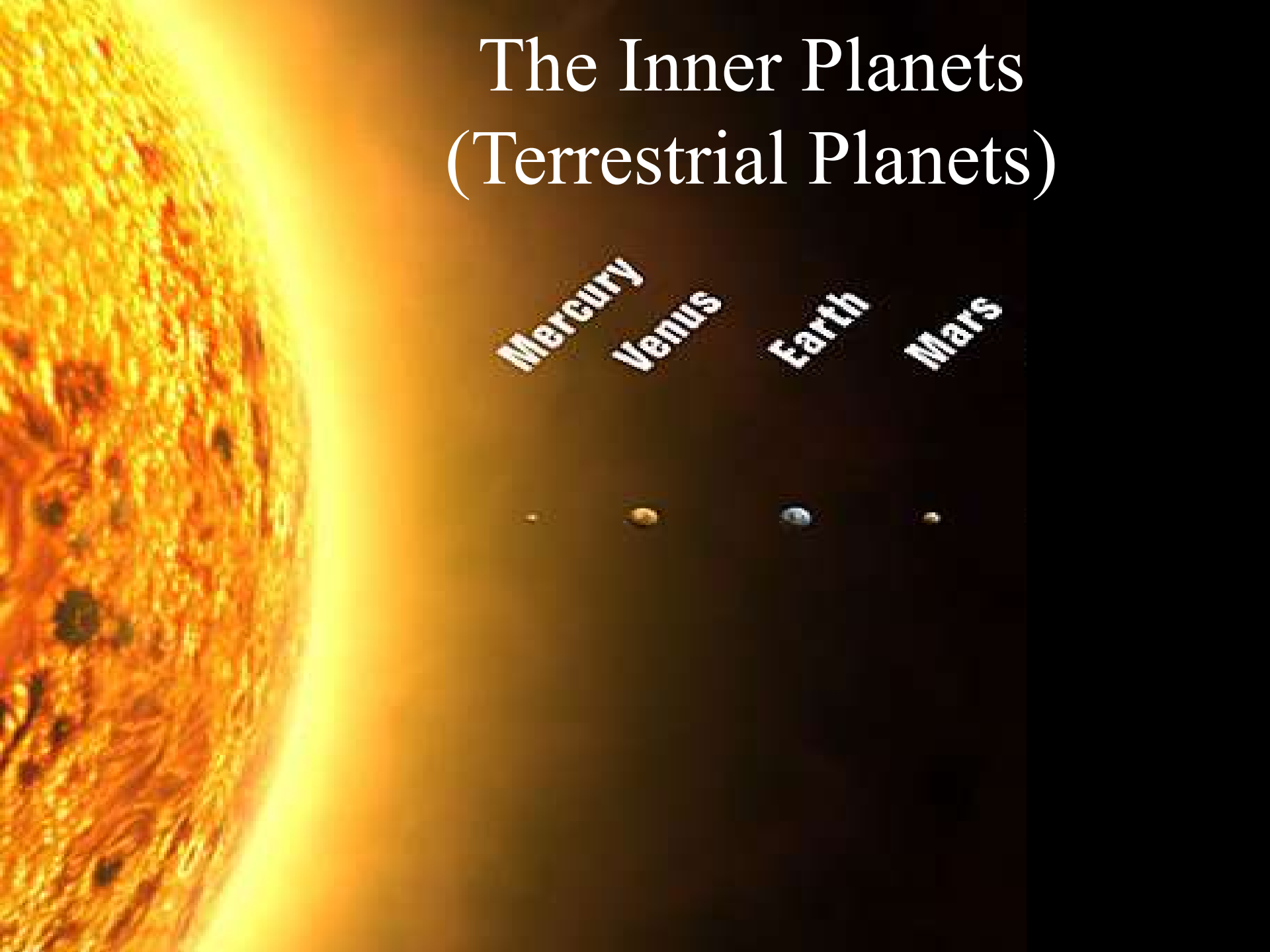
The Milky Way

- Our Solar System is part of the "Milky Way" galaxy.

BRAIN POP

- **GALAXY**
  - http://www.brainpop.com/science/space/galaxies/
- **MILKY WAY**
  - http://www.brainpop.com/science/space/milkyway/
- **SOLAR SYSTEM**
  - http://www.brainpop.com/science/space/solarsystem/

The Inner Planets (Terrestrial Planets)



Spinning Planets

- **Period of Rotation: amount of time that an object takes to rotate once. (1 Day)**

- **Period of Revolution: time it takes an object to revolve around the sun once. (1 year)**

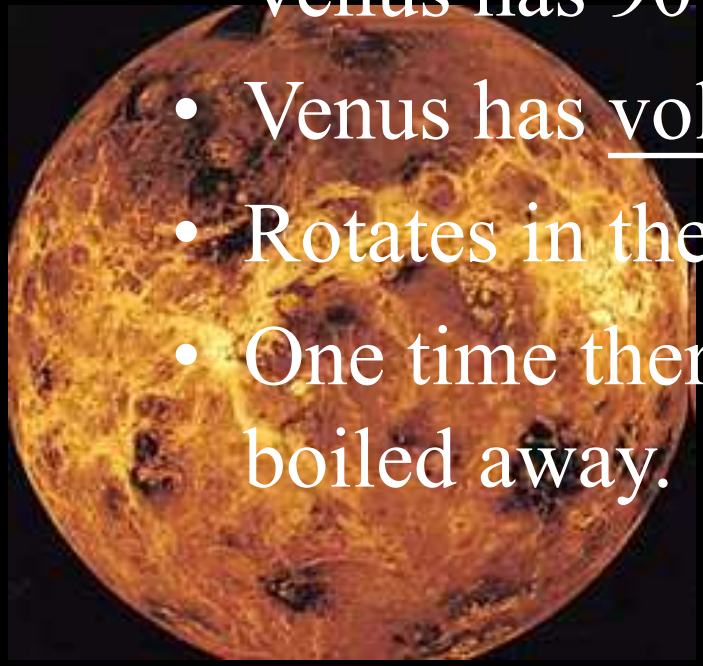
http://www.youtube.com/watch?v=97Ob0xR0Ut8&feature=related

Mercury

- On Mercury you weigh only 38% of what you weigh on Earth.
- Fastest orbiting planet
- Planet nearest to the sun
- One side of the planet can be 800 degrees Fahrenheit when the other can be -280 degree Fahrenheit at the same time.

Venus

- On Venus you weigh only 91% of what you weigh on Earth.
- Venus has 90 times the pressure of Earth
- Venus has volcanoes like Earth
- Rotates in the opposite direction of Earth.
- One time there were oceans before they boiled away.



Earth

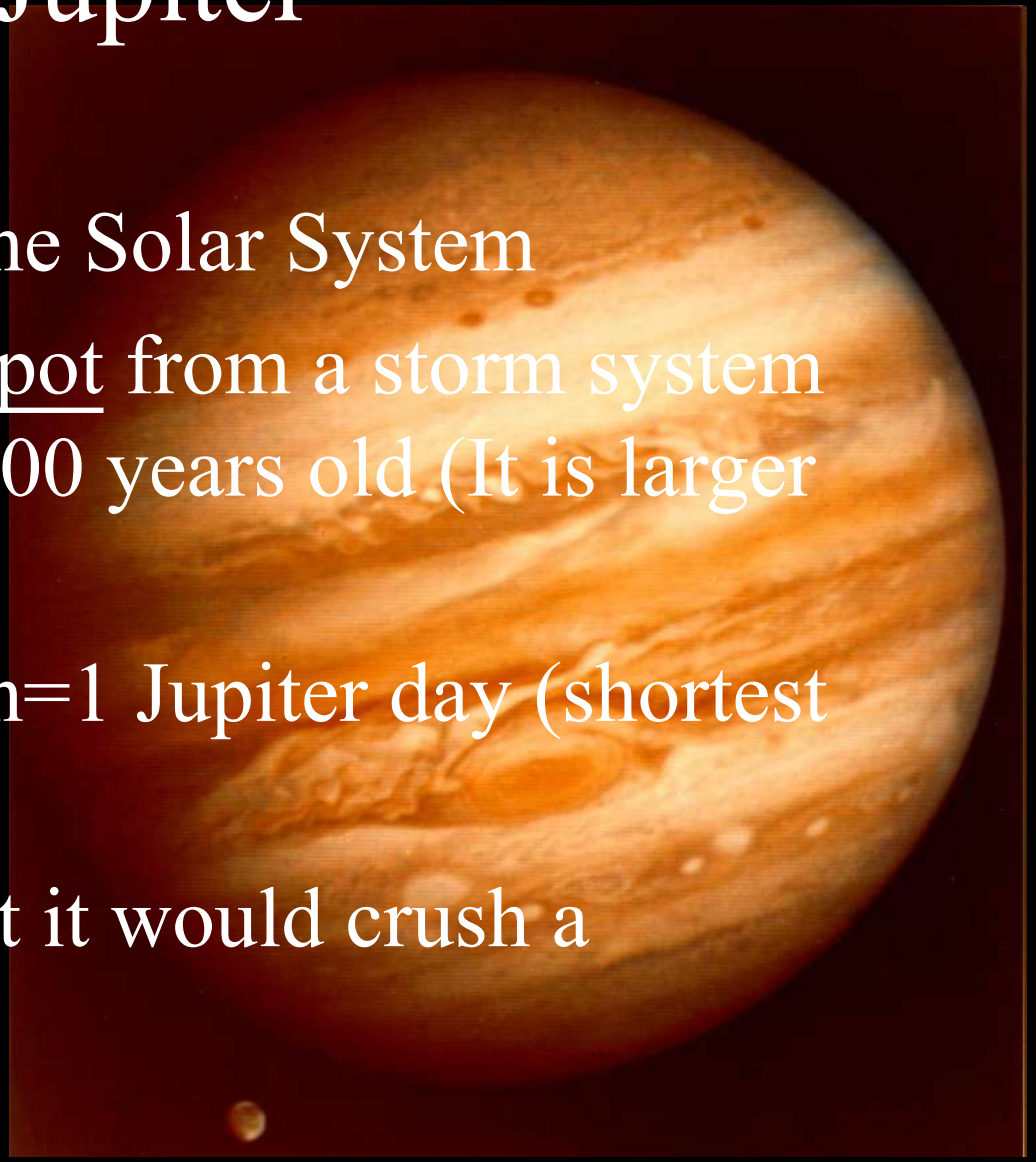
- 23 hours and 56 min=1 Earth day (rotation)
- 365 days =1 Earth year (revolution)
- Earth is warm enough to keep most of its water from freezing and cold enough to keep it's water from boiling
- Temperature is between –13 degrees Celsius and 37 degrees Celsius

Mars

- Air Pressure on Mars is the same as 30 km above the Earth's surface
- Mars is in the form of ice.
- Evidence that water was there at one time
- Volcanic history like Earth.
- It has the tallest mount of the planets (Olympus Mons) 3x's size of Mt. Everest.

Outer Planets
(Gas Planets or Jovial Planets)

Jupiter



- Largest planet in the Solar System
- Has a Great Red Spot from a storm system that is more than 400 years old (It is larger than Earth!)
- 9 hours and 54 min=1 Jupiter day (shortest day)
- Pressure is so great it would crush a spaceship.

Saturn

- **2nd Largest planet in the Solar System**
- **95 times more massive than earth.**
- **Saturn has the largest rings of any planet, the rings are made of icy particles.**
- **Most moons of any planet.**

Uranus

- Discovered in 1781
- Uranus appears blue-green in color
- It's axis of rotation is tilted 90 degrees
- Moons are named after Shakespearean plays and formed from other broken moons.

Neptune

- Discovered in 1846
- Neptune has visual belts of clouds
- Interior releases thermal energy to its outer layers.
- Use to be the 8th planet after Pluto until 1999.

What Keeps Our Planets & Other Objects In Space In Orbit??

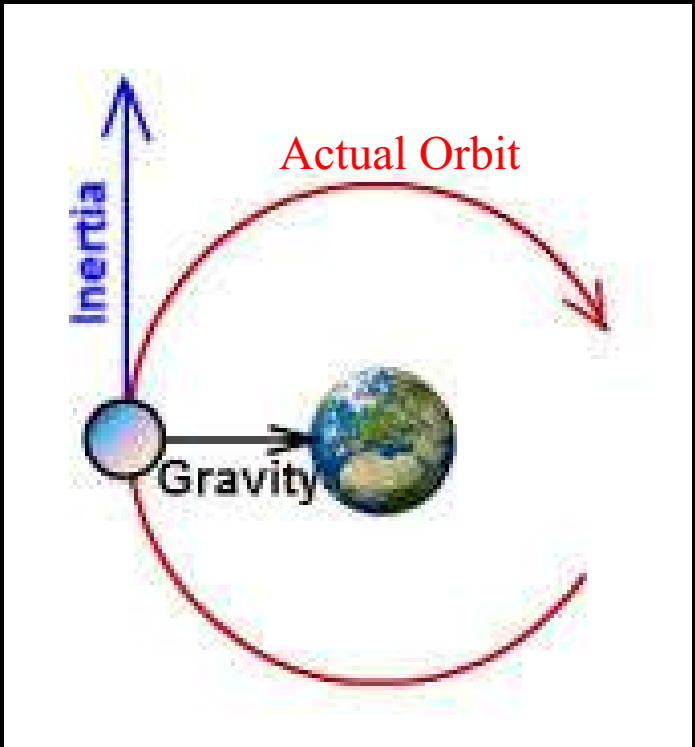
GRAVITY & INERTIA

GRAVITY & INERTIA

- **Gravity** – A force that pulls all objects toward each other.
- **Inertia** – The tendency of an object to stay either at rest or in motion along a straight path

So how does these 2 forces keep everything in orbit?

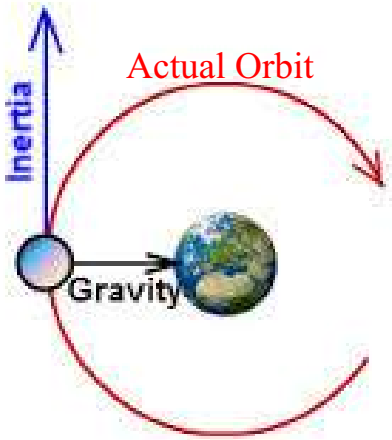
**Example: The picture to the right shows how inertia & gravity work together to keep the moon orbiting the Earth.



GRAVITY & INERTIA

If **inertia** was stronger than gravity then objects would stay on their straight path & fly off into space.

If **gravity** was stronger than inertia then objects would crash



Inertia & **gravity** work together to keep the moon orbiting the Earth. And they work together to keep planets orbiting the sun

Other Space Objects

COMETS

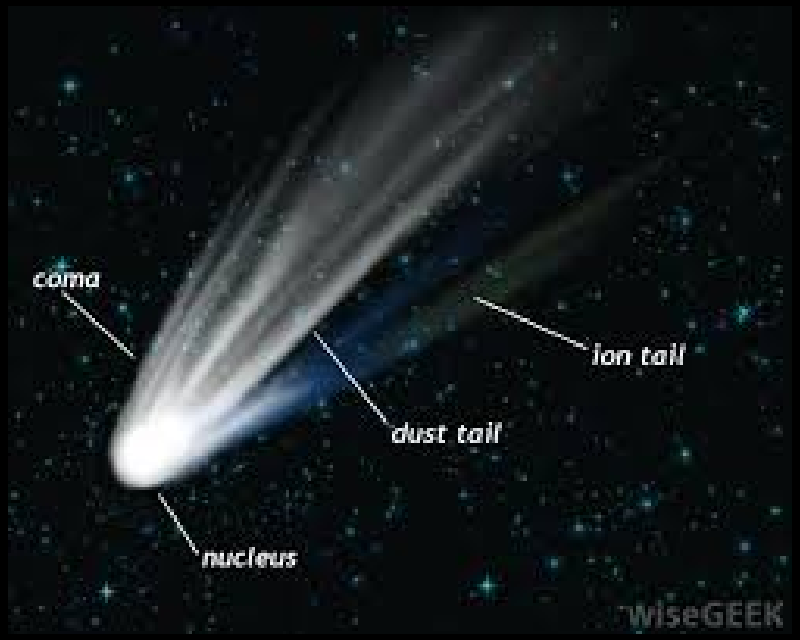
ASTEROIDS

METEOROIDS

What is a comet?

- A comet is a small body made out of dust, rock, gas & ice.
- They are kind of like a dirty snowball
- Comets come from faraway regions of our solar system beyond the planets

Comets are made up of different parts.



- The nucleus
- The coma
- The ion tail
- The dust tail

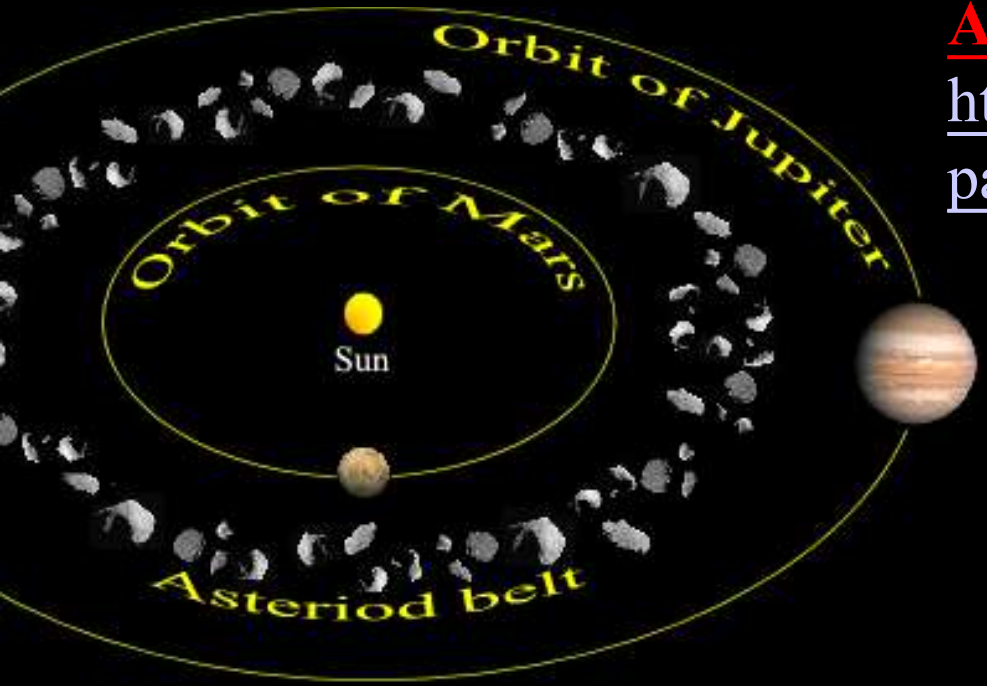
Comet Brain Pop

http://www.brainpop.com/science/space/comets/

What is an asteroid?

- Asteroids are large pieces of space rock with irregular shapes.
- They are also known as planetoids or minor planets that revolves around our sun

- Most asteroids orbit the Sun in the asteroid belt located between Mars and Jupiter. A few asteroids approach the Sun more closely.
- Asteroids can collide with object such as Earth's moon, creating huge craters on the surface.



Asteroid Brain Pop
http://www.brainpop.com/science/space/asteroids/

METEOROIDS METEORS & METEORITES

Meteoroid

- Meteoroids are pieces of rock or dust that are smaller than asteroids.
- Meteoroids are tiny particles left by an asteroid or a comet & most meteoroids are smaller than the size of a pebble.

- When small **meteoroids** enters Earth's atmosphere, they usually burn up & make a fiery trail as it falls, it is then called a **meteor** or a "shooting star"

- **Meteors** that land on Earth are called **meteorites**.