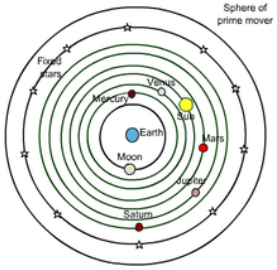
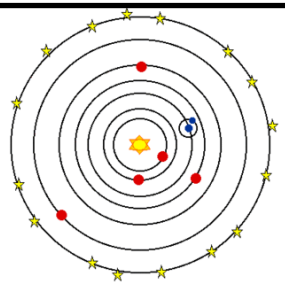
Name:_____ Class:_____ Date:_____

## Astronomy Study Guide

**Learning Target:** I can ask questions to determine changes in models of Earth's position in the solar system, and origins of the universe as evidence that scientific theories change with the addition of new information.




The _____ Model



The _____ Model

**Learning Target:** I can develop a model to represent the position of the solar system in the Milky Way galaxy and in the known universe.

Draw a picture of the Milky Way Galaxy and indicate the position of our solar system below:

What is the Big Bang Theory?

What evidence supports the Big Bang Theory?

**Learning Target:** I can analyze and interpret data to compare and contrast the planets in our solar system in terms of size relative to Earth.

**Which planets have 0 moons?**

**Which planet has the most moons?**

**What are Saturn's rings made of?**

**Characteristics of Inner Planets:**

**Characteristics of Outer Planets:**

**What planets can support life?**

**What characteristics must a planet have to support life?**

**Which other inner planet has evidence of liquid water?**

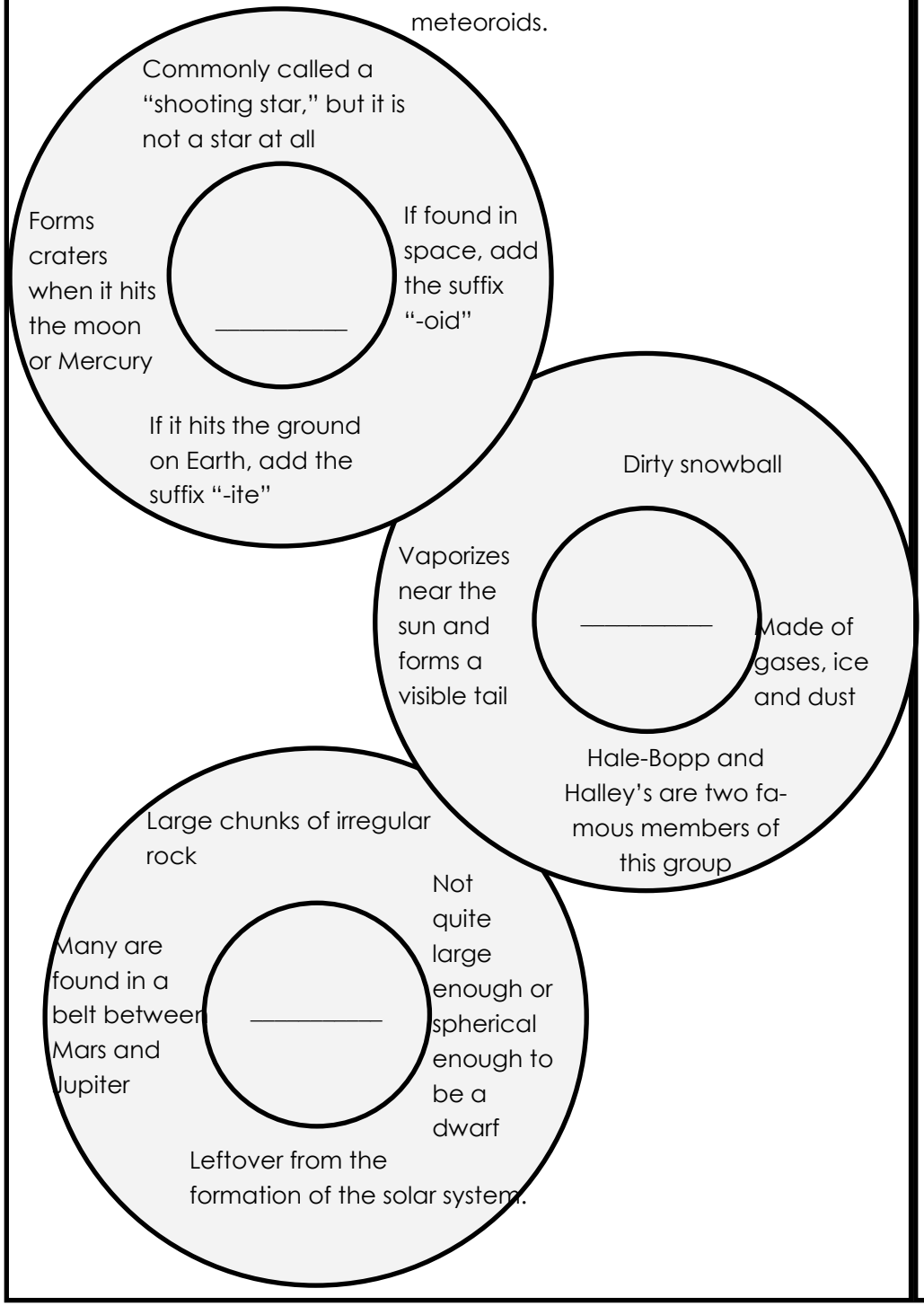
**Why is Venus called Earth's Twin?**

**Describe rotation vs. revolution:**

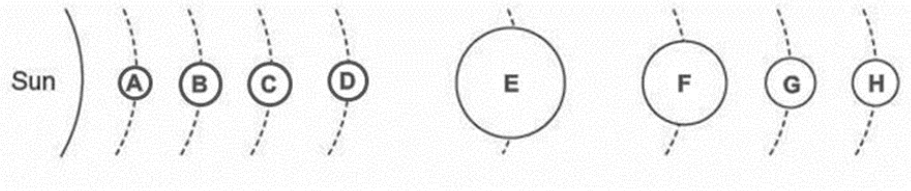
**What makes Uranus unique?**

**Name and Describe the gas giants:**

**Learning Target:** I can ask questions to compare and contrast the characteristics, composition, and location of comets, asteroids, and meteoroids.




**Label the planets and draw the location of the asteroid belt:**




**Learning Target:** I can develop and use a model to explain the interaction of gravity and inertia that governs the motion of objects in the solar system

1. Without the Sun, the planets would travel in a straight line. This fact represents Newton's law of _____: an object stays in motion unless an outside force acts on it.

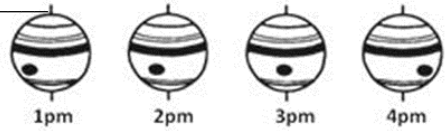
2. What would happen to the planets if there were no inertia, but only gravity acting on the planets?

3. What two opposing forces are responsible for keeping our Solar System together? _____ and _____

**Rotation or Revolution?** _____

**How can you tell?** _____

_____

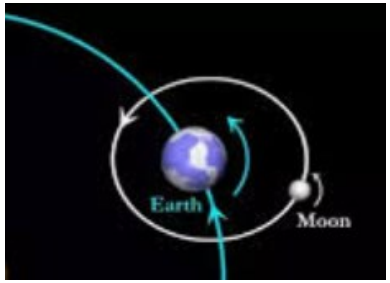



**Rotation or Revolution?** _____

**How can you tell?** _____

_____

_____



**Rotation or Revolution?** _____

**How can you tell?**

_____

_____

_____

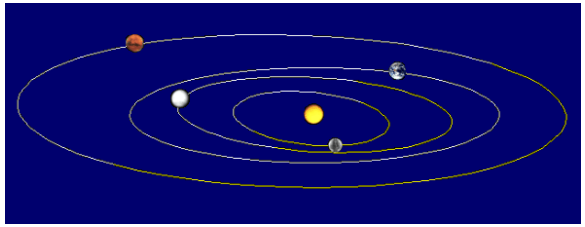
**Rotation or Revolution?**

_____

**How can you tell?** _____

_____

_____



**Put the following in order from smallest to largest:**

Solar System, Universe, Milky Way Galaxy

_____ _____ _____

**Orbiting the Sun:**

What is the shape of a comet's orbit? _____

What is the shape of the planets' orbits around the sun? _____

**Asteroids, Meteors and Comets part II:**

1. Which body is made primarily of rock or iron that enters Earth's atmosphere and touches the ground? _____
2. Which body is made mostly of ice? _____

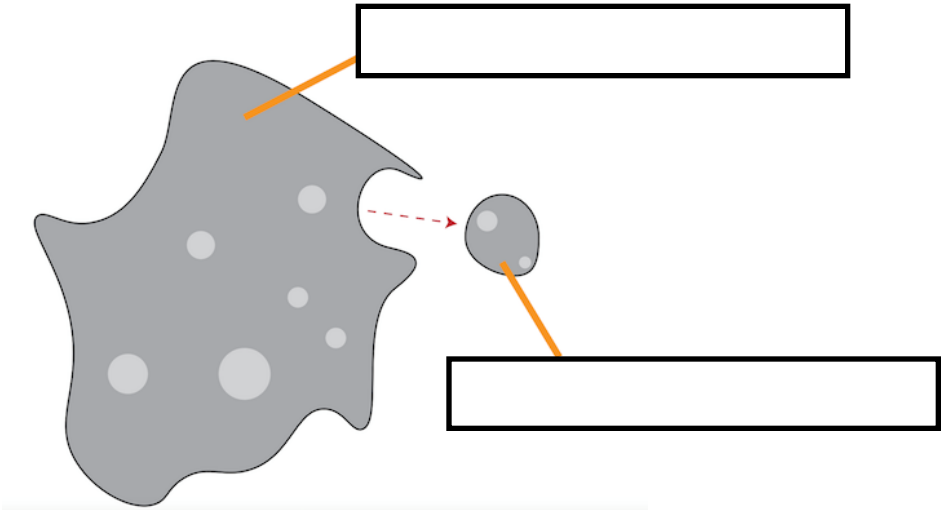
3. When a meteoroid enters Earth's atmosphere, it produces a streak of light called a _____

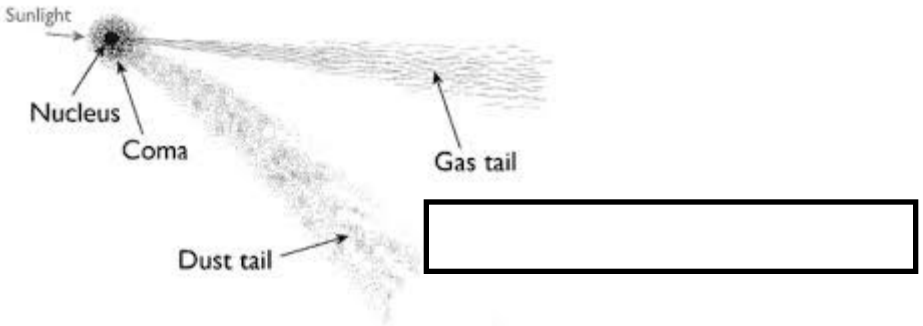
4. Meteoroids usually come from _____

Label the diagrams below:

Word Bank:

Comet Meteoroid Asteroid

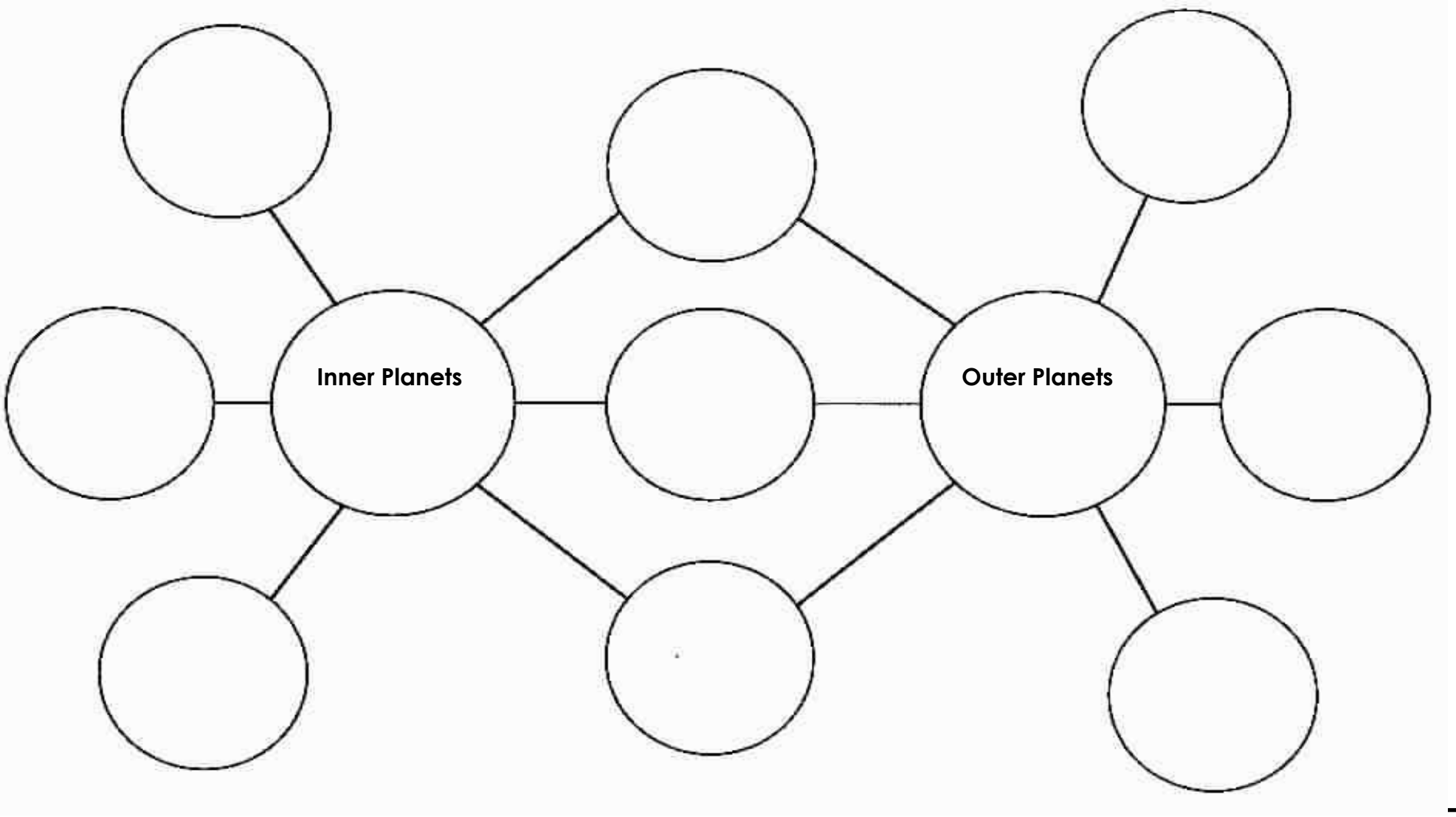




**Fill in the double bubble comparing and contrasting the inner and outer planets.**

Suggestions for filling in bubbles (you may not use all of them, or you may have to add more bubbles to one side)

| | | | | |
|---|---|---|---|---|
| Have Rings | Made of Rock | Made of Gas | Have 0-2 moons | Have >10 Moons |
| Smaller in size | Larger in size | Have a solid core | Closer to sun | |
| Orbit the sun | No rings | Farther from sun | Located in our solar system | |



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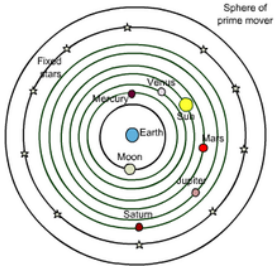
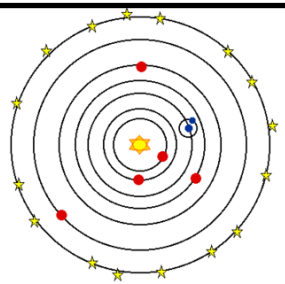
## Astronomy Study Guide

**Learning Target:** I can ask questions to determine changes in models of Earth's position in the solar system, and origins of the universe as evidence that scientific theories change with the addition of new information.



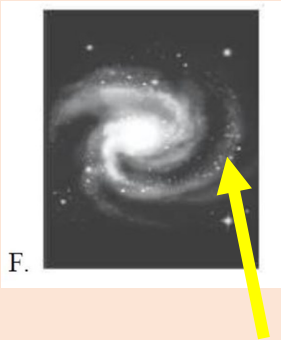

The Geocentric Model



The Heliocentric Model

**Learning Target:** I can develop a model to represent the position of the solar system in the Milky Way galaxy and in the known universe.

Draw a picture of the Milky Way Galaxy and indicate the position of our solar system below:




What is the Big Bang Theory?

The theory that the universe started with a tremendous explosion and continues to expand today.

What evidence supports the Big Bang Theory?

Galaxies are still moving farther apart.

**Learning Target:** I can analyze and interpret data to compare and contrast the planets in our solar system in terms of size relative to Earth.

**Which planets have 0 moons?**

Mercury and Venus

**Which planet has the most moons?**

Jupiter (79)

**What are Saturn's rings made of?**

Chunks of ice and rock

**Characteristics of Inner Planets:**

Small, rocky, few or no moons, closer to sun, no rings

**Characteristics of Outer Planets:**

Large, made of gas, multiple moons, farther from sun, all have rings

**What planet(s) can support life?** Earth

**What characteristics must a planet have to support life?** Liquid water, located in the "goldilocks zone"

**Which other inner planet has evidence of liquid water?** Mars

**Why is Venus called Earth's Twin?**

Similar size and density

**Describe rotation vs. revolution:**

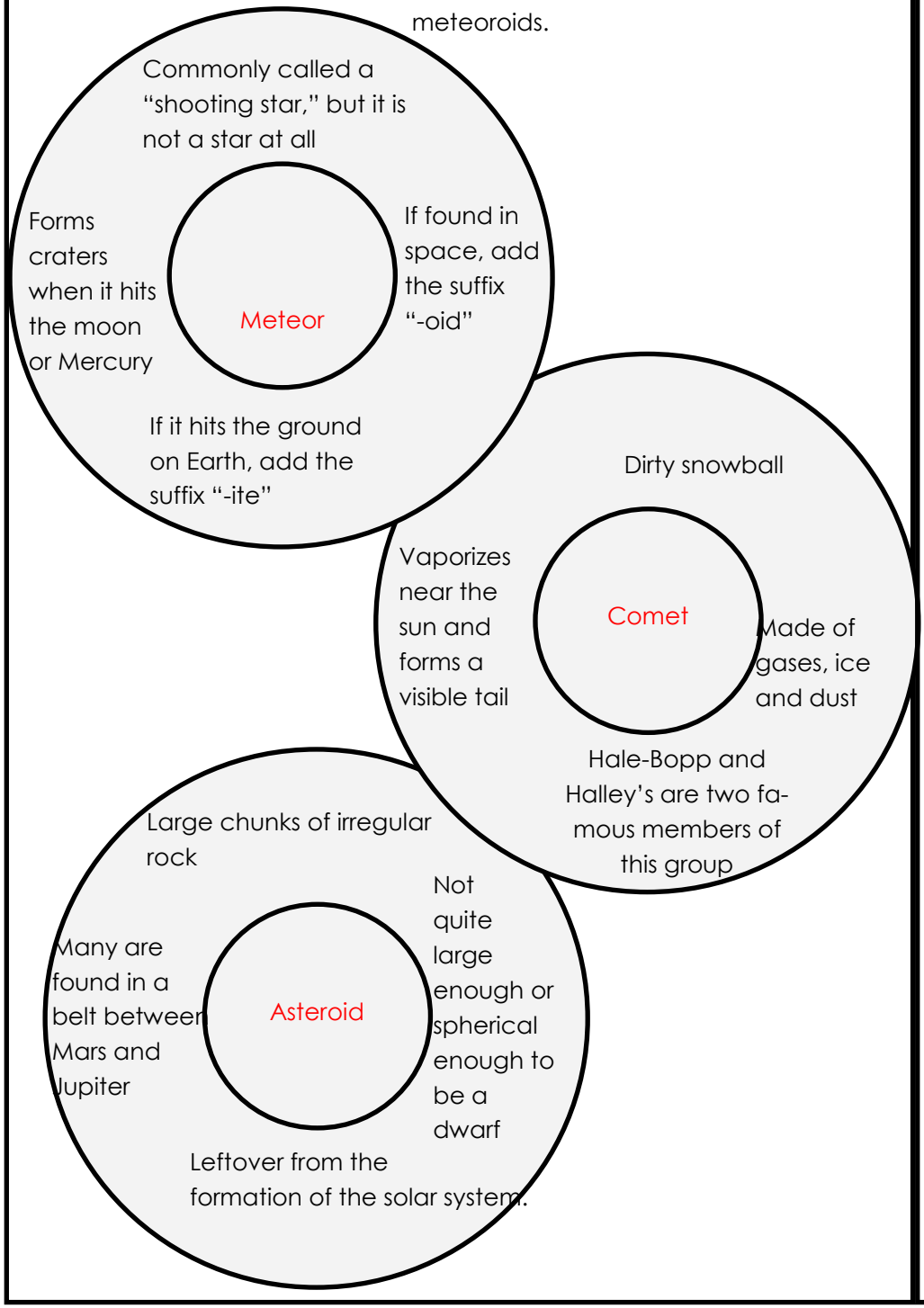
**What makes Uranus unique?**

It rotates on its side

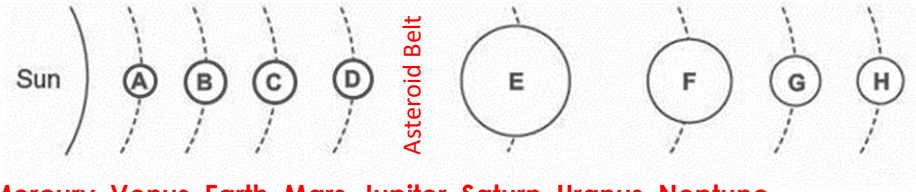
**Name and Describe the gas giants:**

Jupiter-Large, has big red spot. Saturn-second largest, known for rings. Neptune: blue-green, rings, farthest. Uranus: rotates on side, greenish blue color

**Learning Target:** I can ask questions to compare and contrast the characteristics, composition, and location of comets, asteroids, and meteoroids.




**Label the planets and draw the location of the asteroid belt:**




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

**Learning Target:** I can develop and use a model to explain the interaction of gravity and inertia that governs the motion of objects in the solar system

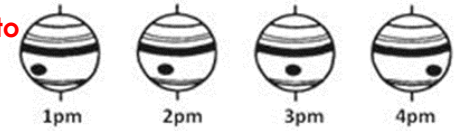
1. Without the Sun, the planets would travel in a straight line. This fact represents Newton's law of inertia: an object stays in motion unless an outside force acts on it.

2. What would happen to the planets if there were no inertia, but only gravity acting on the planets?
Planets would not orbit but would move toward the Sun

3. What two opposing forces are responsible for keeping our Solar System together? Gravity and inertia

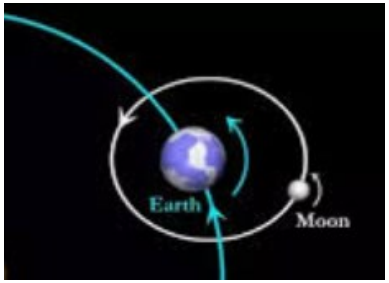
**Rotation or Revolution? Rotation**

**How can you tell? The spot appears to be moving across the surface**




**Rotation or Revolution? Revolution**

**How can you tell? The moon is going around Earth**

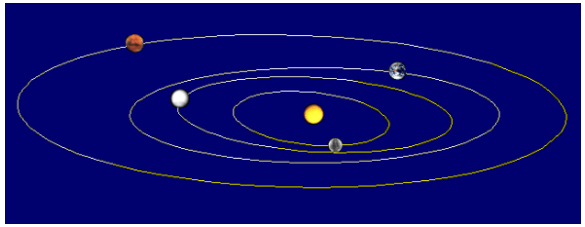


**Rotation or Revolution?** Rotation

**How can you tell?** Earth is spinning in place not going around another body in the image.

**Rotation or Revolution?** Revolution

**How can you tell?** The planets are going around the sun (orbiting)



**Put the following in order from smallest to largest:**

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**Solar System, Milky Way, Universe**

**Orbiting the Sun:**

What is the shape of a comet's orbit? Long, narrow ellipses

What is the shape of the planets' orbits around the sun? Ellipses

**Asteroids, Meteors and Comets part II:**

1. Which body is made primarily of rock or iron that enters Earth's atmosphere and touches the ground? Meteorite
2. Which body is made mostly of ice? Comet

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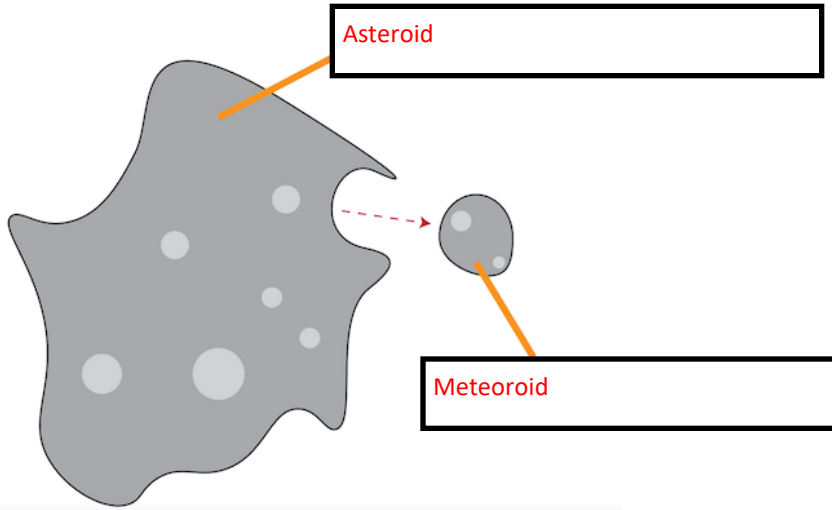


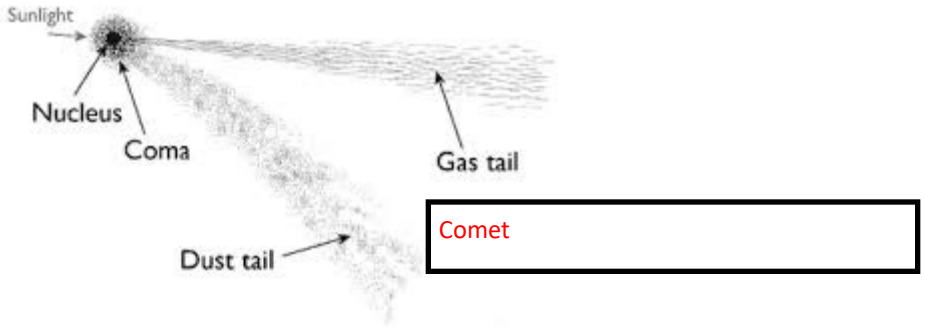

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