

# THE ASTRONOMY TOPICS UNIT

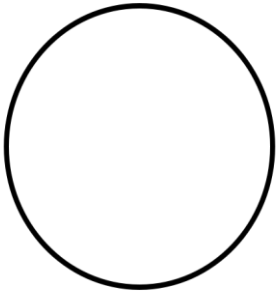
Name:

Due:

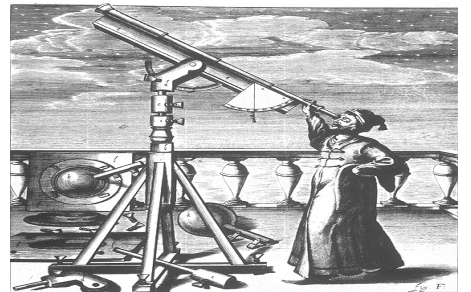
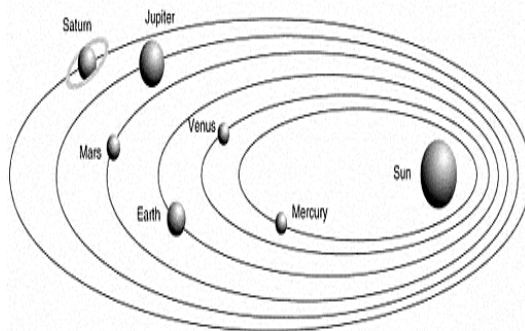
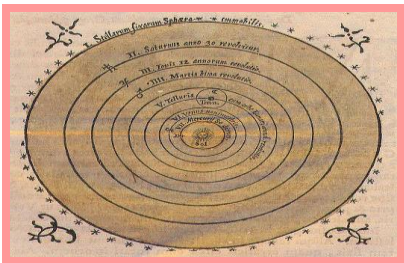
Use this space to describe... (check diamond when done)

- ◇ The order and names of planets.
- ◇ Other bodies in our solar system.
- ◇ Distances, relative size to each other

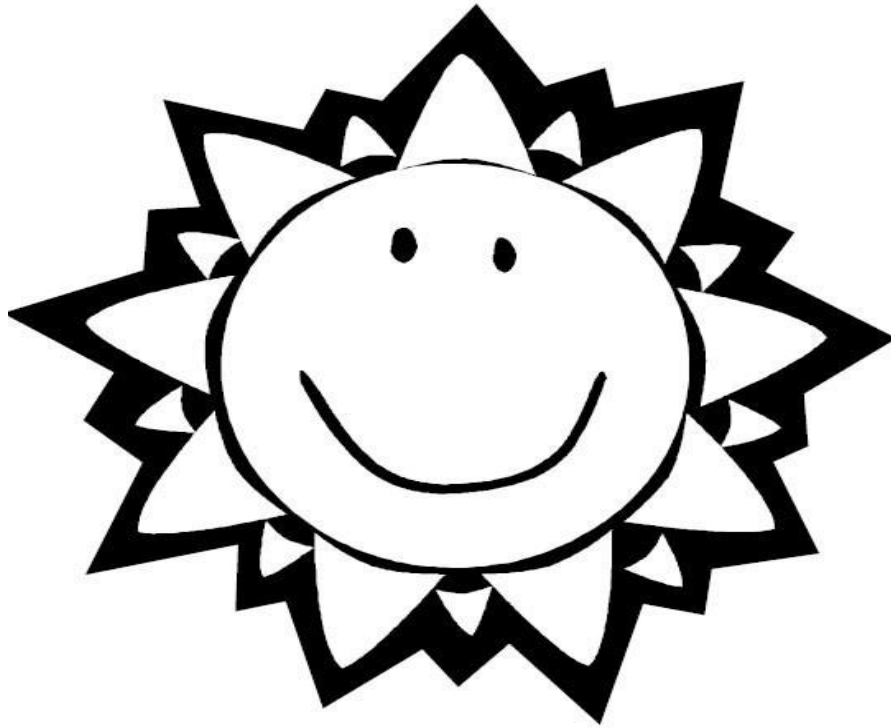
M  
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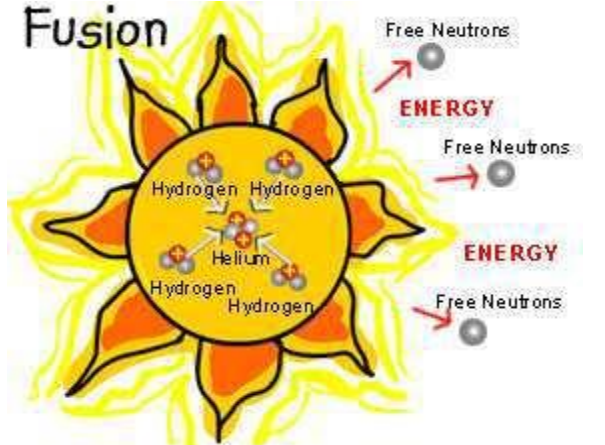


Name each person below and at least one thing about them.



Please list ten factoids about the sun around the picture below. Color to taste!



<p><b>Fusion</b></p> 	<p>◇ Where does the energy in our solar system come from? ◇ A strong answer will use the picture on the left for details.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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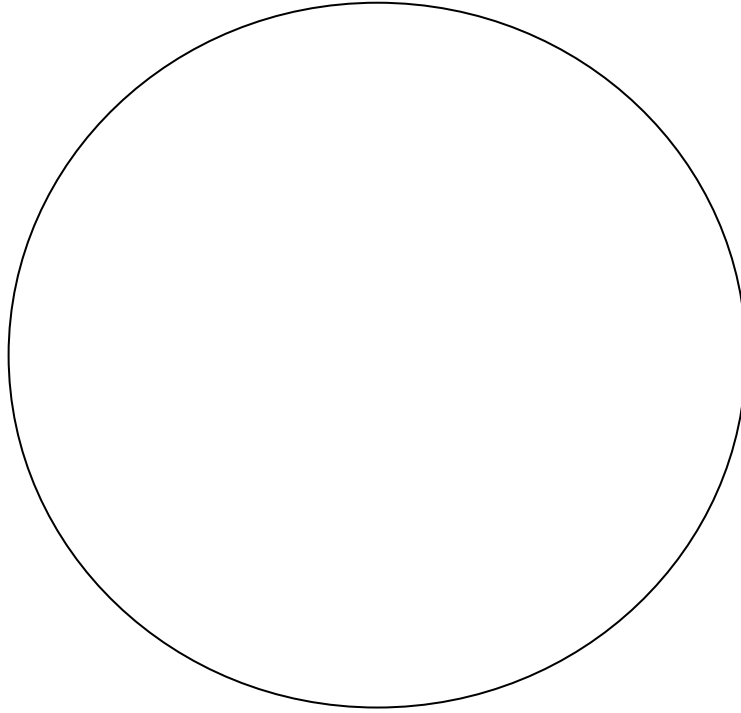
Use the boxes below to describe the life cycle of a star. You can pick its future!

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Add some features to this perfect circle so that I know it's our Sun.

◇ Sun spots, CME's, solar flare, planet transit, Benard Cells,

◇ Do you know anything about the interior? Inner Core, Convection Zone, Radiation Zone, Chromosphere, Corona



Please use your knowledge of a solar eclipse by drawing a visual in the boxes below.

Solar Eclipse



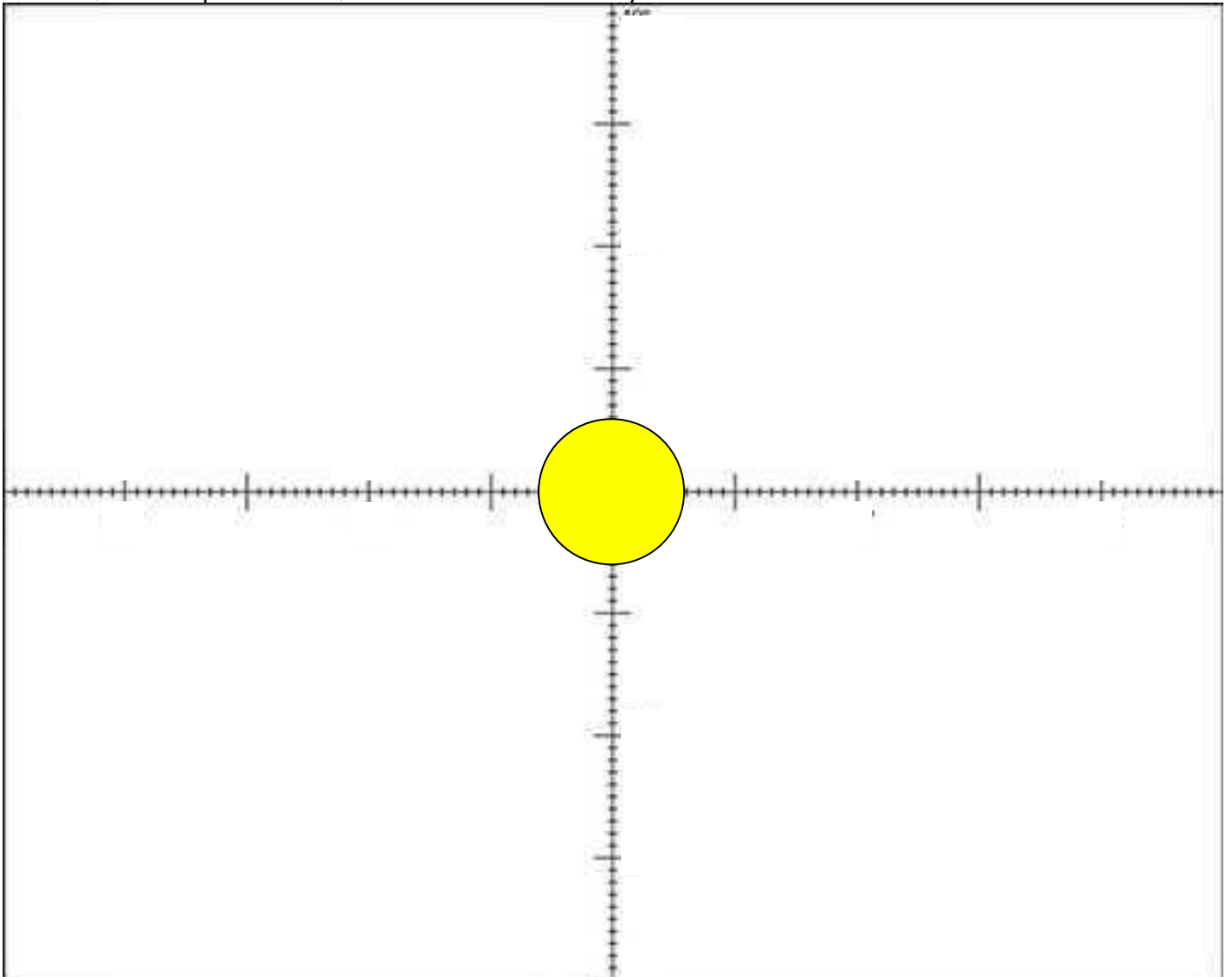
Please use your knowledge of a lunar eclipse by drawing a visual in the boxes below.



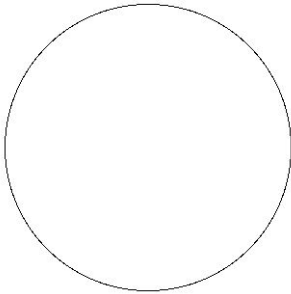
Lunar Eclipse

Provide information about the inner planets below next to each planet.

◇ Sketch of all the planets ◇ Size, ◇ Composition, ◇ Rotational Period, ◇ Year, ◇ Moons, ◇ Temperature, ◇ Neat facts that you know.

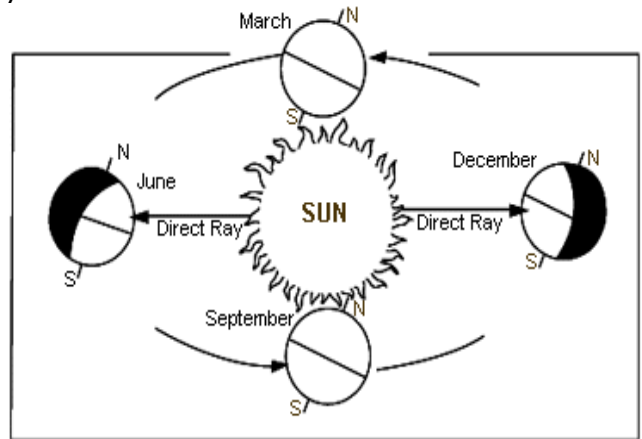


Please draw the axis of the earth below as it spins around our solar system on the elliptical plane.

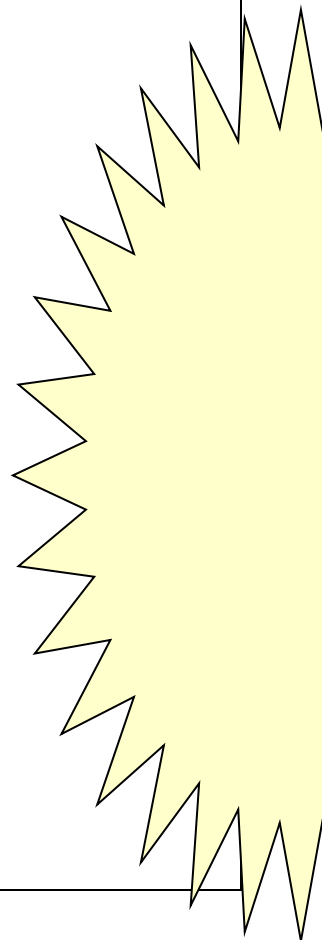
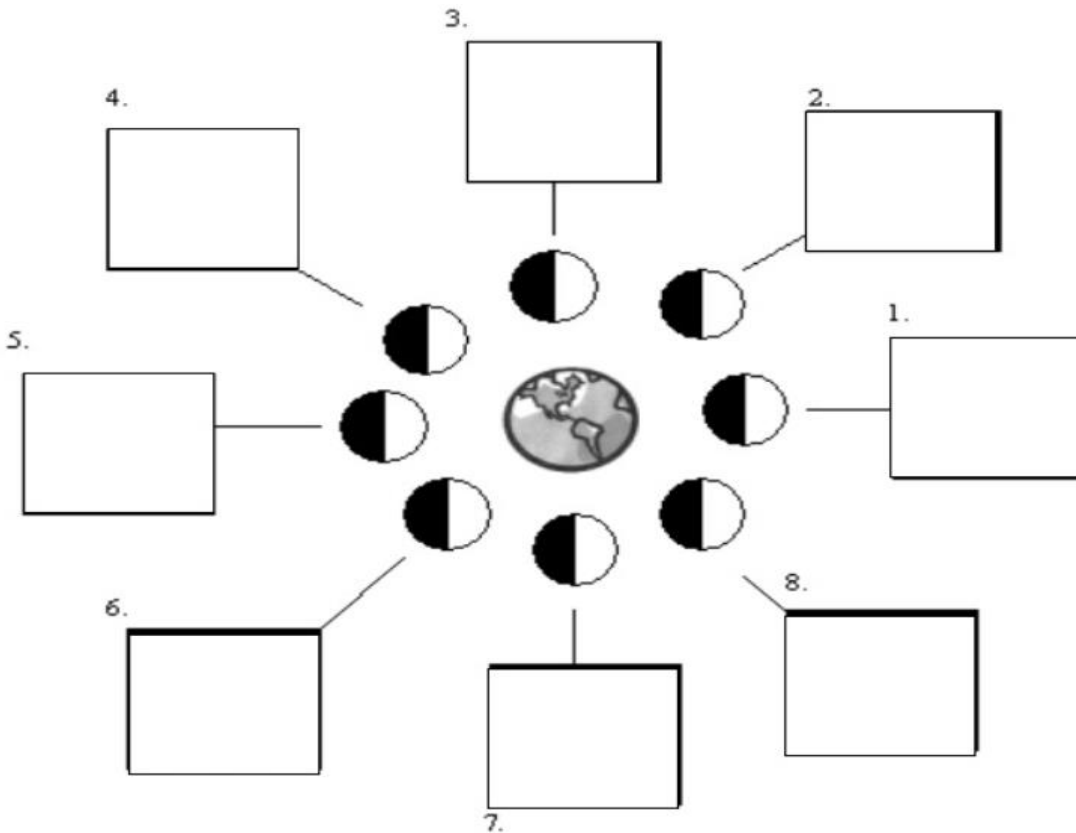


Provide some information about our home planet earth below.

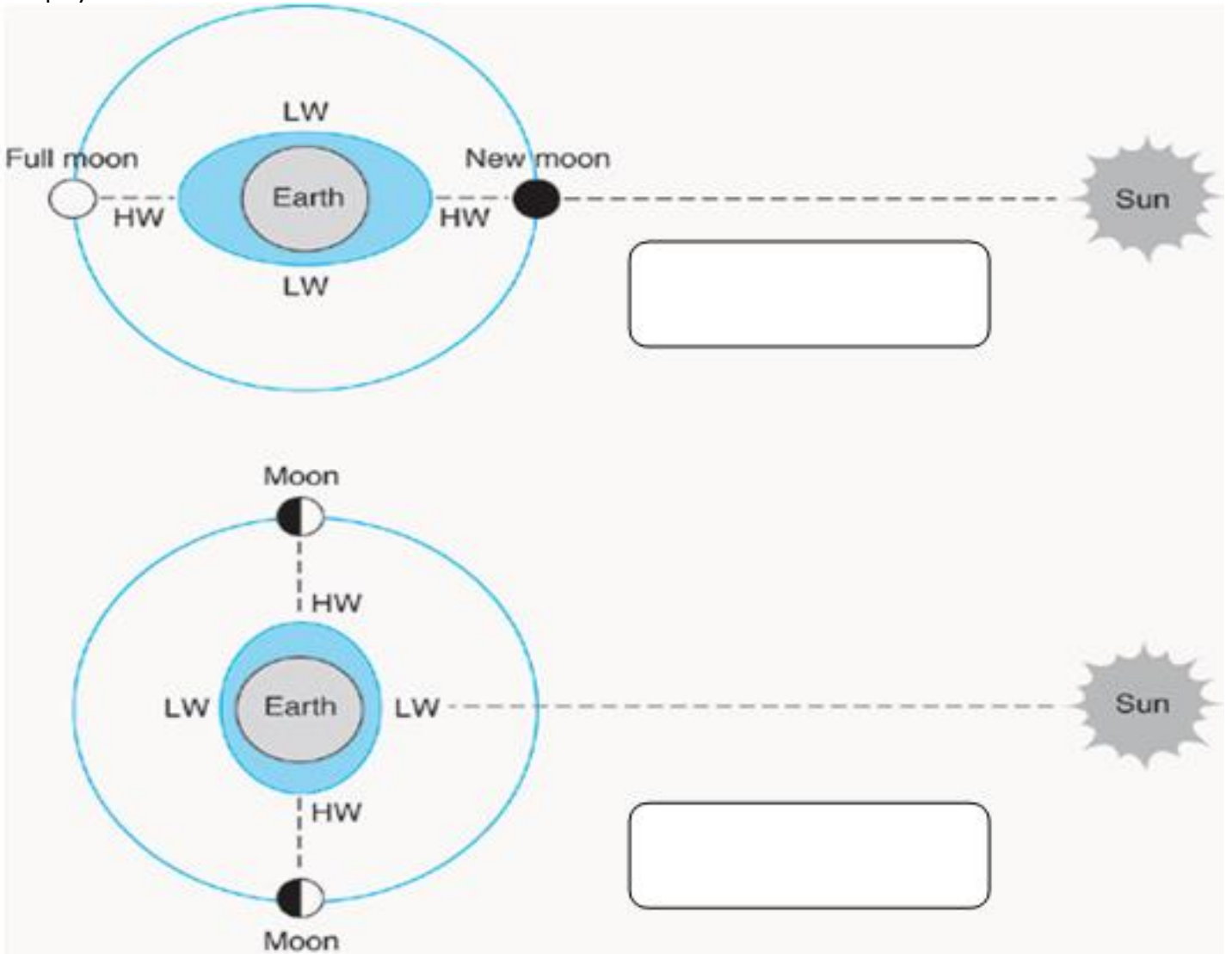
Why does this axis cause a change in the seasons? Use the picture to help you.



Sketch in the boxes and then label the phases of the moon below from an earthbound observer.



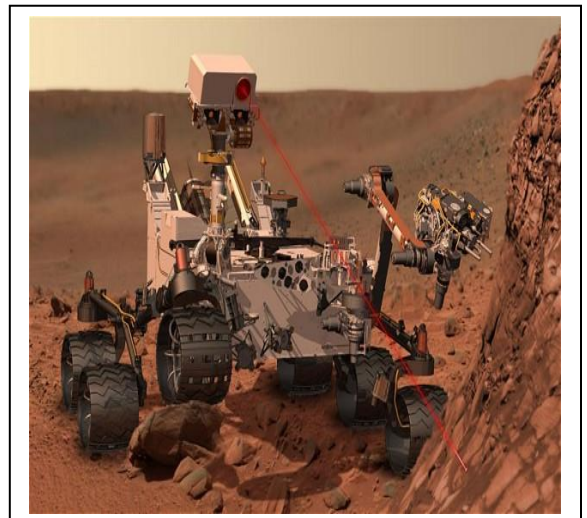
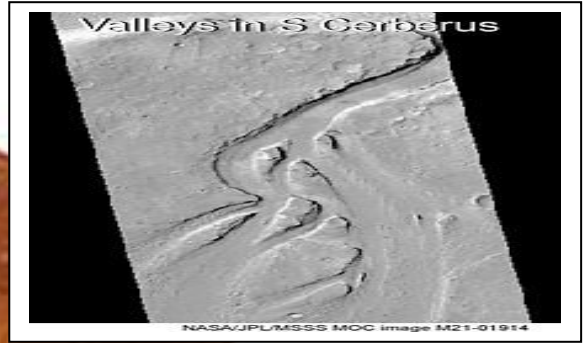
◇ Which is a Spring Tide and which is a Neap Tide? Explain using the pictures to help you.



◇ Sketch one tidal cycle below? Label each sketch as High or Low Tide. If you visited a tide chart with the actual times I would be really impressed.




Tell me all that can about this planet and these pictures. I also see poles, a mountain and valley on the surface.



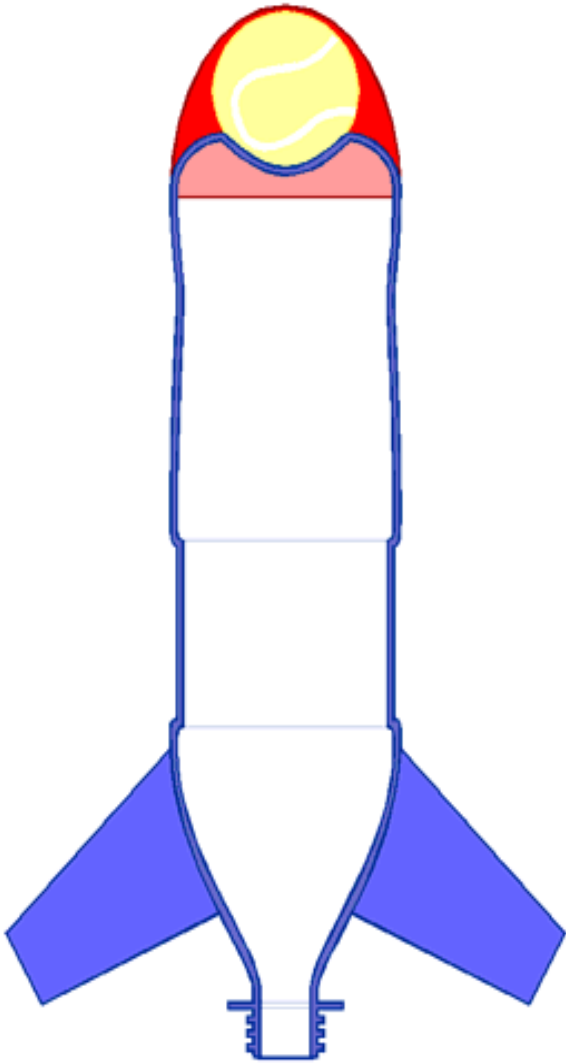
◇ Please provide information about our moon. ◇ Please include information about the Apollo Missions. <http://www.google.com/moon/>



Make sure to name the different parts of the Apollo Spacecraft



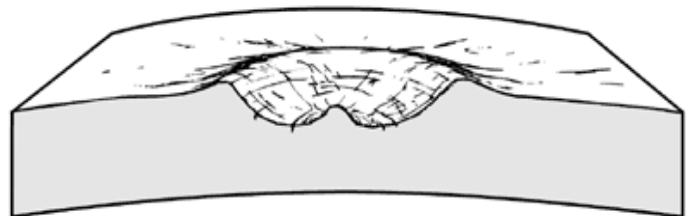
◇ Please describe the parts of a rocket below. ◇ What are some parts of a basic rocket and how do they work?



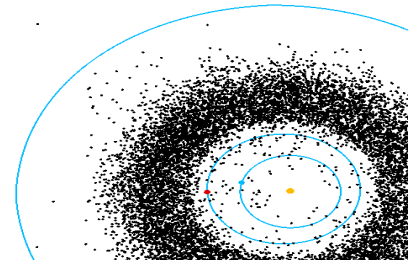
Why doesn't the earth have as many craters as other planets?



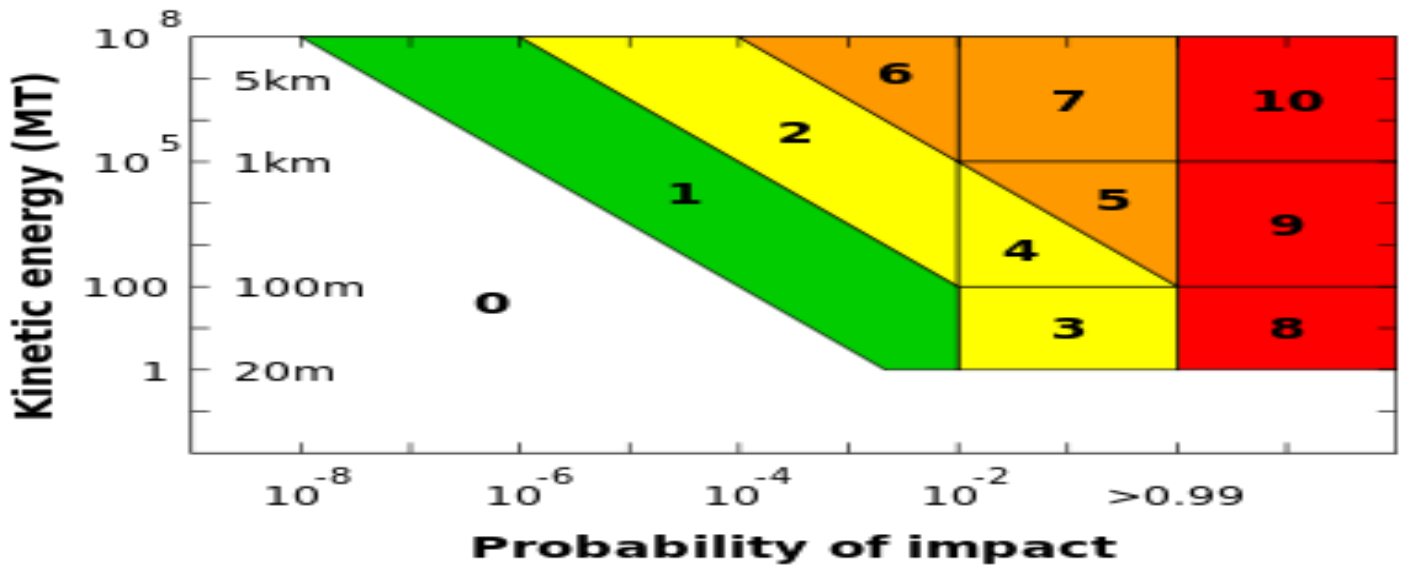
◇ Please provide some technical information about the crater below.  
 ◇ How do mass and speed relate to impact size?



- ◇ Describes earth's violent past with regard to impact events?
- ◇ What may the future bring us?
- ◇ What is the difference between an asteroid, meteoroid, and meteorite?



What is the threat value for a 1 km sized NEO that has >.99 Probability of Impact?



Can you mention / research a recent or future NEO? Name/ ID of the NEO

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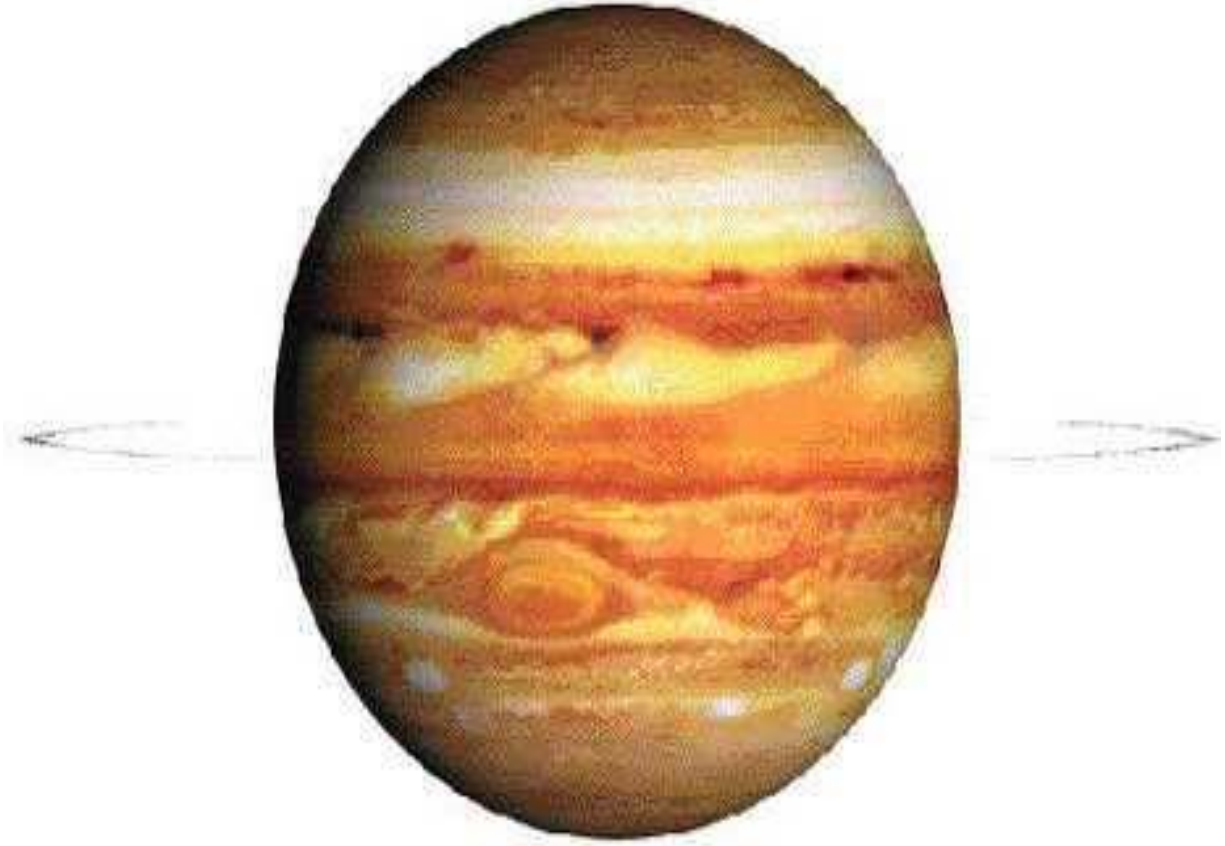


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◇ Please provide some information about Jupiter below. ◇ Size, ◇ rotational period, ◇ year, ◇ name the Jovian moons, ◇ composition, ◇ temp. ◇ Other facts.



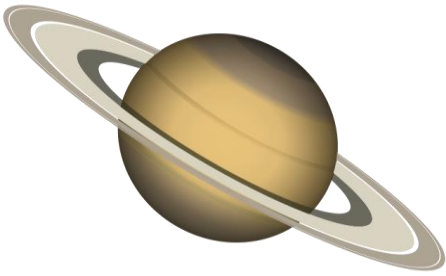



Galilean (Outer) Moons:



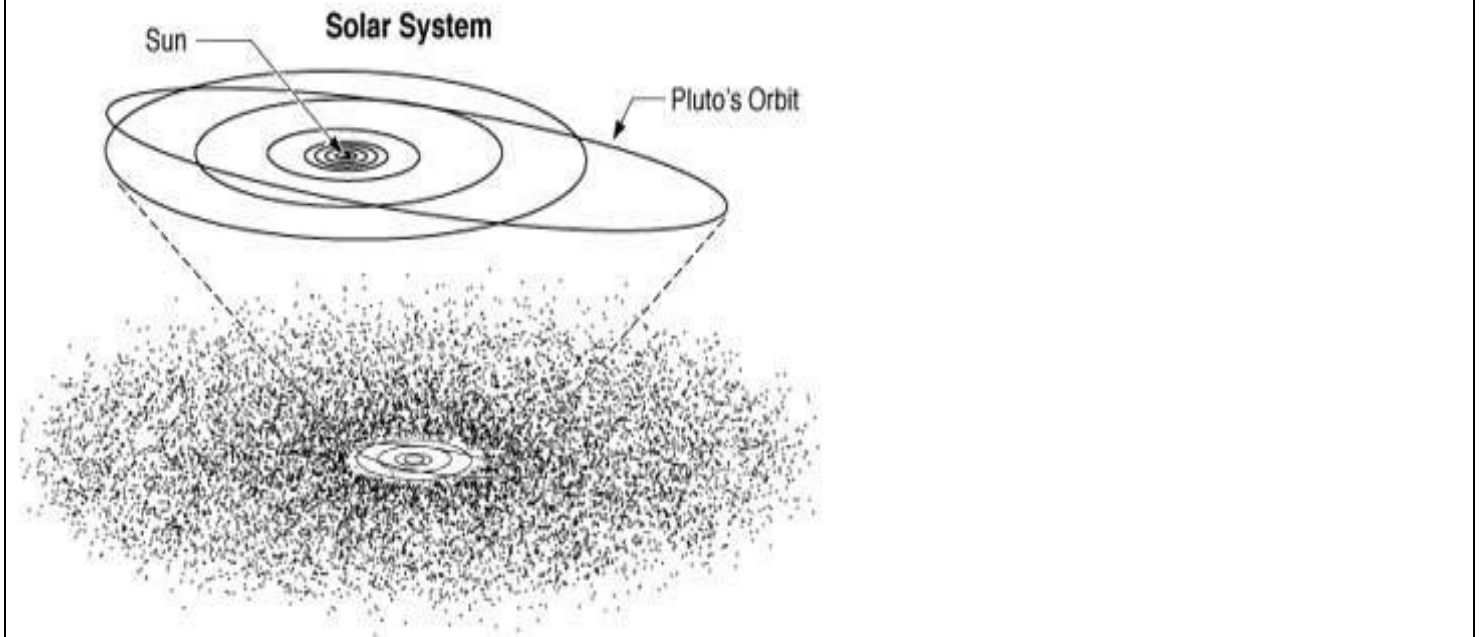
Geologically Dead



◇ Please provide some information about the outer planets below. ◇ Size, ◇ rotational period, ◇ year, ◇ moons, ◇ composition, ◇ temp. ◇ Other facts.

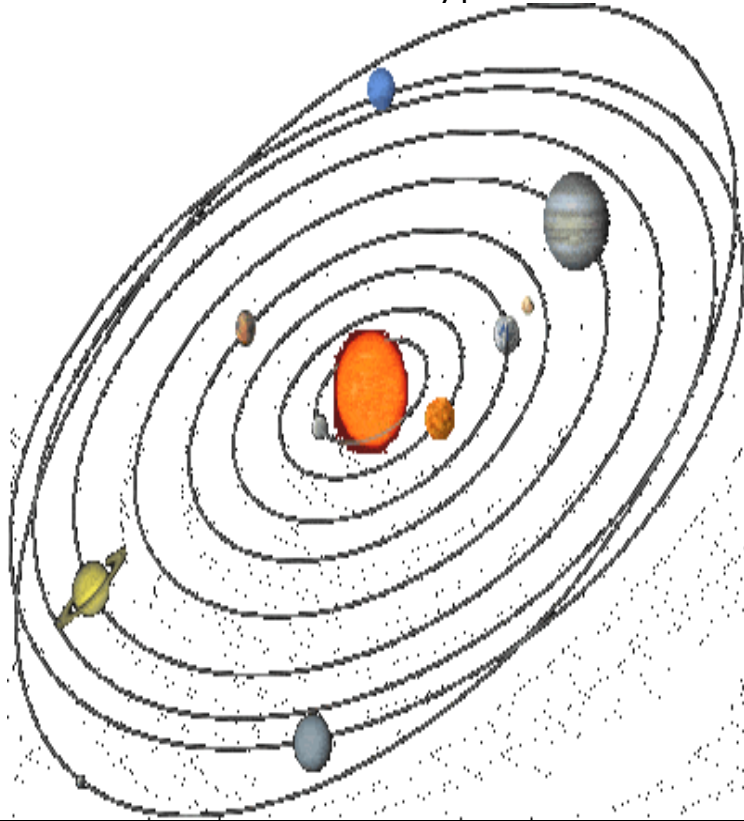
 <p>Large Moon</p> 	 <p>This is after Saturn but before Neptune</p>	
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◇ Should Pluto be reinstated as a planet instead of a Dwarf Planet.  
 ◇ Use your knowledge of the 70,000 objects in the Kuiper Belt within your answer.



◇ Please research and provide some info about a comet that passes through our solar system.

◇ Draw an orbit of a typical comet in our solar system. (Think Kepler)



Your Comet \_\_\_\_\_

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Name at least three extra solar planets. Provide their astronomical catalogue *name* and some information about them. (Over 1,800 have been detected).

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What's so mind blowing about this photograph that the Hubble Deep Space Telescope took just focusing on the areas of empty space?

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Name each below based on the description.

A compact, extremely bright celestial object whose power output can be hundreds to several thousand times that of the entire Milky Way galaxy.

A diffuse cloud of interstellar dust or gas or both, visible as luminous patches or areas of darkness depending on the way the mass absorbs or reflects incident light or emits its own light.

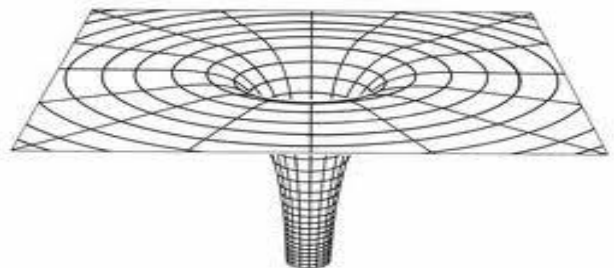
Any of several celestial objects emitting periodic, short, intense bursts of radio, x-ray, or visible electromagnetic radiation, generally believed to be quickly rotating neutron stars.

### Speed of Light info








How fast is the speed of light?

### Neutron Star, Space-time, Black hole

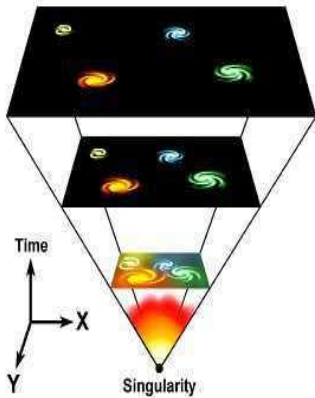


Sketch the Galaxy (labels?)

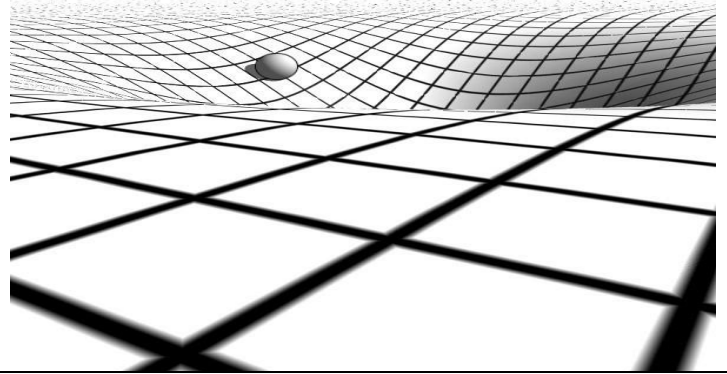
<p style="text-align: center;">Spiral</p>	<p style="text-align: center;">Barred</p>
<p style="text-align: center;">Elliptical</p>	<p style="text-align: center;">Irregular</p>

<p>Venus</p>					<p>Saturn</p>	<p>Uranus</p>	
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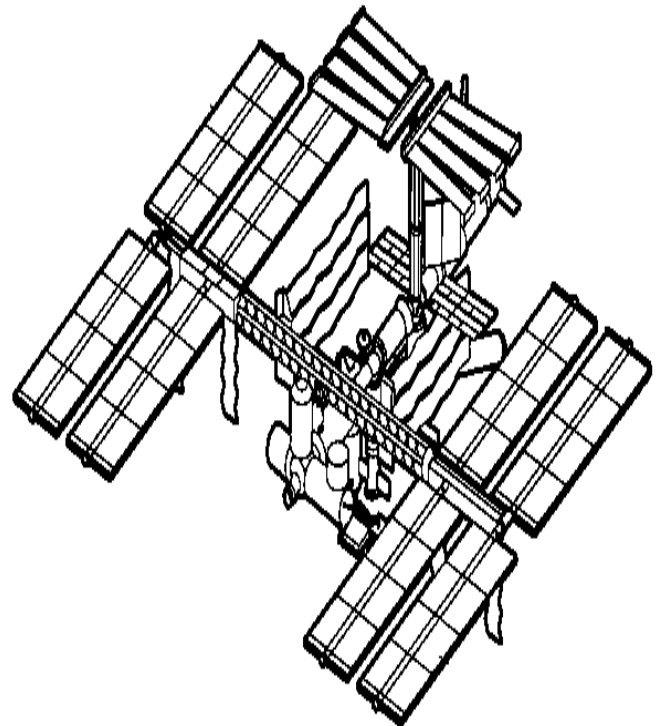
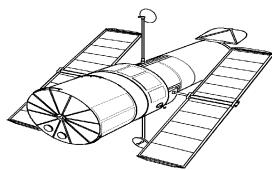
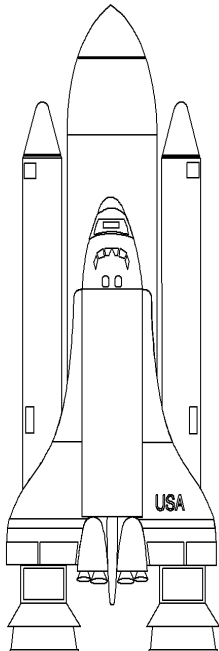
What is the Big Bang Theory?  
Evidence?



Describe the picture below as best as you can? Think multi-dimensional!



- ◇ Please name and provide information about the pictures below.
- ◇ Who owns them?
- ◇ What do they do?
- ◇ What are some of their parts?
- ◇ How do they use or get energy?



Name the terms / planet / other associated with the following words.

Phobos and Deimos \_\_\_\_\_

Water Exists in all three states of matter \_\_\_\_\_

Spirit, Opportunity, and Curiosity are there \_\_\_\_\_

Io and Europa \_\_\_\_\_

Giant Red Spot \_\_\_\_\_

Hottest Planet in the Solar System \_\_\_\_\_

Tethys, Telesto, Calypso, Titan \_\_\_\_\_

Symbol for Men \_\_\_\_\_

Symbol for Women \_\_\_\_\_

Olympus Mons \_\_\_\_\_

Valles Marineris \_\_\_\_\_

Has two Ice Caps \_\_\_\_\_

Apollo Missions visited here \_\_\_\_\_

A very long day \_\_\_\_\_

Largest Planet in our Solar System \_\_\_\_\_

Has the most moons \_\_\_\_\_

Is made up of 70,000 objects \_\_\_\_\_

Now considered a Dwarf \_\_\_\_\_

Chunks of a comet recently hit this planet \_\_\_\_\_

I am after Saturn but before Neptune \_\_\_\_\_

Has lakes of liquid methane \_\_\_\_\_

Coronal Mass Ejections can occur here \_\_\_\_\_

Turn sideways and draw  
+ label three  
constellations

T H T F A R C E C A P S P E L F A I R S  
 O R B I T S R T S P M E M I E V R E S O  
 N T O D S P S A E A R I G O O T I Q H R  
 S S F I R A U O T I T H L N O R O U E E  
 R O T O E C N E G S T E R K U N B I C D  
 A L E R M E O E P Y Y E L A Y B O N A G  
 S A C E O S E N E O P R T L L W N O P I  
 L R L T N H T A S U C N A E I S A X S A  
 U W I S O U R R S T E S F N O T M Y P N  
 P I P A R T A H E C E R E L I M E A E T  
 O N S P T T O N A G A L A L W B T U E G  
 A D E O S L A M A W S R L Y E S E R D A  
 L R D G A E I L D R S A E A T T O O N L  
 U E I E E X A E A Y I L N L T I R R C I  
 B T T E O X T S S I R A L O P I V A E L  
 E A A R I I A T M O S P H E R E O A S E  
 N R P E H U E L O H K C A L B O K N R O  
 R C S W Q M M U N I V E R S E S C T A G  
 A N D R O M E D A G A L A X Y R O N P G

49 Words associated with Astronomy Topics can be found in the word search above. Please circle as many as you can find. No word Bank.... "What?"



Please elaborate on our general themes / big ideas. How is the Universe...?

# General Theme

The Universe is...

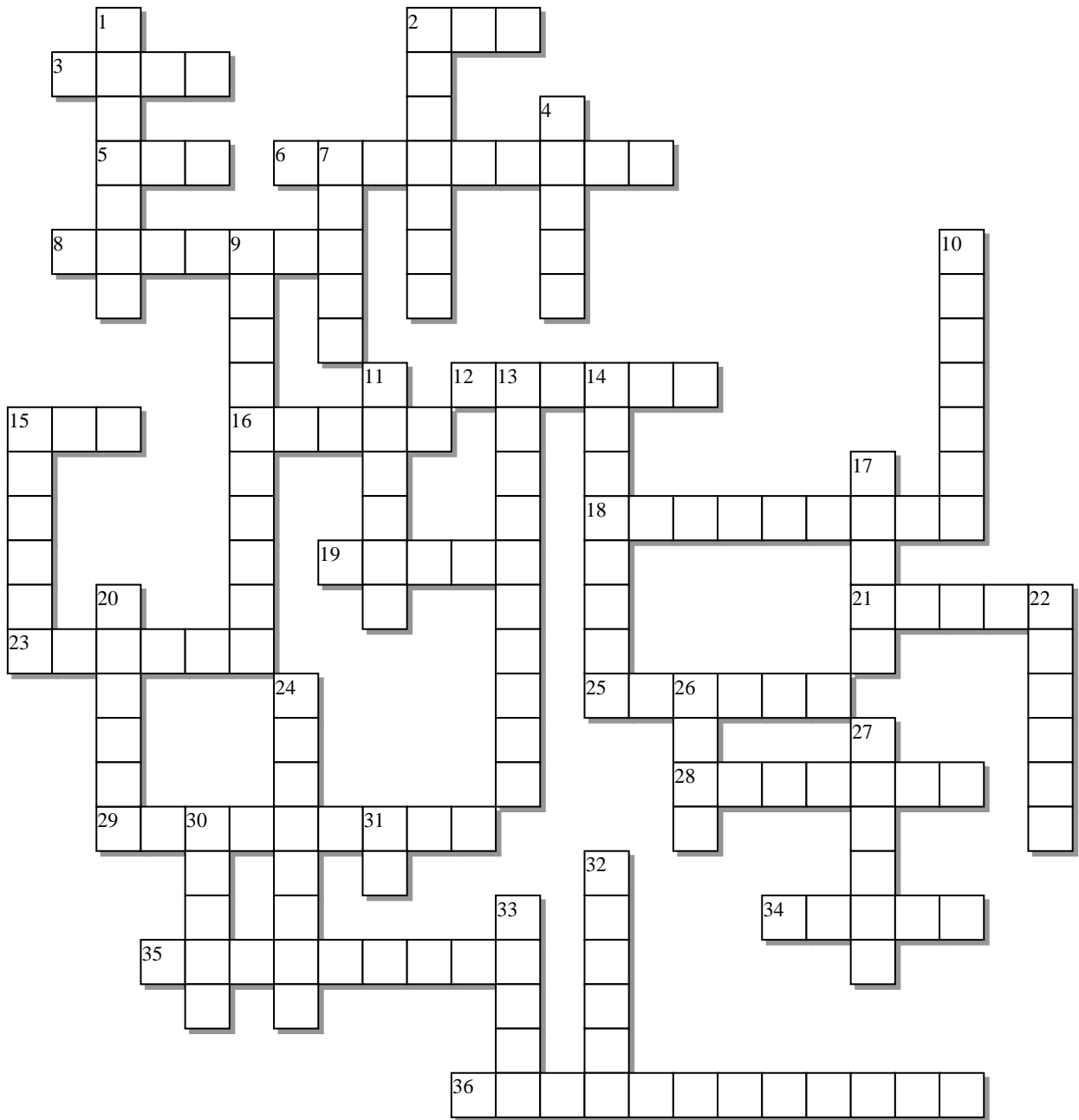
BIG

FAST

OLD

FAR

powerful



**Possible Answers:**

Asteroids, Astronomical, Astronomy, Bang, Blackhole, Comet, Earth, Full, Galaxy, Giant, Gravity, Hubble, Hydrogen, Io, ISS, Jupiter, Kuiper, Lunar, MC2, Mercury, Meteorite, Nebula, Neptune, Neutron, Notation, Orbit, Plasma, Quasar, Relativity, Relativity, Saturn, Solar, Spring, Sun, Tides, Titan, Uranus, Venus

**Across:**

- 2 - E= \_\_ \_\_ \_\_
- 3 - Phase of the moon between waxing gibbous and waning gibbous
- 5 - International Space Station abbreviation
- 6 - A region of space resulting from the collapse of a star with an extremely high gravitational field.
- 8 - Type of star leftover when a large star collapses. (Creates Black hole)
- 12 - 3rd largest planet, mostly made of methane that absorbs red and reflects blue
- 15 - By far the largest object in our solar system
- 16 - Largest moon on Saturn
- 18 - Natural science that deals with the study of celestial objects
- 19 - The path (usually elliptical) of one celestial body in its revolution around another.
- 21 - This planet has a strong EM field that protects it.
- 23 - Large group of stars, gas, and dust that constitute the universe. By a large group, we mean hundreds of billions.
- 25 - Large cloud of gas and dust which can form stars and galaxies
- 28 - Outermost gas giant, made of some molten Rock, methane, water, ammonia
- 29 - Rocky and metallic objects that orbit the Sun but are too small to be considered planets.
- 34 - Gas \_\_\_\_\_: A large, massive, low-density planet composed primarily of hydrogen, helium, methane, and ammonia in either gaseous or liquid state.
- 35 - Space matter that has fallen to the earth's surface from outer space.
- 36 - AU = \_\_\_\_\_ Unit, Distance from earth to the sun. (93 Million Miles, 150 Million Kilometers)

**Down:**

- 1 - Largest Planet in the solar system. (63+ moons)
- 2 - Closest planet to the sun in our solar system
- 4 - Type of eclipse when the moon passes between the Sun and the Earth so that the Sun is wholly or partially obscured
- 7 - Type of eclipse when the earth interrupts light shining on the moon
- 9 - General \_\_\_\_\_: A theory of the structure of spacetime.
- 10 - The force of attraction between all masses in the universe.
- 11 - This planet could float in water, second largest in solar system
- 13 - Special \_\_\_\_\_: The laws of physics are equally valid in all frames of reference moving at a uniform velocity.
- 14 - Scientific \_\_\_\_\_: A method for expressing, and working with, very large or very small numbers.
- 15 - The type of tide when the moon and sun are aligned (larger tide)
- 17 - A frozen mass (3-5 mile diameter) that travels around the sun in a highly elliptical orbit.
- 20 - This state of matter is electrically charge particles and makes up our sun.
- 22 - Name of a space telescope
- 24 - The Sun is made up of this element \_\_\_\_\_ and Helium
- 26 - Big \_\_\_\_\_ Theory: The cosmic explosion that is hypothesized to have marked the origin of the universe.
- 27 - Gigantic grouping of powerful stars.
- 30 - \_\_\_\_\_ are the rising of Earth's ocean surface caused by the gravitational forces of the Moon and the Sun acting on the oceans.
- 31 - Moon of Jupiter that looks like a rotten orange.
- 32 - \_\_\_\_\_ Belt: A disk-shaped region of minor planets outside the orbit of Neptune.
- 33 - Earth's sister planet, very hot.

# The Astronomy

Newtons Laws...

TIDES

TOPICS UNIT

MOON

MERCURY EARTH

Jupiter

Saturn

URANUS

VENUS MARS

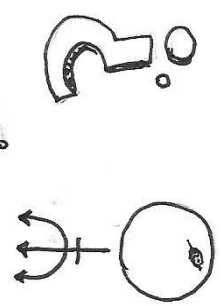
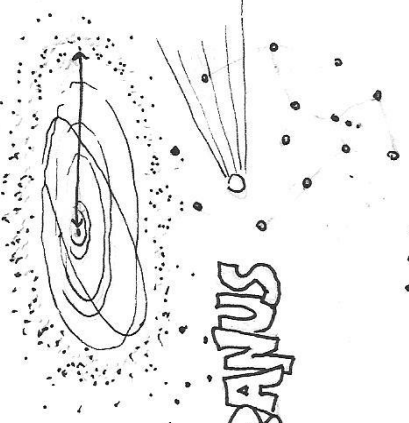
LUNAR

SOLAR

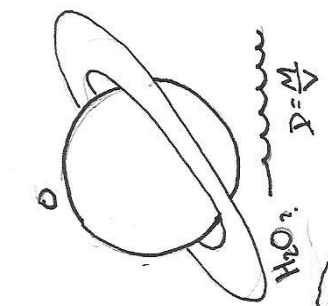
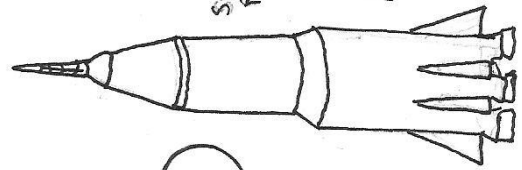
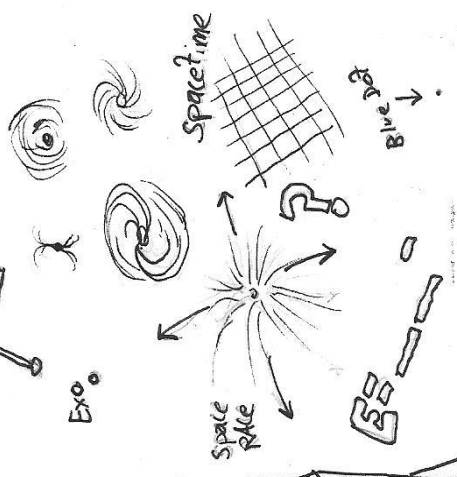
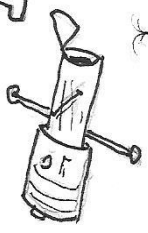
Life Cycle of a Star

SIZE OF STARS?

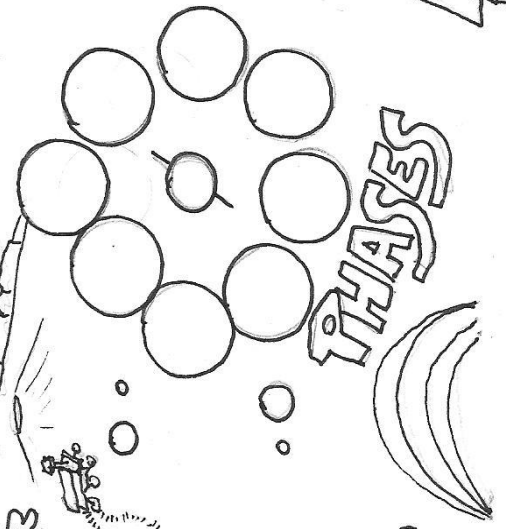
MSU



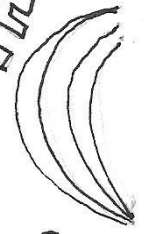
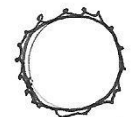
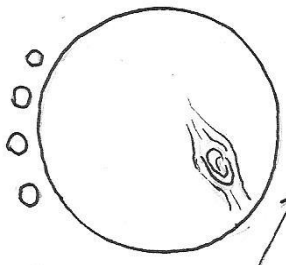
DWARF



$P = \frac{M}{V}$

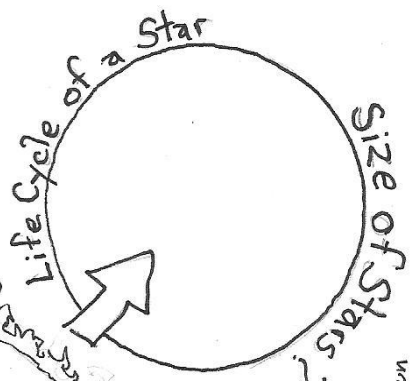
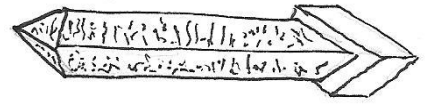


PHASES



AU =

VENUS



Not gas but



af