SSBCrack EXAMS

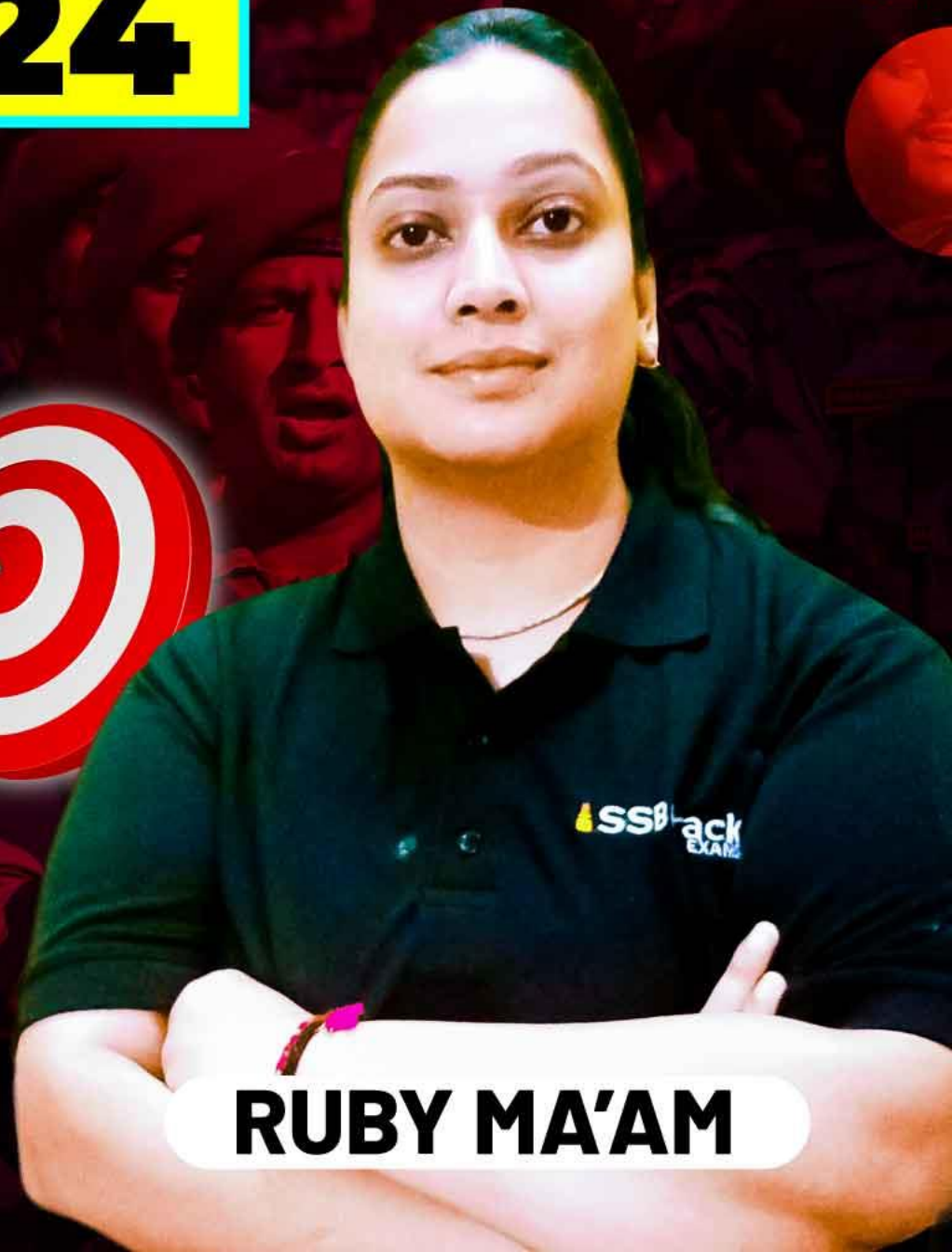
NDA-CDS 2 2024

GK

LIVE

PHYSICAL GEOGRAPHY

CLASS 1



RUBY MA'AM

24 Sep 2024 Live Classes Schedule

8:00AM	24 SEP 2024 DAILY CURRENT AFFAIRS	RUBY MA'AM
9:00AM	24 SEP 2024 DAILY DEFENCE UPDATES	DIVYANSHU SIR

NDA 1 2025 LIVE CLASSES

11:30AM	GK - PHYSICAL GEOGRAPHY - CLASS 1	RUBY MA'AM
1:00PM	BIOLOGY - HUMAN BODY - CLASS 1	SHIVANGI MA'AM
2:30PM	MATHS - QUADRATIC EQUATIONS - CLASS 1	NAVJYOTI SIR

CDS 1 2025 LIVE CLASSES

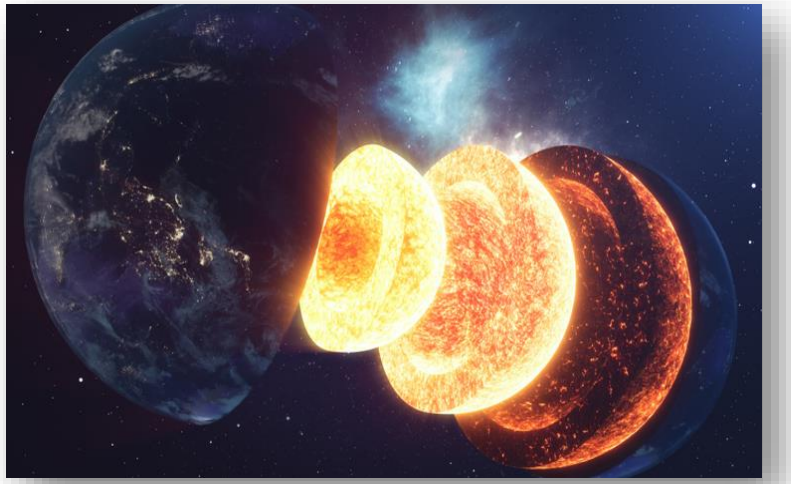
11:30AM	GK - PHYSICAL GEOGRAPHY - CLASS 1	RUBY MA'AM
1:00PM	BIOLOGY - HUMAN BODY - CLASS 1	SHIVANGI MA'AM
2:30PM	MATHS - PERCENTAGE - CLASS 1	NAVJYOTI SIR

AFCAT 1 2025 LIVE CLASSES

10:00AM	REASONING - VERBAL ANALOGY	RUBY MA'AM
2:30PM	MATHS - PERCENTAGE - CLASS 1	NAVJYOTI SIR
4:00PM	STATIC GK - DEFENCE EXERCISE	DIVYANSHU SIR

Early Theories: Origin Of The Earth

Many Hypotheses Were Put Forth By Different Philosophers And Scientists Regarding The Origin Of The Earth Like **Immanuel Kant's Gaseous Hypothesis, Laplace's Nebular Hypothesis**, **Planetesimal Hypothesis**, T**idal Hypothesis**, etc.



Gaseous Hypothesis - Immanuel Kant

German Philosopher **Immanuel Kant** Gave The **Gaseous Hypothesis** In **1755.** It States That The Planets Were Formed Out Of A **Nebula Cloud** Comprise Of **Very Cold, Solid & Motionless Particles** Associated With A **Youthful Sun.**

Nebula: A Giant **Cloud Of Dust And Gas** (Like Hydrogen & Helium) In Space.

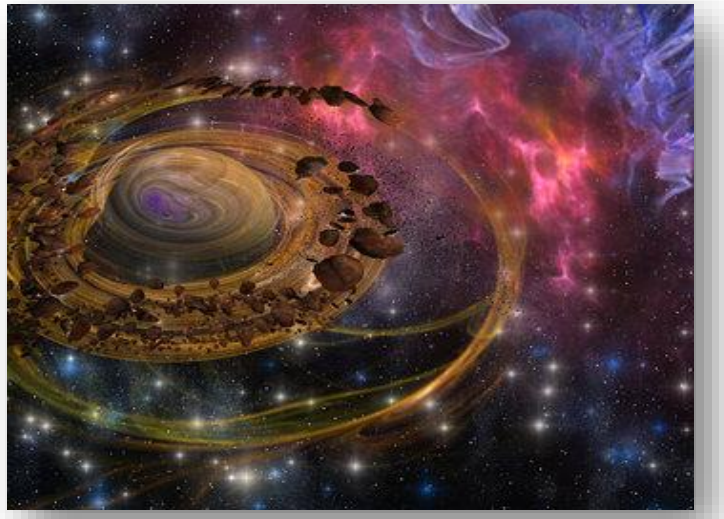
Gaseous Hypothesis - Immanuel Kant

Due To **Mutual Gravitational Force** & Attraction Between The Particles

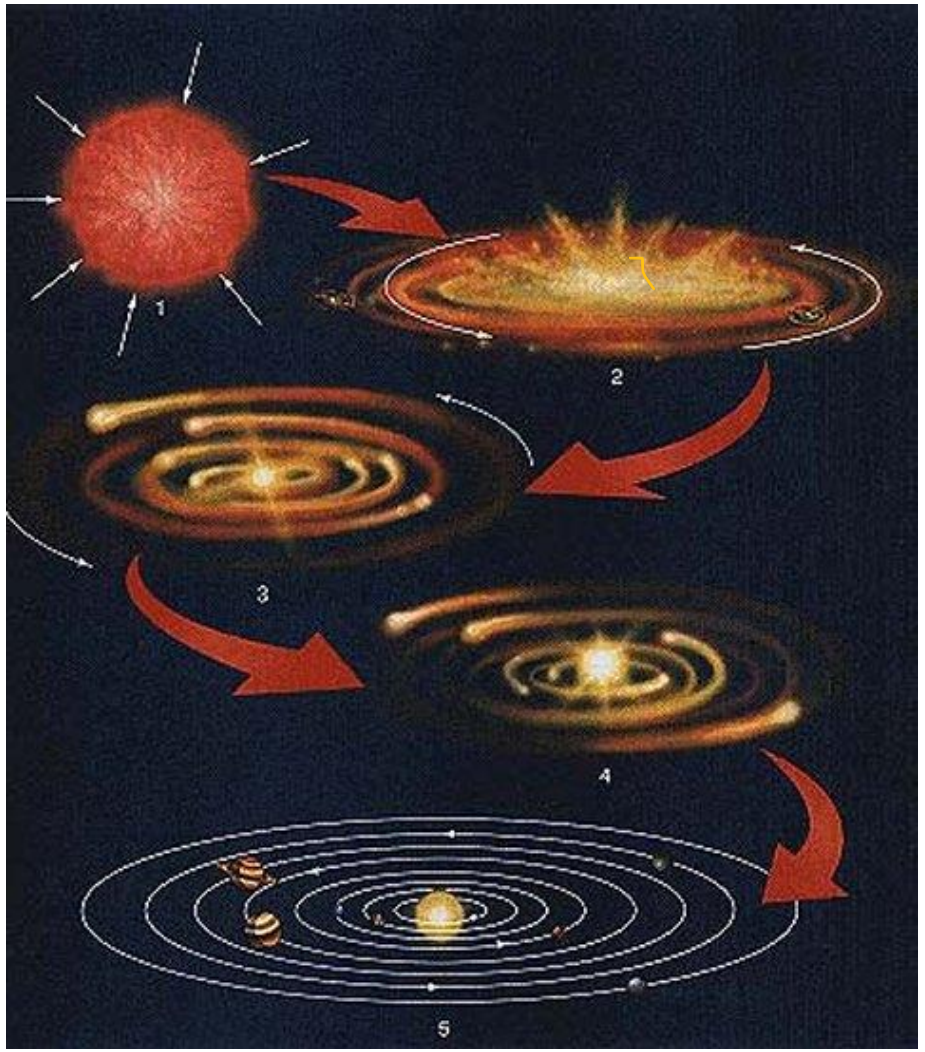
Generated **Random Motion. Colliding Particles** Will Also Generate **Friction**

Which Generates Heat & Will Increase The **Temperature.** The Rise In

Temperature Changed The State Of Matter From **Solid To Gaseous Particles.**

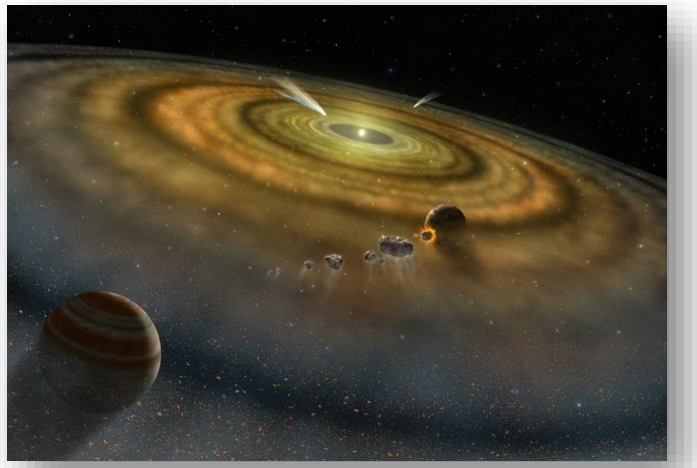


Gaseous Hypothesis - Immanuel Kant



Gaseous Hypothesis - Immanuel Kant

Due To the **Expansion & Rotation** Of the **Nebula** So Rapidly**,** Gases Like **Hydrogen & Helium** Having **Low Density** Remained At The **Centre** Forming **Fusion Reaction** & Hence **Sun** Formed**. 9 Irregular Rings** Separated From The **Nebula.** All The Rings Were Aggregated At A Point To Form **Planets.**



Why Gaseous Hypothesis Was Rejected ?

1. Kant Did Not Explain The Origin Of **Pre-existing Nebula Gas & Temperature**

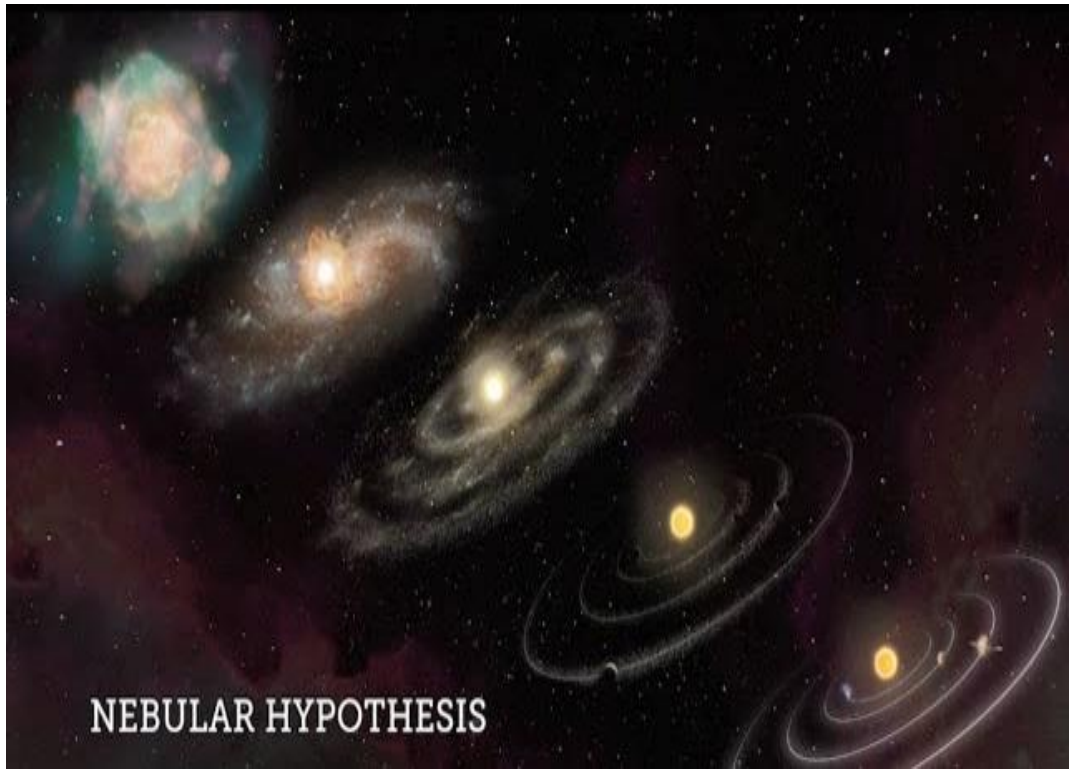
2. Kant Did Not Explain The Cause Of The **Random Motion & Mass - Velocity.**

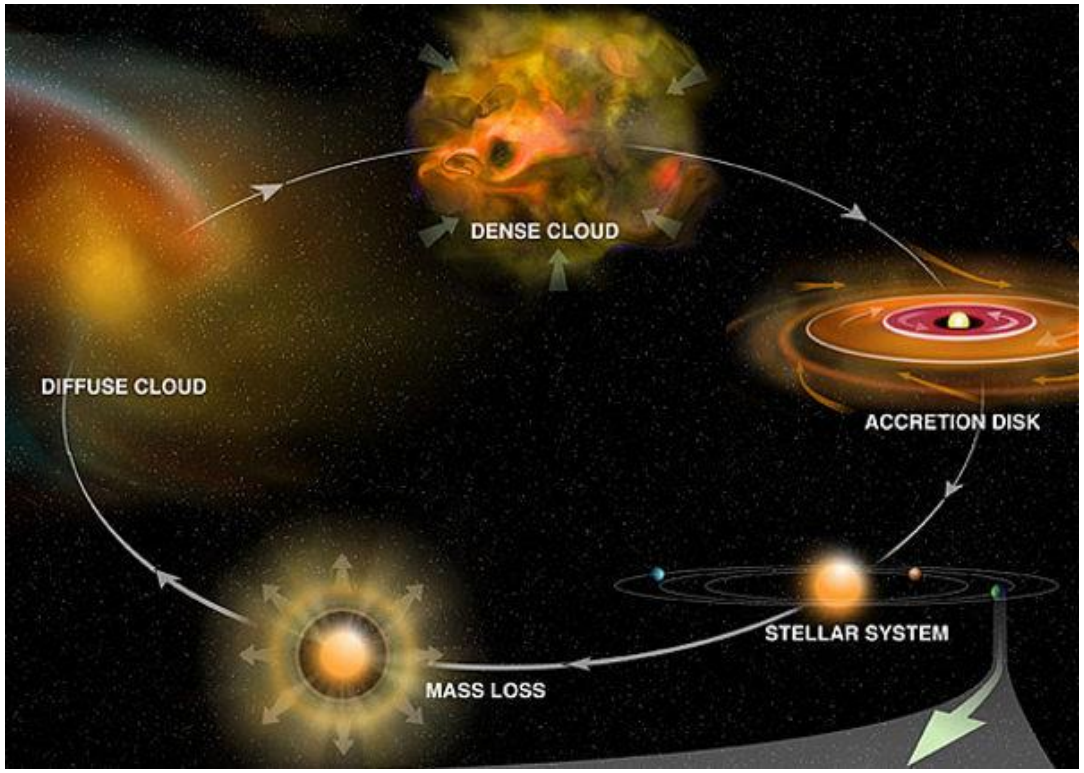
3. Kant Assumed That The Spinning Of A Nebula Increased With The Increase Of Its Size Was Against **The Law Of Conservation Of Angular Momentum.**

Nebular Hypothesis - Laplace

French Mathematician **Laplace** Revised the **Gaseous Hypothesis** In **1796**. He Assumed That There Was A Huge & Hot Gaseous **Nebula** In The Space Which Was **Rotating In Its Axis**. The Nebula Was Cooling Due To **Loss Of Heat** From Its **Outer Surface** Due To Which It Was **Reducing In Size** Due To **Contraction.**

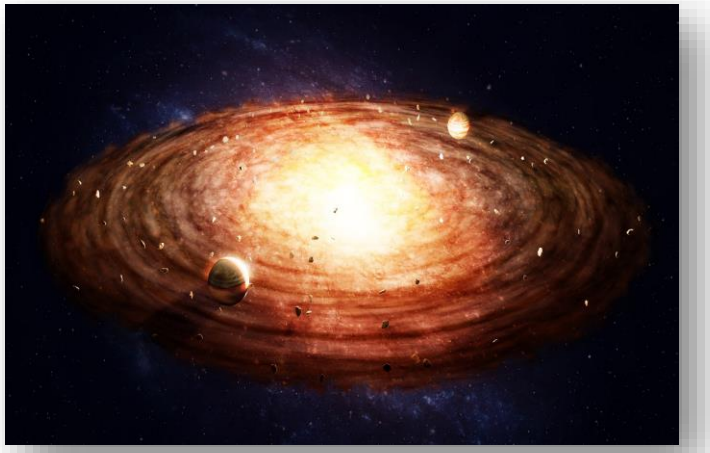
Nebular Hypothesis - Laplace

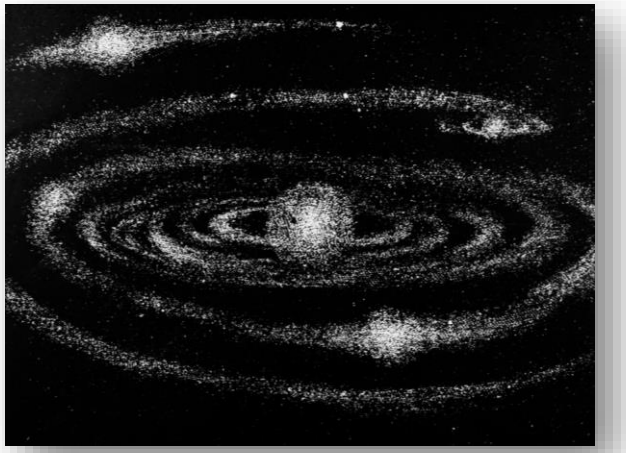




Nebular Hypothesis - Laplace

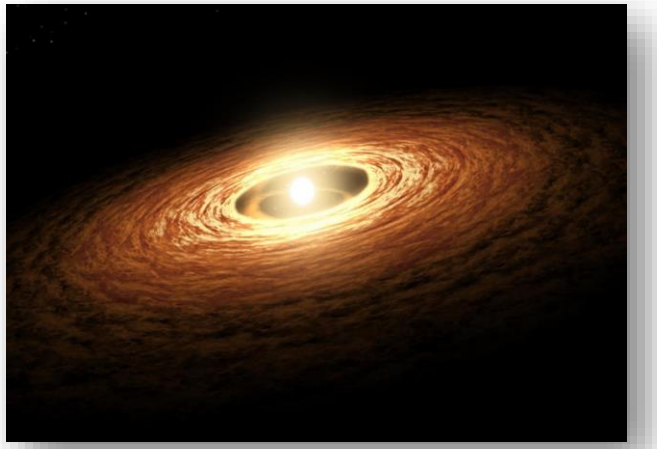
Reduction In Size Of Nebula Of The Outer Surface Due To **Radiation** Increased The Circular Velocity Of Nebula. Due To **Increase In Velocity,** Nebula Started Spinning At A Very High Pace & The **Centrifugal Force** Becomes So High That It Exceeds The **Centripetal Force.**





Nebular Hypothesis - Laplace

The Outer Surface Was **Condensed** Due To Excessive Cooling & Thus The Outer Rings Were Separated From The Remaining Part Of The **Nebula.** Thus **9 Planets** Were Formed From The **9 Rings** & The Remaining **Central Nucleus** Of The Nebula Becomes **The Sun.**

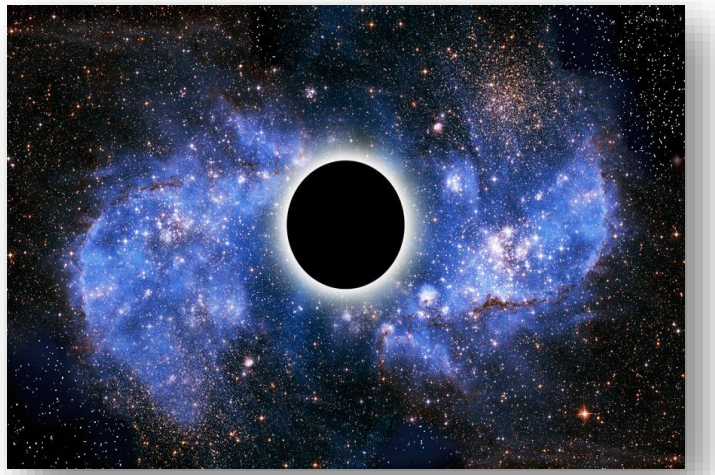


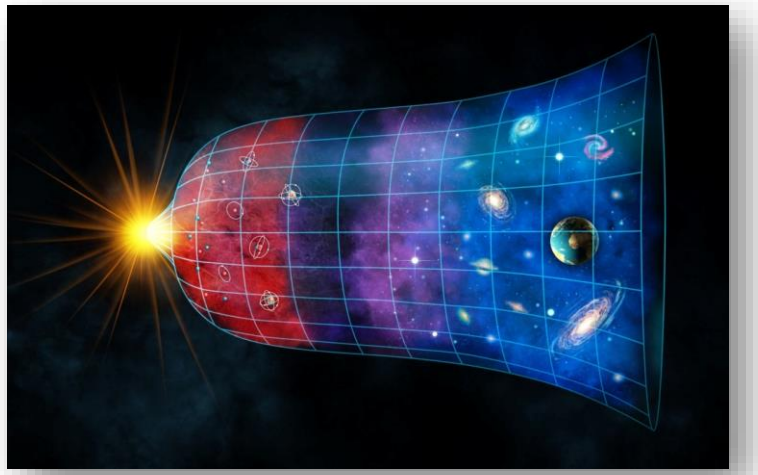
The Big Bang Theory

Edwin Hubble, In **1920,** Provided Evidence That The **Universe Is Expanding**. As Time Passes, Galaxies Move Further And Further Apart**.** Scientists Believe That Though The **Space Between The Galaxies Is Increasing,** Observations Do Not Support The Expansion Of Galaxies.

The Big Bang Theory

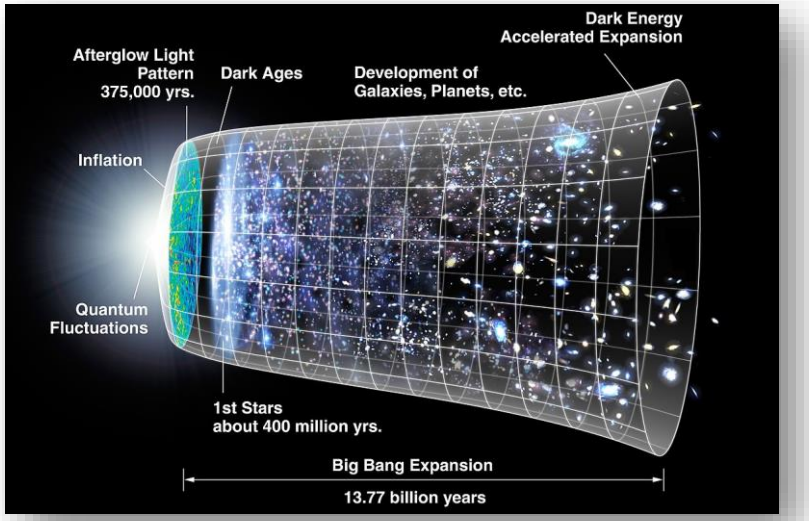
The Theory Was Proposed By **Georges Lemaitre In 1927**. In The Beginning, All Matter Forming The Universe Existed In One Place In The Form Of A **“Tiny Ball”** (Singular Atom) With An Unimaginably **Small Volume, Infinite Temperature,** And **Infinite Density**. At The Big Bang, The “Tiny Ball” Exploded Violently.

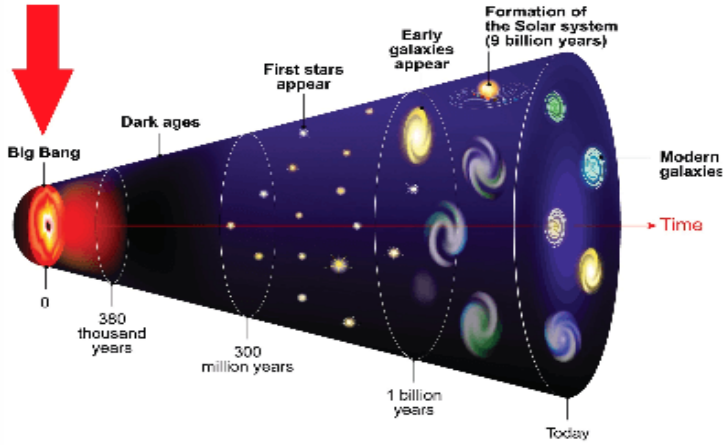




The Big Bang Theory

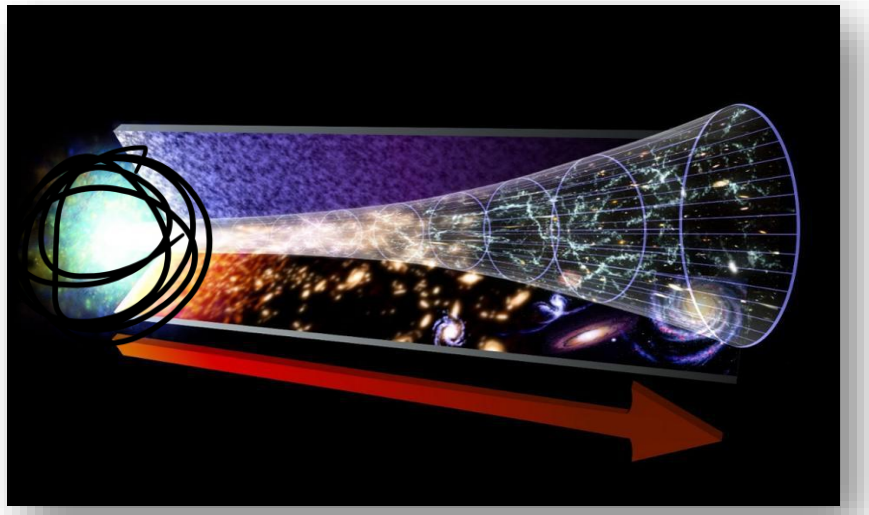
This Led To A Huge Expansion. It Is Now Generally Accepted That The Event Of **Big Bang** Took Place **13.7 Billion Years** Before The Present**.** The Expansion Continues Even To The Present Day. As It Grew, Some Energy Was Converted Into **Matter.** Rapid Expansion Within Fractions Of A Second After The Bang.



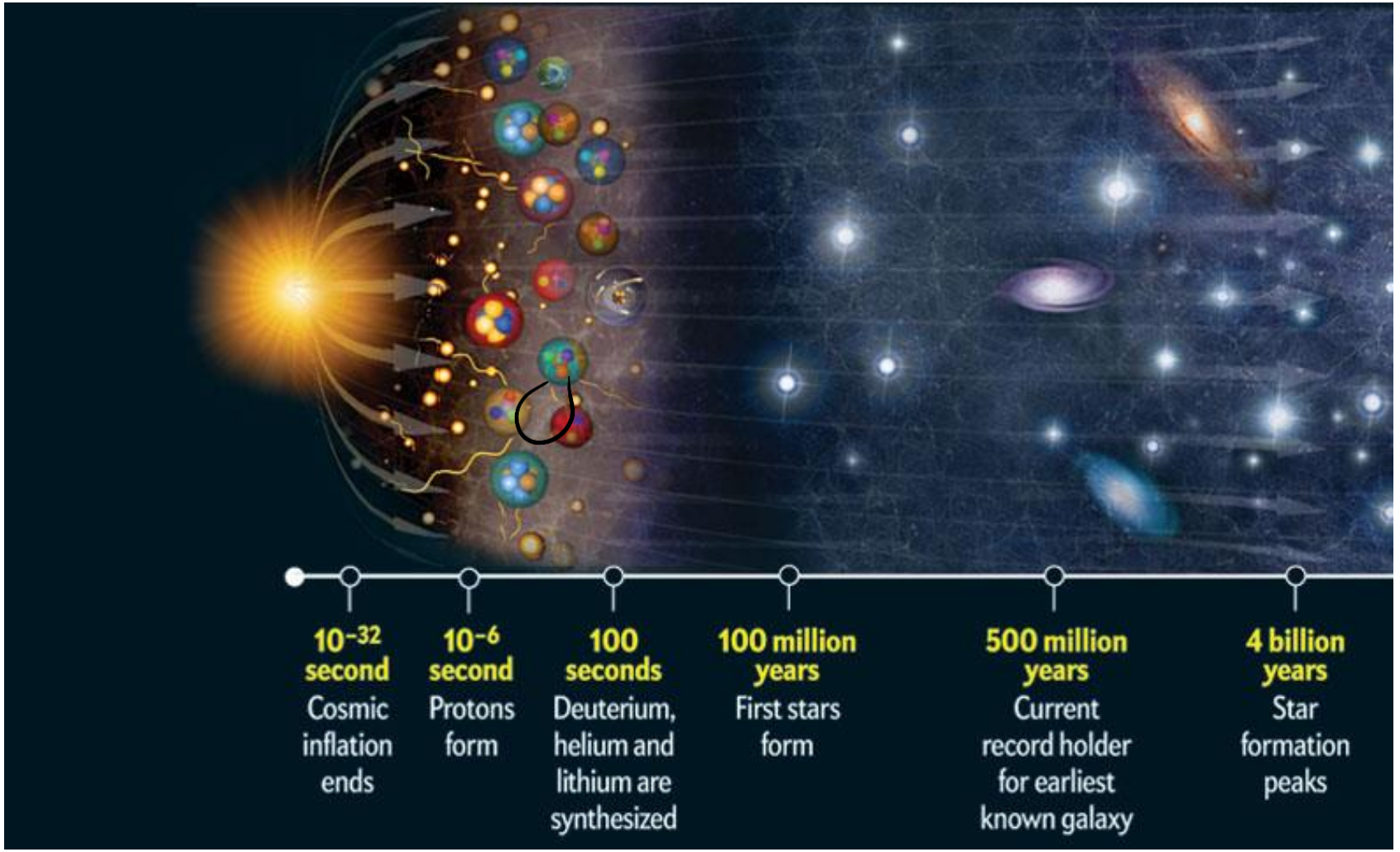


The Big Bang Theory

Thereafter**,** The Expansion Slowed Down. Within the **First Three Minutes** From The Big Bang Event, **The First Atom** Began To Form**.** Within **300,000 Years** From The Big Bang, Temperature Dropped To **4,500 K (Kelvin)** And Gave Rise To **Atomic Matter.** The Universe Became **Transparent**



The Big Bang Theory

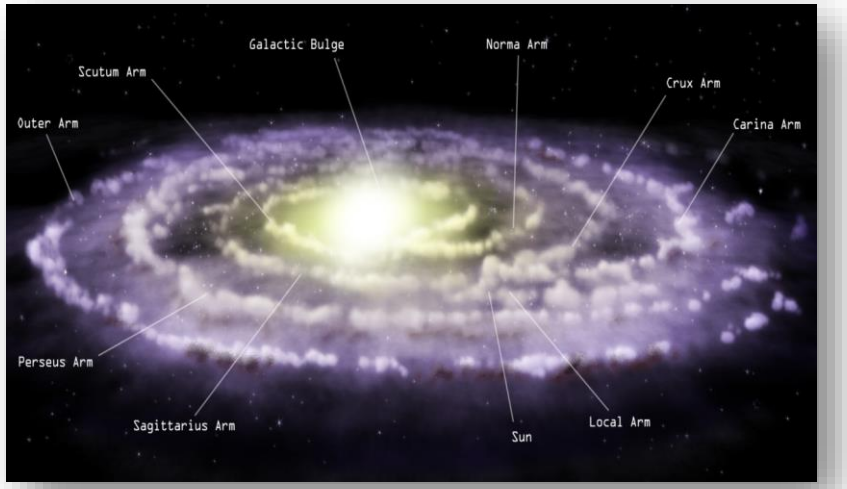


Important Hypothesis Theories

Gaseous Hypothesis	Kant
Nebular Hypothesis	Laplace
Planetesimal Hypothesis	Chamberline and Moulton
Tidal Hypothesis	Sir James Jeans and Harold Jeffreys
Binary Star Hypothesis	HN Russell
Supernova Hypothesis	F Hoyle
Interstellar Dust Hypothesis	Otto Schmidt
Electromagnetic Hypothesis	H Alfven
Protoplanet Hypothesis	G Kuiper
Nebular Cloud Hypothesis	Dr. Von Weizsacker

The Milky Way

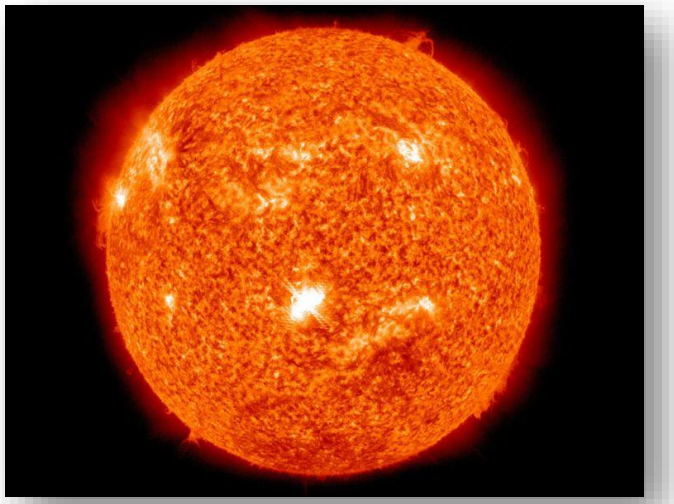
The **Solar System** Is Located In The **Orion Arm, 26,000 Light Years** From The Centre (About 1-3rd From The Centre) Of The Milky Way Galaxy. The **Sun** Completes One Lap Of The Galaxy In About Every **220 Million Years**. The Solar System Revolves Around The Milky Way With A Speed Of **285 Km/Second**.



The Sun

The **Sun** Is An **Average Star** (Yellow Dwarf Star). It Isn't The Hottest, Coolest, Oldest, Brightest, or Biggest Star. The **Sun's Mass** Is In Between **99.8%** And **99.9%** Of The Solar System**.** It Is Composed Mainly Of **Hydrogen And Helium.**

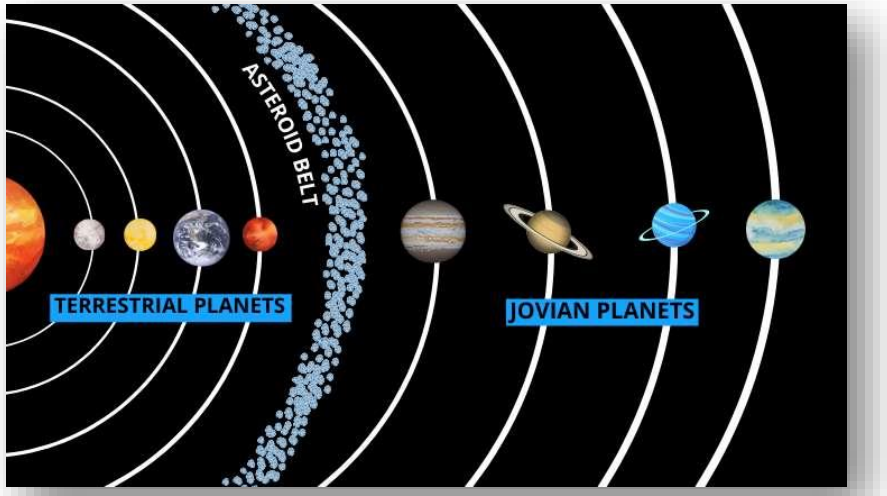
Nuclear Fusion In The Core Of The Sun Is the Source Of All Its Energy.



Terrestrial Planets & Jovian Planets

The **Terrestrial Planets** (Inner Planets Or Rocky Planets) Are The 4 Innermost Planets In The Solar System, Which Include **Mercury, Venus, Earth, And Mars**.

The **Jovian Planets** (Outer Planets Or Gaseous Planets) Are **Jupiter, Saturn, Uranus, And Neptune** Because They Are Gigantic And Have A **Gaseous Nature**.



Mercury & Venus

Planets	Special Characteristics	Important Physical Properties	Rotation and Revolution Time	Satellite Systems
Mercury	Smallest and the inne most planet. It has no atmosphere. It has a cratered surface, much like the Moon.	It has the maximum diurnal range of temperature.	Rotation: 58.65 days; Revolution: 88 days(Fastest Revolution in the Solar System).	No satellite
Venus	Also called as the veiled planet known as **(Evening and Morning star)** as it is seen in the East in morning and in the	Rotates from East to West unlike the other planets. It is the hottest planet.	It has the slowest rotational speed. It has almost equal rotation and revolution. Rotation:	No satellite
	West in the evening. It is the brightest object in solar system because of almost 70% albedo. It contains 90 to 95% The night and day temperature almost the same.		(Clockwise) 243.02 days and Revolution: 224.7 days	

Earth & Mars

Planets	Special Characteristics	Important Physical Properties	Rotation and Revolution Time	Satellite Systems
Earth	The Earth is neither too hot nor too cold. It is called as the **Blue Planet** due to the presence of water.	It is the densest of all and is unique for the presence of higher forms of life.	Rotation: 24 hours. Revolution: 365 days and 6 hours.	Moon is the only natural satellite.
Mars	Called as **Red Planet.** It has a thin atmosphere comprising of nitrogen, argon, Carbon mono oxide.	It is marked by dormant volcanoes. Nix Olympia is the highest mountain which is three times higher than the Mount Everest.	Rotation: 24.6 hour. (almost equal to Earth) Revolution: 687 days.	Two satellites Phobos and Deimos.

Jupiter & Saturn

Planets	Special Characteristics	Important Physical Properties	Rotation and Revolution Time	Satellite Systems
Jupiter	It is the largest planet in the solar system with a mass 2.5 times greater than the combined mass of all the remaining planets, satellites and asteroids put together. It contains hydrogen, helium, methane and ammonia. A great red spot is detected on it	It is too massive to solidify as a planet but not massive enough to develop nuclear fusion and become a star. It gives off more energy than it receives from the Sun, because of the heat inside.	Fastest rotational velocity (9.8 hrs)	It has 95 (as of 2017) satellites. Some of the prominent satellites are: Europa, Callisto and Ganymede. These are called as **Galilean Moons.**
Saturn	It is the 2nd largest planet and is surrounded by a set of eight rings, which are made up of Primordial dust and ice particles.	It has the least density of all the satellites. 30 times less dense than the Earth.	Rotation in 10.3 hours. Revolution in 29.5 years.	It has 145 satellites, the largest being Titan.

Uranus & Neptune

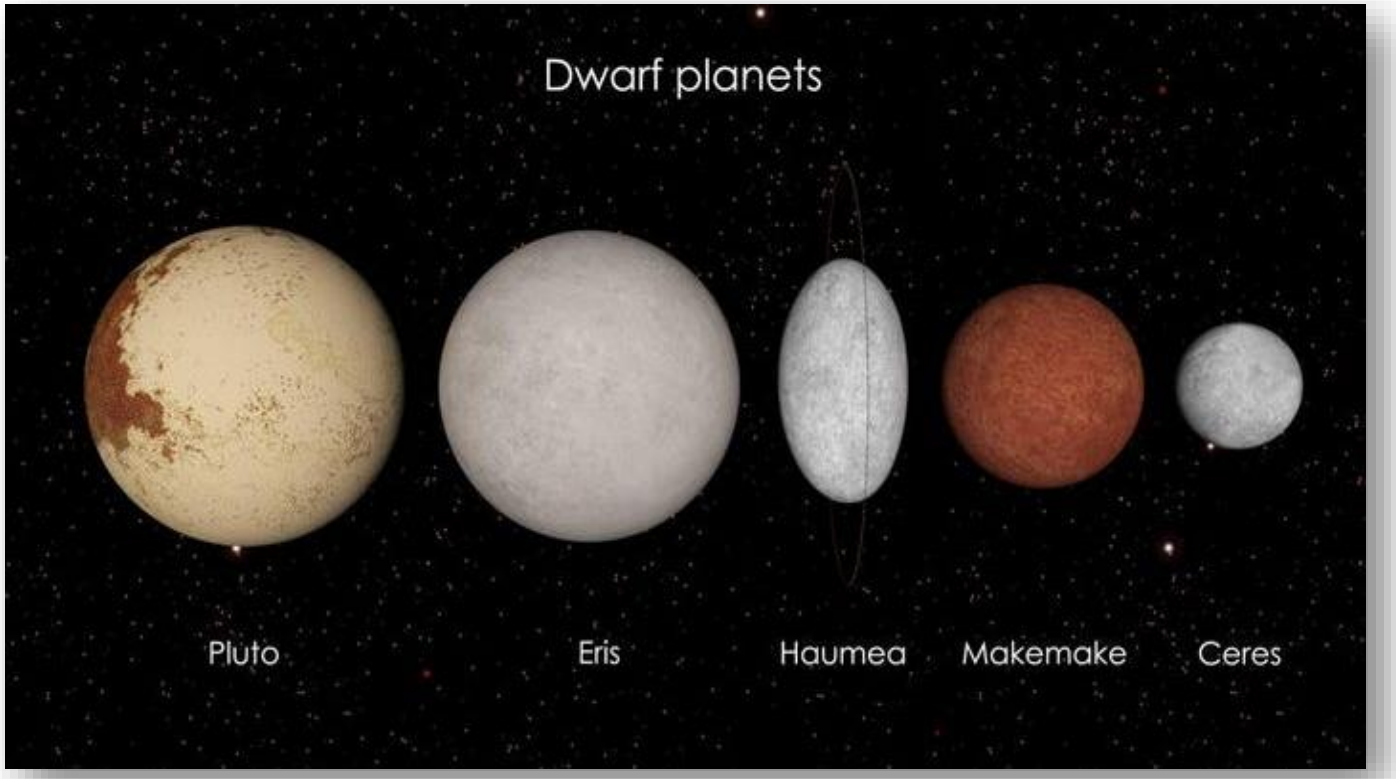
Planets	Special Characteristics	Important Physical Properties	Rotation and Revolution Time	Satellite Systems
Uranus	It is unique as its axis of rotation is inclined at 98° to its orbital plane.	Surrounded by a system of 9 faint rings.	Unlike the others, which spin on their axis, Uranus actually rolls apparently from North to South.	It has 27 satellites. The prominent are Miranda, Ariel etc.
Neptune	It is a penultimate planet, has a dynamic atmosphere, which contains an Earth sized blemish called the **Great Dark Spot** that is reminiscent of Jupiter's Great Red spot.	It has 5 faint rings it appears as **Greenish Star.**	Rotation: 16.1 hours and Revolution: 165 years.	It has 14 satellites. The prominent are Triton and Nereid.

Dwarf Planets

DWARF PLANET

A dwarf planet is a planetary-mass object that is neither a planet nor a natural satellite. It shares its orbits around the Sun with other objects such as asteroids or comets. It is massive enough for its shape to be in hydrostatic equilibrium under its own gravity, but has not cleared the neighborhood around its orbit.

The first 5 recognised dwarf planets are – Ceres, Pluto, Eris, Haumea & Makemake.



Q. The four planets closest to the Sun are called

(a) terrestrial planets

(b) giant planets

(c) dwarf planets

(d) gas planets

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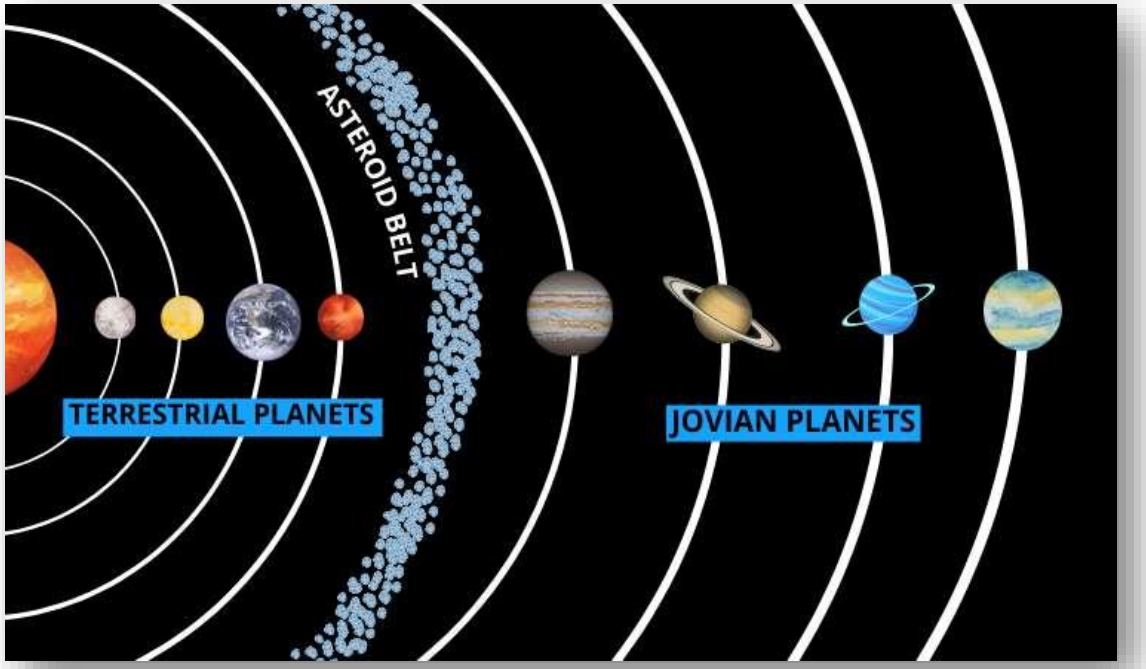
Answer: A

Explanation:

• The **4 Planets Closest To The Sun- mercury**, **Venus, Earth, And Mars** Are Called **Terrestrial Planets**.

• The **Jovian Planets** Or **Outer Planets** Are **Jupiter, Saturn, Uranus, And Neptune** Because They Are All **Gigantic Compared To Earth**



Q. Which One Of The Following Is The Correct Sequence In Increasing Order (Diameter) ?

(A) Mars - Venus - Earth - Mercury - Uranus

(B) Mercury - Mars - Venus - Earth - Uranus

(C) Mercury - Mars - Venus - Uranus - Earth

(D) Venus - Mercury - Mars - Earth - Uranus

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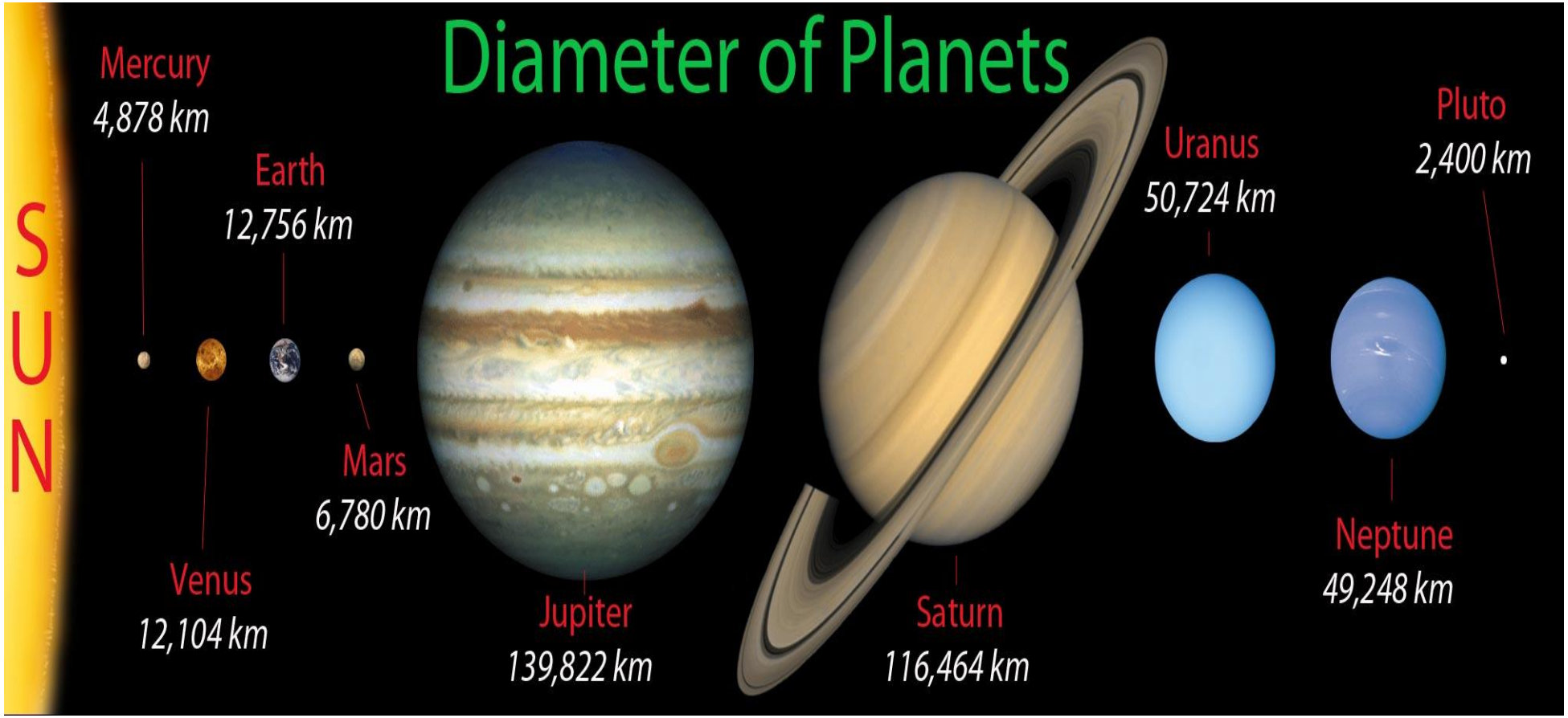
Explanation:



Q. The Mean Distance From The Sun To The Earth Is Called A/An

(A) Light Year

(B) Parallactic Second

(C) Astronomical Unit

(D) Angstrom

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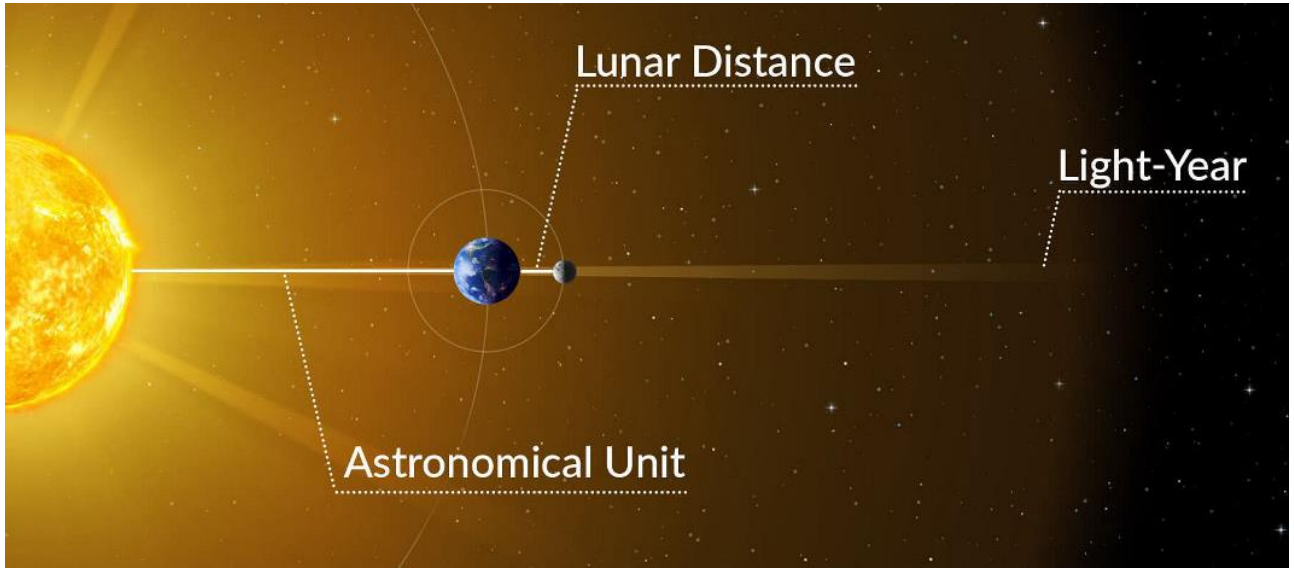

Explanation:

An **Astronomical Unit** Is The **Mean Distance Between** The **Earth** And **The Sun**. **1 Au** = **149,597,870.700 Kilometers.**

Q. Assertion (A) Venus Is The Brightest Object In The Sky After The Sun.

Reason (R) Venus Is The Second Planet From The Sun In Our Solar System.

Codes:

(A) Both A And R Are True And R Is The Correct Explanation Of A

(B) Both A And R Are True, But R Is The Correct Explanation Of A

(C) A Is True, But R Is False

(D) A Is False, But R Is True

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Q. Which one of the following is the correct sequence of arrangement of the given planets in descending order of their density (in gm/cm^3) ?

(a) Earth > Jupiter > Venus > Saturn

(b) Jupiter > Earth > Saturn > Venus

(c) Earth > Venus > Jupiter > Saturn

(d) Earth > Venus > Saturn > Jupiter

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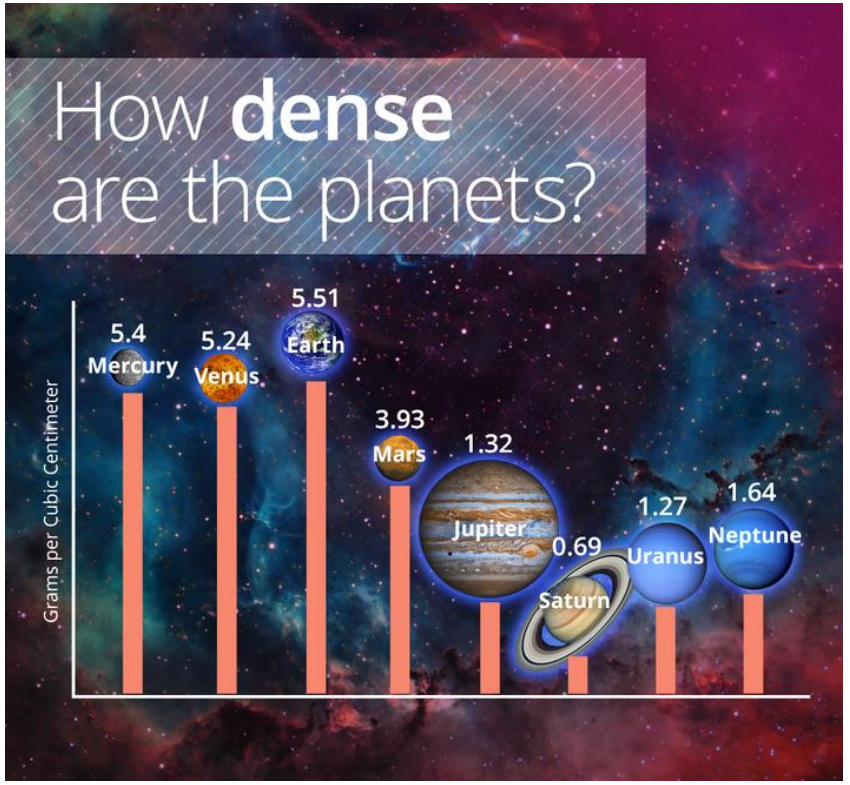

ANSWER: C

Q. Which of the following groups of planets is termed as 'gas planets' as they are composed primarily of lighter ices, liquids and gases?

(a) Mars, Jupiter, Neptune, Uranus

(b) Jupiter, Uranus, Neptune, Saturn

(c) Saturn, Mars, Jupiter, Neptune

(d) Neptune, Saturn, Mars, Uranus

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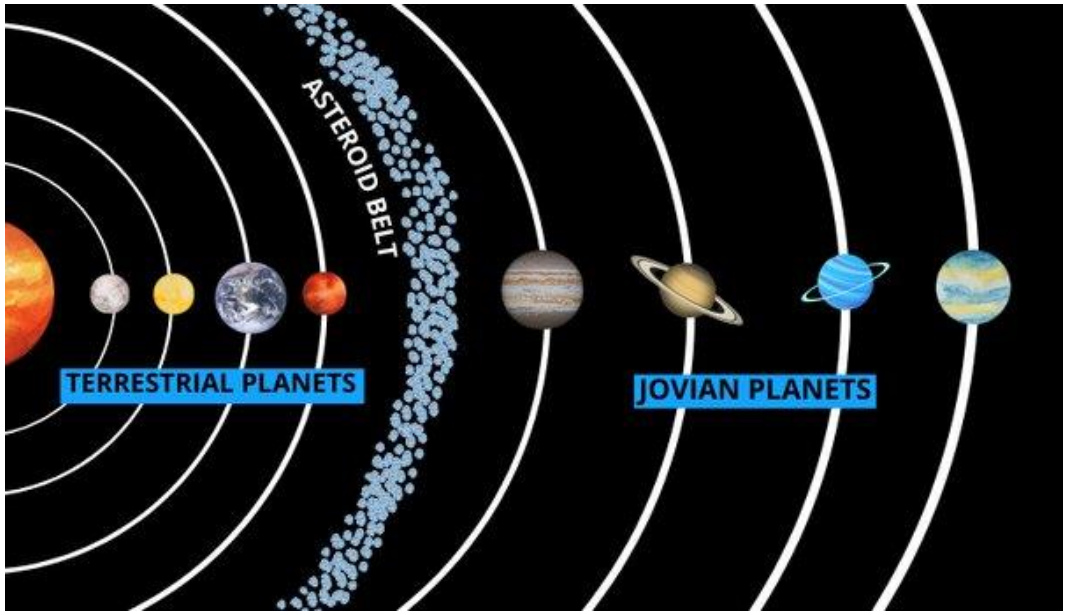
(c) Saturn, Mars, Jupiter, Neptune

(d) Neptune, Saturn, Mars, Uranus



ANSWER: B

Q. A Typical Black Hole Is Always Specified By

(A) A (Curvature) Singularity

(B) A Horizon

(C) Either A (Curvature) Singularity Or A Horizon

(D) A Charge

Q. A Typical Black Hole Is Always Specified By

(A) A (Curvature) Singularity

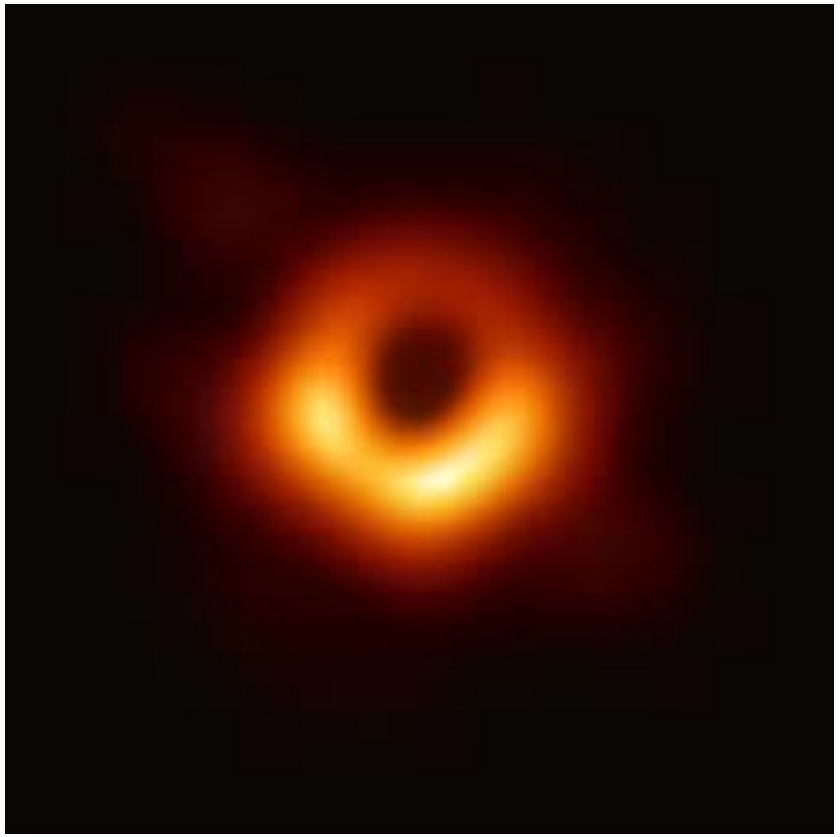
(B) A Horizon

(C) Either A (Curvature) Singularity Or A Horizon

(D) A Charge

Explanation:

- Black Holes Are Regions Of Space-time From Which Nothing, Not Even Light, Can Escape.
- A Typical Black Hole Is The Result Of The Gravitational Force Becoming So Strong That One Would Have To Travel Faster Than Light To Escape Its Pull.



Q. Which Planet Is Known As The "Ice Giant"?

A. Venus

B. Neptune

C. Saturn

D. Jupiter

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A. Venus

B. Neptune

C. Saturn

D. Jupiter

Q. Which Planet Has The Great Red Spot?

A. Jupiter

B. Saturn

C. Uranus

D. Neptune

Q. Which Planet Has The Great Red Spot?

A. Jupiter

B. Saturn

C. Uranus

D. Neptune

Q. Which One Of The Following Statements Is Correct With Reference To Our Solar System?

(A) The Earth Is The Densest Of All The Planets In Our Solar System.

(B) The Predominant Element In The Composition Of Earth Is Silicon.

(C) The Sun Contains 75 Percent Of The Mass Of The Solar System.

(D) The Diameter Of The Sun Is 190 Times That Of The Earth.

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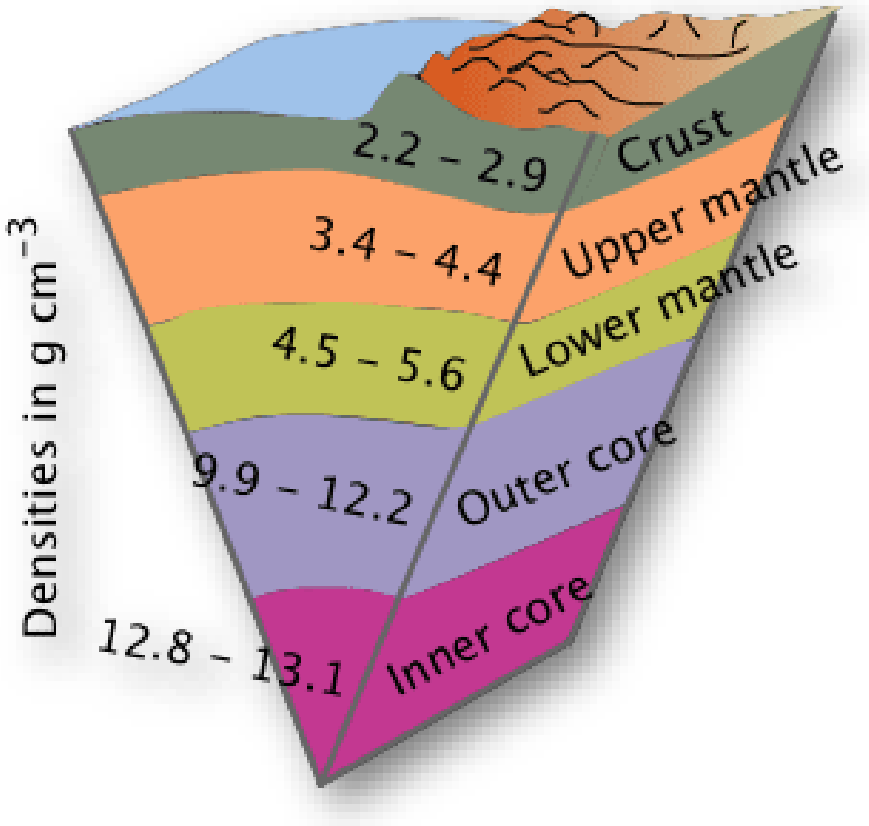
(D) The Diameter Of The Sun Is 190 Times That Of The Earth.

Explanation:

- The **Earth** Is The **Densest Planet In The Solar System.**
- The Density Of Earth Is **5.513g/Cm3.**
- This Is An Average Of All The Material On The Planet.



Q. Consider the following statements about Light year :

1. Light year is a unit for measurement of very large distances.
2. Light year is a unit for measurement of very large time intervals.
3. Light year is a unit for measurement of intensity of light.

Which of the statements given above is/are correct ?

(a) 1, 2 and 3

(b) 2 and 3 only

(c) 1 and 2 only

(d) 1 only

Q. Consider the following statements about Light year :

1. Light year is a unit for measurement of very large distances.
2. Light year is a unit for measurement of very large time intervals.
3. Light year is a unit for measurement of intensity of light.

Which of the statements given above is/are correct ?

(a) 1, 2 and 3

(b) 2 and 3 only

(c) 1 and 2 only

(d) 1 only

Answer: D

Explanation:

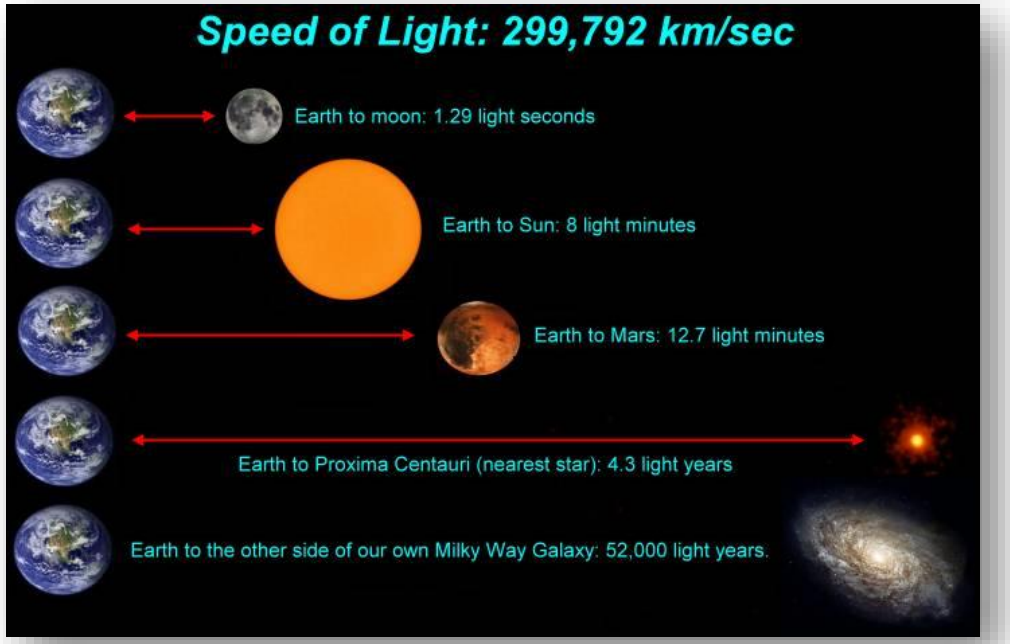
A **Light-year,** Is A **Unit Of Length** Used

To Express **Astronomical Distances**

And Is Equivalent To About **9.46**

Trillion Kilometers (9.46×1012 Km) Or

5.88 Trillion Miles (5.88×1012 Mi).



Q. Which one of the following planets has the highest density ?

(a) Mercury

(b) Venus

(c) Jupiter

(d) Earth

Q. Which one of the following planets has the highest density ?

(a) Mercury

(b) Venus

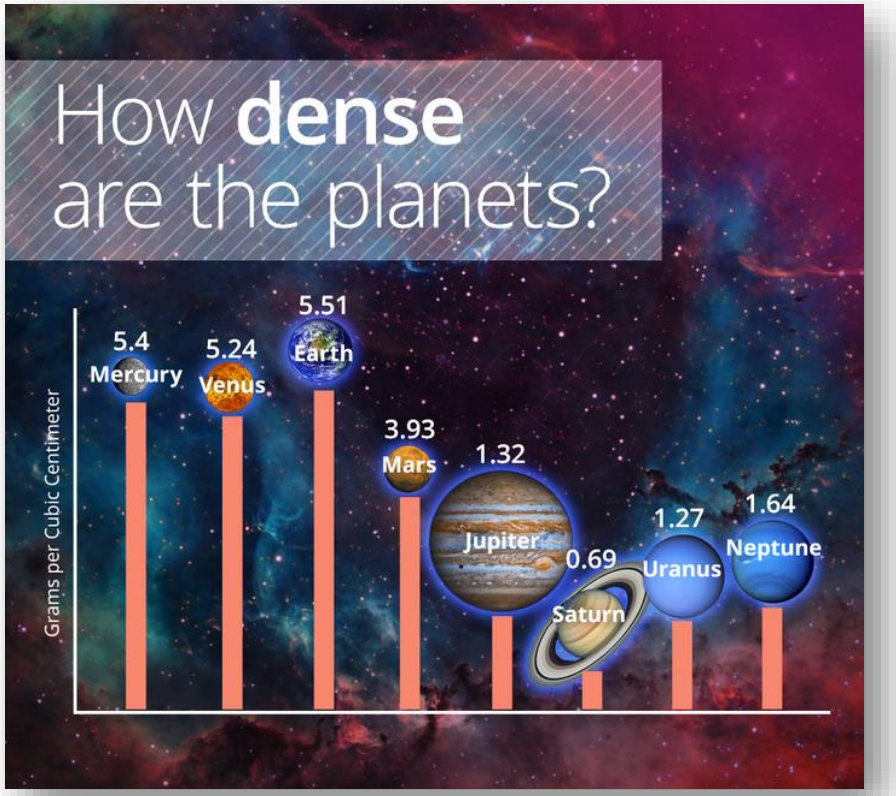
(c) Jupiter

(d) Earth

Answer: D

Explanation:

- **Earth Has The Highest Density Of Any Planet** In The Solar System at **5.514 G/Cm3.**
- This Is Considered The Standard By Which **Other Planets' densities Are Measured.**
- The Combination Of **Earth's Size, Mass, And Density** Also Results In A **Surface Gravity** Of **9.8 M/S²**



Q. The Asteroid Belt Is Found Between Which Of The Following?

(A) Earth And Mars

(B) Jupiter And Saturn

(C) Mars And Jupiter

(D) Saturn And Uranus

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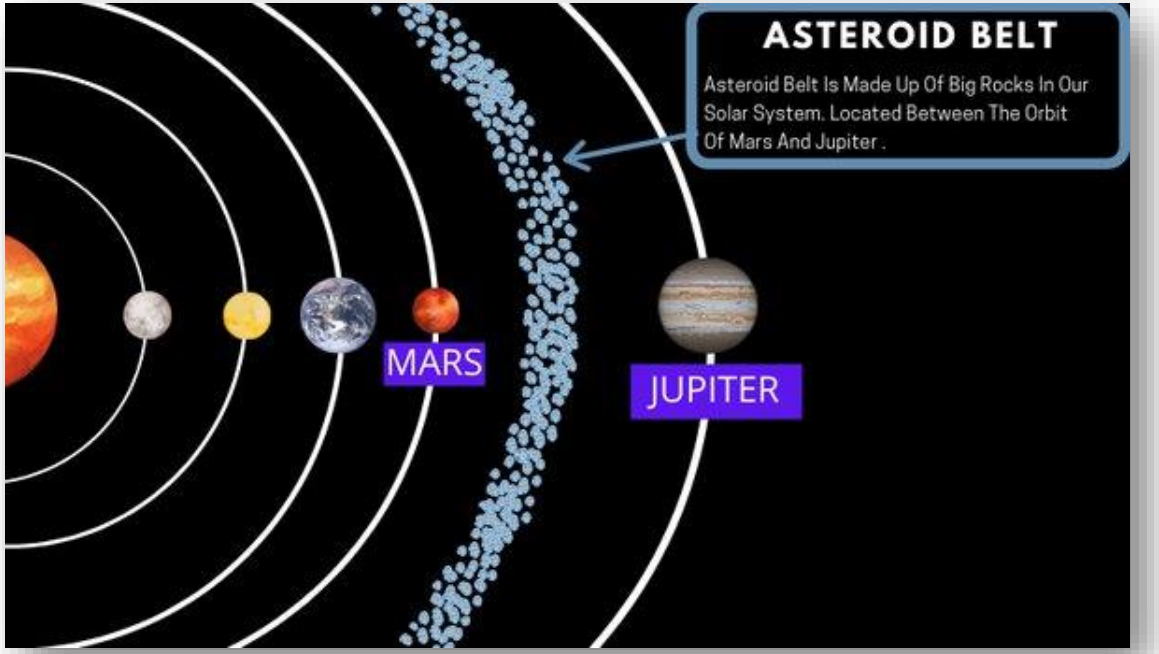


Q. The Planet Which Is Called Twin Sister Of The Earth Is

(A) Mercury

(B) Venus

(C) Mars

(D) Uranus

Q. The Planet Which Is Called Twin Sister Of The Earth Is

(A) Mercury

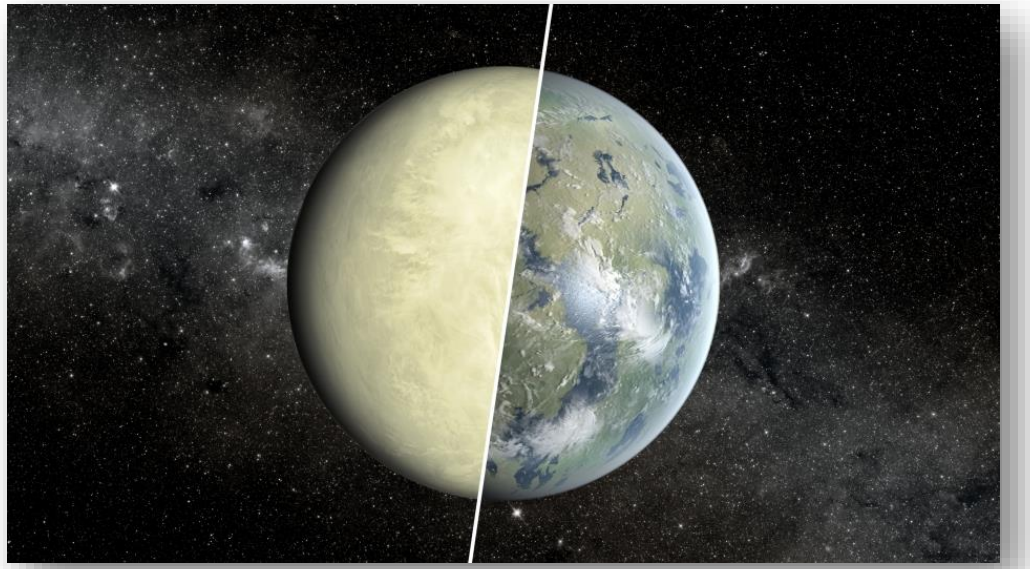
(B) Venus

(C) Mars

(D) Uranus

Explanation :

- **Venus** Is Known As The **Earth's Twin** Because Of Its **Similar Size,**
- **Chemical Composition** And **Density.**
- Due To Its **Toxic Atmosphere, Venus Is Not Habitable**



Q. Which Of The Following Is The Nearest Star Of Earth?

(A) Sirius

(B) Sun

(C) Rigel

(D) Vega

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(A) Sirius

(B) Sun

(C) Rigel

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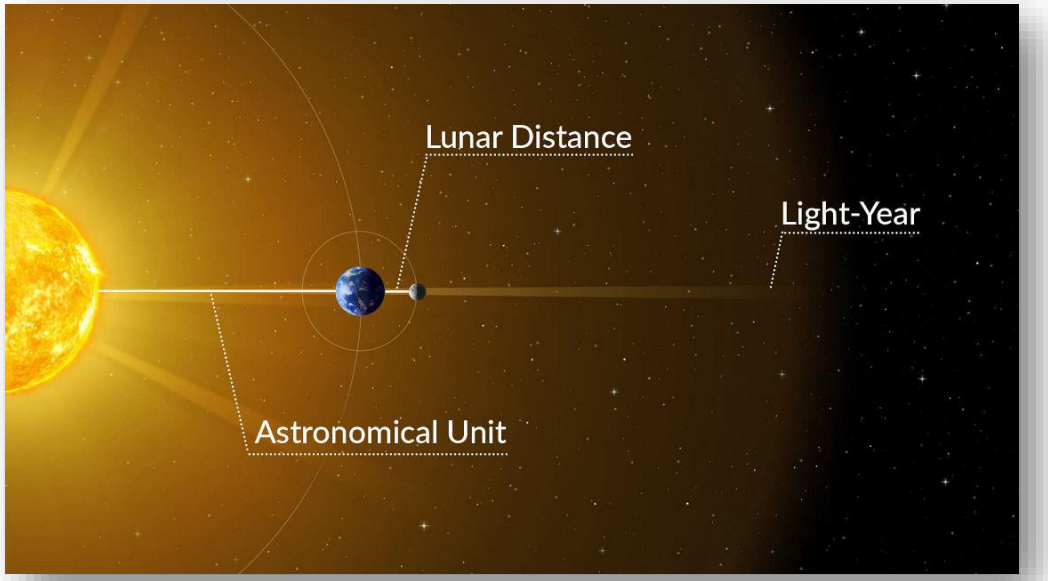
Explanation :

- The **Distance From Sun To Earth** Is Called An **Astronomical Unit (AU)**
- One Of The Nearest Star **Sirius** Is **More Than Thousands Of AU Distance** From **Earth.**



Q. Consider The Following Statements:

1. Our Solar System Is Located In The Orion Arm Of The Milky Way Galaxy, About Two-third Of The Way Out From The Centre.

2. The Solar System Formed From An Interstellar Cloud Of Dust And Gas Or Nebulla About 4.6 Billion Years Ago.

Which Of The Above Statements Is/Are Correct?

(A) 1 Only (B) 2 Only (C) Both 1 And 2 (D) Neither 1 Nor 2

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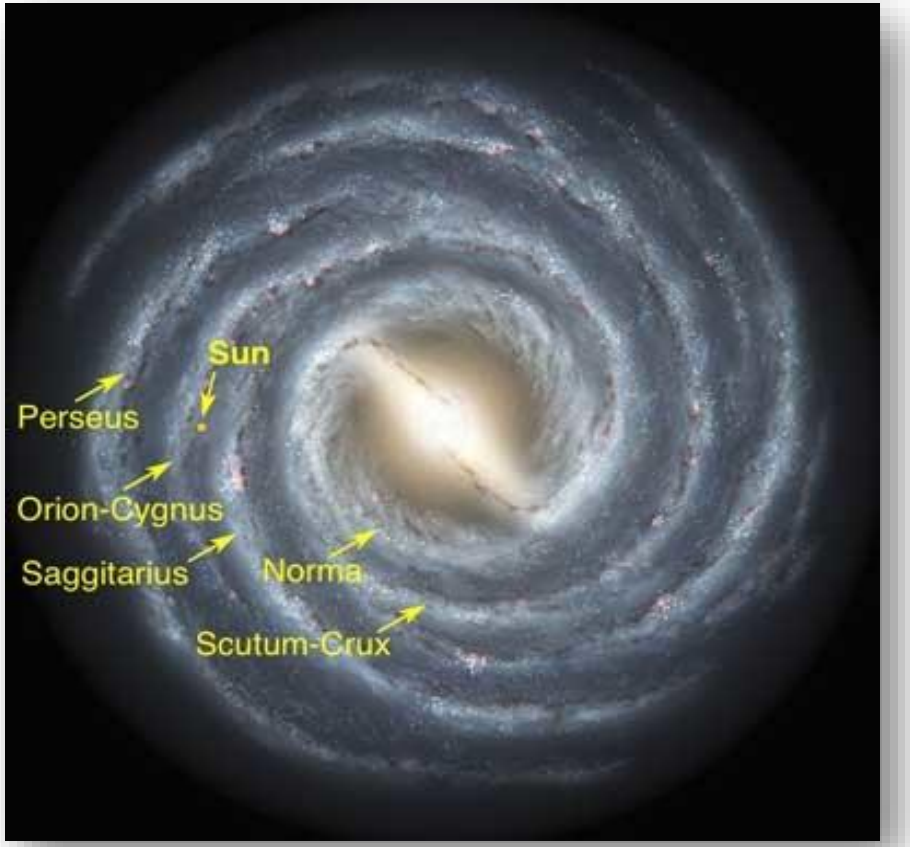
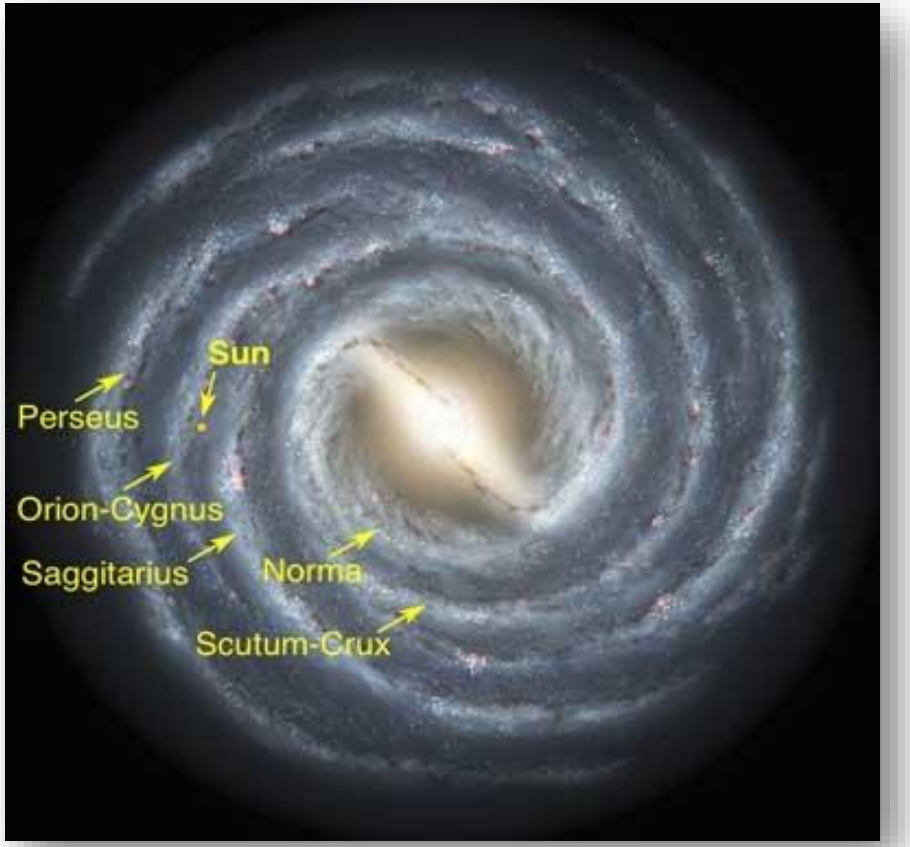
Explanation :

- Our Solar System Is Located In The **Orion Arm** Of The **Milky Way Galaxy**, **About 2/3rd** Of The Way Out From The **Centre.**
- The **Sun** Is About **26,000 Light-years** From The **Center Of The Milky Way Galaxy**, Which Is About **80,000 To 120,000 Light-years Across (And Less Than 7,000 Light-years Thick).**



Explanation :

- It Takes The Sun **(And Our Solar System) Roughly 200-250 Million Years** To **Orbit Once Around The Milky Way.**
- In This **Orbit, We (And The Rest Of The Solar System)** Are Traveling At A Velocity Of About **155 Miles/Sec (250 Km/Sec).**



Q. Consider The Following Statements:

1. Only Two Planets Venus And Uranus Revolve Around The Sun From East To West i.e., Clockwise.

2. While Other Planets Revolve Around The Sun From West To East I.E., Anti-clockwise.

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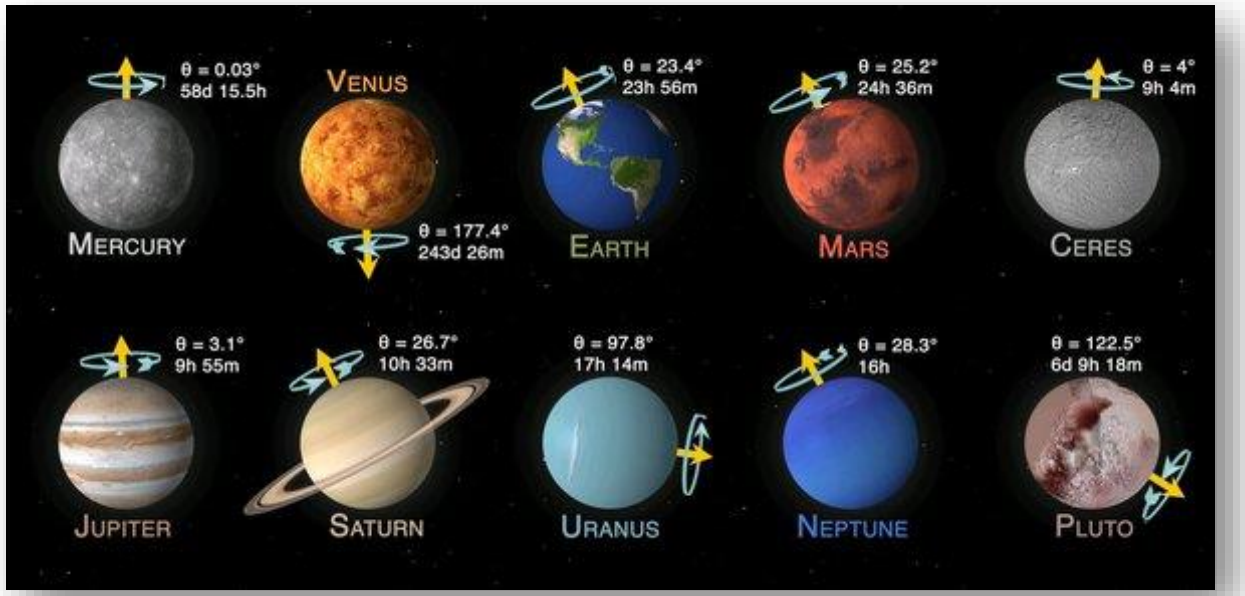

Q. Consider The Following Statements:

1. The Sun Is The Heart Spot Of The Solar System Which Is The Source Of Energy Of All Organism Of The Earth.

2. The Innermost Layer Of The Sun Is Called Corona.

Which Of The Above Statement(s) Is/Are Correct?

(A) 1 Only (B) 2 Only (C) Both 1 And 2 (D) Neither 1 Nor 2

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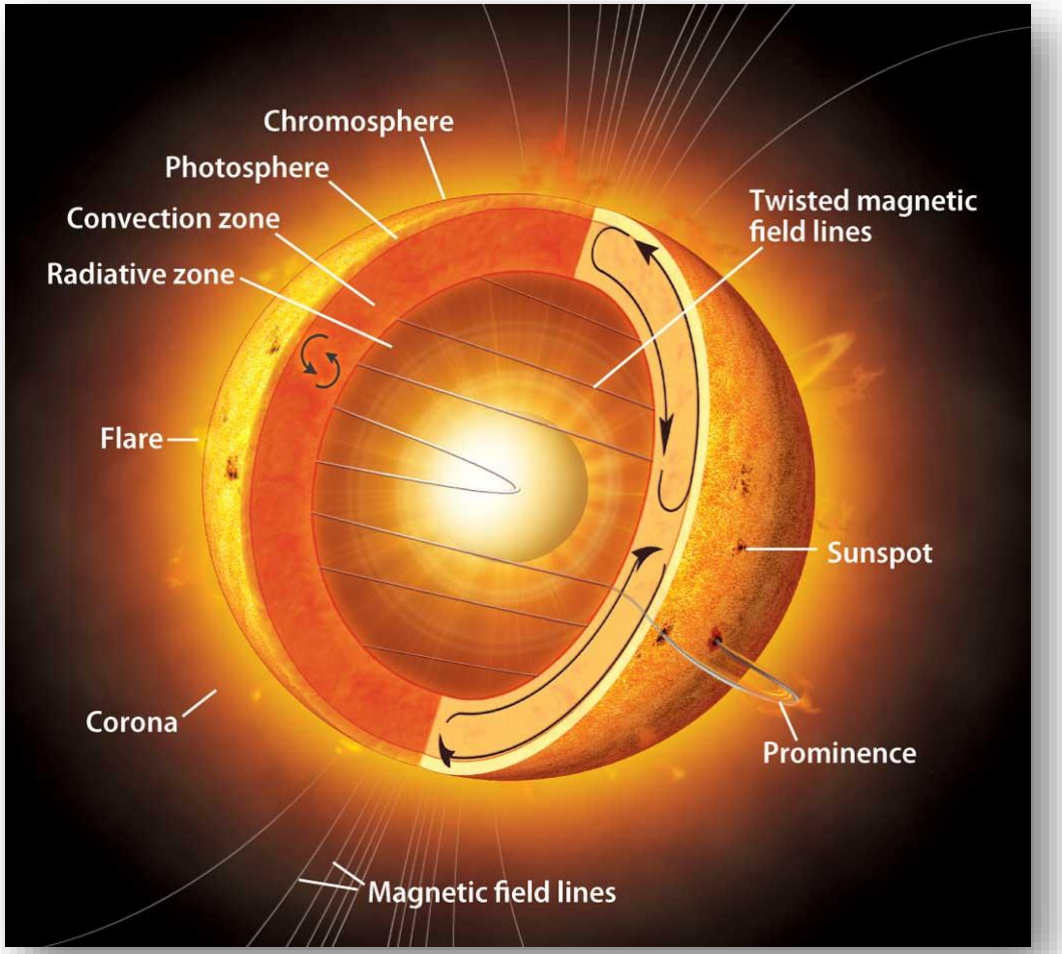
Explanation :

- The **Sun** Is The **Heart Spot** Of The **Solar System** Which Is The **Source Of Energy Of All Organisms On Earth.**
- The **Corona** Is The **Outermost Layer Of The Sun**, Starting At About **2100 KMs** Above The **Solar Surface (The Photosphere).**



Q. Lack Of Atmosphere Around The Moon Is Due To

(A) Low Escape Velocity Of Air Molecule And Low Gravitational Attraction

(B) High Escape Velocity Of Air Molecule And Low Gravitational Attraction

(C) Low Gravitational Attraction Only

(D) High Escape Velocity Of Air Molecule Only

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Q. The Brightness Of A Star Depends On Its

(A) Size And Temperature Only

(B) Size And Distance From The Earth

(C) Size, Temperature And Mass

(D) Size, Temperature And Distance From The Earth

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(A) Size And Temperature Only

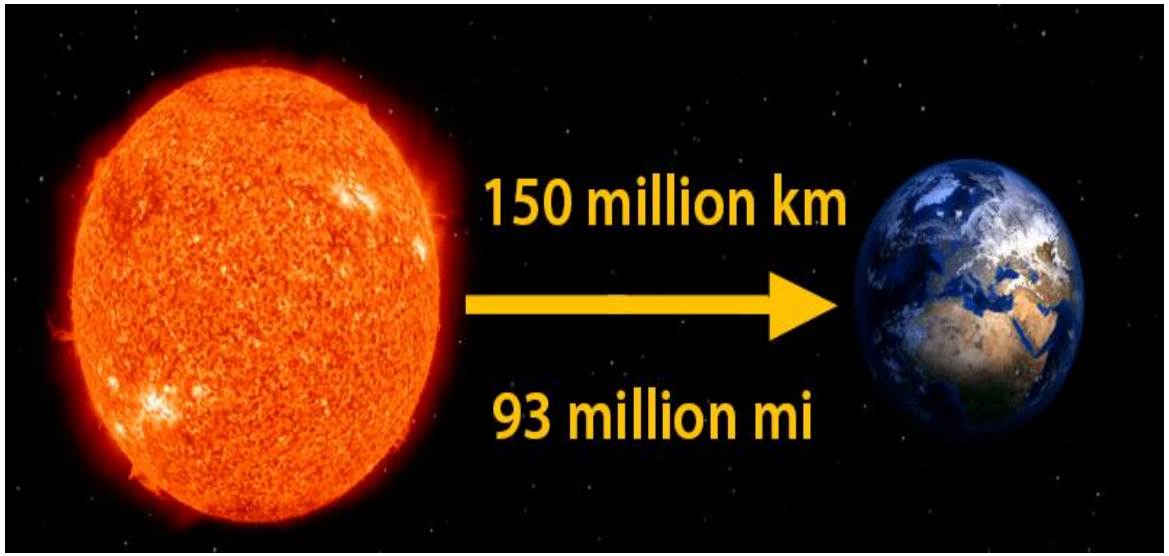
(B) Size And Distance From The Earth

(C) Size, Temperature And Mass

(D) Size, Temperature And Distance From The Earth

Explanation:

- The **Brightness Of A Star** Depends On Its **Composition i.e., Size And Temperature** (Energy Light Radiation E.G. X-ray, Etc.) And **How Far It Is From The Planet.**



Q. Supernova is

(a) Comet

(b) Asteroid

(c) Exploding Star

(d) Black Hole

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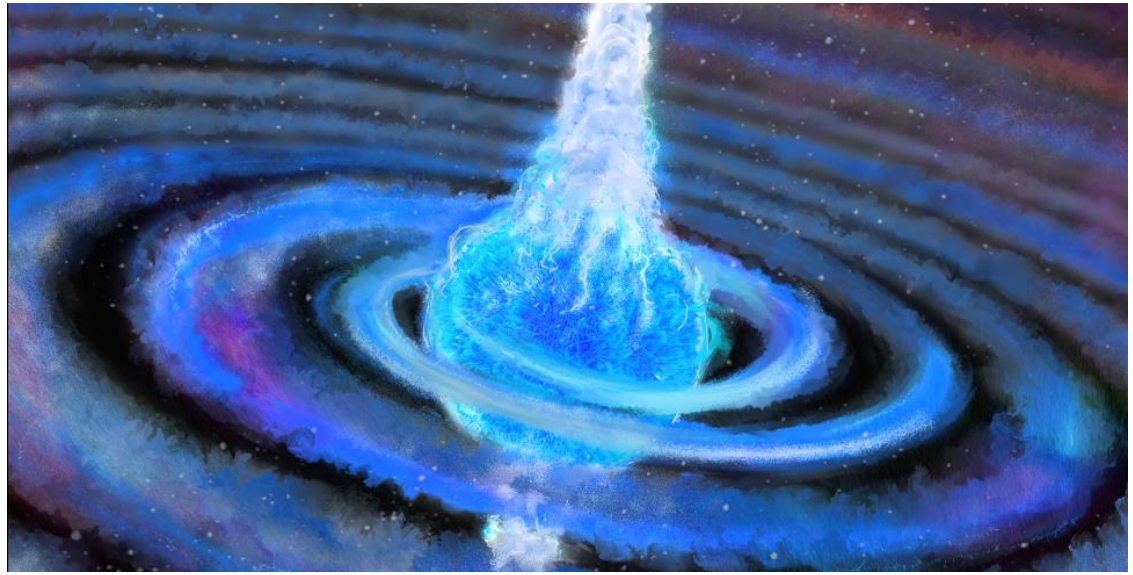

A supernova is the biggest explosion that humans have ever seen. Each blast is the extremely bright, super-powerful explosion of a star.

Q. As we go from equator to North Pole, the value of ‘g’(the acceleration due to gravity)

(a) Remains the same

(b) decreases

(c) Increases

(d) None of the above

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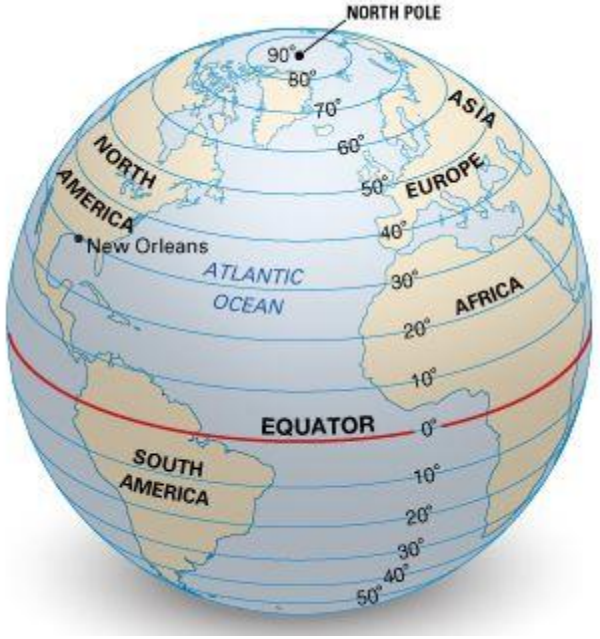

FACTS ABOUT LINES OF LATITUDE

- Are known as parallels.
- Run in an east-west direction.
- Measure distance north or south from the Equator.
- Are parallel to one another and never meet.
- Cross the prime meridian at right angles.
- Lie in planes that cross the Earth's axis at right angles.
- Get shorter toward the poles, with only the Equator, the longest, a great circle.

Q. Solar eclipse occurs when

(a) Earth comes between Sun and Moon

(b) Moon is at right angle of Earth

(c) Moon come between Sun and Earth

(d) Sun comes between Moon and Earth

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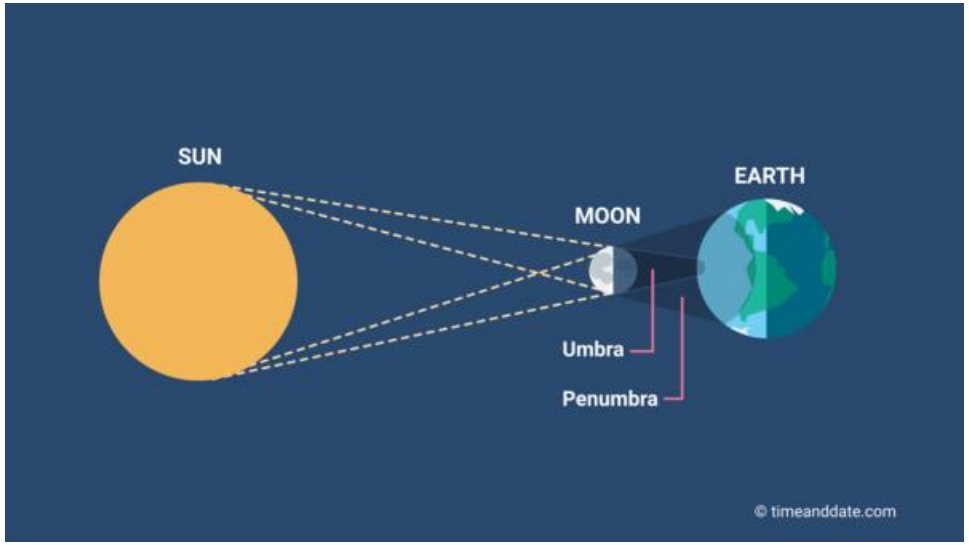

Q. If the plane of the earth's equator were not inclined to the plane of the earth's orbit,

(a) The year would be longer

(b) The winter would be longer

(c) There would be no change of seasons

(d) The summers would be warmer

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(b) The winter would be longer

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If the plane of the Earth's Equator were not inclined to the plane of its Orbit then, you could not have expected any change in seasons to taking place. The Northern and Southern part of Earth experience opposite seasons. If Equator is not inclined (which means tilting) then there will be no variation in the seasons.

Q. Which Among The Following Planets Is Also Known As The Veiled Planet?

A. Mars

B. Venus

C. Jupiter

D. Neptune

Q. Which Among The Following Planets Is Also Known As The Veiled Planet?

A. Mars

B. **Venus**

C. Jupiter

D. Neptune

Explanation: Venus **Is Surrounded By A Thick Cloud Cover, Known As The Veiled Planet. Venus** Is Referred To As The “Morning Star” And “Evening Star”. It Is The Hottest Planet In Our Solar System

Q. What Are ‘Planetesimals’ Associated With Theories Of Planet Formations?

(a) They Are Formed By the Cohesion Of Small Rounded Bodies Of Condensed Gas Cloud With The Matter Around The Core.

(b) They Are A Combined Object Formed Around The Comets And Meteorites.

(c) Large Number Of Dwarf Planets Form One Planetesimal.

(d) None Of These

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Q. The Earth While Rotating Around The Sun, Always Keeps Its Axis Pointed Towards Which One Of The Following?

(a) Venus

(b) The Moon

(c) The Pole Star

(d) The Saturn

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Q. Consider the following statements:

(1) The nearest large galaxy of Milky Way is the Andromeda galaxy.

(2) The Sun’s nearest known star is a red dwarf star called Proxima Centauri, at a distance of 4light years away.

Which of the above statement(s) is/are correct?

a) Both 1 and 2

b) Neither 1 nor 2

c) 2 only

d) 1 only

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Explanation

The nearest large galaxy of Milky Way is Andromeda galaxy. At a distance of about 2.5 million light-years, the Andromeda galaxy (also known as NGC 224 and M31) is the nearest galaxy to the Earth apart from smaller companion galaxies such as the Magellanic Clouds.

The Sun’s nearest known star is a red dwarf star called Proxima Centauri, at a distance of 4.3 light-years away.

Q. Which one of the following conditions is most relevant for the presence of life on Mars?

a) Occurrence of ice caps and frozen water

b) Occurrence of ozone

c) Thermal conditions

d) Atmospheric composition

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a) Occurrence of ice caps and frozen water

b) Occurrence of ozone

c) Thermal conditions

d) Atmospheric composition

Explanation : Mars is the only planet with similar day time temperatures and an atmosphere similar to earth. The most relevant condition for presence of life on Mars is occurrence of ice caps and frozen water.

Q. Which one of the following statements is correct with reference to our solar system?

a) The Sun contains 75 percent of the mass of the solar system.

b) The diameter of the sun is 190 times that of the Earth.

c) The predominant element in the composition of Earth is silicon.

d) The earth is the densest of all the planets in our solar system.

Q. Which one of the following statements is correct with reference to our solar system?

a) The Sun contains 75 percent of the mass of the solar system.**(99)**

b) The diameter of the sun is 190 times that of the Earth.**(109)**

c) The predominant element in the composition of Earth is silicon.

d) The earth is the densest of all the planets in our solar system.

The Earth is the densest of all the planets in our solar system. The density of the Earth is 5.513 g/cm3. This is an average of all of the material on the planet

Q. Which of the following is/are cited by the scientists as evidences for the continued expansion of universe?

(1) Detection of microwaves in space.

(2) Observation of redshift phenomenon in space.

(3) Movement of asteroids in space.

(4) Occurrence of supernova explosions in space.

Select the correct answer using the codes given below :

a) 1, 3 and 4

b) None of the above

c) 2 only

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a) 1, 3 and 4

b) None of the above

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Q. The tail of comet is directed away from the Sun, because

a) The radiation emitted by the Sun exerts a radial pressure on the comet throwing its tail away from the Sun

b) The tail of the Comet always exists in the same orientation

c) As the Comet rotates, the lighter mass of the Comet is attracted by some stars situated in the direction of its tail

d) As the Comet rotate around the Sun, the lighter mass of Comet is pushed away due to centrifugal force alone

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