

It took nearly 2000 years for ancient astronomers to solve this "mystery" of the night sky. What was it?

- (a) phases of the Moon
- (b) cause of the seasons
- (c) retrograde motion of the planets
- (d) annual motion of the Sun

Radio waves differ from visible light, in that they:

- (a) have a much longer wavelength
- (b) travel much faster
- (c) are not electromagnetic waves like visible light
- (d) travel much slower
- (e) have a much shorter wavelength

What force holds Jupiter in orbit around the Sun?

- (a) the strong force
- (b) the electric force
- (c) the weak force
- (d) the gravitational force
- (e) the magnetic force

The law of inertia (Newton's First Law) states that:

- (a) objects generally move in ellipses unless forces act on them
- (b) planets move in circles around the Sun
- (c) objects remain at rest or in motion with a constant speed unless a force acts on them
- (d) planets move in ellipses around the Sun
- (e) none of the above

A light-year (ly) is defined as:

- (a) the distance from the Earth to the Sun
- (b) the distance from the center of the Milky Way to the Sun
- (c) the distance from the Earth to the Moon
- (d) the distance light travels in 1 Earth year
- (e) a year at the north pole

Seasons are caused by:

- (a) the changing of Earth's distance from the Sun
- (b) the changing brightness of the Sun during the Sunspot cycle
- (c) the tilt of the Earth's rotation axis
- (d) the rotation of the Earth

Choose the list that correctly orders the Solar System objects from the center outward.

- (a) Earth, Mercury, Venus, Sun, Mars, Jupiter, Saturn, Uranus, Neptune
- (b) Mercury, Venus, Earth, Mars, Jupiter, Saturn, Sun, Neptune, Uranus
- (c) Sun, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune
- (d) Sun, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Neptune, Uranus

Which of the following did Galileo discover by observing the heavens with a telescope? Circle all that apply.

- (a) craters on the Moon
- (b) Moons of Jupiter
- (c) spots on the Sun
- (d) phases of Venus
- (e) Moons of Pluto
- (f) evidence for Saturn's rings
- (g) all of the above

Copernicus suggested searching for stellar parallax, but for hundreds of years astronomers failed to find any. Why?

- (a) angle-measuring instruments were too crude
- (b) no telescopic instruments were available
- (c) stars are much further away than they anticipated
- (d) nobody knew which stars were closer to Earth
- (e) all of the above

Which has the highest energy?

- (a) a photon of red light
- (b) a photon of ultraviolet light
- (c) a photon of x-ray light
- (d) a photon of microwave light
- (e) a photon of blue light

Which star is hotter?

- (a) Rigel (blue-white)
- (b) a red dwarf (only detectable at infrared wavelengths)
- (c) Betelgeuse (red)
- (d) the Sun (yellow)

This man made accurate and continuous observations of the positions of stars and planets.

- (a) Isaac Newton
- (b) Galileo Galilei
- (c) John Dalton
- (d) Tycho Brahe
- (e) Aristarchus

This moon is the largest moon in the solar system.

- (a) Io
- (b) Titan
- (c) Triton
- (d) Ganymede
- (e) Charon

What produces aurorae?

- (a) reflection of sunlight by clouds
- (b) chemical reactions in the atmosphere
- (c) collisions of high-energy particles with atmospheric gases
- (d) meteor showers
- (e) none of the above

Which of the following have been observed on the surface of Mars?

- (a) volcanic landforms
- (b) vast canyons
- (c) dry riverbeds
- (d) polar caps
- (e) all of the above

The “minimum safe distance” beyond which a moon could be torn apart is called the:

- (a) Chandrasekhar limit
- (b) Roche limit
- (c) Coriolis deflection
- (d) Schwarzschild radius

The Earth's interior is hot, in part, because:

- (a) it contains radioactive materials
- (b) it is rotating very fast
- (c) fusion is taking place in the core
- (d) chemical reactions between Oxygen & Hydrogen are occurring

The glow of a meteor is caused by:

- (a) reflected sunlight
- (b) radioactive decay of its elements
- (c) trapping of dust and gas by its magnetic field
- (d) heating as it moves through the atmosphere

“Differentiation” refers to:

- (a) the creation of Helium from Hydrogen
- (b) the break-up of Earth's crust into plates
- (c) the settling of heavy elements, like iron, to the center of an object
- (d) the creation of the inner planets
- (e) the processes that form the coma of a comet

Why do we think that there is an ocean of liquid water beneath the surface of the moon Europa?

- (a) there are gaps in the surface through which liquid water has been seen
- (b) the surface shows many impact craters
- (c) geysers have been seen erupting on the surface
- (d) the surface resembles arctic ice fields here on Earth

The Asteroid Belt lies between the orbits of

- (a) Uranus and Neptune
- (b) Mars and Jupiter
- (c) Jupiter and Saturn
- (d) Mercury and the Sun
- (e) Mars and Earth

What is particularly noteworthy about Earth?

- (a) it contains vast oceans of liquid water
- (b) it contains a staggering variety of advanced life
- (c) its crust is broken up into large plates that move
- (d) all of the above

One reason the moon has no atmosphere is because:

- (a) the Sun's gravity has stripped it all off
- (b) the Earth's gravity has stripped it all off
- (c) the moon's gravity is so strong that gas cannot escape from the surface rock
- (d) the moon's gravity is too weak to hold it

The flat shape of the solar system results from

- (a) a collision between the early solar system and an interstellar gas cloud
- (b) intense magnetic fields in the Milky Way galaxy
- (c) rotation of the original gas cloud from which it formed
- (d) both (a) and (b)
- (e) the statement is false. The solar system is not flattened.

More than 99% of the solar system's mass is contained within

- (a) the Earth
- (b) the Sun
- (c) the Jovian planets
- (d) the Asteroid Belt
- (e) the Kuiper Belt