

## Review Questions Topic 1: The Beginning

Which telescope took the famous Deep Field View of a small part of the nightsky in 2009?

Which star system is closest to that of our own?

How far (on average) is this star system from our sun?

How long would it take a spacecraft, traveling around 240,000kmh to reach this system?

What is “time dilation” and what are the two main variables that influence this?

How is the widespread perception of the Big Bang incorrect?

How long after the beginning of the Big Bang, did light first appear in the universe?

Explain how we know what the color of the original cosmic background radiation was

The cosmic background radiation is invisible today because it has stretched into what wavelengths?

To what temperature (in Kelvin) did the universe have to cool down to, for light to be able to travel through it?

How old is the universe?

A common misconception is that the first light in the universe was that of stars. When did stars first form?

Which four elements formed in the initial conditions of the Big Bang?

How do stars create energy?

What labels do scientists give to the THREE major pathways known to form elements?

Explain the Nebula Theory of Planet Formation

What conditions have to be met in order for rocky planetesimals to be turned into a true planet?

What is the currently held hypothesis on how the Moon formed?

What was Theia?

List all the true planets from closest to farthest from the sun

List all the dwarf planets from closest to farthest from the sun

What region of space (two names) are most dwarf planets located?

Which dwarf planet's location is unique in the solar system and where is it located?

What is the ecliptic plane and which planets and dwarf planets orbit the sun within this plane?

Explain why Pluto is no longer considered a planet today.

What was the favored hypothesis that sought to explain why gas giants are dominant in the outer solar system, whereas rocky planets dominate in the inner solar system (this is probably wrong).

Define asteroid

What is the largest asteroid in the solar system?

Why are asteroids not considered dwarf planets?

There are four regions of asteroids in the solar system, describe...

Why does the asteroid belt exist?

What is the largest impact crater preserved on Earth and where is it found?

Why are impact craters so rare on Earth's surface compared to that of other rocky planets (or the Moon?)?

Explain the difference between a meteoroid, meteor, and meteorite

What are the three major provenances of meteorites?

What conditions make it ideal to search for meteorites in Antarctica?

Define what a comet is, and how it differs from asteroids

Explain what causes the different tails of comets

How do the tails "behave" differently as the comet goes around the sun?

What is the difference between long and short-period comets? Where do each come from?

Explain how "meteor showers" form and why they occur with such regularity throughout the year?