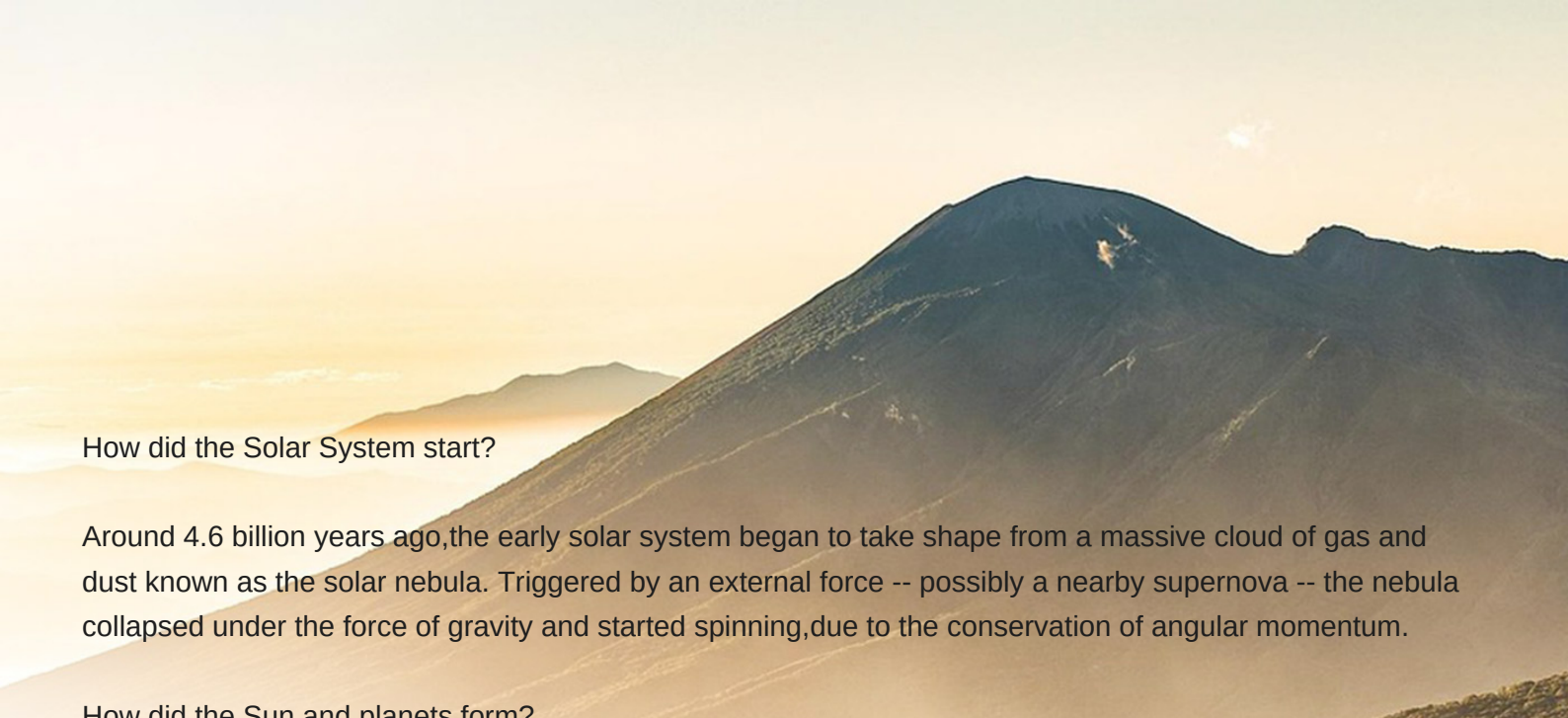

How did the Solar System start?

Around 4.6 billion years ago,the early solar system began to take shape from a massive cloud of gas and dust known as the solar nebula. Triggered by an external force -- possibly a nearby supernova -- the nebula collapsed under the force of gravity and started spinning,due to the conservation of angular momentum.

How did the Sun and planets form?

The Sun and the planets and all of the other stuff in our solar system all formed from a really big cloud of gas and dust in space. We call such a cloud a "nebula" and more than one of them we refer to as "nebulae." There are nebulae all around our galaxy,and it's from these nebulae that stars and planets form.

How has the Solar System evolved?

The Solar System has evolved considerably since its initial formation. Many moons have formed from circling discs of gas and dust around their parent planets,while other moons are thought to have formed independently and later to have been captured by their planets. Still others,such as Earth's Moon,may be the result of giant collisions.

Did the Solar System ever form a planet?

And like that,the solar system as we know it today was formed. There are still leftover remains of the early days though. Asteroids in the asteroid belt are the bits and pieces of the early solar system that could never quite form a planet. Way off in the outer reaches of the solar system are comets.

How did planetesimals form in the Solar System?

The inner Solar System,the region of the Solar System inside 4 AU,was too warm for volatile molecules like water and methane to condense,so the planetesimals that formed there could only form from compounds with high melting points,such as metals (like iron,nickel,and aluminium) and rocky silicates.

When did ring formation occur in the Solar System?

Although theoretical models indicated that the rings were likely to have formed early in the Solar System's history, [ 115 ] data from the Cassini-Huygens spacecraft suggests they formed relatively late. [ 116 ] Formation of the Solar System after gas and dust coalesced into a protoplanetary disk.

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED


? Our story starts about 4.6 billion years ago, with a wispy cloud of stellar dust. This cloud was part of a bigger cloud called a nebula. At some point, the cloud collapsed???possibly ???


A basic concept of the origin of the solar system. Scheme for the formation of the solar system, from the collapse of a molecular cloud fragment through the formation of the proto-Sun and protoplanetary disk (1,2), followed by its breakup into individual ring clumps of solid particles, eventually giving birth to planetesimals (3,4).


Artist's conception of a protoplanetary disk. There is evidence that the formation of the Solar System began about 4.6 billion years ago with the gravitational collapse of a small part of a giant molecular cloud. [1] Most of the collapsing ???

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED


Our solar system formed as the same time as our Sun as described in the nebular hypothesis. The nebular hypothesis is the idea that a spinning cloud of dust made of mostly light elements, called a nebula, flattened into a protoplanetary disk, and became a solar system consisting of a star with orbiting planets. The spinning nebula collected the

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Answer: Holds that the solar system formed from the gravitational collapse of a great cloud of gas and dust, successfully explains all the major features of our solar system.  Explain why? Answer: 1. Hydrogen and Helium gas (98%) 2. Hydrogen compounds (1.4%) 3. Rock (0.4%) 4. Metal (0.2%) Rock and Metal are in terrestrial planets Jovian

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED


? Scientists have multiple theories that explain how the solar system formed. The favoured theory proposes that the solar system formed from a solar nebula, where the Sun was born out of a concentration of kinetic energy and ???

Solar nebula, gaseous cloud from which, in the so-called nebular hypothesis of the origin of the solar system, the Sun and planets formed by condensation. Swedish philosopher Emanuel Swedenborg in 1734 proposed that the planets formed out of a nebular crust that had surrounded the Sun and then


When the solar system formed, rocks (and other dense, heavy materials in the dust cloud such as iron and uranium) tended to gather closer to the Sun, and these materials combined together to form

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED

In a similar manner, moons formed orbiting the gas giant planets. Comets condensed in the outer solar system, and many of them were thrown out to great distances by close gravitational encounters with the giant planets. After the Sun ignited, ???


The most widely accepted explanation of how the solar system formed is called the nebular hypothesis. According to this hypothesis, the Sun and the planets of our solar system formed about 4.6 billion years ago from the collapse of a giant cloud of gas and dust, called a nebula.


Any convincing theory of the origins of our solar system should be able to adequately explain the various properties therein. The primary conditions that must be explained include:  This suggests that the solar system arrived at its current form after collapsing from a molecular gas cloud some 4.568 billion years ago. In essence, a large

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED


Solar system - Origin, Planets, Formation: As the amount of data on the planets, moons, comets, and asteroids has grown, so too have the problems faced by astronomers in forming theories of the origin of the solar system. In the ancient world, theories of the origin of Earth and the objects seen in the sky were certainly much less constrained by fact. Indeed, a ???

OverviewGalactic interactionHistoryFormationSubsequent evolutionMoonsFutureChronology


The Earth formed over 4.6 billion years ago out of a mixture of dust and gas around the young sun. It grew larger thanks to countless collisions between dust particles, asteroids, and other growing planets, including one last giant impact ???

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED


The solar system was formed about 4.7 billion years ago. It probably started as a loose cloud of gas and dust. Scientists think that a force called gravity pulled parts of the cloud together into clumps. The largest clump was squeezed together so tightly that it got very hot. This clump eventually became the Sun.


Early Universe and Solar System: The Big Bang Theory and Formation of the Solar System. The universe we inhabit today is the result of a long and intricate evolutionary process, starting with the Big Bang.  The origin of Earth's water is a subject of ongoing scientific investigation, with multiple theories proposed to explain its presence

How did the Sun, planets and moons in the Solar System form? There is a surprising amount of debate and several strong and competing theories, but do scientists have an answer?  The terrestrial planets can form in a reasonable time, but the gaseous planets take far too long to form. The theory does not explain satellites or Bode's law and is

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED


Western scientists have developed several different theories to explain the origins of our solar system. Many different scientists from different subject areas have contributed to the present theory. Ideas about the origin of the solar system have changed based on new data that has been gathered. There are still many questions to be answered.

Explain the formation process of the terrestrial and giant planets; Describe the main events of the further evolution of the solar system; As we have seen, the comets, asteroids, and meteorites are surviving remnants from the processes that formed the solar system. The planets, moons, and the Sun, of course, also are the products of the

Even after this breakthrough, many years elapsed while scientists struggled with applications of Newton's laws to explain the apparent motions of planets, moons, comets, and asteroids.  This model for solar system formation was widely accepted for about 100 years. During this period, the apparent regularity of motions in the solar system

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED

Several theories about our Moon's formation vie for dominance, but almost all share that point in common: near the time of the solar system's formation, about 4.5 billion years ago, something ??? perhaps a single object the size of Mars, ???


The Solar System [d] is the gravitationally bound system of the Sun and the objects that orbit it. [11] It formed about 4.6 billion years ago when a dense region of a molecular cloud collapsed, forming the Sun and a protoplanetary disc.The Sun is a typical star that maintains a balanced equilibrium by the fusion of hydrogen into helium at its core, releasing this energy from its ???


In the next section, we describe the solar nebular theory for how our solar system formed, and explain how each of the constraints described above are successfully explained by this theory. The Solar Nebula Model. The cloud of gas and dust that collapsed to became our solar system is called the solar nebula. Our solar system was formed from

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED

The solar system as we know it began life as a vast, swirling cloud of gas and dust, twisting through the universe without direction or form. About 4.6 billion years ago, this gigantic cloud was transformed into our Sun. The processes that followed gave rise to the solar system, complete with eight planets, 181 moons, and countless asteroids.


The Earth formed over 4.6 billion years ago out of a mixture of dust and gas around the young sun. It grew larger thanks to countless collisions between dust particles, asteroids, and other growing planets, including one last giant impact that threw enough rock, gas, and dust into space to form the moon.


The Solar Nebula. All the foregoing constraints are consistent with the general idea, introduced in Other Worlds: An Introduction to the Solar System, that the solar system formed 4.5 billion years ago out of a rotating cloud of vapor and dust???which we call the solar nebula???with an initial composition similar to that of the Sun today.

# EXPLAIN HOW THE SOLAR SYSTEM WAS FORMED


Several theories about our Moon's formation vie for dominance, but almost all share that point in common: near the time of the solar system's formation, about 4.5 billion years ago, something ??? perhaps a single object the size of Mars, perhaps a series of objects ??? crashed into the young Earth and flung enough molten and vaporized debris into space to create the Moon.

Around 4.6 billion years ago, the early solar system began to take shape from a massive cloud of gas and dust known as the solar nebula. Triggered by an external force ??? possibly a nearby supernova ??? the nebula collapsed under the force of gravity and started spinning, due to the ???