

## Details About the Birth of a Planet

If Galileo were alive today he would be astounded at the advancements that have occurred with the telescope. The very thought of telescopes orbiting high above the Earth, photographing and studying galaxies, solar system, planets and other celestial phenomenon billions of light-years away would have amazed him. While he had a conflict with the religion of his day, he did not have a conflict with the Bible. Galileo defended *heliocentrism*, and claimed it was not contrary to Scripture passages. He took Augustine's position on Scripture: *Do not take every passage literally*. He realized the writers of the Scriptures wrote from the perspective of the terrestrial world and not from the heavens above.

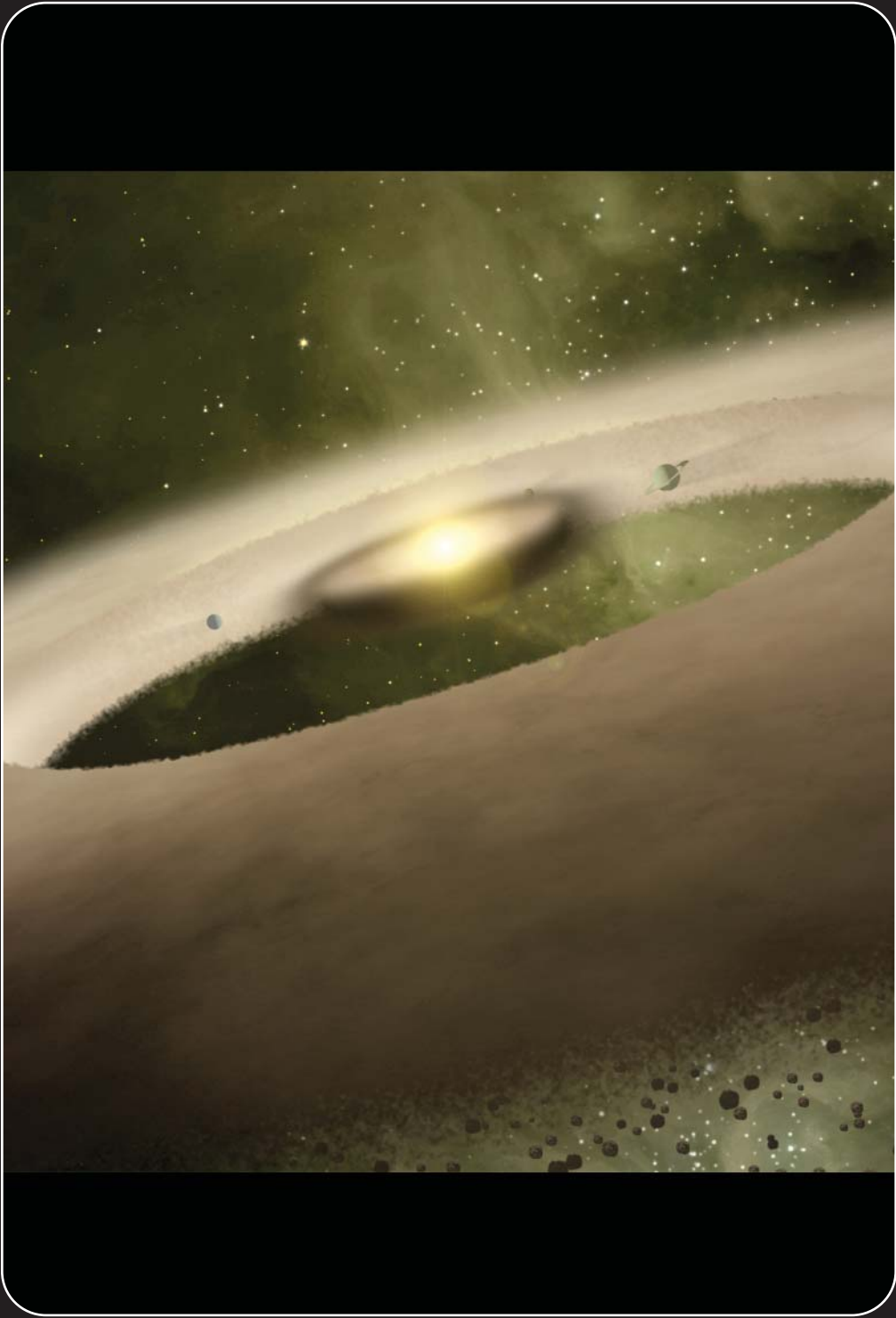
When we look at the information pouring in from Hubble, Spitzer, and other telescopes, it tells us how planets are formed in darkness from dust lanes left by their parent stars. It is as if these works were recorded for us so that we can now view their incredible births. We can rewind and play back in slow motion how a planet is born, details left out in the Genesis account that Galileo struggled with. Perhaps we can now answer the question "How did we come to be?" It is now obvious that the Earth was billions of years in the making and our knowledge confirms what Galileo understood: Not all scriptural passages ought to be taken literally.

With the information from Hubble and Spitzer, it appears that light from the Sun appeared gradually upon the earth, just as the Genesis account suggests. Light would have been scarce during the many thousands of years it took for the dust lanes between the Earth and the Sun to clear away, perhaps as the planets Venus and Mercury, like vacuum cleaners, sucked up the remaining dust and debris between the Earth and the Sun's bright rays.

Each year, as man peers through this once Secret Doorway, more knowledge is unlocked about our past, especially as we probe deeper and deeper into these worlds once hidden through time and space. Until this doorway was discovered, our knowledge was basically limited to the things we studied on Earth. With this new technology, the knowledge we previously gathered on Earth will no doubt pale in comparison to the knowledge waiting for us beyond this doorway.

Think of it in these terms: if you consider that the Earth is like a speck of dust in the universe that will give you a perspective of how small we really are compared to the rest of the grand cosmos. This demonstrates how little knowledge we have discovered compared to what we are yet to discover on the other side of this incredible doorway. All the knowledge we have obtained to this point in the stream of time, has only led us to a doorway of unending knowledge beyond our ability to fully comprehend for now. Our bold quest for knowledge has only just begun!

The exciting drama unfolds one frame at a time on the following pages as Hubble and Spitzer probe deep into the intriguing darkness of space to reveal just how the planets, like the Earth, are born in dense darkness and are gradually brought into the spotlight as the dense planet-forming dust and debris are finally polished away. This drama exposes many of the details man has pondered since the beginning of time, of just how our life-sustaining planet was formed.



## A Grand Potter at Work

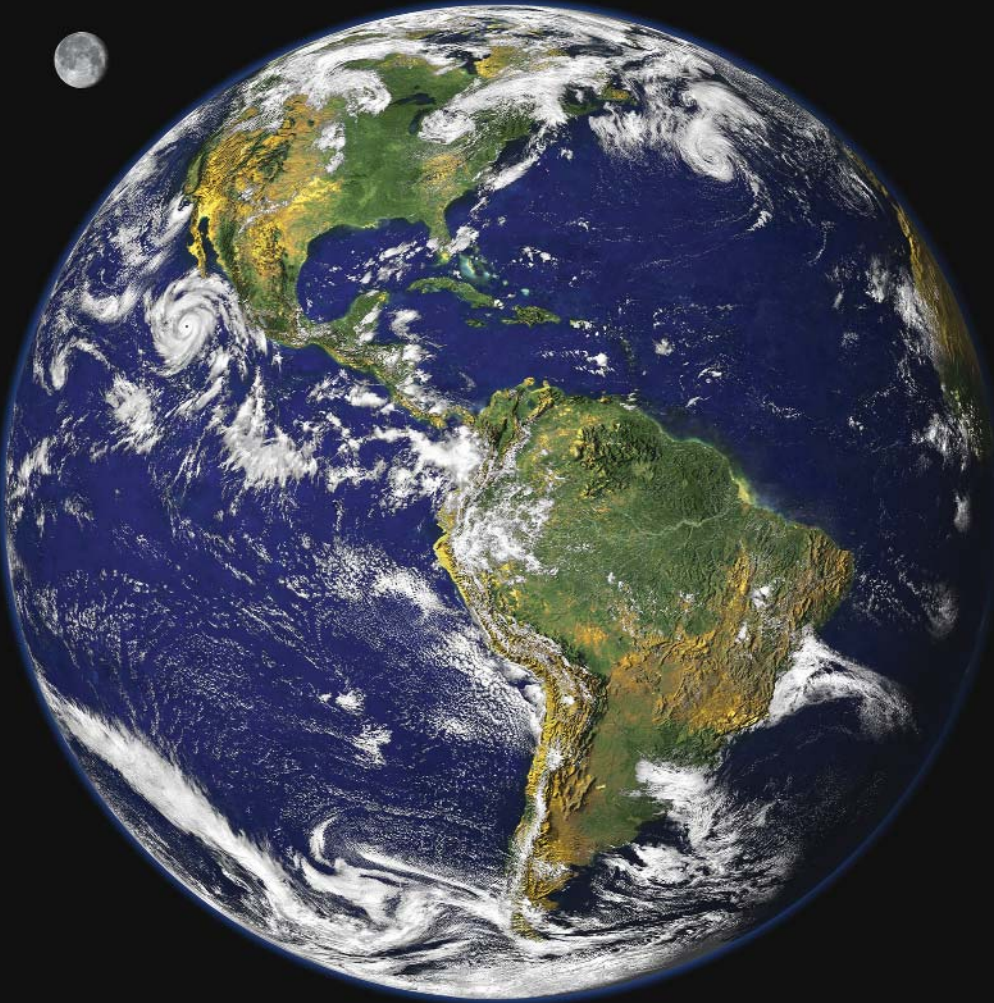
Like a highly skilled potter using just the right blend of clay, Earth's Designer long ago began to form the third planet from our Sun, as if it were spinning on a Grand Potter's wheel to create a very special work of art for you and me. No one really knows exactly when the foundation for Earth was laid or how long it must have taken to bring to completion. The most recent consensus from scientists suggests the Earth is approximately four-and-a-half billion years old. All great works of art require considerable amounts of time, care, and craftsmanship, and the larger the work, the greater the time required.

Imagine if you can, looking back in time. You are peering into the universe through a giant window, scrutinizing our solar system and observing the formation of our Sun and its planets. What you witness would no doubt take your breath away. You would be in awe of the magnitude and precision of it all as each planet spun in its own orbit around the Sun, each one taking on its own personality like a newborn child, sucking up cosmic dust as it grew from an infant to a full-grown planet.

Perhaps the planet-forming scene you witness would not be unlike the scene that is now being witnessed 450 light-years away in a solar system called UX Tau A. This stellar prodigy has been spotted by NASA's Spitzer Space Telescope. A news release appeared on November 28, 2007, under the heading **Youthful Star Sprouts Planets Early**.

*Astronomers suspect this system's central Sun-like star, which is just one million years old, may already be surrounded by young planets. Scientists hope the finding will provide insight into when planets began to form in our own solar system. Such dusty disks are where planets are thought to be born. Dust grains clump together like snowballs to form larger rocks, and then the bigger rocks collide to form the cores of planets. When rocks revolve around their central star, they act like cosmic vacuum cleaners, picking up all the gas and dust in their path and creating gaps. Spitzer saw a gap in UX Tau A's disc, which in our solar system, this gap would occupy the space between Mercury and Pluto.*

Could it be that these dusty planet-forming scenes observed by Spitzer shed some light about the Earth in its early days? How, in the beginning, there was darkness upon the surface of the Earth and that no light would be visible upon it until much later? Apparently, in the beginning, the Sun's light might have been blocked, like what we see in this scene? And then the dust and cosmic debris gradually cleared away, allowing the Sun's light to appear gradually upon the Earth. Could it be that we now have some of the intriguing details to this mystery about this special planet's birth?



## Our Little Ball of Cosmic Dust

It is a fact that an image is a mere reflection of the reality. As stated earlier, everything man has constructed, conceived, or devised has been a result of his imagination. Man's wonderful creative imagination is a **mere reflection** of the creative imagination that went into the design of the universe and a testament to the Supreme Mind responsible for it all.

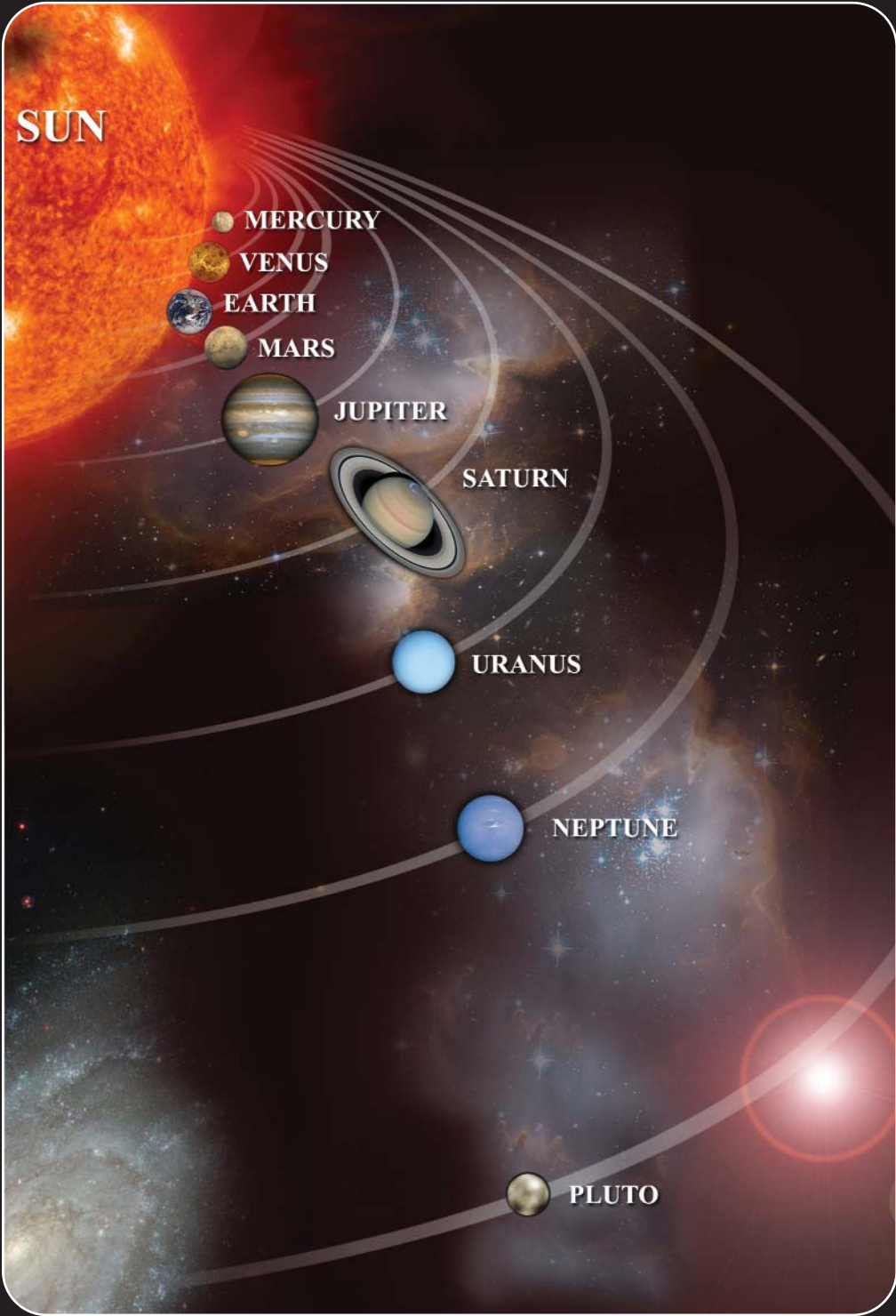
One cannot look at this photo of Earth from space, as well as all the other photos captured by Hubble, Spitzer, and other telescopes in recent years, and not wonder about our beginning and our incredible place in this universe. We, *alone in the universe*, have been gifted an imagination with the likeness of a Superior Architect Who has an Imagination Supreme. Upon examining the evidence now coming forth, it becomes clear that He surely is responsible for our very existence and has given us this special Jewel in the Universe as our home to take care of.

Consider this for a moment: everything you see in this photo represents the entire existence of man. This is man's home. It was here, through Supreme Imagination, that man was formed from the ground and given the breath of life. Man, in likeness, has used his own imagination to create and conceive every invention, architectural structure, work of art, and every other material thing devised. This includes Hubble and Spitzer to capture these beautiful photos. It was all created, ironically, using the materials from the same ground that we were formed from. This Earth, in essence, is our ball of cosmic clay. We do not own the clay and we have created nothing that did not already exist here upon the Earth. We, ourselves, are merely living cosmic clay sculptures who have been permitted to take materials from the ground and sculpt them into whatever useful nonliving devices our imaginations can conceive. As male and female, we have also been allowed to carry the gift of life and transfer the seeds of life to others. But this gift is not of our own making.

As we explore the Heavens above, we are learning what these bewildering worlds beyond our home have to offer to amaze and intrigue us. At some point, will we, like Alice in Wonderland, have the opportunity to explore the far reaches of this ever-expanding universe? The prospect of exploring these strange worlds is truly exciting.

Only time will tell if man was meant to go beyond this incredible doorway into the future. Who would have thought 400 years ago that man's imagination would lead him to a Secret Doorway on the threshold of time and space to a world beyond anything he could have dreamed of? As man peers back in time with flying space telescopes, developed by use of his imagination, he has discovered that there was someone with an imagination far superior to his own Who existed long before he arrived onto the scene, who billions of years ago laid the foundations of this incredible universe we have just discovered.

Have you ever pondered this question: who conceived this curious thing we call imagination? It appears this someone has proven power, dynamic energy, and imagination beyond the comprehension of the human mind. What will we discover through our imaginations as our knowledge grows a million years from now, or billions of years from now, as we devise new ways to explore and discover the universe?



## In the Stream of Time

Where are we? In the stream of time, that is. In man's best estimations, the universe as we know it from our vantage point is around 13.7 billion years old. Our Milky Way galaxy is thought to be 13.2 billion years old. Our Sun is considered to be 4.6 billion years old. The Earth began to form shortly thereafter, about 4.54 billion years ago.

According to the big bang theory, this Grand Universe we have just begun to discover through the use of our collective imaginations, was conceived in 1 Plank unit of time from some sort of subatomic seed compacted with dynamic energy of an unknown nature and incomprehensible to man. If the theory holds true, it is at that moment of conception, or germination, or whatever term you want to use short of miracle, a Grand Universe was born which has blossomed forth, stars without number, collecting into massive black holes to become the central powerhouse for galaxies that, in turn, have given birth to billions of other stars, who, in their turn, have birthed planets and other cosmic phenomenon.

The all-inclusive *incomparable energy* that powers all the heavenly bodies in the Universe is a power beyond man's ability to understand. The only term in our human vocabulary that can come close to describing it is *Supernatural*.

Regardless of one's personal beliefs or religious convictions, this *scientific fact* gives us reason to consider the implications of Isaiah's ancient statement: "*He brings them out like an army, one after another, calling each by its name. Because of his great power and incomparable strength, not a single one is missing.*"

The outgrowth of matter from the early universe led to the formation of our solar system, where we now find ourselves some 13.7 billion years later. As caretakers of a planet 4.54 billion years old, with a recorded human history of just over 5,500 years, we have just begun our journey. We are but babes in the grand stream of time. Where do we go from here?

We are physical beings in a universe perfectly suited for us; but we struggle to know why we are here. In many ways, we are being tested on our ability to respect and manage this gift we call Earth. Only through using our collective imaginations—for good all the time and for the benefit of all—can we go forward and finish the work we have to do on Earth, before moving on.

There exists no physical thing that does not serve some purpose. The Designer of the planets in our solar system and across the universe surely had a Grand Purpose in mind for them and us when we were placed right in the middle of it all.

Now, to the question: Where are we in the stream of time? Right where we are supposed to be, at the beginning of a wonderful journey, a journey where our imaginations will likely compel us to go forward by some future means into an amazing universe, *made just for us*, in our quest for knowledge and a sense of purpose!



## Veil Nebula

NASA's Hubble Space Telescope photographed three magnificent sections of the Veil Nebula—the shattered remains of a supernova that exploded thousands of years ago. This series of images provides beautifully detailed views of the delicate wispy structure resulting from this cosmic explosion. The Veil Nebula is one of the most spectacular supernova remnants. The entire shell spans three degrees on the sky, about six full moons.

The Veil Nebula is a prototypical middle-aged supernova remnant, and is an ideal laboratory for studying the physics of supernova remnants because of its unobscured location in our galaxy, its relative closeness, and its large size. Also known as the Cygnus Loop, the Veil Nebula is located in the constellation of Cygnus, the Swan. It is 1,500 light-years away from Earth.

Stars in our galaxy, and others, are born and then die. How long a star lives depends on how massive it is. The more massive the star, the shorter its life. When a star significantly larger than our Sun runs out of fuel, it collapses and blows itself apart in a catastrophic supernova explosion. A supernova releases so much light that it can outshine a whole galaxy of stars put together. The exploding star sweeps out a huge bubble in its surroundings, fringed with actual stellar debris along with material swept up by the blast wave. This glowing, brightly colored shell of gas forms a nebula that astronomers call a “supernova remnant.” Such a remnant can remain visible long after the initial explosion fades away. Scientists estimate that the Veil supernova explosion occurred some 5,000 to 10,000 years ago.

The small regions captured in these Hubble images provide stunning close-ups of the Veil. Fascinating smoke-like wisps of gas are all that remain visible of what was once a star in our Milky Way galaxy. The intertwined rope-like filaments of gas in the Veil Nebula result from the enormous amounts of energy released as the fast-moving debris from the explosion plows into its surroundings and creates shock fronts. These shocks, driven by debris moving at 600,000 kilometers per hour, heat the gas to millions of degrees. It is the subsequent cooling of this material that produces the brilliant glowing colors.

Although only about one star per century in our galaxy will end its life in this spectacular way, these explosions are responsible for making all chemical elements heavier than iron, as well as being the main producers of oxygen, in the universe. Elements such as copper, mercury, gold, and lead are forged in these violent events. The expanding shells of supernova remnants mix with other clouds in the Milky Way and become the raw material for new generations of stars and planets. The chemical elements that constitute Earth, and indeed those of which we ourselves are made, were formed deep inside ancient stars and distributed by supernova explosions in nebulae like the one we see here.

## Imagination of Man

*Romeo and Juliet* ~ William Shakespeare (1591-1595)