HUBBLE REVEALS CREATION

By An Awe-Inspiring Power

PAUL HUTCHINS

Imagination
Publishing

CONTENTS

ACT V: A GRAND ARCHITECT REVEALED AND COMPLETED
A Special Star is Born

POWER BEYOND COMPREHENSION

CREATIVE IMAGINATION

THE GALLERY OF A FORMERLY UNKNOWN
Artist With Supreme Imagination

INTRODUCTION

In what is sure to inspire your imagination, *Hubble Reveals Creation*, meticulously details how the world famous Hubble telescope is now revealing that an Intelligent Designer, with Incomprehensible Power and Supreme Imagination is behind the Creation of the Universe.

While it quotes from the book of Geneses and Isaiah, Hubble Reveals Creation is not about religion; rather it is a common sense look at what Man's Insatiable Quest to the Stars is revealing about an Awe-Inspiring act of Creation. It reveals how the discoveries by the Hubble and Spitzer telescopes confirm that the Geneses account of creation is scientifically accurate.

It uncovers a Divine Invitation extended to man twenty-seven-hundred years ago to investigate the stars. This invitation challenged mankind to find anyone equal in power to the one who created all the stars.

It reveals how man, with the invention of the telescope in 1609 embarked upon an insatiable quest to the stars as if he were being drawn to them by an invisible, magnetic force, and is now spending tens of billions of dollars, and hundreds of millions of man hours each year, in response to this intriguing invitation.

It details how this quest culminated with the invention of the Hubble Space Telescope that is now filming the Greatest Drama in Human History; the Creation of an Awe-Inspiring Universe, as it reveals an Incomprehensible Power without equal!

In cinematic fashion and simple layman terms, Hutchins presents a real-life drama, one page at a time with each page telling its own awe-inspiring story of how the universe was formed. You will be inspired by over one hundred, full color images of beautiful Nebula, Stars, and Majestic Galaxies. You will get a glimpse into the incomprehensible power behind the universe.

The author's intent is to inspire people who possess a logical reasoning mind that recognizes nothing comes into existence devoid of imagination. To reaffirm their convictions, leaving little room for doubt; that the Universe was brought to us through Intelligent Design and Supreme Imagination by a power incomprehensible to the human mind! The intriguing and compelling story He presents may just change the way you look at our universe, and man's future role in it.

A DIVINE INVITATION

"To whom will you compare me? Who is my equal?" asks the Holy One. Look up into the heavens. Who created all the stars? 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.

—Isaiah 40:25, 26

When the ancient prophet Isaiah transcribed the words to this Divine Invitation, he could not have imagined the elevated meaning those words would acquire as a result of man's expanded imagination later on in history.

On the following pages is a real-life drama being played out like a silent motion picture—one frame at a time. Each frame tells its own awe-inspiring story. Collectively, they reveal the Grandest Story ever told: the Creation of the Universe in detail never before revealed.

What I present to you in this book is merely what I perceive, through my own imagination, as to how this Grand Drama came into view through man's use of imagination. It began with the invention of the telescope that turned into an insatiable quest to the stars. Also, I am demonstrating how imagination plays an intriguing role in the creation of all things, including our incredible universe. You and I find ourselves at the center of this story, as if we had a front row seat in front of a super-IMAX screen, taking in all the drama being presented.

As we each enter the theater and take our seats, we have a choice to make. Either we recognize that the unfolding drama is being brought to us by a Superior Architect with Supreme Imagination, power, and dynamic energy far beyond our comprehension. Or decide it came about randomly on its

own, devoid of intelligent design and imagination. Regardless of your choice, the invitation to behold wonderful things no human eyes have ever seen has been graciously extended to each of us.

To understand how this drama came to be and is now being played out, we first need to look at this curious faculty we call imagination and what role it has played to bring this drama into view for the entire world to see. We must come to understand how the use of Supreme Imagination can be the only logical explanation for the Grandest Drama ever beheld by human eyes.

I invite you to sit back and enjoy an awe-inspiring view as you explore the incredible universe, expand your imagination, and ponder the limitless possibilities for our future as you respond to that ancient invitation to: *"Look up into the heavens. Who created all the stars?"*

Who conceived this curious thing;
we call Imagination?

ACT I

IMAGINATION

The Driving Force Behind all Creative Works

"Imagination is everything. It is the preview of life's coming attractions." Albert Einstein (1879-1955)

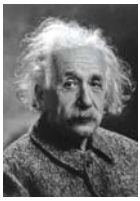
All things created, from the smallest to the largest, are first conceived in the mind and then driven by the force of imagination to make them real. Everything achieved by man and considered great by many was driven by Imagination—the dynamic force that shapes our world.


Imagination is the force that drove the artist to first create in his mind and then bring to reality works of art like the *Mona Lisa* (Leonardo da Vinci) and *Water Lilies* (Claude Monet).


It is the driving force that impelled the architect to first create in his mind and then bring to reality great works like the Great Pyramid of Cheops (Egyptian Pharaoh Khufu of the Fourth Dynasty) and the Eiffel Tower (Alexandre Gustave Eiffel).


It is the force that drove the inventor to first conceive in his mind and then bring to reality the dream of human flight (Brothers Orville and Wilbur Wright) and the phonograph (Thomas Edison).


It is the force that drove the musician to first compose in his mind and then bring to life—*The Brandenburg Concertos* (Johann Sebastian Bach) and *Pastoral* (Ludwig van Beethoven).

It is the force that drove the scientist to discover the law of gravity—(Isaac Newton) and the Law of Relativity (Albert Einstein).


It is the force that drove the writer/poet to first create in his mind and then bring to life—*Romeo and Juliet* and *Hamlet* (William Shakespeare) and "I'm Nobody! Who are you?" (Emily Dickinson).

These works, along with all others, were inspired by creative imagination and, in one way or another, have shaped our world. The entire life experience of man has revealed that nothing we have designed, invented, conceived, or brought into existence, came about void of imagination. This fact brings us to this very important question: If man's imagination is the driving force that shapes our world, then whose imagination is the driving force that shaped the universe?

"The true sign of intelligence is not knowledge but imagination."

Albert Einstein

ACT II

IMAGINATION

The Driving Force That Shapes Our World

Imagination
The Driving Force That Shapes Our World

A WORLD WITHOUT IMAGINATION would be no world at all, sad to say. In fact, our world would be a dull and boring place if it were not for this intriguing gift we all possess.

Imagination shapes our world. From the artist to the inventor, each is driven by a small inner voice that inspires them to do the impossible, the unheard of. They are driven to reach beyond their limits to discover and devise all things new. Imagination has given us variety, excitement, and the anticipation of what may materialize in the future.

From the earliest days of our existence, humans have taken raw materials from the Earth and, through imagination, formed and shaped them from basic materials into useful devices, just as a potter or sculptor takes a lump of clay and, through his or her imagination, creates something beautiful and useful.

In the beginning, man ground stones and shaped them into tools. In time, he learned how to melt copper and steel ore and to forge them into axes for cutting trees and tools to cultivate the ground. These advances provided shelter, simple houses, and food.

With each passing generation, more raw materials were taken from the earth and turned into many useful devices. Through the imagination of following generations, those devices were improved upon and eventually replaced. With each generation, the human imagination grew stronger and became more creative.

Every year, we see thousands of new products and ideas brought into the marketplace by highly imaginative men and women. It is more and more difficult to keep up with all the new things coming at us. The same can be said about the arts, architecture, science, astronomy, literature, film, and every other field of endeavor known to man. It seems that man has been blessed with an unlimited imagination.

If you were to compare human knowledge and imagination today to that of those who lived four thousand years ago, you would find that there is no comparison. The human mind has had the benefit of a much greater reservoir of knowledge and experience to draw upon, gathered over the millennia. Knowledge is the fuel that feeds the human imagination and inspires it to create new things.

It is clear that ***when a thinking person imagines big, what they imagined often***

takes on a life of its own. One good example of this was the life of the Italian physicist Galileo, who lived from 1564 to 1642. Through his imagination and experimentation he improved upon the telescope. Drawing upon the knowledge of others in the same field of interest, he pointed his new telescope to the heavens and began to study the night sky in a way that no one before him ever had.

In his observations, he discovered the four largest moons of Jupiter. Also, through his studies and observations, he began to realize, like Nicolaus Copernicus and Johannes Kepler, that the Earth moved around the Sun, and not the other way around, as commonly thought. He recognized that there was a much greater body of stars than previously believed. His curiosity led to a new way of looking at the world and the heavens above. Nevertheless, his imagination and abilities were limited due to the paucity of scientific knowledge and tools available at the time. However, he lit the fuse and sparked a race to the stars that resulted four centuries later in the discovery of a Universe even more Awe-Inspiring than previously celebrated.

Expanded Imagination

In the generations after Galileo, many improvements were made to the telescope; and in the 1920s, man's imagination began to kick into high gear. Still, most scientists considered a space telescope pure science fiction. However, some were seriously exploring the idea. Rocket pioneer Hermann Oberth, for example, speculated about orbiting telescopes in his writings, and scientist Robert Goddard began testing his newly invented liquid-fuel rockets.

As these men were pushing the technological envelope, Edwin Hubble was unveiling new heavenly horizons. Before Hubble came along, astronomers had a restricted view of the universe, believing that the only galaxy in the heavens was our Milky Way. But Hubble used the latest technology, a powerful one-hundred-inch telescope, and made some startling discoveries that changed our concept of the cosmos.

First, he observed that galaxies existed beyond the Milky Way. Then he found that those galaxies were flying away from each other, an observation that helped him determine that the universe is expanding.

It takes powerful telescopes to study the uncharted territories of the vast cosmos. But it became increasingly clear to astronomers that the Earth's atmosphere distorted starlight, which made it difficult to obtain razor-sharp views of celestial objects.

The idea of placing a telescope in space, above Earth's turbulent air, had been imagined and kicked around for several years. Scientists pondered how to transport a telescope into space. The rocket technology pioneered by Oberth and

Goddard and revolutionized by the Germans during World War II became the means of transportation.

After scientists figured out the means, they focused on coming up with the money to develop and build a space telescope. The newly established National Aeronautics and Space Administration (NASA), created in 1958, and well-known American astronomers such as Lyman Spitzer, began championing the cause, trying to convince the United States Congress that such a project was useful. In 1977, Congress finally agreed to allocate the money; but it took a decade of research, planning, and testing before NASA successfully launched its first space observatory. Two decades passed before NASA launched the Hubble space telescope on April 24, 1990. This initiative has expanded our heavenly vistas far more than its namesake ever dreamed.

Like a young child trying to climb out of its crib, man is determined, now more than ever, to see what's on the outside. His curiosity and imagination are driving him to do what seemed to former generations as impossible. In his mind the railing is not too high, he will figure it out!

Imagination is proving to be man's way out, and a doorway to a world beyond imagination. The first discovery of that doorway was made when the telescope was invented and improved upon, through the use of imagination early in our history. Since Galileo, man has continued to improve upon the telescope and taken additional steps toward understanding the heavens above, as if they were calling to him. With Hubble, Spitzer, and other modern-day telescopes, it is as if we are ascending a stairway right up into the heavens for a front row view of a Grand Drama of Creation in progress. There is no doubt that imagination will continue to play a key role in the development of new ways to explore the awe-inspiring Heavenly night sky, and take further thrilling steps that will bring us closer to understanding our incredible universe.

As one looks at the photos and the body of evidence gathered since Hubble's launch, it becomes clear that we have ascended ever closer to a world that is beyond human imagination. It is as if one were climbing a long winding staircase, twisting and turning past galaxies and stars too numerous to count. There are natural phenomena too bizarre for us to fully understand as we make our way back to the beginning of the universe. Like a wide-eyed child, we can hardly wait to see what is around the corner to excite and enlighten us!

When we review how telescope technology has progressed, we find that the road at times has been bumpy but man's burning desire to learn ever more of our universe has never dampened in the slightest way. With every obstacle he encountered along the way man tapped deeper into his imagination to develop a solution which always inspired new technology that has taken him closer to the ultimate discovery of our incredible universe and an Awe-Inspiring Power

ACT III

MAN'S INSATIABLE QUEST TO THE STARS

Eyes To See

Eyes to See an Awe-Inspiring Power

FOR MILLENNIA MAN HAS GAZED UP AT THE NIGHT SKY WITH HIS NAKED EYES. He has dreamed of what must lie beyond the darkness amongst the glimmering stars, as he long harbored a burning desire to understand their source. Looking back on the history of the telescope, each of us must recognize we have been given a gift of sight beyond anything Galileo could have imagined. This is all a direct result of man's imagination. We now see images of the universe through sophisticated telescopes that are so jaw-dropping awe-inspiring they are just short of inspired visions. What Isaiah must have seen and written about two millennia earlier was no doubt an inspired vision of the reality we now behold through the eye of the Hubble telescope.

The telescope had a very humble beginning. It evolved from the spyglass used by sailors to spy on distant ships. This in turn had evolved from the invention of eyeglasses. Hans Lippershey, in the Netherlands is generally credited with the earliest recorded design for an optical telescope (a refracting telescope) in 1608, although it is unclear if he actually invented it. A master lens grinder, his work with optical devices grew out of his work as a spectacle maker. One story contends that Lippershey got the idea for his spyglass invention from children playing in his shop. They held two eyeglass lenses up together and discovered they could see the weathervane atop a distant church.

This small, simple invention, accidentally set man's imagination ablaze and took him to a world beyond imagination, a world unknown to previous generations. When Galileo improved upon Lippershey's invention and turned his newly-improved telescope toward the night sky, it was if some invisible force was compelling it skyward—much like a compass needle is compelled to point to the magnetic north. With each passing generation, the size and magnification of the telescope grew as did the compulsion to point them skyward in search of what was hidden beyond the night sky. While some were driven by their thirst for fame or prestige, others were propelled by a sheer quest to know what existed out there in this bold new world.

> ***By taking our sense of sight far beyond the realm of our forebears' imagination, these wonderful instruments, the telescopes, open the way to a deeper and more perfect understanding of nature.*** **—René Descartes, 1637**

Galileo devoted his time to improving and perfecting the telescope and soon succeeded in producing telescopes of greatly increased power. His telescope was a simple instrument compared to the colossal telescopes of today. It was a small tube with two lenses—the primary convex lens that curved outward, and the concave eyepiece lens that curved inward. Nevertheless, it set the principle for telescopes to come. It would be through the use of lenses and later mirrors to gather more light than the human eye could collect on its own, focus it, and form an image through magnification that would make it possible to seeing distant objects as if they were close up. The word telescope was coined in 1611 by the Greek mathematician Giovanni Demisiani for one of Galileo Galilei's far-seeing instruments.

Galileo quickly realized through his observations with this intriguing new instrument that the world he observed was the very sun-centered world that Nicolaus Copernicus had theorized about in his book, *De Revolutionibus Orbium Coelestium*. Copernicus had printed it in 1543 in his revolutionary rejection of the popular belief that the earth was at the center of the universe.

For the first time in history it was as if a veil had been lifted for all eyes to see what Isaiah had saw and wrote about some twenty seven hundred years earlier. Now more than ever before man's desire to know was being fueled by the things this new technology was revealing. It was if a fuse had been lit, never to be extinguished.

If you look at the insatiable development of the telescope from Galileo onward each generation studied the men and telescopes that preceded them. They used their own imagination and thirst for knowledge or fame to improve upon the existing technology. They continued to devise a better way to view the night sky in a way that had never been revealed. From a simple small 1.5 cm wide aperture devise weighing only a few pounds, the telescope evolved over a 400 year period to colossal telescopes of today weighing hundreds of tons with reflectors measuring over ten meters in diameter. Today there are computer driven, laser and GPS guided ground based telescopes costing hundreds of millions dollars to flying space telescopes costing billions of dollars with thirty and forty meter ground based telescopes on the drawing board for the near future.

The history and list of telescopes on the following pages in no way represent all the telescopes and developments that have taken place over the past few centuries that have led us to this point in our quest. The purpose of this historical account is not to bore you with history but to unequivocally show that the development of this particular instrument, out of all of man's inventions, appears as though it were part of some master plan to reveal to all humanity a Grand Creation by an Awe-Inspiring, and Powerful Creator. It will also highlight man's obsession with the telescope, which has grown to a fever pitch in just the last few decades as this quest has intensified with the introduction of microprocessors, and other sophisticated equipment.

There are so many telescopes in use around the world today with capabilities too numerous to count. There are also numerous satellites, space proves, and space agencies dedicated to this quest. Billions of dollars are spent each year, along with millions of man-hours dedicated to searching the night sky.

The two telescopes that have had the most profound impact on humanity as of this writing would be Galileo's telescope, that started us on this quest, and the Hubble space telescope that has revealed a Grand Drama of Creation by an Incomprehensible Power. No one can deny the evidence presented by this history of the telescope. Man's drive to learn more about the stars has now become an obsession for individuals, governments, and space agencies all around the globe. They have joined the race as if some invisible force was drawing each passing generation deeper and deeper into this insatiable quest with an intense burning desire to see further and further as man's Awe and knowledge of this incredible universe deepen.

Each day and night the heavens are bubbling forth in unspoken words with endless amounts of information that have been hidden from man for millennia that is just now coming to light through the eye of the Hubble telescope. Hubble transmits about 120 gigabytes of science data back to earth every week. That's equal to about 3,600 feet (1,097 meters) of books on a shelf. The data gathered thus far by Hubble will take many decades to glean and unravel

> ***Like buried treasures, the outposts of the universe have beckoned to the adventurous from immemorial times. Princes and potentates, political or industrial, equally with men of science, have felt the lure of the unchartered seas of space, and through their provision of instrumental means the sphere of exploration has rapidly widened.*** **—George Ellery Hale**

As you review this history of the telescope, four things become abundantly clear: (1) There is no limit to man's imagination in devising new technology to reach his goals. (2) Man's original curiosity with the stars has turned into an insatiable quest in which no investment of time or money is too large; (3) Some unexplainable force seems to be driving man in this quest with it intensifying with each new generation. (4) Man's insatiable quest to the stars will never be quenched, because we have come upon an incomprehensible and endless universe where each new astronomical discovery draws us in deeper, confounding former theories and raising more unanswered questions. These in turn fuel man's imagination to development new ways to probe ever deeper for the answers to the new questions.

Man's Quest to the Stars

MANS' EARLY FASCINATION

From **early** times **man** has had a fascination with the stars in the night sky. The seasons became important; during different times of the year, as different stellar patterns would appear in the sky. In the spring, Virgo and her accompanying constellations would signal the time to prepare the earth, to plant crops, and to be wary of floods.

In the fall, Orion rises to indicate time to harvest and to prepare for winter. Early astronomers used many kinds of instruments and structures to study the heavens. All were basically tools for measuring or calculating the positions of objects in the sky including the sun.

EARLY WRITINGS ABOUT THE STARS

The **early Biblical writers** made mention of the stars or referenced the heavens hundreds of times, indicating their keen interest in the stars in the night sky. They expressed certainty as to who was responsible for them. Those writers, including Isaiah, attributed the creation of all the stars to their God whose name according to the oldest Hebrew manuscripts was written with four Hebrew consonants called the Tetragrammaton (יהוה).

MAN'S INTEREST BECOMES A SCIENCE

With the passing centuries, man's fascination with the stars continued in conjunction with the study of philosophy, mathematics and natural science. These later coalesced into astronomy with men like Socrates, Plato, Aristotle, Aristarchus, Ptolemy, and **Copernicus** who developed a heliocentric model of the Solar System which retained the notion of perfect circular motion, but placed the Sun at the center and established the proper order of the planets outward from the Sun that challenged the religious beliefs of his day.

(1609) A TURNING POINT WITH A MAGNETIC DRAW

The year 1609 marked a turning point in man's fascination with the stars. **Galileo** made improvements to a new invention called the telescope by increasing it from an

eight-power- to a twenty-power magnification. Galileo then used his imagination and fascination of the stars to turn his telescope skyward.

That single act opened up a whole new world that would spark an insatiable quest to the stars. A race soon developed to build bigger and better telescopes in order to understand this new found world as if it were somehow calling to us to have a closer look. The race took two directions early on, one with the Galileo-style **refractor** telescope and the other with the Newton-style reflector telescope.

(1668) NEWTON MAKES A BREAKTHROUGH

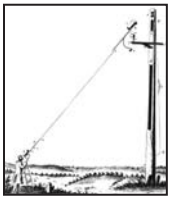
When the Galileo-style refractor telescopes grew excessively long and increasingly difficult to handle, telescopes were ready for a new design. This design came, courtesy of **Sir Isaac Newton**. He investigated the refraction of light, demonstrating that a prism could decompose white light into a spectrum of colors, and that a lens and a second prism could recompose the multicolored spectrum into white light.

The images produced by this new type of telescope were free from chromatic aberration, (i.e., the rings of color that surrounded bright objects). He changed the primary lens to a mirror and launched a new class of telescopes called **reflectors**, which used a reflecting mirror.

(1673) TELESCOPES GROW TO 150 FEET IN LENGTH

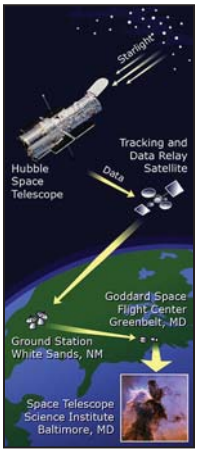
With the acceptance of the astronomical telescope, a "telescope race" quickly developed. Beginning in the 1640s, the length of telescopes began to increase. From the typical Galilean telescope of five or six feet in length, astronomical telescopes rose to lengths of fifteen or twenty feet by the middle of the century.

By 1647, **Johannes Hevelius**, a Polish brewer and councilor, had built a twelve-foot-long telescope in an attempt to improve his view of the sky. That was just the beginning. In 1670, Hevelius's knowledge of the way **refracting** telescopes worked pushed him to create longer and longer telescopes that eventually stretched to 150 feet.



(1686) A TELESCOPE WITHOUT A TUBE

In 1686, Christopher Huygens, a Dutch astronomer, decided to stop using long tubes altogether because of the inherent problem with long tube telescopes. He mounted his primary lens in a short iron tube and attached it to a high pole. He mounted the eyepiece in another small tube on the ground, and ran a length of cord



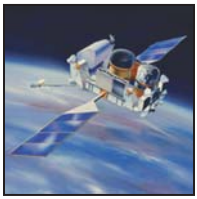
(1990) HUBBLE REVEALS A GRAND CREATION

Since the time of Galileo, astronomers have shared a single goal—to see more, to see further and to see deeper. In 1946, Lyman Spitzer imagined a national observatory in the sky. Forty-four years later, in April 1990, his imagination became a reality when the **Hubble Space Telescope** was carried into orbit by the space shuttle, Discovery. It single-handedly sped humanity to one of its greatest advances in that journey, and to date is widely regarded as the most successful scientific facility in all history.

Hubble is a telescope that orbits Earth. Its position above the atmosphere, which normally distorts and blocks the light that reaches our planet, gives it a view of the universe that far surpasses that of ground-based telescopes. It has beamed hundreds of thousands of images back to Earth, shedding light on many of the great mysteries of astronomy. Enough information to fill about eighteen DVDs is transmitted from Hubble every week. Astronomers can download archived data via the Internet and analyze it from anywhere in the world.

Its gaze has helped determine the age of the universe, the identity of quasars, and the existence of dark energy. When you stitch all the data and images together what has emerged is the Greatest Drama in human history; the creation of an Awe-Inspiring Universe as never before revealed!

Counting all the repairs and fixes since it was put into orbit in 1990, the total cost for the Hubble has been estimated to be about ten billion dollars.

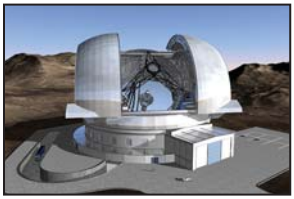


(1991) COMPTON GAMMA RAY OBSERVATORY

The **Compton Gamma Ray Observatory** (GRO) was a sophisticated satellite observatory dedicated to observing the high-energy Universe. It was the second in NASA's program of orbiting "Great Observatories", following the Hubble Space Telescope. While Hubble's instruments originally operated at visible and ultraviolet wavelengths, Compton carried a collection of four instruments which together could detect an unprecedented broad range of high-energy radiation called gamma rays.

Some of its scientific achievements were, the discovery of an isotropic distribution of the Gamma-ray burst events, mapping of the Milky Way using the twenty-six Al Gamma-ray line, the discovery of Blazar Active Galactic Nuclei as primary source of the highest energy cosmic Gamma-rays, and the discovery of the "Bursting Pulsar"

At seventeen tons, the Compton was the heaviest astrophysical payload ever flown at the time of its launch on April 5, 1991 aboard the space shuttle Atlantis. Compton was safely de-orbited and re-entered the Earth's atmosphere on June 4, 2000.

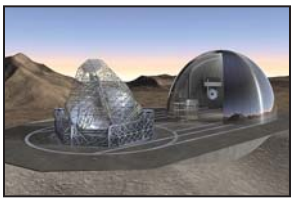


(2018) EUROPEAN EXTREMELY LARGE TELESCOPE (E-ELT)

Just when you think telescopes can't possibly get any larger, they will in 2018. The European Extremely Large Telescope will be a ground-based astronomical observatory with a **42-meter** (one-hundred-thirty-eight-foot) diameter segmented mirror. The telescope's "eye" will be almost half the length of a football pitch in diameter and will gather fifteen times more light than the largest optical telescopes operating today with an estimated cost of well over $1 billion.

The telescope has an innovative five-mirror design that includes advanced adaptive optics to correct for the turbulent atmosphere, giving exceptional image quality. The E-ELT will gather 100, 000, 000 times more light than the human eye, 8, 000, 000 times more than Galileo's telescope, and twenty-six times more than a single VLT Unit Telescope. In fact, the E-ELT will gather more light than all of the existing 8–10-meter class telescopes on the planet, combined.

The E-ELT is a revolutionary new ground-based telescope concept, with a performance that is orders of magnitude better than currently existing facilities. Such a telescope may, eventually, revolutionize our perception of the Universe, much as Galileo's telescope did, 400 years ago.



(2019) OVERWHELMINGLY LARGE TELESCOPE

The Overwhelmingly Large Telescope (OWL) is a conceptual design by the European Southern Observatory (ESO) organization for an extremely large telescope, which was intended to have a single aperture of one hundred meters in diameter. Because of the complexity and the $1.6 billion cost of building a telescope of this unprecedented size, ESO has elected to focus on the forty-two meter diameter European Extremely Large Telescope, instead.

The OWL could have been expected to regularly see astronomical objects with an apparent magnitude of thirty-eight or 1,500 times fainter than the faintest object which has been detected by the Hubble Space Telescope. Experience gained in existing segmented mirrors suggests that the one hundred meter mirror proposed for the OWL is feasible and may very well be built sometime in the future. With this ambitious design ESO proves that man's imagination is trumped only by the depth of his pockets.

Types of Telescopes In Use Today

Cosmic-ray
Gamma-ray
Gravitational wave
High Energy Particle
Infrared
Optical reflecting
Optical refactoring
Radio
Solar
Space
Submillimeter
Ultraviolet
X-ray

No Limits to Man's Quest or Imagination

As seen from this brief history of the development of the telescope there appears to be no end in sight for man's obsessive quest to the stars, or limits to his imagination to devise new ways to have a closer look at the incredible source of energy that powers the universe.

Even as the next generation of telescopes is being readied for first light there are new ideas on the drawing boards that will make the latest technology seam old school. Time and time again, each generation of telescope builders have outdone those before them, resulting in discovering even more incredible secrets of the universe. This, in turn, drives their passion of discovery to an even higher pitch.

Those things now unknown to us that will be discovered with the emerging telescope technologies will inspire our imaginations in the future to even greater heights than we thought possible. This will inevitably draw us in deeper to this unquenchable thirst for greater knowledge of the stars. There appears to be no turning back now in man's cosmic obsession as he is compelled forward in his endeavor to search for answers.

If Galileo could only see the Insatiable Quest his imagination fueled with the use of that simple telescope 400 years ago. He would observe how each generation after him raced to improve upon their view of the universe as they were drawn toward it like metal to a magnet.

Or if Isaiah could only see the reality of what you and I are now privileged to see through the eye of the Hubble telescope. They would see themselves as characters among a string of cast members performing their part to bring to humankind the Grandest Drama in history. A drama that takes us to the core of our very existence!

What awaits us to be revealed as the next generation of telescopes comes on line in the very near future? No one can really say for sure, but it will likely be beyond anything we could have imagined based on our experience thus far.

After this brief review of man's journey with the invention of the telescope, would you agree that man truly has been embarked on an insatiable quest to the stars? As you will learn on the pages just ahead, you will see that the money and time spent on this quest have not been in vain. You will see revealed the unfathomable truth in the words spoken by Isaiah.

To learn more about the latest developments on emerging telescopes of gigantic proportions just Google the last three telescopes mentioned on the previous pages, and "the world's largest optical telescopes"

Man's Quest to Know and Understand Takes On New Dimensions

FOR MILLENNIA, CURIOSITY has driven man to explore the world around him. This is how humans grow and progress as a society. Through the study of plant life on Earth, man has come to realize the importance of photosynthesis and how it is arguably the most important biological process on Earth.

Through his studies, man has come to realize that marine life represents a vast resource, providing food, medicine, and raw materials. He now knows that marine organisms contribute significantly to the oxygen cycle and are involved in the regulation of the Earth's climate. He also understands the need to maintain a proper balance.

Through the study of birds and animals, many of man's inventions have come into existence. Biomimicry, or looking to nature for design inspiration, is not new; its guiding principles have served to inspire architectural works, aviation breakthroughs, designs in robotics, and a host of other inventions.

Now, with the invention of flying telescopes placed in orbit above the Earth's atmosphere for clearer visibility, man has a new world of discovery open to him. A world unlike anything he has ever explored or studied here on Earth. This world is one that was perhaps best described in an article that appeared in *National Geographic* a few decades ago under the heading "The Incredible Universe:"

> ***Far From The Land of everyday, out in the distant curves of the universe lie strange and fantastic realms, unlike anything in our wildest dreams. Hidden by the barriers of time and space, they have lived forever beyond the reach of man, unknown and unexplored. But now, just now the cosmic barriers have begun to lift a little. Man has had his first glimpses of these once-secret domains, and their bizarre ways have left him stunned. They challenge his very notion of matter and energy. With Alice in Wonderland, he says, "One can't believe impossible things". And impossible, indeed they seem to be.***
>
> ***In those far reaches of the universe, in those bewildering worlds, are places . . . Where a teaspoon of matter weighs as much as 200 million elephants . . . Where a tiny whirling star winks on and off thirty times a second . . . Where a small mysterious object shines with the brilliance of ten trillion suns . . . Where matter and light are continually sucked up by devouring black holes, never to be seen again.***

It is as if many of the inventions man has devised over the millenniums have led us to this point of discovery as though being drawn by an invisible force much like that of a magnet. As we look out upon this world, it forces us to see that we are a small but important part of a much bigger picture. This is a world our forefathers knew nothing of, even though they, too, had been drawn along in the quest to know and understand why we are here and what our purpose is.

This new world is so immense, we can only measure its distance in light-years. (A light-year is the distance light travels in a year at the speed of 186,282 miles a second, which is equivalent to six trillion miles.) To put it into perspective, think of the Earth as a speck of dust, then place that speck of dust onto a grain of sand, which would represent our Sun; then place that grain of sand onto a dime, which would represent our Milky Way galaxy; and then place that dime onto the Earth, which would represent the known universe.

When we look in perspective at our place in the universe, the Earth appears to be but a speck of dust. Yet, here we are, on this planet, which to man seemed bigger than life until he discovered this Doorway that has revealed a world far beyond anything he could ever have imagined. As we look upon this new world, it becomes stunningly clear that it is not of man's making. Yet, we have been privileged as pioneers to be the first to discover it through the use of our imagination. It will be up to future generations to build upon our knowledge and use their own imaginations to take additional materials from the Earth to sculpt and devise a means to travel through that Doorway to explore a strange new world unexplored up to the present.

As we make our way through this Doorway and ascend higher for a closer look, it becomes inescapably clear that this incredible world beyond our sky could not have been created without imagination. Could we, would we, deny that all the incredible things man has created and devised up until now came about randomly and devoid of imagination? Common logic leads you to believe that Supreme Imagination was at work when you examine the precise and orderly design of it all.

The invitation extended to us twenty-seven hundred years ago has now taken on an incredible dimension as a result of flying space telescopes. As the Grand Drama unfolds before you in the pages ahead, take time to look at the detail of the Hubble images that show multitudes of spiral galaxies in the background. Meditate upon what must have gone into their design—with each having billions of stars like ours, and no doubt trillions of planets. Ponder how thrilling it would be to explore them one day in the future! The knowledge we have gained or ever will gain here on Earth pales in comparison to what awaits us just ahead in this Awe-Inspiring Universe!

"That deep emotional conviction of the presence of a Superior reasoning power, which is revealed in the incomprehensible universe, forms my idea of God." Albert Einstein

ACT IV

A GRAND ARCHITECT IS REVEALED

Resulting From 400 Years of Man's Imagination

Hubble in orbit, 353 miles above Earth, peering into the universe.

Gazing Into Our Universe: Peering Into a Mind of Supreme Imagination

The Hubble, as it has become known, has opened up a whole new frontier of discoveries in the heavens. It is as though we have been given a peek into the mind of Imagination Supreme. We have discovered wonderful things, yet they are so vast and complex that it is difficult for the human mind to comprehend. According to NASA:

> ***Hubble's discoveries have transformed the way scientists look at the universe. It has beamed hundreds of thousands of images back to Earth, shedding light on many of the great mysteries of astronomy. Its gaze has helped determine the age of the universe, the identity of quasars, and the existence of dark energy. Its ability to show the universe in unprecedented detail has turned astronomical conjectures into concrete certainties. It has winnowed down the collection of theories about the universe even as it sparked new ones, clarifying the path for future astronomers.***

The universe we can see with the naked eye is only a tiny fraction of the universe that exists. With the invention of telescopes, and through the use of his imagination, man has discovered a world far beyond his own comprehension. This is a world where time seems endless and dimension and space have no boundaries. A world where an unexplainable energy seems to be emitting from every direction. a universe so impossible to conceptualize that it staggers human imagination, a universe so vast that it makes our solar system as insignificant as a single grain of sand on the seashore!

When we look at the awe-inspiring photos taken by the Hubble, Spitzer, and other space telescopes, it looks as if these scenes were meticulously painted by brush onto a black-velvet canvas by a Great Artist with imagination without compare. The reality is that they are not mere paintings by mortals; but a living orchestra of heavenly bodies playing in concert, millions of light-years away, on a scale incomprehensible to the imagination of man.

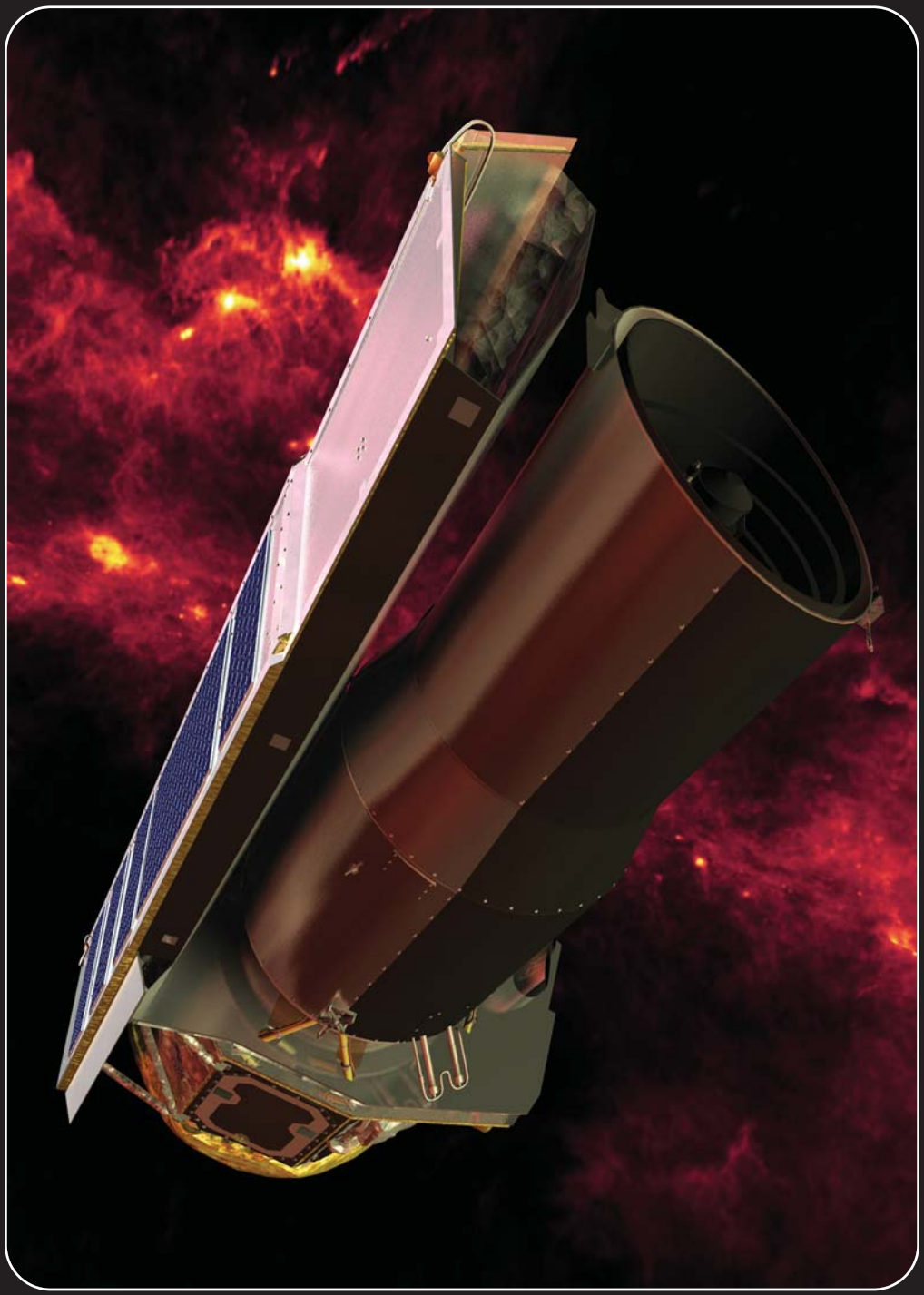
With the invention of space telescopes orbiting above the Earth, man has been elevated closer to the heavens to peer deep into space. It is as though he had been invited to a Grand Premier of Creation itself, where only those who understand its significance, find themselves in Awe of its Supreme Majesty.

One has to wonder why we, of all generations, have been given this awe-inspiring glimpse into Supreme Imagination. Could it be that man, unbeknownst to himself, is merely responding to a Divine Invitation?

"Look up into the heavens. Who created all the stars?"

Spitzer Space Telescope

A Grand Architect Revealed



Infrared view of Spitzer against the Milky Way and Orion.

IMAGINATION OF MAN

Unveiling Long-Hidden Secrets of the Universe

For millennia, man has gazed at the night sky in hopes of unveiling its secrets and revealing the mysteries about how it came about and what the meaning of it all is. Until this generation, man's sight into the vast unknown has been limited by the Earth's atmosphere, which was like a veil that distorted our view of distant worlds far beyond our reach. In 1990, the Hubble telescope began to orbit above Earth's atmosphere. It could now peer out into the universe without a subject-distorting veil. Man had now achieved a major breakthrough in unveiling the secrets of those distant worlds. But, even in deep space, there are things still kept from Hubble's gaze. Many regions of space are filled with vast dense clouds of gas and dust, which block the view and remain hidden from optical telescopes.

The Spitzer, as it is called today, but formerly known as the Space Infrared Telescope Facility (SIRTF), is an infrared cousin of the Hubble Space Telescope that followed Hubble into space in 2003. Its mission was to study stars, galaxies, and planetary disks. Spitzer detects infrared—longer wavelength—light that our eyes cannot see. It detects the infrared energy, or heat, radiated by objects in space and is able to detect dust disks around stars. This is considered an important signpost of planetary formation.

It allows the observatory back here on Earth to see through the dust by delivering light to advanced, large-format, infrared detector arrays. At the time of its launch, Spitzer was the largest infrared telescope ever launched into space. Its highly sensitive instruments give us a unique view of the universe and allow us to peer into regions of space which are hidden from optical telescopes.

> ***According to NASA, "the Spitzer mission is the fourth and final observatory under NASA's Great Observatories program, which also includes the Hubble Space Telescope, Chandra X-Ray Observatory, and Compton Gamma Ray Observatory. It is also the first new mission under NASA's Origins program, which seeks to answer the questions: "Where did we come from?" "Are we alone?"***

Once hidden secrets about the universe are slowly being revealed as man, through his imagination, advances space-telescope technology to the edge. Man has long harbored a burning desire to know where he came from, and if he is alone. This is driving the human imagination to do what, mere years ago—seemed completely unheard of—even impossible. This tells us that the impossible is, after all, possible. Is it not amazing? No generation before us could witness such spectacular views of the universe, thanks to the collective imaginations of those far-sighted geniuses who created the Hubble, Spitzer, and other telescopes so we might sit in front-row seats to marvel at the unfolding drama.

As you view these awe-inspiring images from above and beyond the cosmic dust, see if you can perceive the work of a Grand Architect with Superior Imagination.

Cat's Eye Nebula NGC 6543

A Grand Architect Revealed

SUPREME IMAGINATION

Small Magellanic Cloud NGC 602 A Grand Architect Revealed

SUPREME IMAGINATION

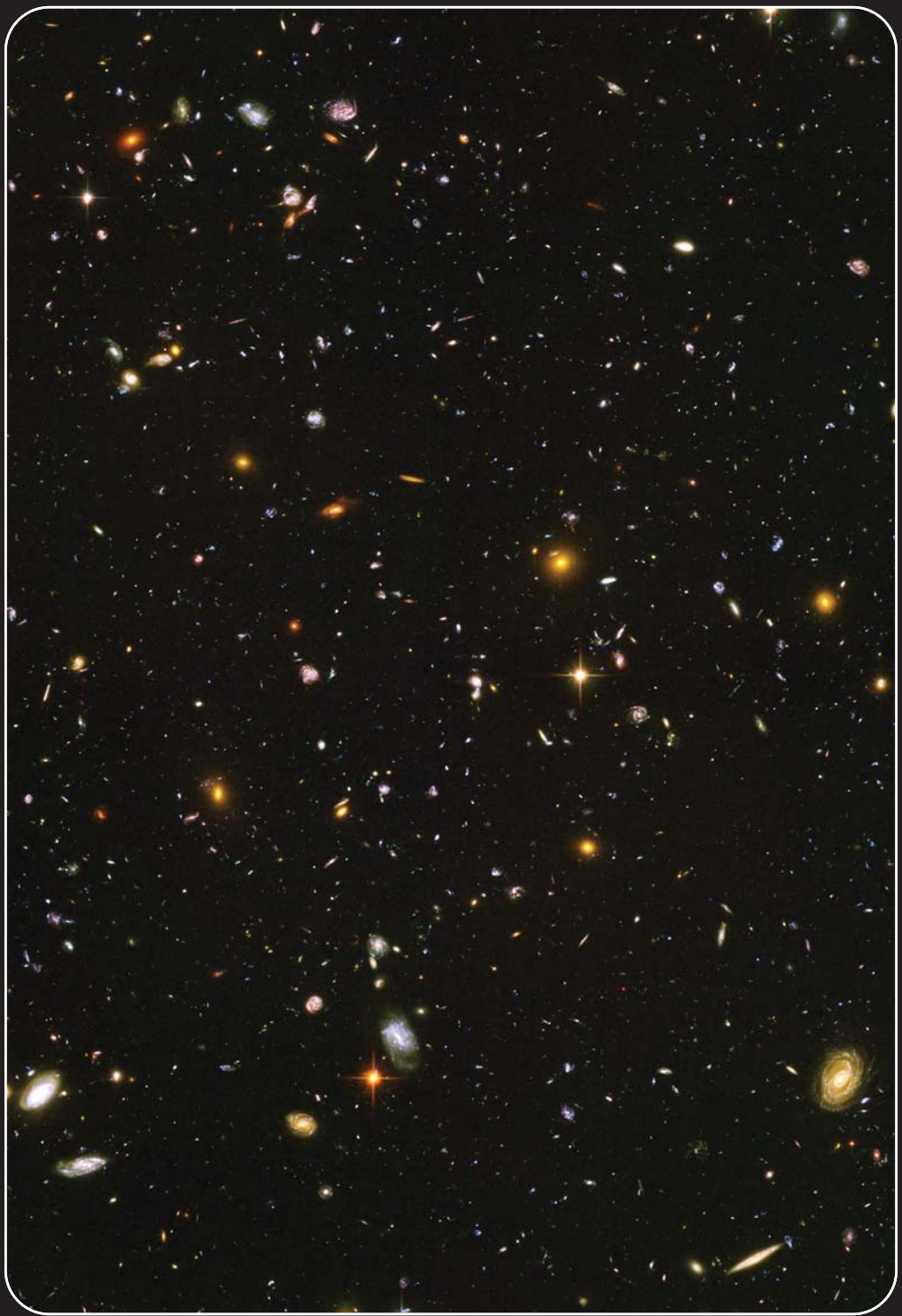
V838 Monocerotis Light Echo

A Grand Architect Revealed

SUPREME IMAGINATION

Hubble Ultra Deep Field

A Grand Architect Revealed



SUPREME IMAGINATION

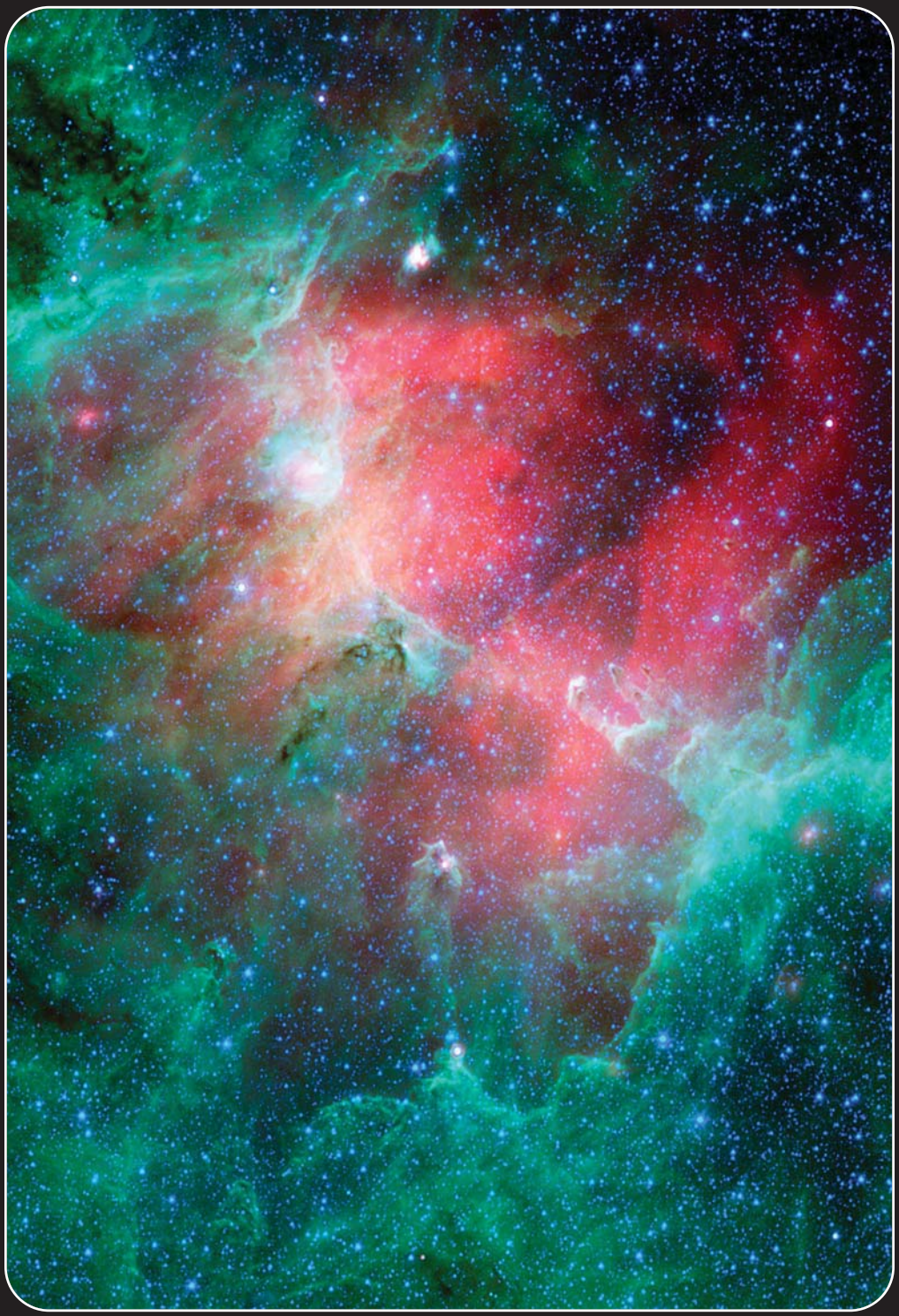
Sombrero Galaxy M104

A Grand Architect Revealed

SUPREME IMAGINATION

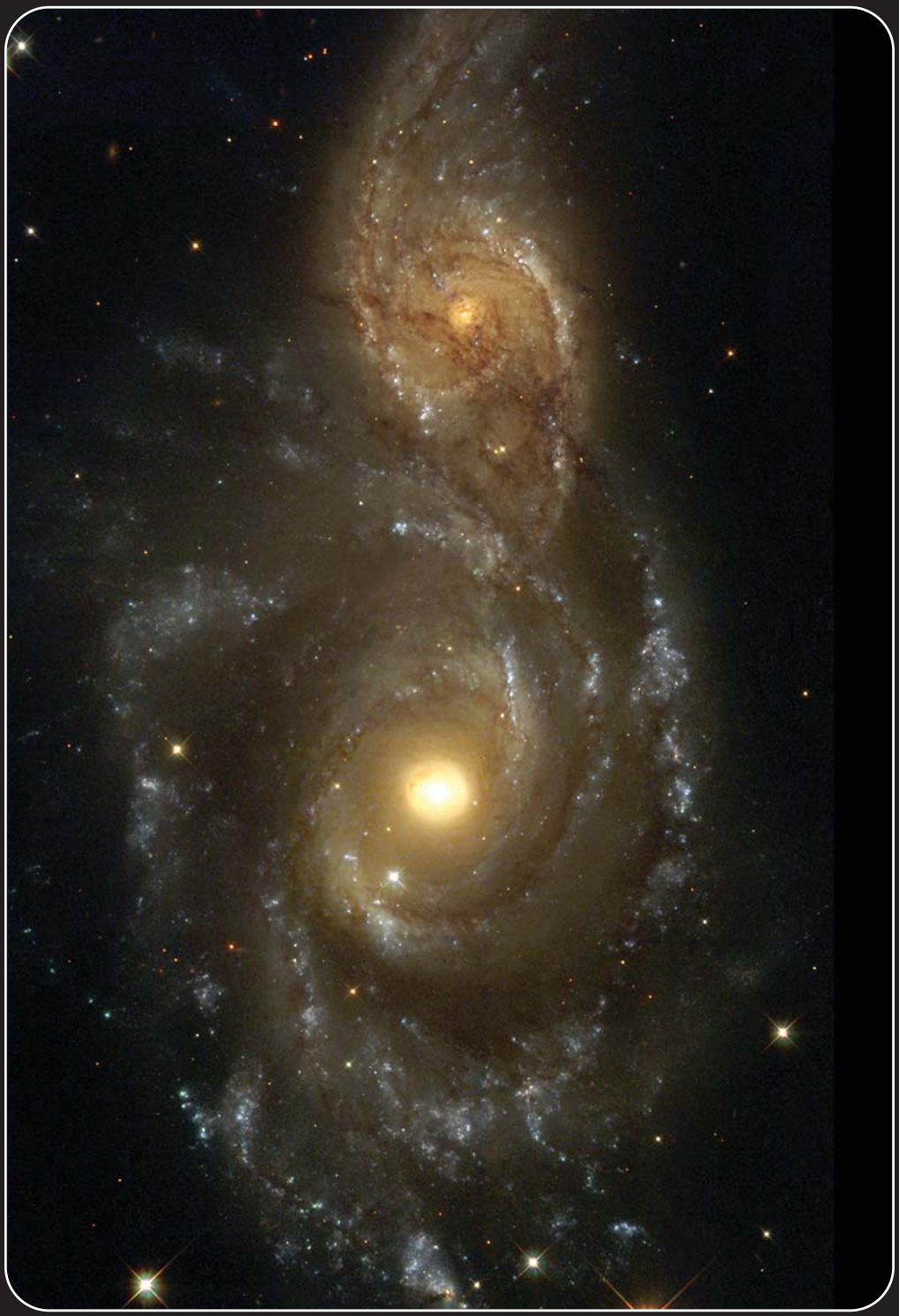
Infrared Eagle Nebula M16

A Grand Architect Revealed



SUPREME IMAGINATION

Galaxies NGC 2207 and IC 2163 A Grand Architect Revealed



SUPREME IMAGINATION

The Birth of a Special Galaxy

As we look back in time at the birth of the Milky Way galaxy, through the eyes of Hubble, we are compelled to give attention to it. What we see as we look back is a construction zone on a galactic scale. As with any great architectural work, the initial stage may seem confusing and disorganized to an outsider. But to the onsite project Engineer in charge, everything is going according to plan. A spectacular work of art has been crafted.

Like someone looking at a construction zone from a distance, we do not have all the details about how this Grand Architecture was constructed. A wonderful work of supreme art is indeed our home—the Milky Way galaxy. Although we can only speculate about its beginning, it might have seemed chaotic to some observers. However, we see that order grew from that. NASA press release:

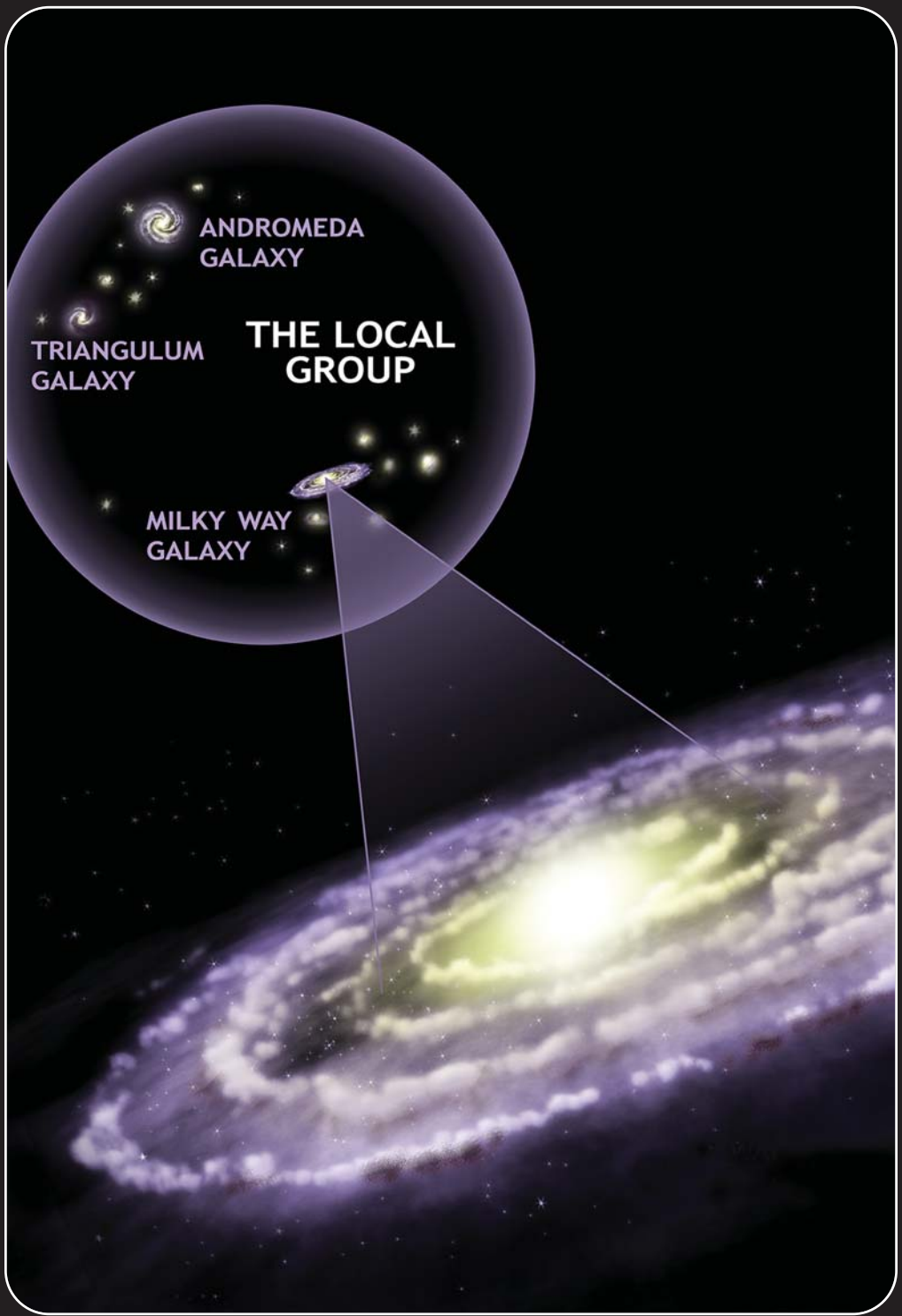
Milky Way's Birth

This is an artist's concept of the early formative years of our Milky Way galaxy, circa 12.7 billion years ago. That long ago, the majestic spiral arms of our galaxy had not yet formed; the sky was a sea of globular star clusters. The bright blue star cluster at center left is among hundreds of primeval globular star clusters that came together to build up the galaxy. This particular cluster survives today as the globular cluster M4 in Scorpius. Astronomers used Hubble to find the oldest burned-out stars–called white dwarfs–in the cluster. The dwarfs serve as "clocks" for calculating the cluster's age based on temperature. The cluster–chock full of young and blue-white stars in this artwork–probably started forming several hundred million years after the big bang. At right of center, the hub of the galaxy is beginning to form. Lanes of dark dust encircle a young supermassive black hole. An extragalactic jet of high-speed material beams into space from the young black hole, which is engorging itself on stars, gas and dust. A string of supernova explosions from the most massive stars in the cluster creates pink bubbles of hot gas around each star cluster.

The act of birth is miraculous when you consider that from the moment of conception a child's complete makeup is written in its DNA blueprint. Could the same be true of the birth of a galaxy? Perhaps from the moment the Milky Way was conceived in its Creator's mind, through the use of imagination, its makeup or DNA blueprint was known, and the creative work would proceed exactly as planned.

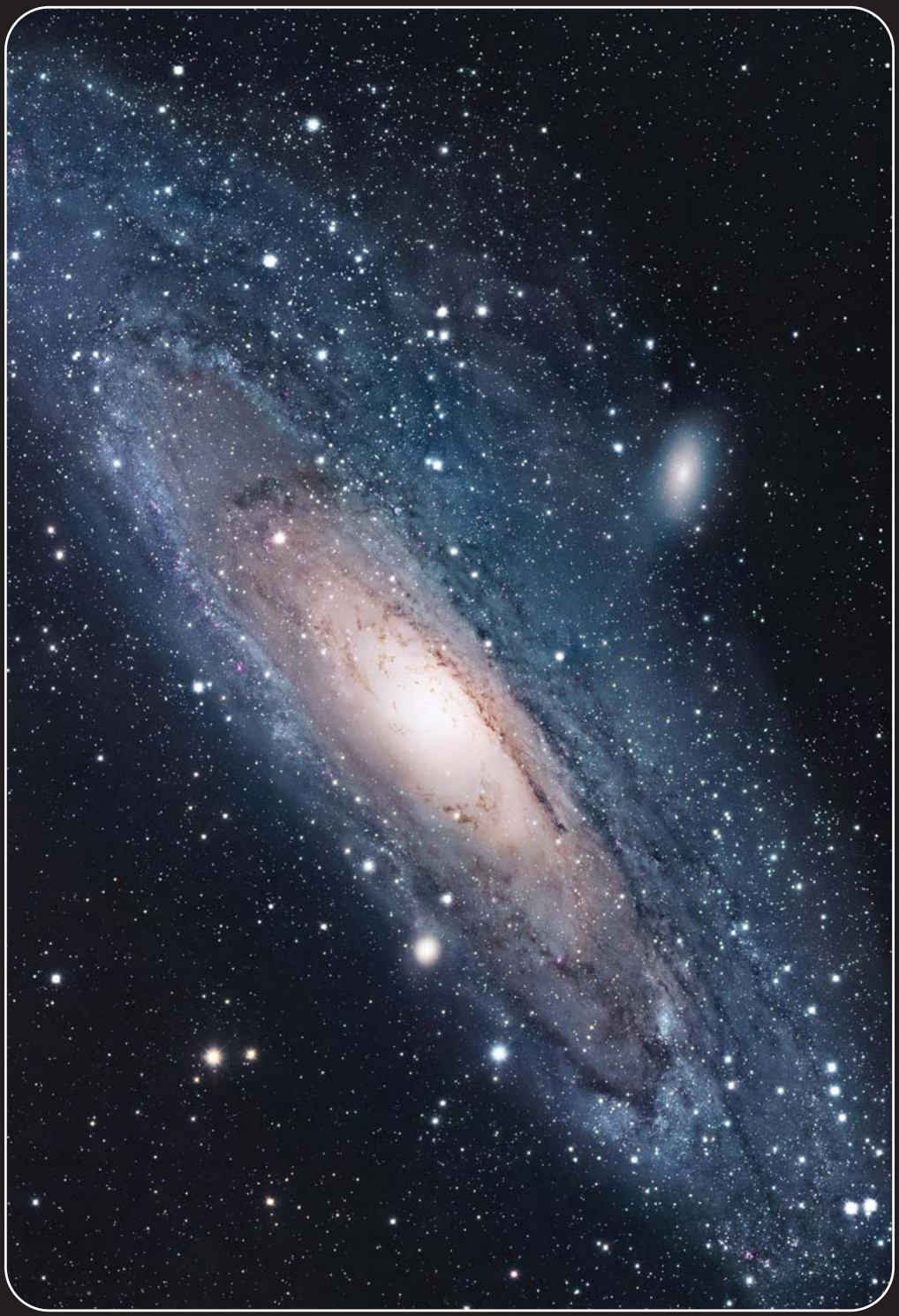
Because Hubble's orbit is inside the Milky Way galaxy, it cannot be photographed by Hubble like our neighbor, the Andromeda galaxy. But when you look at the photos of Andromeda and other galaxies, can you imagine how beautiful the Milky Way galaxy must be from an external vantage point? Does it not make you pause and respect the wonderful works of its Designer?

Milky Way Galaxy (Artist Concept)



Andromeda Galaxy M31

A Grand Architect Revealed



SUPREME IMAGINATION

Can You Name All The Stars?

The ancient text that invites us to *"Look up into the heavens."* and asks *"Who created all the stars?"* also states He is *"calling each by its name."* Imagine, not only does the Grand Architect of the Universe know the exact number of all the stars, but he calls each one by name. What human could come close to accurately counting all the stars, let along naming them?

The Milky Way is a "barred spiral galaxy." It consists of a bar-shaped core region surrounded by a disk of gas, dust, and stars. Within the disk region are several arm structures that spiral outward in a logarithmic spiral shape. Its galactic center harbors a compact object of very large mass, strongly suspected to be a super-massive black hole. It contains our solar system—the Sun, the Earth, and other planets, as well as star clusters, asteroids, nebula, and assorted cosmic phenomenon. The Milky Way is a relatively small galaxy among billions of other galaxies within the universe. It is thought to contain 100 to 400 billion or more stars, yes that is 100,000,000,000 to 400,000,000,000! Some galaxies are thought to contain a trillion or more stars. The Milky Way belongs to a local group of galaxies, comprising over thirty other galaxies, including the Great Andromeda Galaxy M31.

The diameter of our galaxy is so vast that if you could travel as fast as the speed of light (186,282 miles *a second*) it would take you 100,000 years to cross it! How many miles would you have to travel? Well, since light travels about six trillion (6,000,000,000,000) miles in a year, multiply that by 100,000 and you have the answer—Our Milky Way galaxy is about 600 quadrillion (600,000,000,000,000,000) miles in diameter.

Since the Hubble and other space telescopes are in orbit inside the Milky Way, it is not possible to photograph it like other neighboring galaxies. For this reason, it has ably photographed the sister galaxies, such as the Great Andromeda Galaxy. It is thought by some that if we could see our galaxy from a distance, it would look much like the Andromeda Galaxy.

Consider the Andromeda Galaxy's size. It is a spiral galaxy approximately two-and-a-half million light-years away in the constellation Andromeda and is thought to be 220,000 light-years in diameter, containing one trillion stars. Yes, that is 1,000,000,000,000 stars.

Are you not awestruck by the sheer number of stars in these two galaxies alone? It is incomprehensible for man to even consider naming all the stars in two galaxies, let alone in the entire universe. Is it not logical that the One who made them would be able to name each one by its own unique name? Is not His naming the stars proof that His Imagination has no limits?

As you view this image of the Majestic Andromeda Galaxy, pause for a moment and ponder what imagination and source of power is responsible for this Grand Symphony of stars, then review the inspiring words Isaiah wrote.

Details About the Birth of a Planet

In the beginning God created the heavens and the earth.[2] ***The earth was formless and empty, and darkness covered the deep waters…***[3] ***Then God said, "Let there be light." And there was light. —Geneses 1:2,3***

These words recoded millennia ago may prove to be the most profound words ever recorded. This simple statement left out the details of how the universe and the earth formed. It is becoming clear that we are now getting the details of this spectacular event with NASA's Hubble and Spitzer telescopes. Hubble has revealed the universe began to form 13.7 billion years ago and the Earth 4.54 billion years ago. It appears that Hubble and Spitzer may have uncovered the truth about this long debated statement, confirming that the Geneses account has been scientifically accurate about this event all along.

It is now known that the universe formed first, and then the Earth in the same sequence as stated in Geneses. However, something more specific and revealing has come to light from the discoveries of these two telescopes. Hubble and Spitzer have revealed that planets are born in darkness, hidden from their sun in the early stages and eventually exposed to light in their more mature stages, as described in Geneses 1:2,3. They have in recent years discovered that the ingredients for life find their way into the dense dust clouds that swirl around new forming stars.

It is in these dense dark dust lanes that dirt and rock begin to clump together to form rocky planets like our Earth. Like in the case of Earth this process lasted for billions of years as the planet was taking shape. During this process the planet at some point could be described as being in a formless and dark state as it was shrouded in dust hidden from the light of the sun or even other stars. (See images on pages 82-88). This planet forming phase appears to correspond with the statement made at Geneses1:2. **The earth was formless and empty, and darkness covered the deep waters.**

As the planet matures, the dust is sucked up by the planet like a giant vacuum cleaner. During its later stage the planet is slowly exposed to the sun's light. Leftover material is eventually blown out by solar wind or pushed out by gravitational interactions with the planets as Hubble and Spitzer discovered with a Sun-like star called HD 107146. (See image on page 90.) During this process the planet could be described as having light appear, after a long period of darkness. This planet-forming phase appears to correspond with day one at Geneses 1:3. **And there was light.**

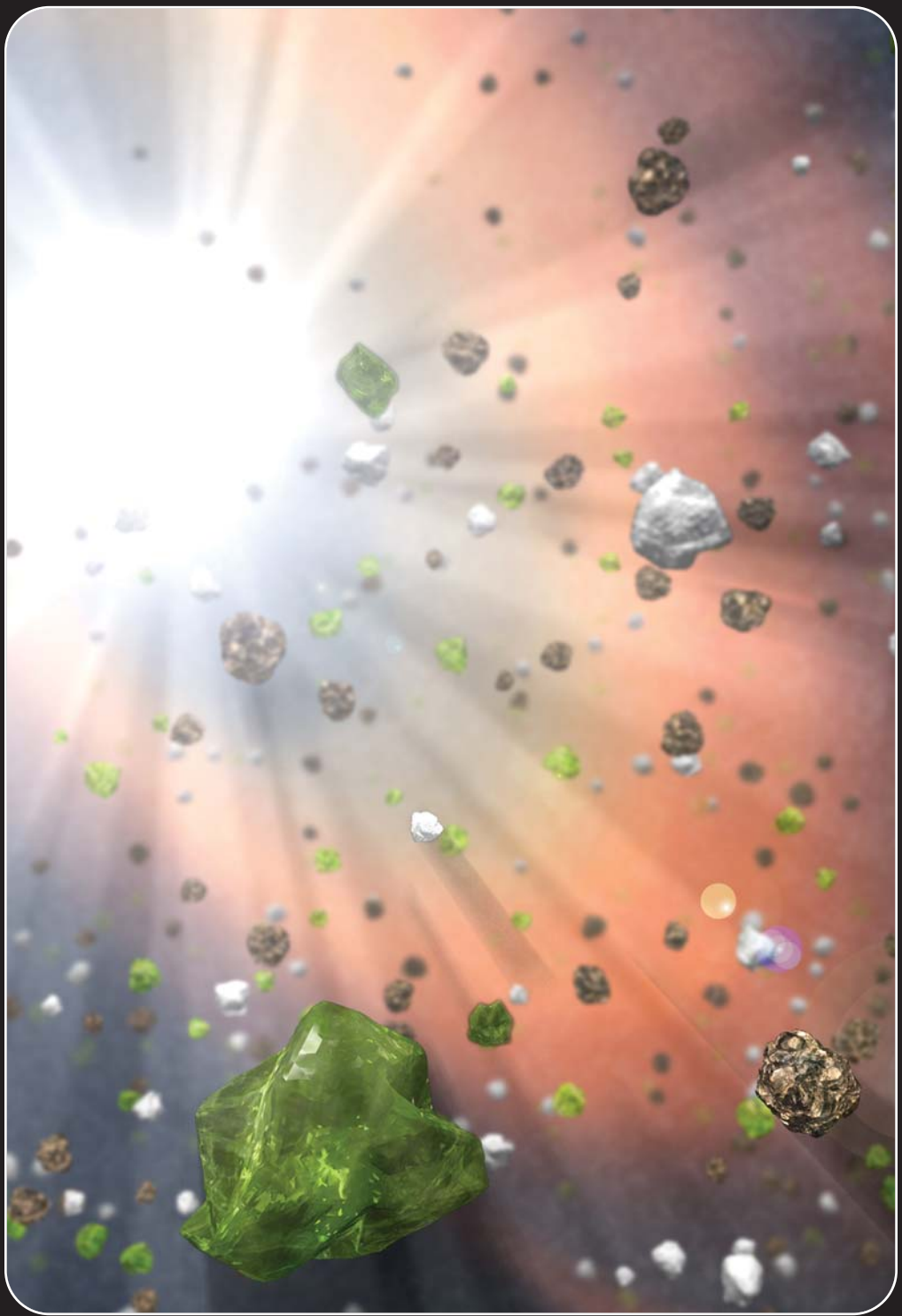
If Galileo were alive today he would be astounded with the discoveries on the following pages revealed by Hubble and Spitzer. While he had a conflict with the religion of his day, he did not have a conflict with the Bible. He realized the writers of the Scriptures wrote in a simple style from the perspective of the terrestrial world and not from the heavens above.

ACT V

A GRAND ARCHITECT REVEALED AND COMPLETED

A Special Star is Born

Quasar PG2112+059 (Artist concept)



A Special Star is Born

From cosmic dust swirling for billions of years, to a brilliant shining star, the star at the center of our solar system came to life. This star amongst trillions would prove to be a special star to eventually give birth to a very special planet, our home, the Earth. If we could look back in time to see the birth of our Sun from a cloud of gases and cosmic dust, perhaps the scene we would see would be much like the one that Spitzer witnessed 600 light-years away in the constellation Cygnus in the Star system L1014, depicted in this artist's conception. NASA press release, November 9, 2004:

Spitzer Sees Ice and Warm Glows in Dark and Dusty Places

In this artist's conception, we peer through the dark dust of L1014 to witness the birth of a star. NASA's Spitzer Space Telescope has detected a faint, warm object inside the apparently starless core of a small, dense molecular cloud. If, as astronomers suspect, there is a young star deep inside the dusty core, it would have a structure similar to this illustration. Dark dust from the cloud, attracted by the gravity of the newborn star, forms a disc as it spirals inward. Often, the hidden birth of a star is heralded by bipolar outflows, jets of material moving outward from the star's poles. Although astronomers do see a faint "fan-shaped nebulosity" where they might expect the jet to be, the existence of the jet has yet to be confirmed.

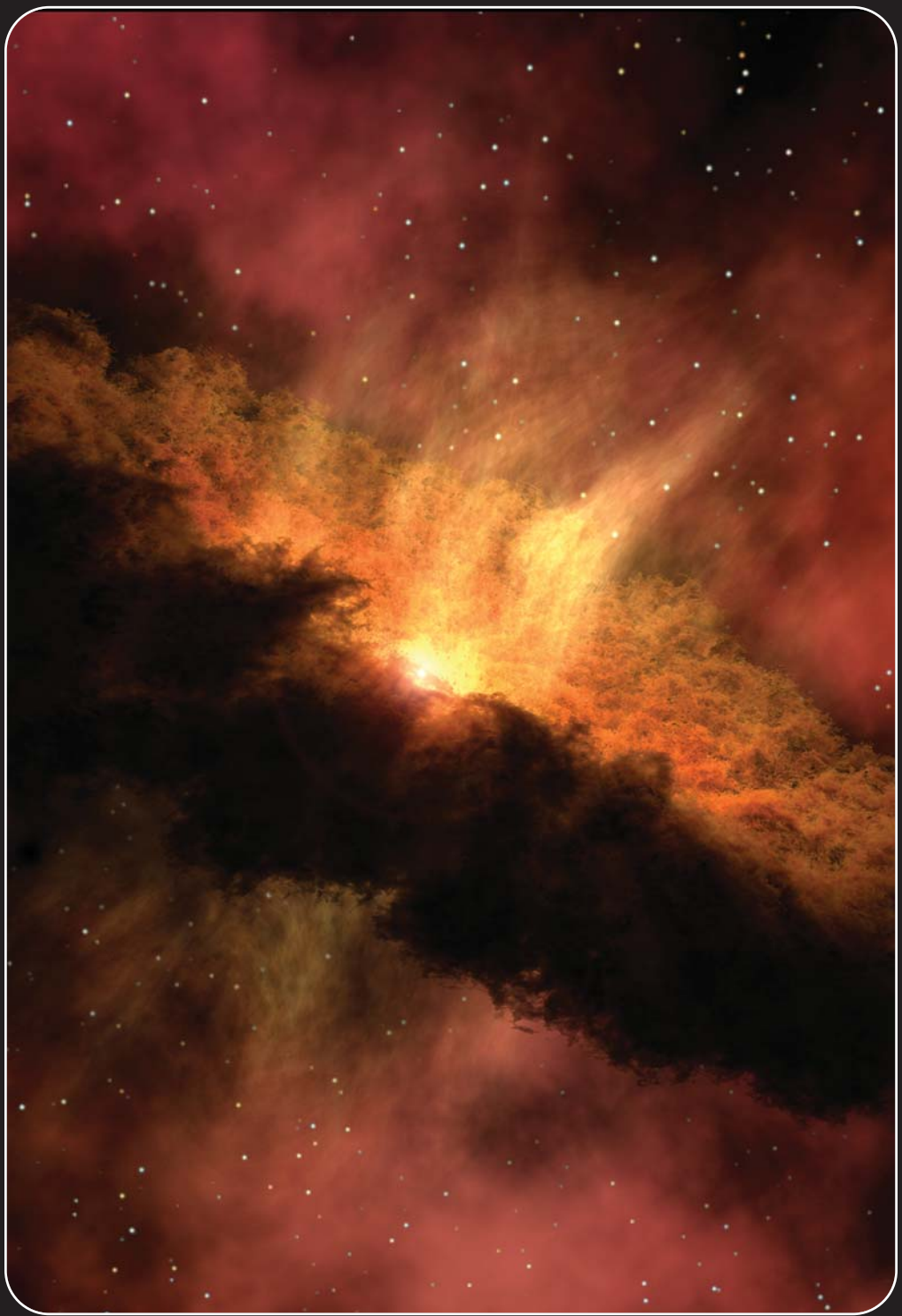
Two new results from NASA's Spitzer Space Telescope released today are helping astronomers better understand how stars form out of thick clouds of gas and dust, and how the molecules in those clouds ultimately become planets. Using Spitzer's infrared eyes, a team of astronomers of the University of Texas at Austin probed dozens of these dusty cores to gain insight into conditions that are needed for stars to form.

In one discovery, Spitzer's infrared eyes have peered into the place where planets are born—the center of a dusty disc surrounding an infant star—and spied the icy ingredients of planets and comets. This is the first definitive detection of ices in planet-forming discs. This disc resembles closely how we imagine our own solar system looked when it was only a few hundred thousand years old. It has the right size, and the central star is small and probably stable enough to support a water-rich planetary system for billions of years into the future.

Who could imagination that from a cloud of cosmic dust, such a beautiful life-sustaining work of Art could be sculpted? Just like a sculptor with his clay, the Grand Sculptor of the universe used just the right combination of life-sustaining materials to express His imagination on a grand scale for our benefit, when from cosmic dust He formed our Sun that gives life to this planet we call home.

The images from page 80 to 88 represent the formation of our Sun and solar system, including planet Earth and its moon as they were born in dense darkness, a period thought to be billions of years long.

Star System NGC 1333-IRAS 4B (Artist Concept) A Grand Architect Revealed



SUPREME IMAGINATION

Star Dust Collects to Form Planets

Galileo may have wondered how the Earth was formed and what held it in place. He did not have the benefit of an infrared space telescope to give him any clues. Like a curious child, he sought answers to those questions. Only now are some of these long-hidden secrets being revealed as man looks back in time, aided by the technology of Hubble and Spitzer.

These artist concepts of the Spitzer and Hubble space telescope's discoveries of planets forming from the cosmic dust debris of newly forming stars can give us some clues. Hubble and Spitzer are uncovering secrets as to how our Sun and solar system—including Earth—were formed. Notice the progressive stages. This is how the star forms first, creating a disk of cosmic dust and debris. The planets were then formed from the dust lanes in darkness. All the dust and debris blocked the Sun's light until the dust and debris eventually dissipated, finally allowing the parent Sun to provide unrestricted life-sustaining light. NASA press release, August 29, 2007:

Star System Called NGC 1333-IRAS 4B

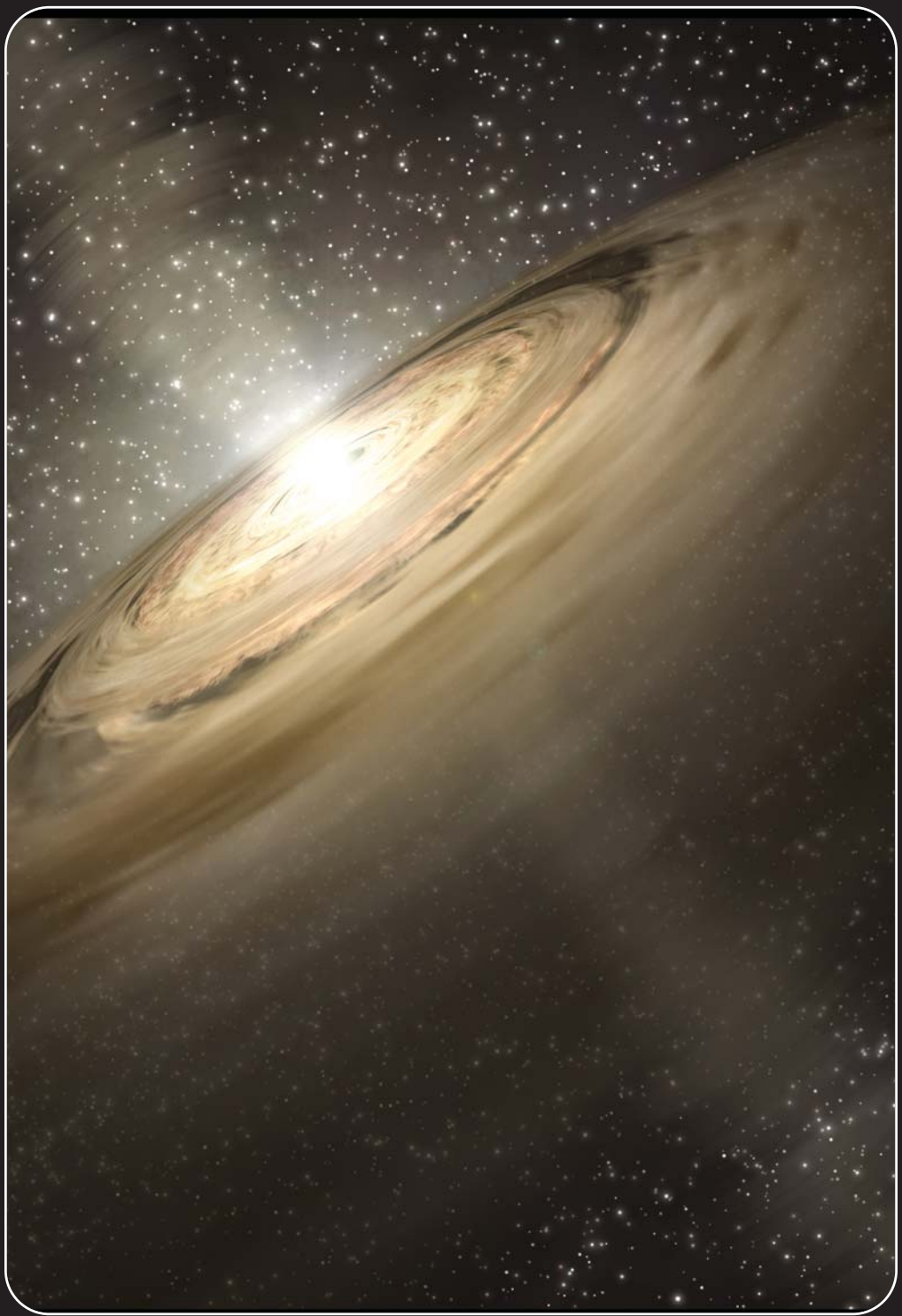
In the new Spitzer study, water also serves as an important tool for studying long-sought details of the planet formation process. By analyzing what's happening to the water in NGC 1333-IRAS 4B, the astronomers are learning about its disk. For example, they calculated the disk's density (at least 10 billion hydrogen molecules per cubic centimeter or 160 billion hydrogen molecules per cubic inch); its dimensions (a radius bigger than the average distance between Earth and Pluto); and its temperature (170 Kelvin, or minus 154 degrees Fahrenheit).

Water is easier to detect than other molecules, so we can use it as a probe to look at more brand-new disks and study their physics and chemistry, this will teach us a lot about how planets form. We have captured a unique phase of a young star's evolution, when the stuff of life is moving dynamically into an environment where planets could form. NGC 1333-IRAS 4B's central stellar embryo is still "feeding" off the material collapsing around it and growing in size. At this early stage, astronomers cannot tell how large the star will ultimately become.

As new information pours in from space we are getting a much clearer blueprint of how our sun and Earth formed. The great mystery of just how earth was created from cosmic dust is beginning to unravel before our very eyes. Hubble and Spitzer are just scratching the surface of an Awe-Inspiring undertaking!

According to a new study by Australian astronomers there are "70 sextillion stars in the known universe." Assuming that many, if not all stars, may eventually develop planets during their life cycle, it is reasonable to assume that if each star developed just six planets there could be 420 sextillion planets in the universe (420,000,000,000,000,000,000,000). That astronomical number significantly increases the likelihood of a large number of inhabitable planets in the universe!

Star IRS 46 (Artist concept)



SUPREME IMAGINATION

A Dusty Construction Zone

As the cosmic dust masses were brought together billions of years ago to form our solar system, along with Earth, its Designer no doubt took great delight knowing that this would serve a special purpose. Perhaps Earth's dusty construction zone looked similar to this scene discovered by Spitzer in the Ophiuchus constellation. NASA press release, December 20, 2005:

Partial Ingredients for DNA and Protein Found Around Star

NASA's Spitzer Space Telescope has discovered some of life's most basic ingredients in the dust swirling around a young star. The ingredients—gaseous precursors to DNA and protein—were detected in the star's terrestrial planet zone, a region where rocky planets such as Earth are thought to be born. The findings represent the first time that these gases, called acetylene and hydrogen cyanide, have been found in a terrestrial planet zone outside of our own.

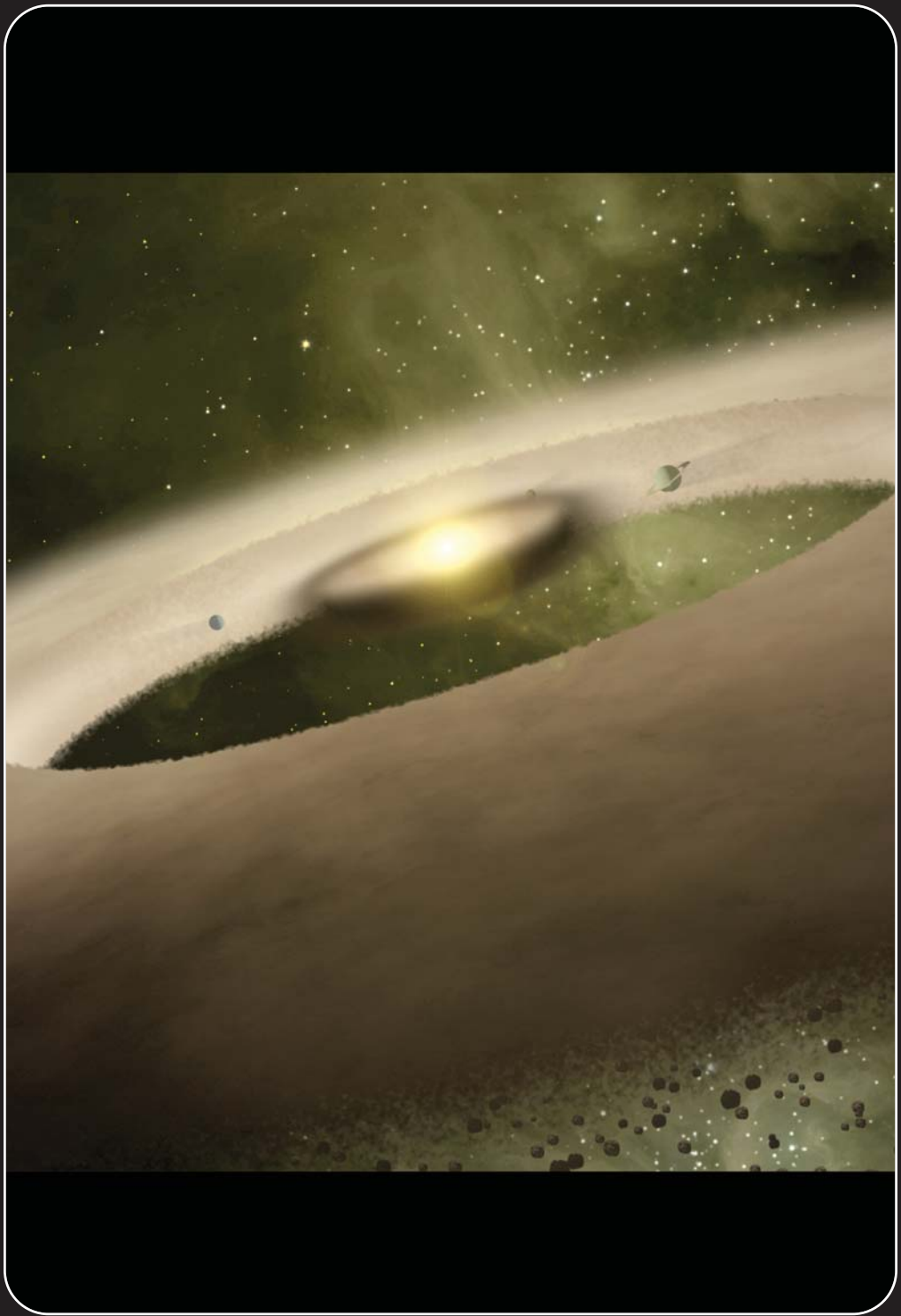
This infant system might look a lot like ours did billions of years ago, before life arose on Earth, said scientists of Leiden Observatory in the Netherlands and the Dutch space research institute called SRON.

Scientists spotted the organic, or carbon-containing, gases around a star called IRS 46. The star is in the Ophiuchus (pronounced OFF-ee-YOO-kuss), or "snake carrier," constellation about 375 light-years from Earth. This constellation harbors a huge cloud of gas and dust in the process of a major stellar baby boom. Like most of the young stars here and elsewhere, IRS 46 is circled by a flat disk of spinning gas and dust that might ultimately clump together to form planets. When the astronomers probed this star's disk with Spitzer's powerful infrared spectrometer instrument, they were surprised to find the molecular "barcodes" of large amounts of acetylene and hydrogen cyanide gases, as well as carbon dioxide gas. The team observed 100 similar young stars, but only one, IRS 46, showed unambiguous signs of the organic mix.

Here on Earth, the molecules are believed to have arrived billions of years ago, possibly via comets or comet dust that rained down from the sky. Acetylene and hydrogen cyanide link up together in the presence of water to form some of the chemical units of life's most essential compounds, DNA and protein. These chemical units are several of the 20 amino acids that make up protein and one of the four chemical bases that make up DNA. Follow-up observations with the W.M. Keck Telescope atop Mauna Kea in Hawaii confirmed the Spitzer findings and suggested the presence of a wind emerging from the inner region of IRS 46's disk. This wind will blow away debris in the disk, clearing the way for the possible formation of Earth-like planets.

Is it not amazing that each of us, this Earth, and everything around us began as an oversized ball of clay, created from cosmic dust? From this clay we were sculpted into living works of art by a Grand Sculptor. Without this life-giving process all we would be is simply a lump of clay.

UX Tau A (Artist concept)



Planets Born in Darkness

No one really knows exactly when the Earth was formed 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 be like 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. NASA press release, November 28, 2007:

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.

During the earliest phase of planet formation the earth would have been a mass of moist dirt and rock clumping together as it grew in size over time, much like a snowball as it rolls in the snow. This process took place inside a dense cloud of dust as it revolved around the sun, as seen in the images on the previous pages.

This planet-forming phase observed by Spitzer, reveals how planets are formed in darkness in their younger stage. The Sun's light would have been blocked from Earth for perhaps billions of years, much like what we see in these images. As the dense dark dust lanes between the earth and the sun are sucked up by the Earth, Venus and Mercury like giant vacuum cleaners, the older, more mature Earth would gradually over time, emerge from darkness into the light.

These dusty dark phases Spitzer has witnessed, appears to correspond scientifically to verse two of the Geneses account where the earth at some stage was formless and shrouded in darkness. This gives a great deal of credibility to this ancient account. **The earth was formless and empty, and darkness covered the deep waters. – Geneses 1:2**

SUPREME IMAGINATION

Life-Giving Light Emerges

As the dust and cosmic debris in our solar system were polished away the Earth cooled, its dense cloud mass dissipated, and life-giving rays of the Sun warmed our world in order to sustain life.

Sunlight, in the broad sense, is the total frequency spectrum of electromagnetic radiation given off by the Sun. On Earth, sunlight is filtered through the Earth's atmosphere, and solar radiation is obvious as daylight when the Sun is above the horizon.

The existence of nearly all life on Earth is fueled by light from the sun. Most autotrophs, such as plants, use the energy of sunlight, combined with carbon dioxide and water, to produce simple sugars—a process known as photosynthesis. These sugars are then used as building blocks and in other synthetic pathways which allow the organism to grow.

As the surface water over the earth pressed down on the earth's surface, dry land slowly appeared as oceans formed. In time, an atmosphere developed, including an ozone layer as part of the delicate balance of life that would eventually follow.

Sun's warmth reaching the earth changed everything. It set into motion an orderly process that prepared the earth in stages to eventually support intelligent human life. First, the process of photosynthesis kicked in that led to the development of earth's atmosphere. Green vegetation began to blanket the earth as a food source, for sea life, flying creatures, land animals, and finally—humans.

In order to prepare Earth for living creatures, including humans, an oxygen-filled atmosphere was needed. This has been provided through the ingenious engineering process called photosynthesis.

Photosynthesis is a process that converts carbon dioxide into organic compounds, especially sugars, using the energy from sunlight. As well as maintaining the normal level of oxygen in the atmosphere, nearly all life either depends on photosynthesis directly as a source of energy, or indirectly as the ultimate source of the energy in their food.

Just as a farmer would prepare his fields in order to successfully grow his crops it appears the Grand Architect of Earth took great care to prepare the Earth for life to flourish in abundance.

The images from page 90 to 102 represent the finial progressive and orderly phases the Earth underwent for its completion in order to prepare it for the arrival of intelligent human life. It is not clear how long these periods, would have been, evidence reveals that a considerable amount of time passed before humans arrived on the scene. Interestingly these episodes give validity to the six creative days or periods of the Geneses account.

Hubble has revealed as Galileo discovered, not all scripture can be taken literally. Often, throughout the scriptures a day is referred to an unspecified amount of time and not a literal twenty four hour day.

The Heart of a Planet

Earth was eventually covered with a blanket of green vegetation of every kind. As the heartbeat of the planet it provides nourishment for a vast array of living creatures, including humans.

Earth's soil is much more than lifeless dirt. Just scoop up a hand full of it and you will find a complex medium for growth, bursting with organisms. Just two pounds may contain well over 500 billion bacteria, one billion funguses, and up to 500 million multi-cellular creatures, from insects to worms. Many of these organisms work together, breaking down organic matter—such as leaf litter and animal waste—while extracting nitrogen, which they convert into forms that plants can absorb. They also change the carbon into carbon dioxide and other compounds that plants need for photosynthesis.

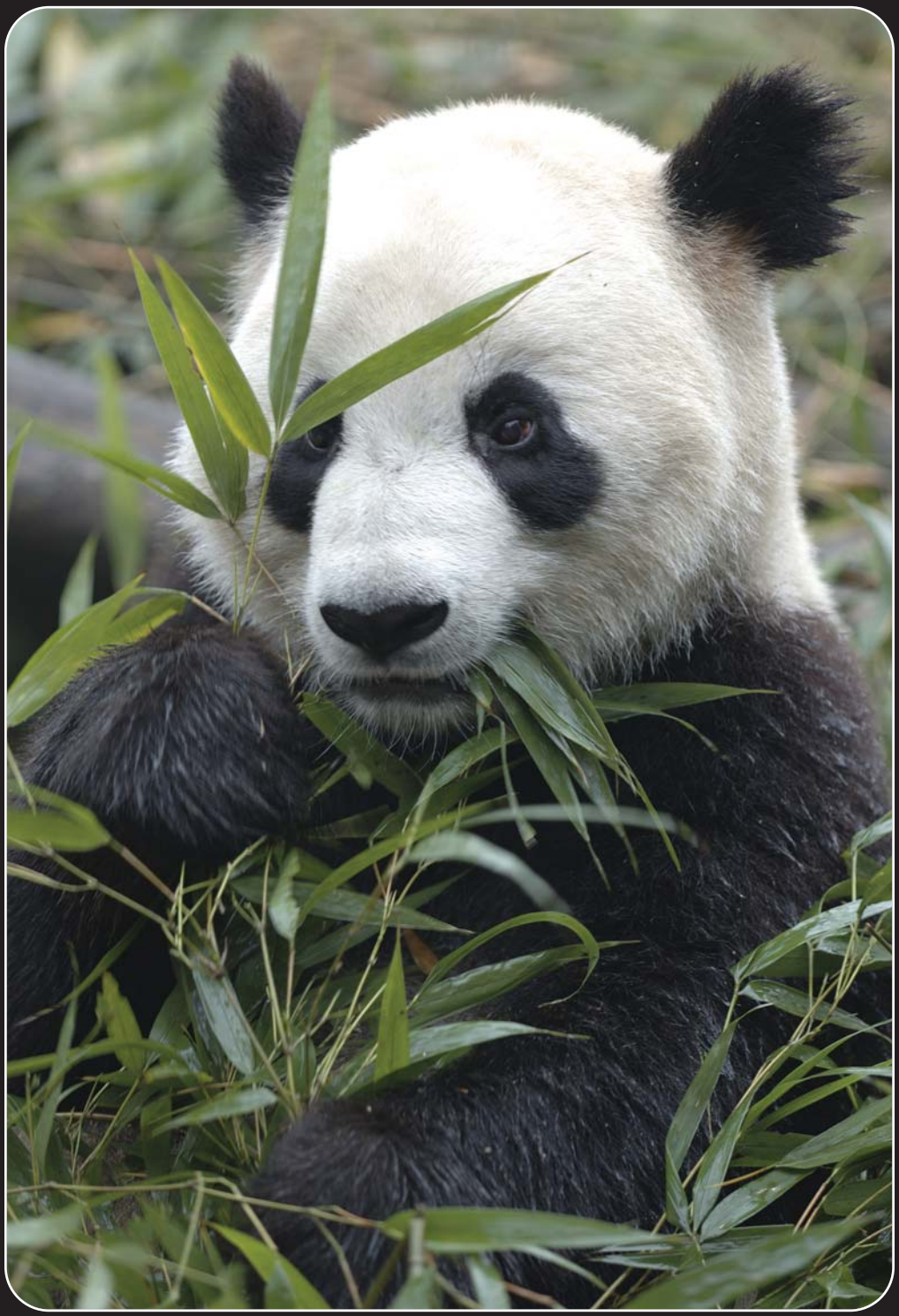
Vegetation, from grasses to trees, is the foundation of the "food chain" on the land. This is because no animal can manufacture its own food. But plants do this work by the complex process of photosynthesis, a process not yet fully understood or duplicated by man. Scientists who study plant species are called botanists. Botanists have, thus far, identified more than 300,000 species of plants on our amazing planet.

Not only does vegetation provide needed oxygen, it supplies our every desire for food and scenic beauty. See Earth truly come alive as its heart beats in a way you have never imagined. You will be amazed when you go to this website: http://oceancolor.gsfc.nasa.gov/SeaWiFS/HTML/SeaWiFS.BiosphereAnimation.70W.html or Google "SeaWiFS Biosphere Animation" to view the planet animation imaging by NASA's SeaWiFS satellite.

See for yourself how the heart of the Earth appears to be beating as the seasons come and go. The Earth's vegetation expands over the planet each growing season, and then retracts in this animated display, as if the Earth's heart were pulsating and providing life to all! The earth appears to be alive!

Look at the endless variety of plant life on the Earth. It, too, came from the dust of the ground. This phenomenon emanated from an Imagination far superior to that of man. As caretakers of the Earth, it is man's responsibility to make sure that an environmental balance is maintained.

However, we are doing a poor job of stewardship of the planet, considering the multitude of serious environmental issues facing man today. According to the World Conservation Union, a total of 5,453 animal species are in danger of being wiped out forever, along with 5,714 plant species. How many thousands have already been lost forever, due to man's greed, insensitivity and short-sightedness? Could we not learn from the Creator of all these things how to better manage our home?



Man's Beloved Friends and Teachers

Can you member your first encounter with a land animal? Perhaps it was a puppy or kitten. Can you remember how much joy it brought you when you would play with it, or cuddle it in your arms or when it licked you on the face? When you look at the panda to the left does it not make you want to just pet it or scratch it behind its ears and play with it? It's a natural human emotion to be drawn to animals.

It is clear that animal life on this planet was put here for the benefit and enjoyment of man. From the very beginning, we have observed and studied animals and thus gained a vast wealth of knowledge from them. We have copied their actions and behavior to develop new products like airplanes, submarines, and countless other inventions.

Though humans have shared the planet with millions of other creatures for thousands of years, we know surprisingly little about our neighbors—we do not even know exactly how many animals call Earth home. There are over 1.7 million identified species of animals and many millions yet to be named. We have only scratched the surface of understanding animal life. Some scientists contend we have discovered a mere ten percent of all living things on this planet.

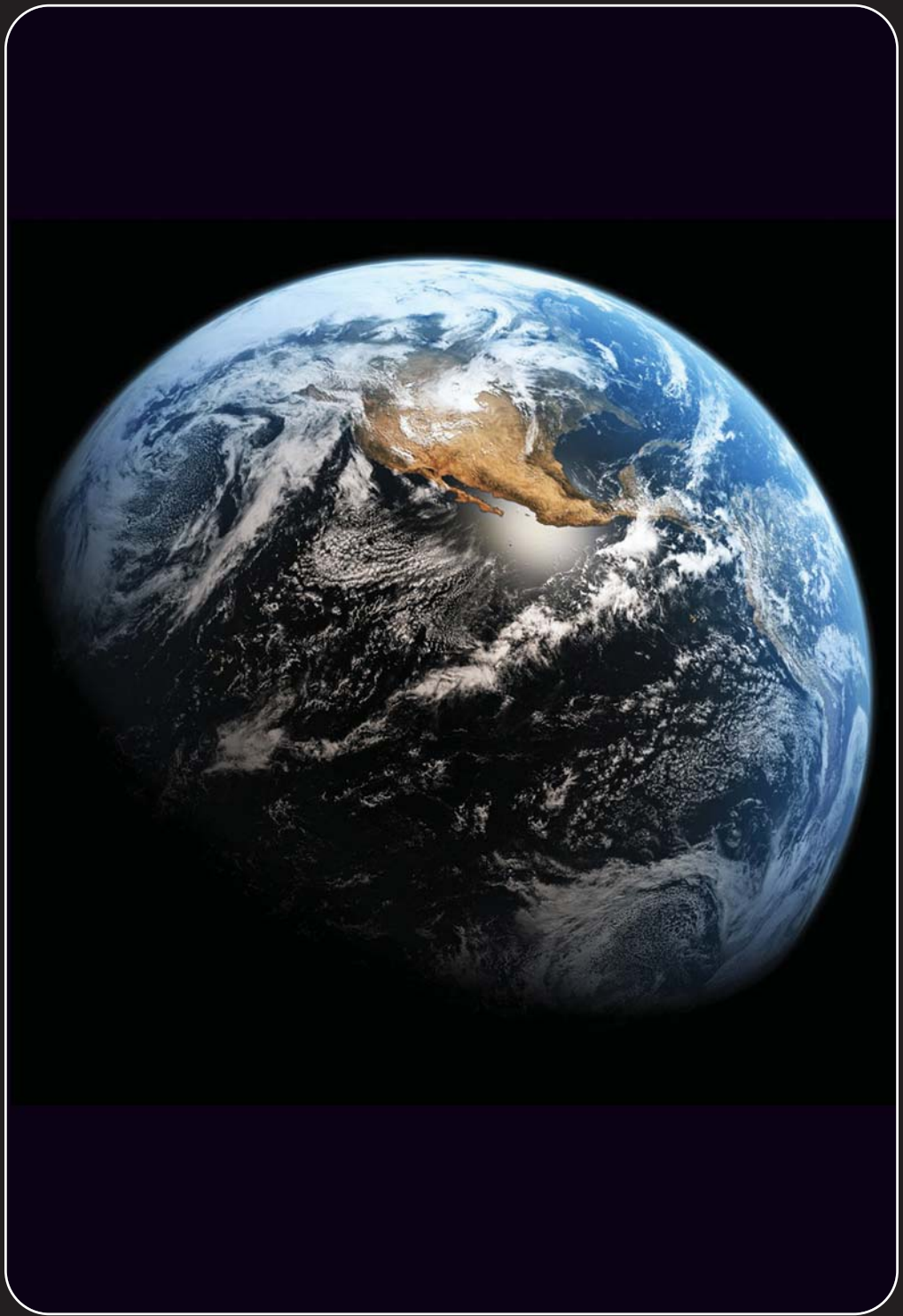
Did you know the cheetah is recognized as the fastest land animal in the world; it reaches speeds upwards of seventy m.p.h., and Pronghorn antelopes, can reach speeds of up to sixty m.p.h. Are you aware that Polar bears can jump over a twenty-foot crack in the ice, and can swim very long distances in near-freezing water because they have a thick layer of blubber to keep it warm?

Animals are designed in such a way that they have a general fear of man as their superior. Wild animals normally prefer to retreat from man's presence, however they do attack when provoked, wounded, cornered, or suddenly surprised. Some animals sometimes become man-eaters by force of circumstances when their food supply becomes depleted.

When people exercise proper dominion over animals and treat them with respect, the results can be heartwarming. A beloved animal may be viewed as a treasured companion, even as part of the family. The remarkable loyalty and devotion of animals actually causes some people to have stronger attachment and love for their pets than for some family members.

When you add up the different complex living creatures here on Earth, they number into the millions, with each acting as a unique book in a grand library of books just waiting to be studied. Each unique species must serve some purpose toward our needs. Already, we have gleaned vast amounts of valuable information, but much more remains yet unknown.

Every book has an author, a creator, as it were, who used their imagination to tell a story. The creator of all the living creatures here on Earth has used superior imagination to provide man with a library filled with wonderful books of every sort imaginable for our enlightenment, and joy.



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; it is a testament to the Supreme Mind responsible for it all.

One cannot look at this photo of Earth from space 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 demonstrated Supreme Imagination. Upon examining the most recent and sophisticated scientific evidence now coming forth, it becomes clear that He surely is responsible for our very existence. He alone has given us this special Jewel in the Universe, wonderfully prepared before our arrival. It is our home to take care of while our knowledge and wisdom grow as we learn more from the natural world around us.

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 man and woman, 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.

At some point, will we have the opportunity to explore our Awe-Inspiring Universe? The prospect of that it is truly exciting, only time will tell. Who would have thought 400 years ago that man's imagination would lead him to the threshold of time and space to a world beyond anything he could have dreamed of? Man has peered 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. Someone Who existed long before man arrived onto the scene. Someone Who, billions of years ago, laid the foundations of this incredible universe we are just now discovering.

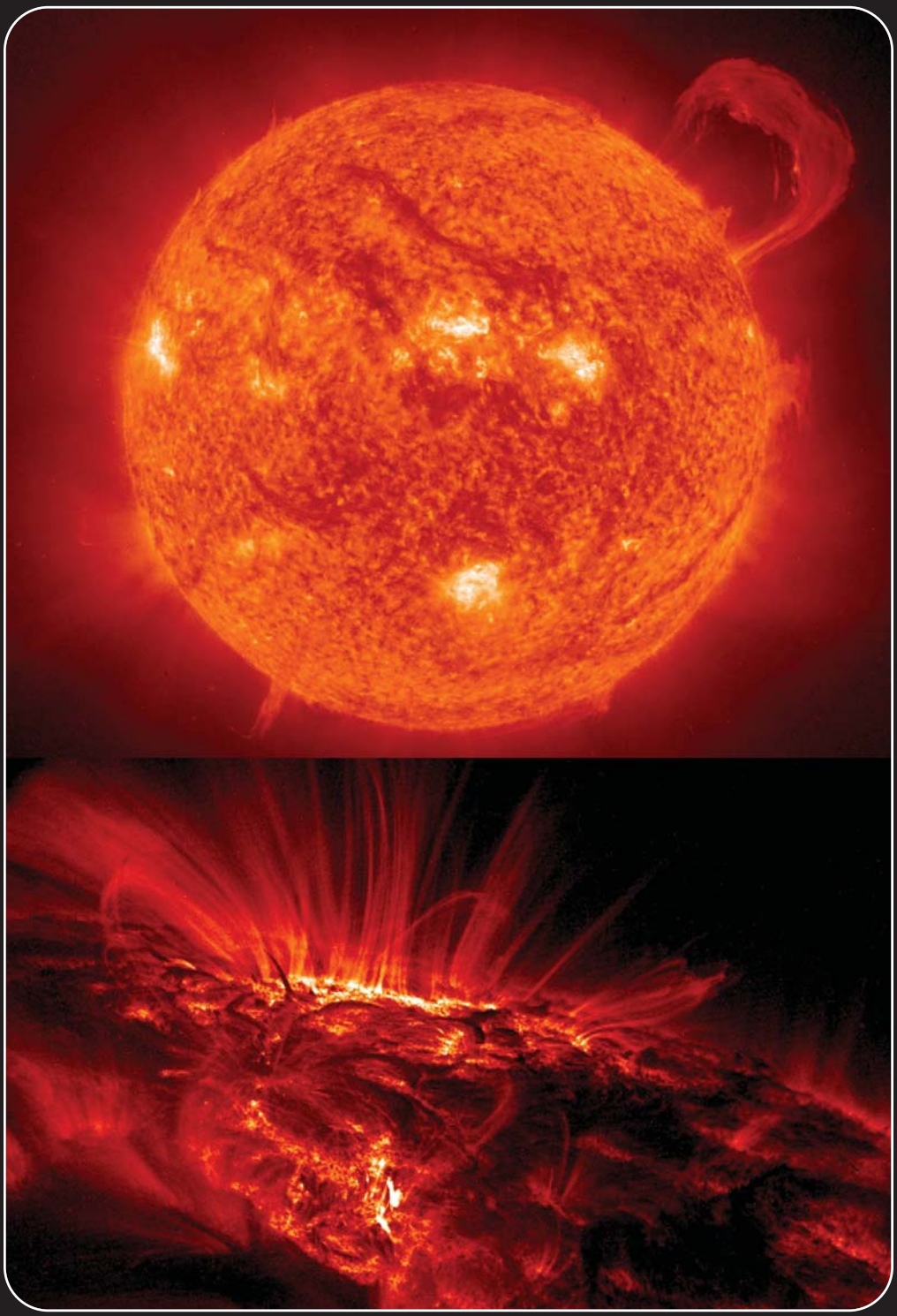
Have you ever pondered this question: *Who conceived this curious faculty we call Imagination?* Each of us have this intangible creative force within us to achieve anything we can imagine. The fact we can shape the world around us, is proof in and of itself of an original Creator Who designed this creative force into us!

Power Beyond Comprehension

To whom will you compare me? Who is my equal?

Our Sun

Power Beyond Comprehension



SUPREME IMAGINATION

Power Beyond Comprehension

Each day when we wake up we take for granted that the sun will rise in the east and shower us with its rays of life-giving energy. Without our Sun, life simply would not exist here on Earth. Yet when you take a closer look at the makeup of it you have to wonder why we don't simply burn up from its intense heat.

Our solar system's star, the Sun, has inspired mythological stories in cultures around the world, including those of the ancient Egyptians, the Aztecs of Mexico, Native American tribes of North America and Canada, the Chinese, and many others. A number of ancient cultures built stone structures or modified natural rock formations to observe the Sun and Moon. They charted the seasons, created calendars, and monitored solar and lunar eclipses. These architectural sites show evidence of deliberate alignment to astronomical phenomena: sunrises, moonrises, moonsets, even stars or planets.

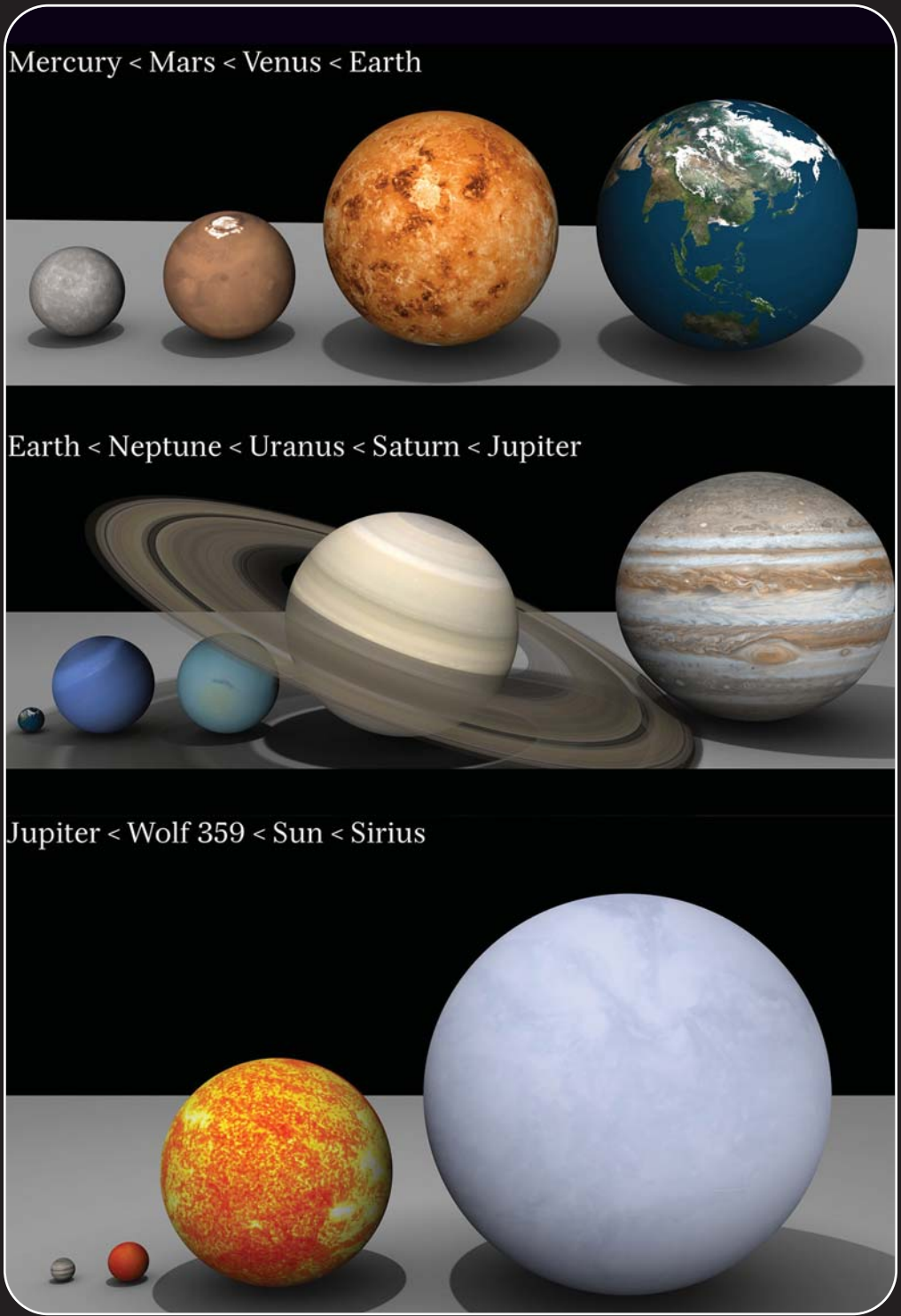
The **Sun** is the star at the center of our Solar System, and is currently traveling through the Local Interstellar Cloud in the Local Bubble zone, within the inner rim of the Orion Arm of the Milky Way galaxy.

It has a circumference of about 2,715,364 miles, about 111 times that of Earth at 24,873 miles. The sun's mass (about 332,900 times that of Earth) accounts for about 99.86% of the total mass of the Solar System. The core temperature of the Sun is close to 27,000,000 degrees fahrenheit. It is, on average, about ninety-three million miles from the Earth. Yet, on a sunny day, its heat can blister your skin. Stare at it long enough and you would go blind! Remarkably, only about one billionth of the sun's energy strikes the Earth. Still, this fraction of the sun's power is enough to sustain life on the planet.

The Sun, like most stars, is a main sequence star, and thus generates its energy by nuclear fusion of hydrogen nuclei into helium. In its core, the Sun fuses 620 million metric tons of hydrogen each second. The Sun's hot corona continuously expands in space, creating the solar wind, a stream of charged particles that extends to the heliopause at roughly 100 astronomical units (one astronomical unit is equal to about 92,955,807.27 miles).

Scientists have calculated that the total energy output from just our sun is enough to sustain some 31 trillion planets like the Earth. To measure this enormous output another way: If all the sun's power could be harnessed for just one second, it would provide the United States with enough energy, at its current usage rate, for the next 9,000,000 years.

As mind numbing and awe-inspiring as the extreme energy our sun produces each second is, it is in reality a relatively small sun among the countless trillions of other stars in the universe. Compared to the red hypergiant star VY Canis Majoris located in the constellation Canis Major, (with an estimated circumference of 5.2 billion miles), our Sun is but a speck of dust in the grand scheme of things.


Mercury < Mars < Venus < Earth
Earth < Neptune < Uranus < Saturn < Jupiter
Jupiter < Wolf 359 < Sun < Sirius

Putting Things Into Perspective

When we put things into perspective, it is truly humbling. It forces us to realize how puny and insignificant we really are. It begs the question: How can we, mere specs of dust, question the existence of the One responsible for all these stars?

Who among us could compare themselves to any of these dynamic star powerhouses of energy sprinkled throughout the universe like perfectly-cut diamonds? How could we challenge the Creator who brought them forth with vigorous power.

By studying and thinking about the images in this chart to the left and on the following pages, you will no doubt have an awakened sense of smallness and humility. Especially since these stars represent only a tiny slice of the cosmic web, with countless trillions of trillions of stars that compose the universe. The point of this exercise is to help you understand how incomprehensibly powerful, is the energy unleashed in the universe. May it drive home the point that Isaiah spoke an unfathomable truth.

Starting with Mercury and ending with Earth, notice in the first section how the size of things get progressively larger, but how Earth is dwarfed by Jupiter in the second section, then notice how Jupiter is dwarfed by the star Sirius in the third section. Sirus is known in the night sky as the Dog star reflecting its prominence in its constellation, Canis Major (Big Dog) is the sky's brightest star. Its brightness makes it easy to find on winter and spring evenings. To the early Greeks, the season following the star's appearance came to be known as the Dog Days of summer.

Circumference Size Comparision Chart

Mercury	9,525 mi
Mars	13,259 mi
Venus	23,627 mi
Earth	24,873 mi
Neptune	96,683 mi
Uranus	99,787 mi
Saturn	235,297 mi
Jupiter	279,118 mi
Wolf 359	434,458 mi
Sun	2,715,364 mi
Sirius	5,231,615 mi

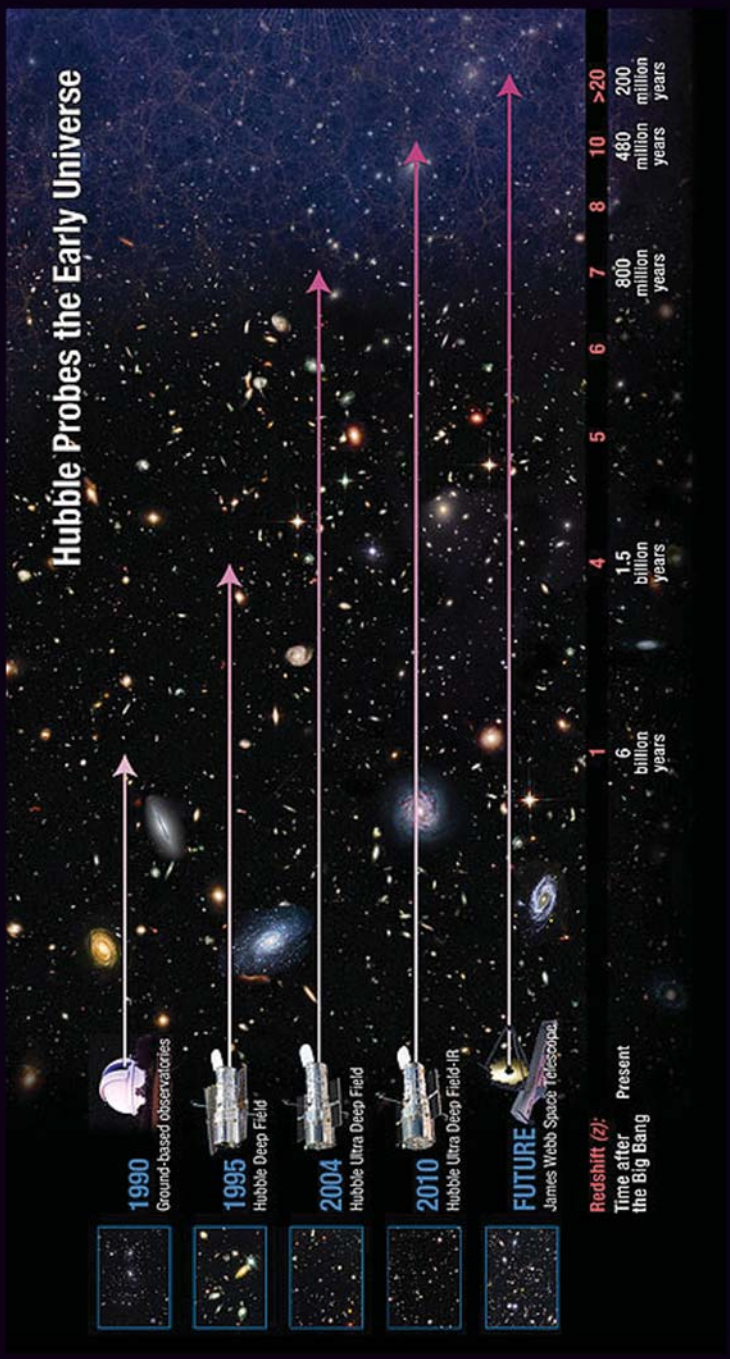
Hubble Space Telescope

A Grand Architect Revealed

MAN'S IMAGINATION PEERING INTO SUPREME IMAGINATION

Creative Imagination

What a Wonderful, Intangible Force!


Hubble Probes the Early Universe
1990
Ground-based observatories
1995
Hubble Deep Field
2004
Hubble Ultra Deep Field
2010
Hubble Ultra Deep Field-IR
FUTURE
James Webb Space Telescope
Redshift (z):
Present
1
6 billion years
4
1.5 billion years
6
800 million years
8
480 million years
10
200 million years
>20

Today's Dream is Tomorrow's Reality

When Galileo turned his newly-improved telescope to the night sky, he found a doorway that no one before him had discovered. With his discovery he had cracked the door open just enough to get a glimpse of a world he had never imagined. In March, 1610, Galileo published the first scientific treatise based on observations made through a telescope. He called it *The Starry Messenger*. The question one must now ponder is this: was Galileo, unbeknownst to himself, merely the first character in a string of characters to act out their role in a prescripted 400-year rehearsal? This rehearsal has culminated in filming the greatest drama in human history. With the telescope, Galileo ignited a Scientific Revolution in the study of the night sky. It revealed phenomena in the heavens that Aristotle and others had not dreamed of. It had a profound influence on the controversy of an Earth centered universe in his day.

In the generations since the seventeenth century, astronomers and scientists have managed to pry that door open a little wider with improvements to the telescope. It was not until the twentieth century that the door was flung wide open with the invention of flying telescopes, like the Hubble and later, the Spitzer. Soon to come will be the James Webb Next Generation telescope, which will be far more powerful than the Hubble.

The JWST will be a true successor to the Hubble Space Telescope (HST) in that it will be able to see many more and much older stars. Its primary mirror has a collecting area which is almost six times larger than the (HTS). The JWST's primary scientific mission has four main components: to search for light from the first stars and galaxies which formed in the Universe after the Big Bang, to study the formation of galaxies, to understand the formation of stars and planetary systems and to study planetary systems and the origins of life. It is expected to look back within 180,000 years of the big band and can be compared to a 70 year old person looking back in time and seeing themselves as an 11 month old toddler. (This chart shows how man's depth of sight into the universe is picking up its pace every few years now instead of decades as in the past).

Here are some key questions to ponder: What new technology will our imaginations create in the future that seems impossible today, but will become tomorrow's reality? Like bees spreading pollen from plant-to-plant to keep the miracle of life growing, will man someday go from planet-to-planet, galaxy-to-galaxy, spreading the miracle of life throughout the universe? Is it man's eternal purpose to transform the cosmos into a beautiful world, full of life as we grow and expand our imagination? Can you imagine being a part of something so Grand? Just imagine how thrilling it would be!

Imagination is the key. As Einstein stated, Imagination is everything. If we could just use it only for good and not for bad, what a world this would be! Come on World—Use your Imagination—for Good!

Our Universe

A Grand Architect Revealed

SUPREME IMAGINATION

Imagine—A Perfect World!

If you could imagine a perfect world, what would it look like? Perhaps this world is what you would envision.

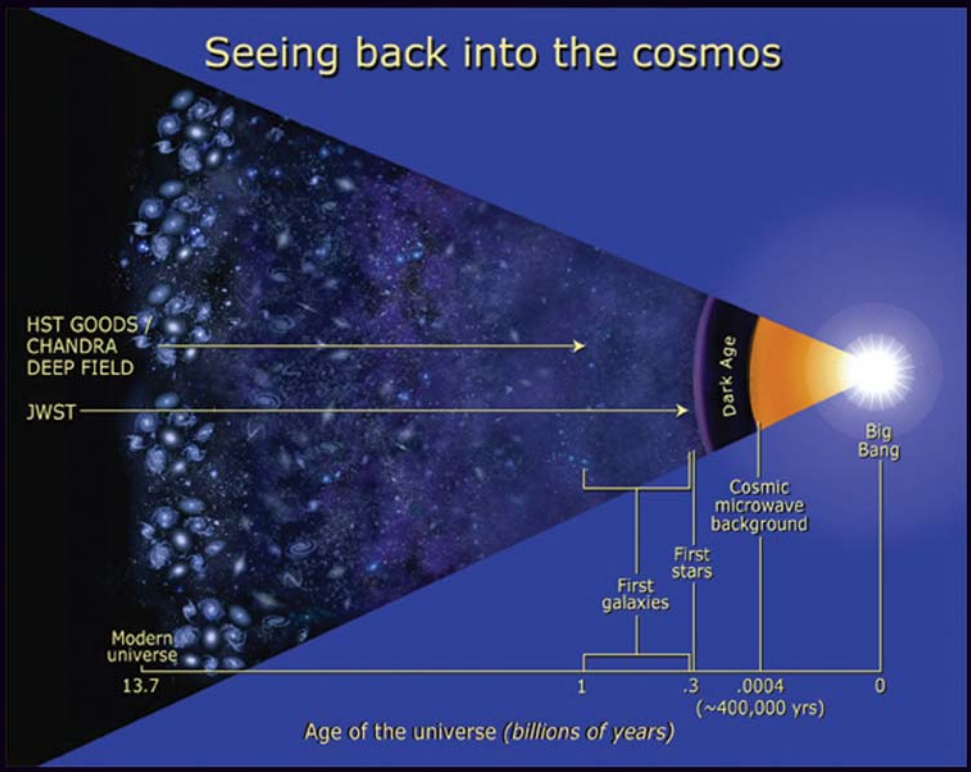
Imagine—an Earth with no holes in the ozone where poisonous radiation is pouring in to harm you. There are no clouds of smoke and poisonous gases spewing from smokestacks or motorized vehicles. There are no global warming issues to worry about because the environment is perfect. The air we breathe is clean and pure once again, with no more smog. You can see the stars clearly when you look up at the night sky. The polar ice caps are stable and no longer in danger of melting. There are no harsh climate conditions caused by unnatural and accelerated global changes.

Imagine—the world's oceans have been cleaned up from all the pollution that has been dumped into them. The water is crystal clear once again, no more murky water to swim in. The coral reefs have all been restored to their original beautiful condition. There is no more red tide or other conditions that kill sea life. All the species once near extinction are flourishing again. The oceans are teeming with an ideal balance of sea creatures of every kind. Dolphins and other fish are no longer caught up in nets, nor do they die from consuming plastic and other waste left by humans. No oil spills. The water in all the lakes and rivers is crystal clear and pollution-free. To drink it, all you have to do is reach down and scoop it up with your hands.

Imagine—if man were suddenly removed from the --Earth, the Earth's self cleansing process would kick-in immediately and dramatically. Eventually, over time, the air, lakes, rivers, oceans, and the global environment would be pure and clean once again.

Imagine that. Man is the problem! How did things get this way? IMAGINATION—man's selfish misuse of it! It can all be reversed when all humans learn to use their IMAGINATION unselfishly to the benefit of their fellowman!

Imagine—a world where there are no more wars. Everyone is living in peace. No mothers, fathers, brothers, sisters, wives, husbands, or children have to mourn the loss of loved ones on the battlefield. No more innocent children maimed or killed from landmines. No more threat of nuclear bombs. No more tanks, missiles, or poisonous gas. In fact, there is no longer a need for weapons because all humans respect each other and treat one another like brothers and sisters. Everyone is kind and considerate to each other. The world is a place where we serve one another rather than ourselves. There is no more racial strife or national hatred because all are considered equals. No more political discord or corrupt leaders. There is no more religious conflict or indifference because the world's spirituality is singular


Seeing back into the cosmos
HST GOODS / CHANDRA DEEP FIELD
JWST
Dark Age
Big Bang
Cosmic microwave background
First stars
First galaxies
Modern universe
13.7
1
.3
.0004
(~400,000 yrs)
0
Age of the universe (billions of years)

What Does It All Mean?

What can we conclude? What does it all mean? Is there a bigger picture for us to see? Since truth is that which conforms to fact or reality, to answer those questions we must look at the facts. From what we have discovered beyond this doorway, the evidence is clear that there exists an incomparable power source that has created all the stars, just as the ancient prophet Isaiah stated long before the telescope was invented. The evidence is also clear that nothing comes into existence devoid of imagination.

This incomparable power source is beyond our comprehension, though it is not beyond our imagination. Even though it is beyond our comprehension that this power source surely has always existed, that, too, is not beyond our imagination. As humans, we possess an imagination that serves as the driving force we use to create and shape our future and envision life's coming attractions. This is a simple truth—our existence and the universe around us could only have come about through the same process of imagination but from an entity with a vastly superior sense of imagination (Imagination Supreme).

The Geneses account had it right; the universe had a beginning long before Hubble discovered it, as evident in the Big Bang. (See image to left) While leaving out the fine details, it turns out the Geneses account of creation, also gave us an accurate overview as to how Earth was formed in its early stages, shrouded in darkness. Spitzer has discovered that in Sun-like star systems planets are formed in lanes of dense dust corresponding to Geneses 1:2 (see page 82-88). Then Hubble and Spitzer together revealed with the Sun-like star called HD 107146, that as planets mature the dense dust is polished away to where the Sun's light would gradually filter through, making day and night distinguishable, corresponding with Genes 1:3 (see page 90) We do not have full comprehension of any of these acts of Supreme Creative Imagination. However, we have used our own imaginations to design the instruments like Hubble, Spitzer and soon the JWST to give us the fine details about creation the Geneses account left out in its brief overview of the beginning!

Think about how we each use our creative imagination to envision, create, and bring into existence things that which formerly did not exist. Your vision of your future creation, be it a painting, an invention, a book, a song, or whatever, starts as a thought process and through the use of your imagination you devise a way to bring your vision into reality. Now, that product or creation can never come into existence on its own. It will not create itself. You have to imagine it. You have to create it. You, alone, have to make it a reality—it simply will not come about any other way.

Like the creation or product conceived in your mind, the universe even though gravity, electromagnetism, and other forces, not fully understood are at work, it

costing tens of billions of dollars and hundreds of millions of man hours has been of man's own doing? Have those engaged in this quest been mere characters among a string of cast members performing their part as they each were drawn along by some invisible and compelling force to lead us to this Grand Revelation? Only time will tell!

Just as with any stage drama, there are many things that go on behind the scene that make the production work; things the audience never see. Likewise with the universe, there are obviously things going on behind the scene of the visible universe that we cannot see nor understand for now.

Like wide-eyed young children we now find ourselves seated in the theater of imagination in awe of every scene as each inspiring frame is transmitted from space to complete the reel of this silent motion picture. We don't fully comprehend for now what is unfolding on the screen before us, or what it all means, because the drama is not yet over and there are still many scenes yet to come.

As man is drawn forward into the future by his insatiable quest for knowledge and a sense of purpose, the pieces to life's puzzle will come together, and as the big picture emerges, he will finally understand his purpose in this vast and wonderful universe he has just discovered and recognize that it is all a product of an Intelligent Designer with Supreme Imagination—To Whom We Owe Our Very Existence!

We are but toddlers in a Grand and Infinite Universe on an insatiable quest for understanding!

THE GALLERY

OF A FORMERLY UNKNOWN ARTIST
WITH SUPREME IMAGINATION

The Gallery of Supreme Art

On the following pages you will view the artwork of the Grandest Artist ever known, whose works, until recently, were unknown! It is truly out of this world and a grand reflection of Supreme Power, Wisdom, Artistic Genius, and Creative Imagination—beyond human comprehension. These works of cosmic art tell a story of our past, including the creation of man's existence on Earth.

How did these Heavenly works of art come about? Common logic dictates that, as with any great work of art, imagination played a key role; in this case, Supreme Imagination had to have been used. And it required expended effort and energy on the part of the designer—in this case, Dynamic Energy beyond belief.

These works of art were not painted by mere mortals with brush strokes of colored oil paints onto cloth canvases. No, they were painted with cosmic dust supercharged with dynamic energy onto a canvas of dark energy peppered with stars covering billions of light-years across the great expanse of the heavens—truly a living orchestra playing in symphony.

In likeness of this Supreme Architect, man has been given the wonderful gift of creative imagination and, thus, we can now view this exquisite collection through space telescopes, like an unfolding Drama, perhaps in response to that invitation from 2,700 years ago. No other generation has been given such a peek into the mind of such a Supreme Imagination. Realize, that as beautiful as these images are, they are mere reflections of the reality that are alive, in motion and powered by dynamic energy. This collection is living proof of their Designer's Superior Power, Design, Wisdom, and Imagination.

Hopefully this gallery will inspire you, build your appreciation, and reaffirm your conviction for the Supreme Imagination demonstrated by the One responsible for these heavenly works of art. Each accompanying page contains information about the image. Also, for a comparison, at the bottom of each page are the names of men and women who have been respected for what they achieved through the use of their creative imaginations and the contributions they made to help shape our small world.

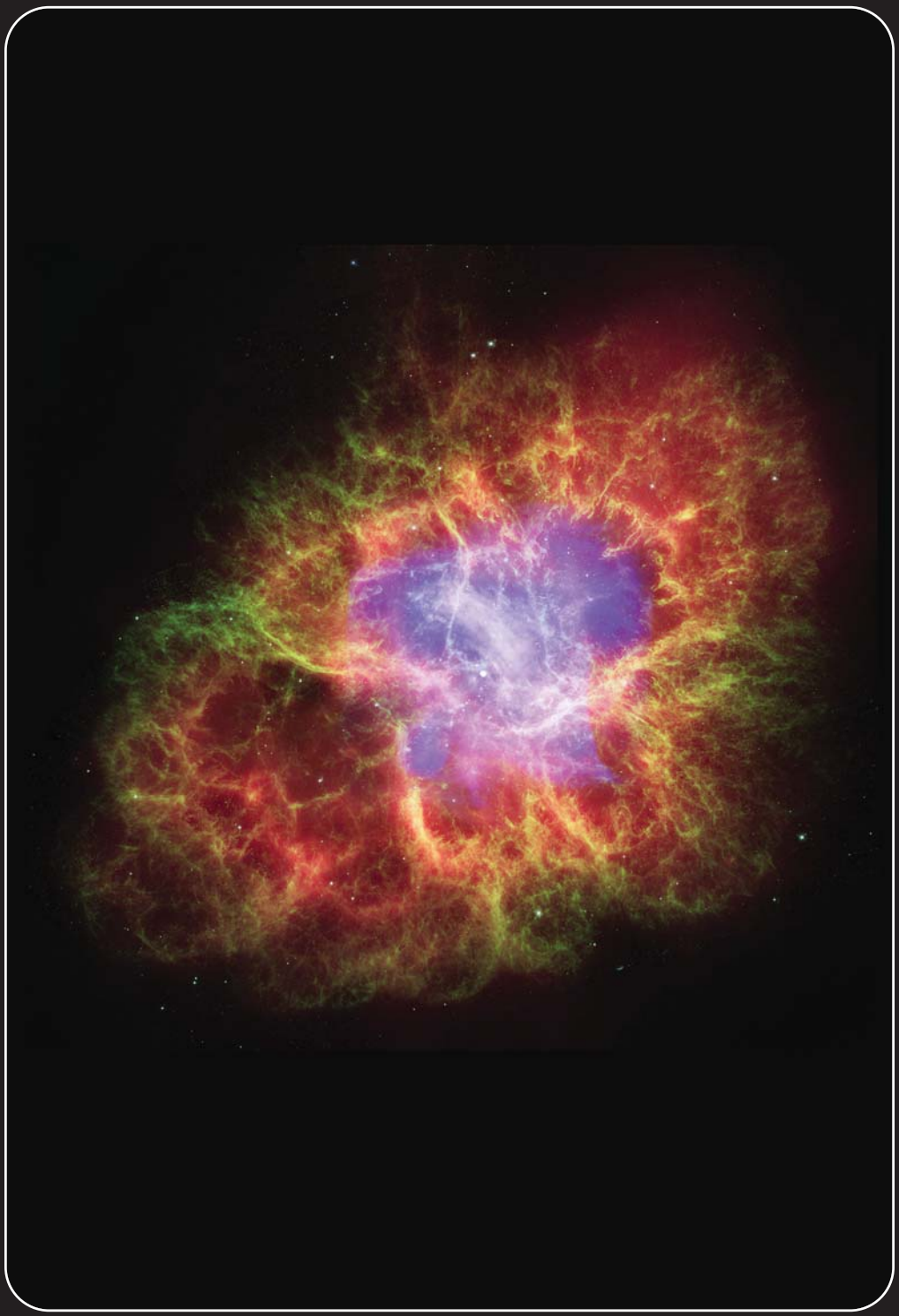
As you look at the awe-inspiring images on the left, compare the creative difference between them and the manmade inventions listed below the text. You will no doubt agree that as creative and important as man's accomplishments are, they pale in comparison to the Supreme Imagination behind these wonderful cosmic works.

"Imagination is everything."

How will we use this curious faculty to shape our future?

Crab Nebula NGC 1952

Cosmic Creation



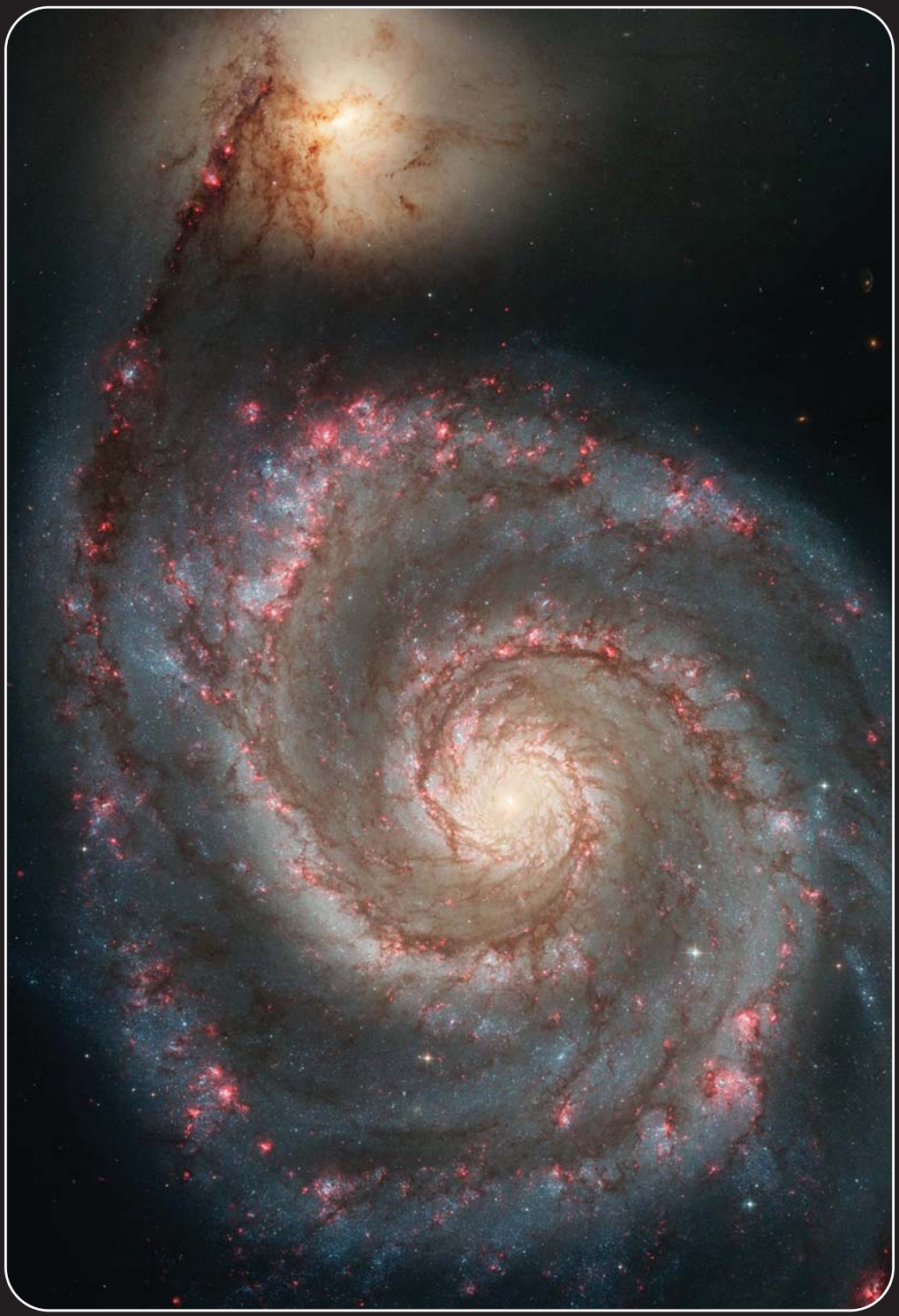
SUPREME IMAGINATION

Carina Nebula

Cosmic Creation

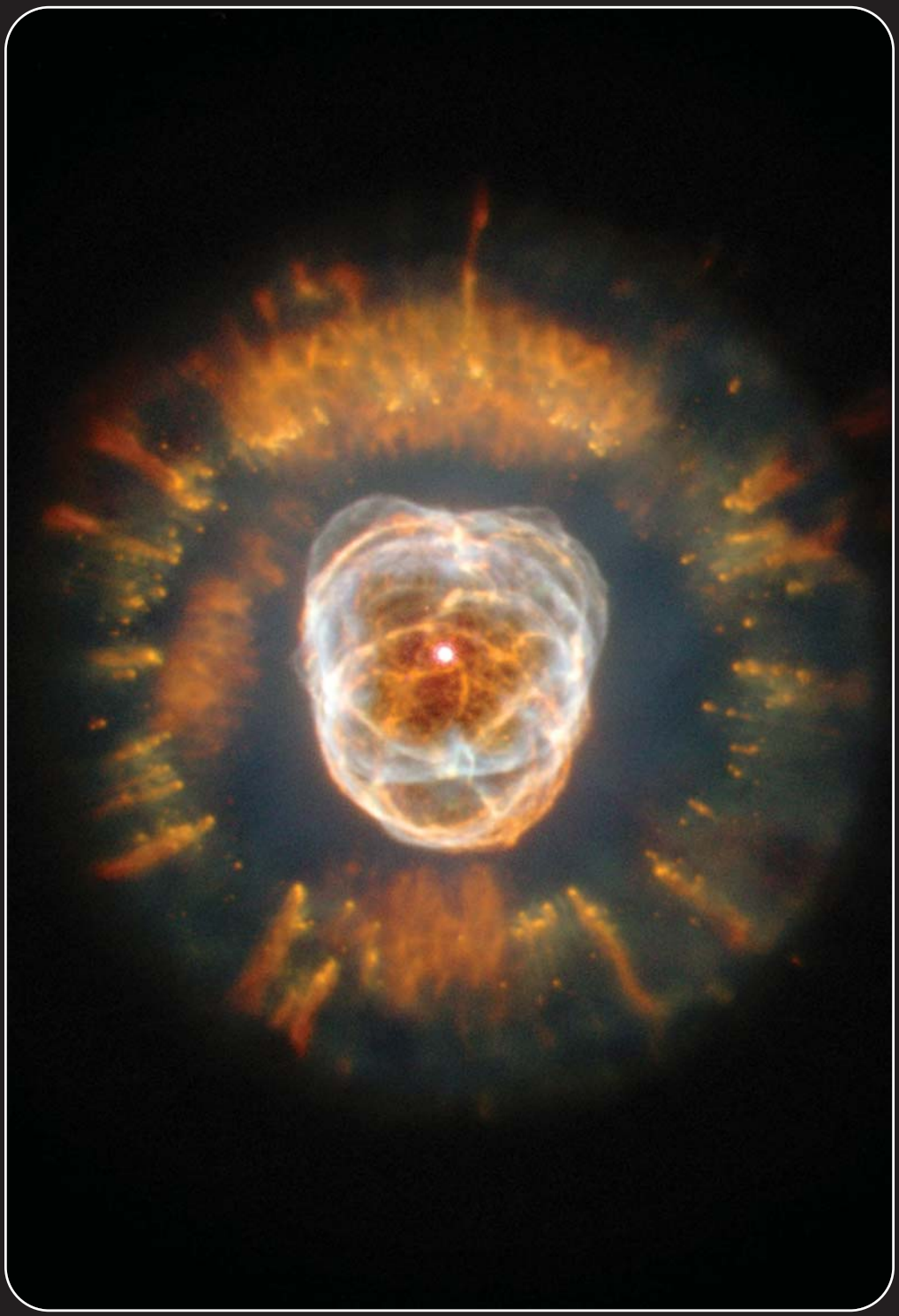
SUPREME IMAGINATION

Whirlpool Galaxy M51 and Companion Galaxy



Eskimo Nebula NGC 2392

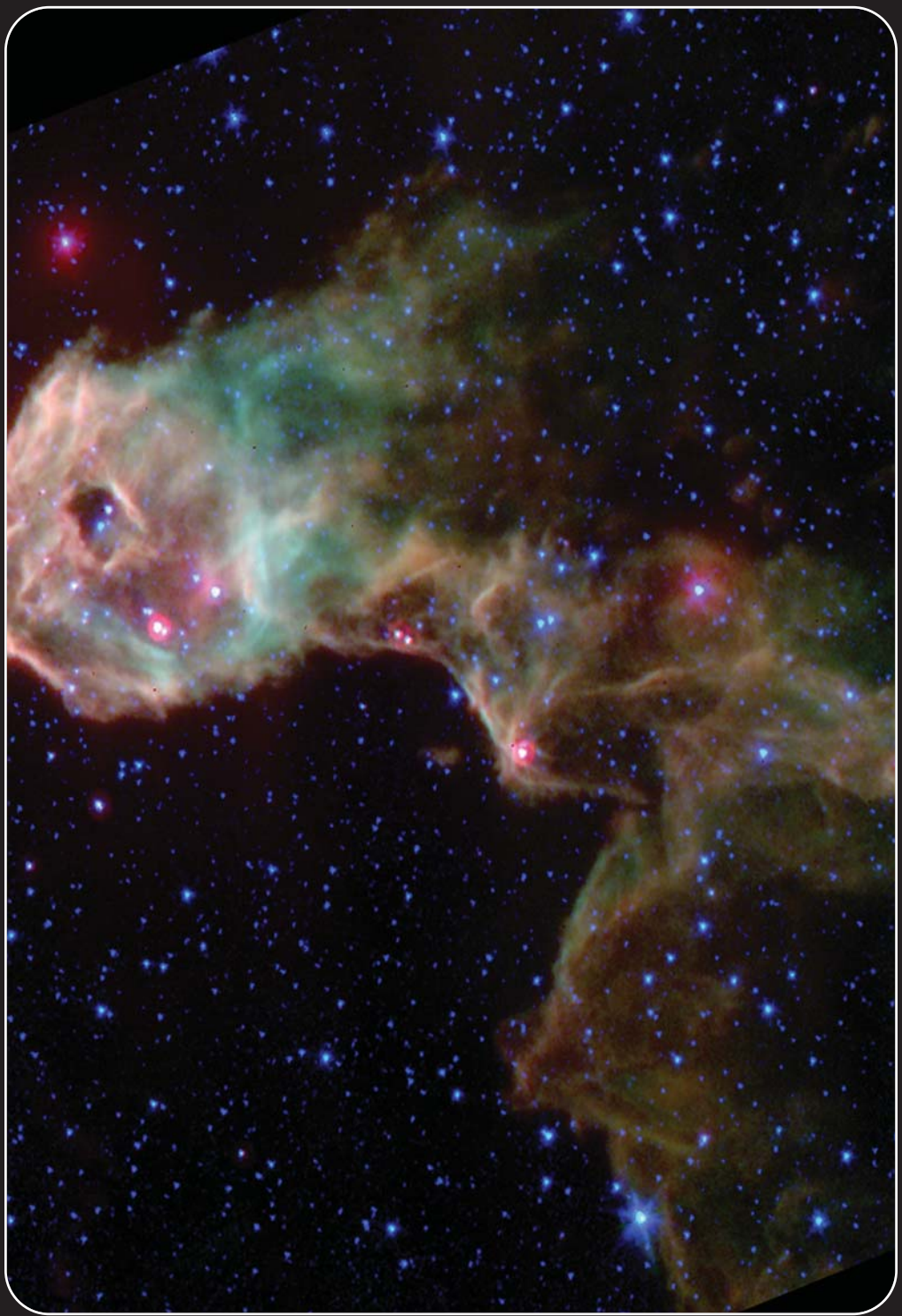
Cosmic Creation



SUPREME IMAGINATION

Dark Globule in IC 1396

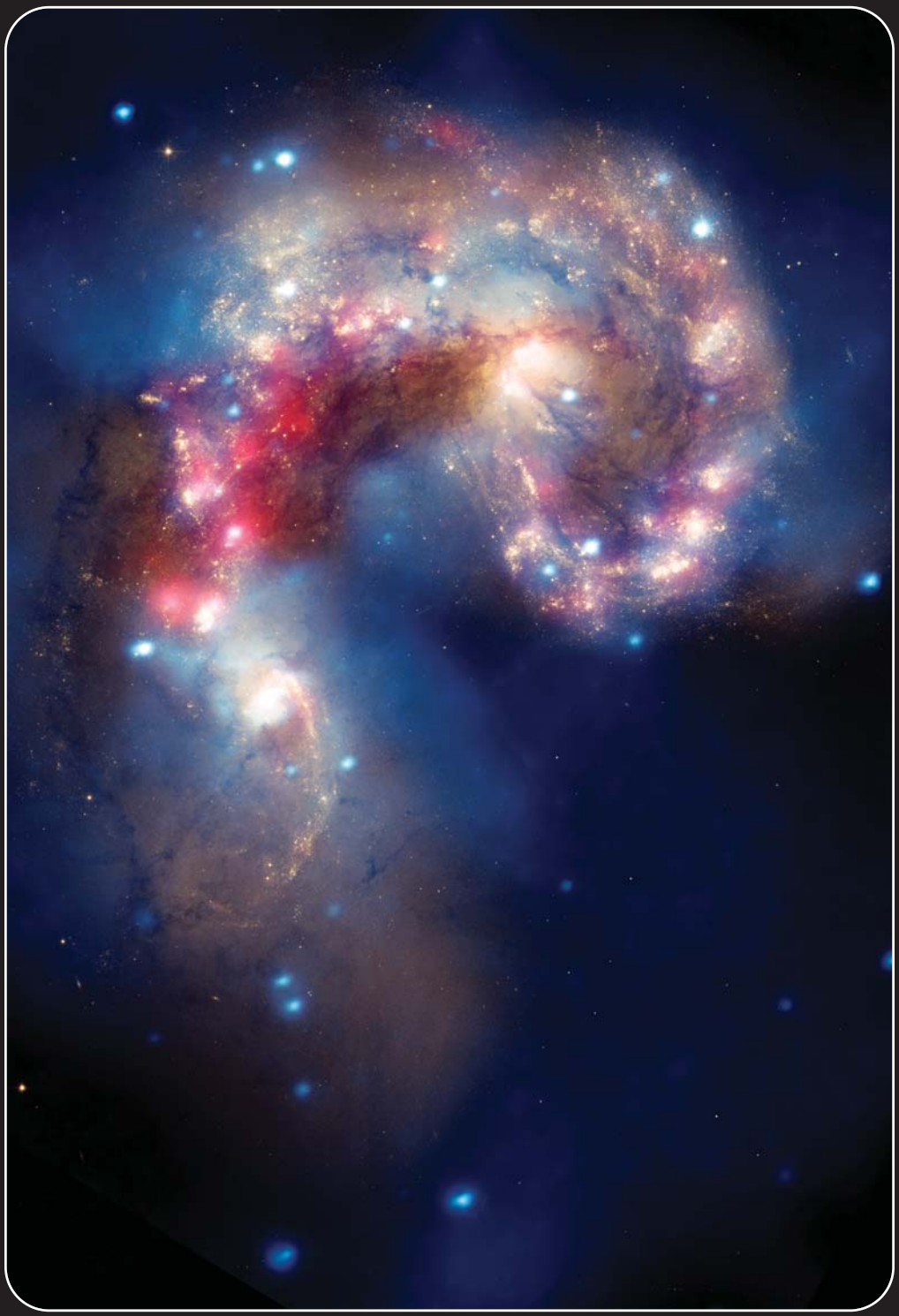
Cosmic Creation



SUPREME IMAGINATION

Antennae Galaxies/NGC 4038-4039

Cosmic Creation



SUPREME IMAGINATION

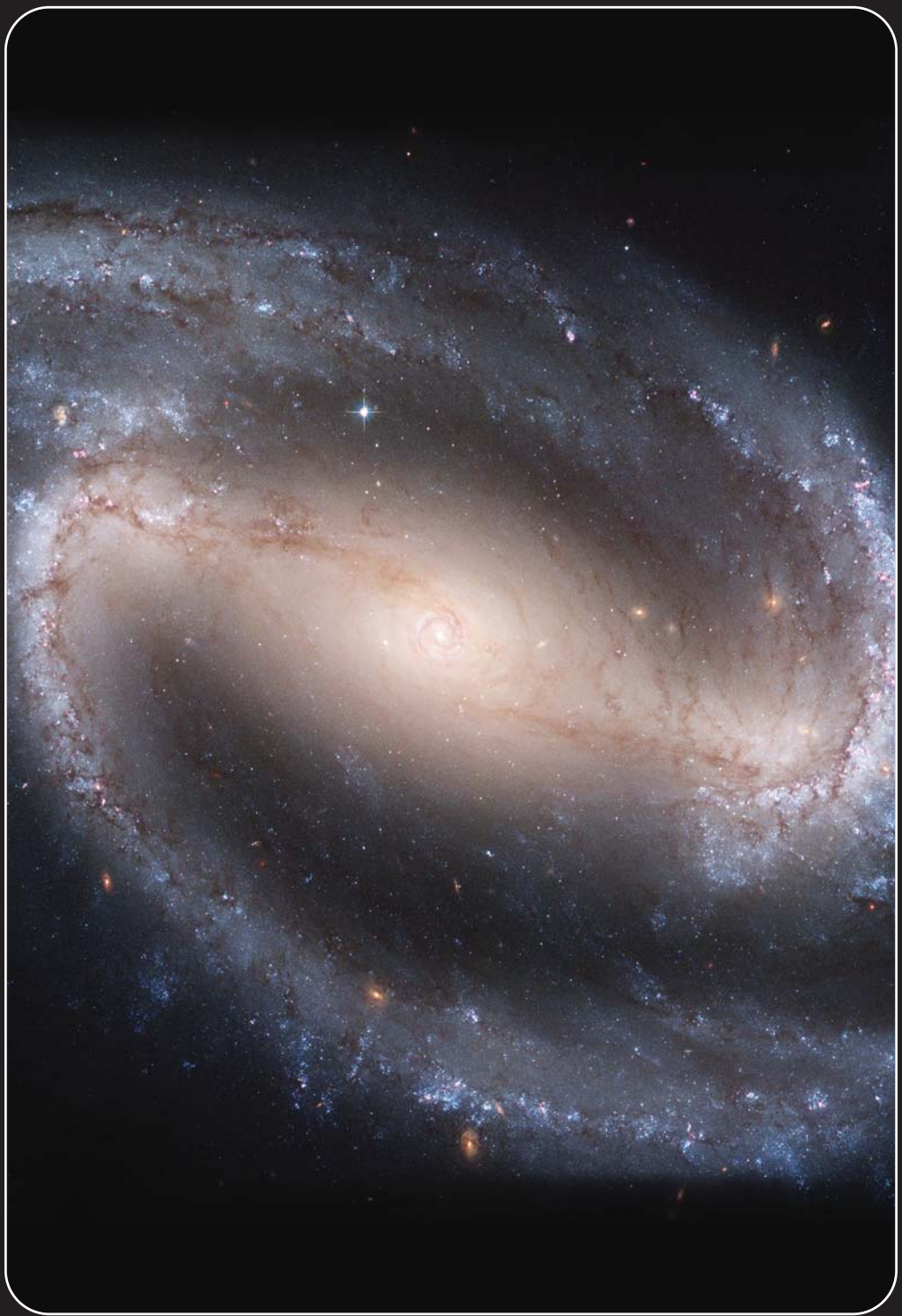
Veil Nebula

Cosmic Creation

SUPREME IMAGINATION

Barred Spiral Galaxy NGC 1300

Cosmic Creation



SUPREME IMAGINATION

The Moon From the Space Shuttle Columbia Cosmic Creation

SUPREME IMAGINATION

Moon's View From Columbia

From time to time men and women risk their lives for what they love and believe in. They have such a passion for what they do it is as if they are pulled by some uncontrollable magnetic force that draws them in. Many times, even if they make attempts to escape it, the attraction is too strong and too irresistible. Through their imagination they can see what others cannot envision. It is that small voice within them that keeps pushing them, whispering: "You can do it, don't give up, ignore what they are saying, take the risk, just go for it." When things go wrong, and they do, we can't fault them, because they were compelled beyond their ability to turn back.

In their quest to explore and understand the universe, the crew members of the Space Shuttle Columbia lost their lives after they recorded this digital photo of the moon on their final mission. On February 1, 2003, the shuttle broke up on re-entry into the Earth's atmosphere. Perhaps, as they looked upon this awe-inspiring view of the moon for the final time they felt a since of awe toward the one whose imagination was responsible for this inspiring view.

Their love for space exploration and their quest to respond to the invitation uttered so long ago *"Look up into the heavens. Who created all the stars?"* ultimately cost them their lives, but their lives were not lost in vain. It is through the tireless dedication of them and others like them that we have been given this glimpse into the mind of Imagination Supreme. Without their efforts, this wonderful Gallery of Cosmic Creations to inspire us and build our appreciation for the heavens above, and their Designer would not be possible. It is through their dedication and pioneering of space that we now have a front row seat of the Grandest Drama to ever unfold before human eyes!

Imagination of Man

Space Shuttle ~ NASA
(1981)

Earth

Earth, our home planet, is the only planet in our solar system known to harbor life—life that is incredibly diverse. All of the things we need to survive are provided under a thin layer of atmosphere that separates us from the uninhabitable void of space. Earth is made up of complex interactive systems that are often unpredictable. Air, water, land, and life—including humans—combine forces to create a constantly changing world that we are striving to understand.

Viewing Earth from the unique perspective of space provides the opportunity to see Earth as a whole. Scientists around the world have discovered many things about our planet by working together and sharing their findings. Some facts are well known. For instance, Earth is the third planet from the Sun and the fifth largest in the solar system. Earth's diameter is just a few hundred kilometers larger than that of Venus. The four seasons are a result of Earth's axis of rotation being tilted more than 23 degrees.

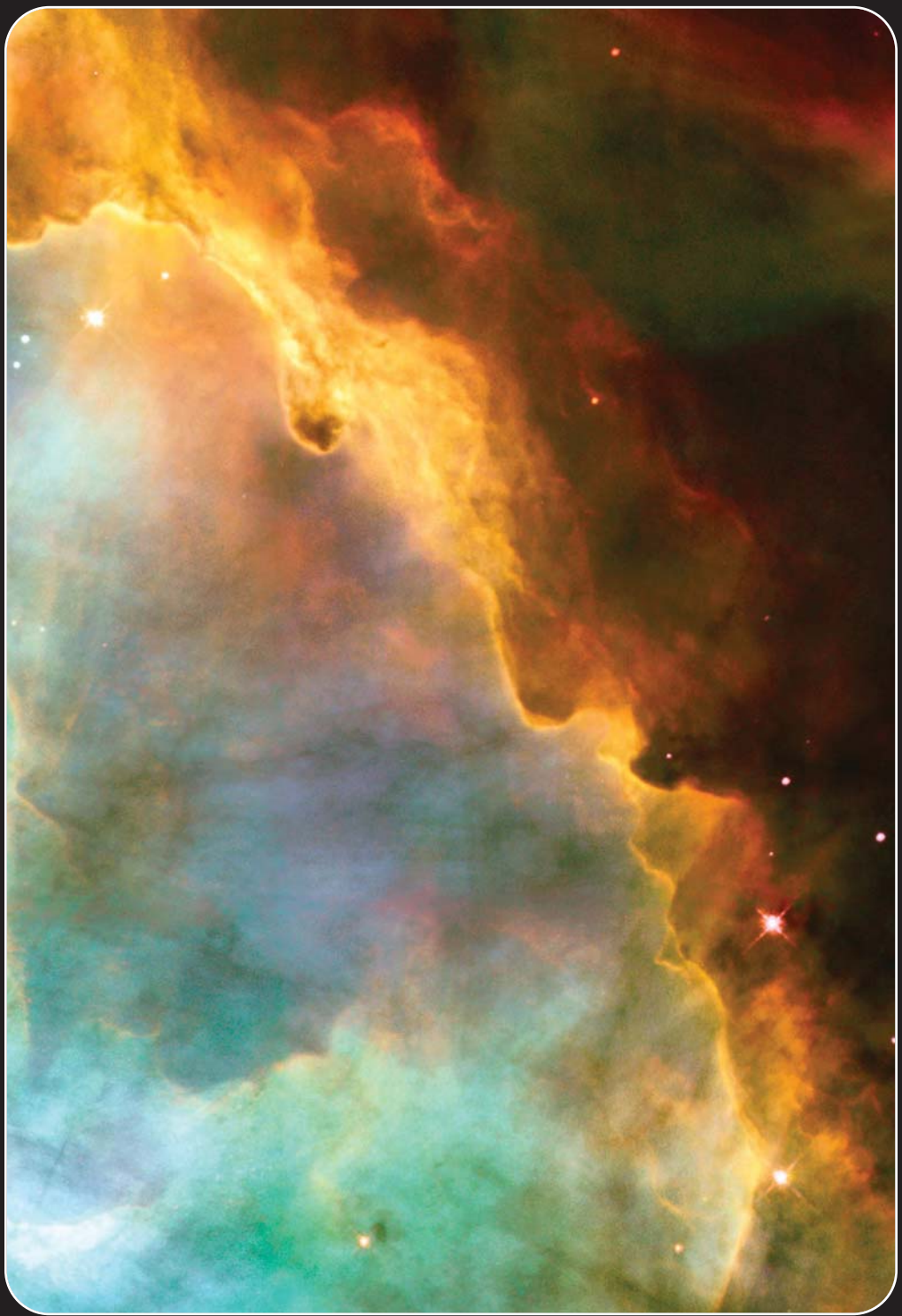
Oceans at least four kilometers deep cover nearly 70 percent of the Earth's surface. Fresh water exists in the liquid phase only within a narrow temperature span (0 degrees to 100 degrees Celsius). This temperature span is especially narrow when contrasted with the full range of temperatures found within the solar system. The presence and distribution of water vapor in the atmosphere is responsible for much of Earth's weather. Near the surface, an ocean of air that consists of 78 percent nitrogen, 21 percent oxygen, and 1 percent other ingredients envelops us. This atmosphere affects Earth's long-term climate and short-term local weather; shields us from nearly all harmful radiation coming from the Sun; and protects us from meteors as well—most of which burn up before they can strike the surface. Satellites have revealed that the upper atmosphere actually swells by day and contracts by night due to solar activity.

Our planet's rapid spin and molten nickel-iron core give rise to a magnetic field, which the solar wind distorts into a teardrop shape. The solar wind is a stream of charged particles continuously ejected from the Sun.

Imagination of Man

Spitzer Space Telescope ~ NASA
(2003)

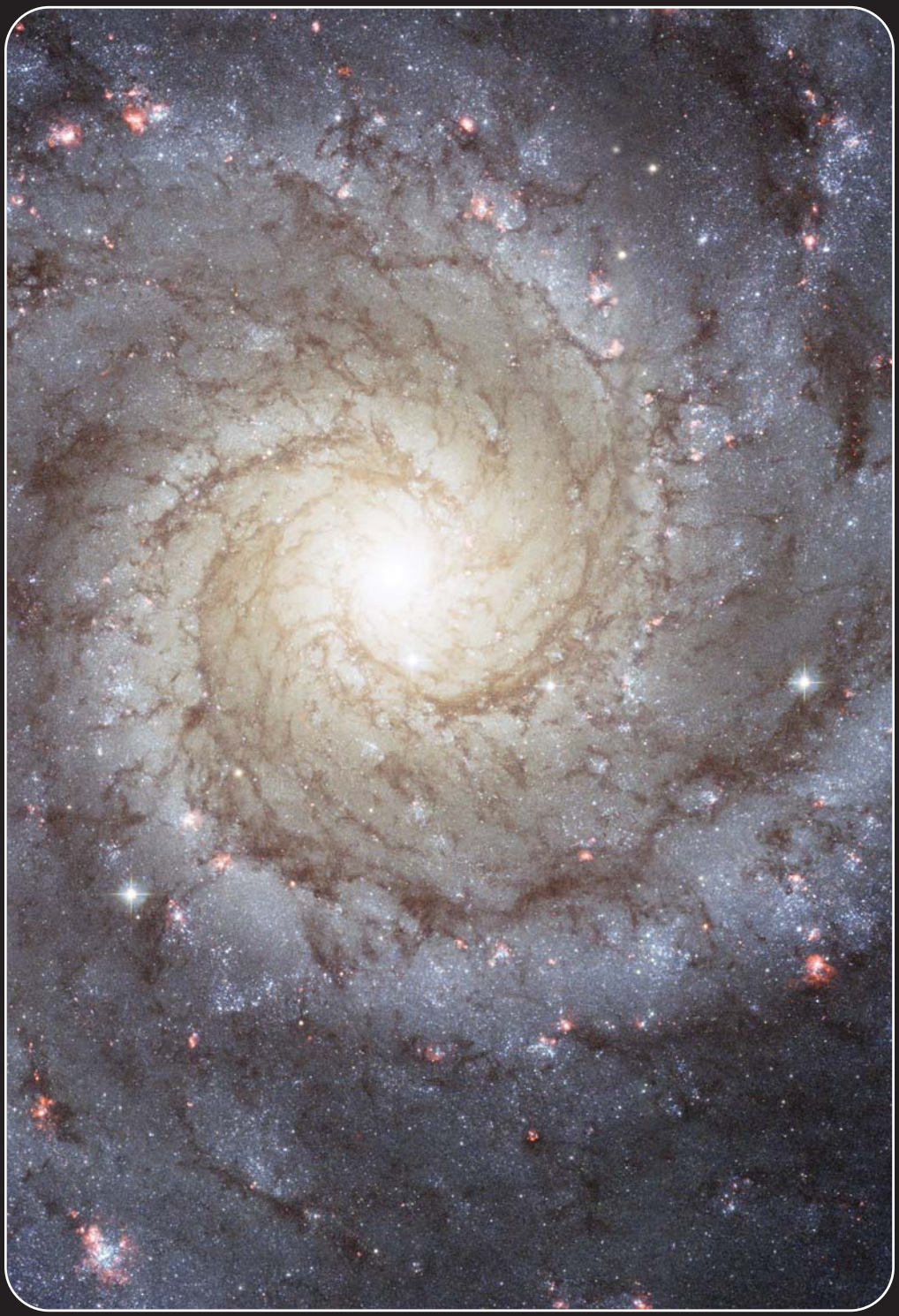
M17 (NGC 6618, Omega Nebula, Swan Nebula) Cosmic Creation



SUPREME IMAGINATION

Spiral Galaxy M74

Cosmic Creation



SUPREME IMAGINATION

ABOUT THE AUTHOR

FROM TROUBLED TEEN TO A SUCCESSFUL ENTREPRENEUR and author, Paul Hutchins' story began when, as a terrified 19-year-old, he found himself cowering in a passenger seat, covering his head and silently praying the rural Kentucky sheriff's bullets would miss their mark and he would make it out alive. As his friend pursued an escape, the teens flew down a country road at potentially lethal speeds. Scared for his life, the high-speed chase was the beginning of a personal life change and the catalyst that would change the course of his life, eventually leading him to write *Hubble Reveals Creation.*

Following his father's death at age 13, Hutchins, one of 10 siblings, lacked guidance and motivation. With his mother working full time to support the large family, he was left without a father figure and adequate parental guidance. As a teenager, Hutchins became involved with illegal drugs, petty crime and delinquency. It wasn't until he found himself in the high-speed chase, riding passenger to a prison-bound friend that he realized something needed to change. Unable to sync his thoughts with reality and lacking a sense of purpose, he considered suicide.

On drugs at age 19 Hutchins began to evaluate his life and resolved to go in a new direction, which saved him from following his brother to prison—who was later shot and killed. His friend from the high-speed chase was later featured on "America's Most Wanted" for double murder.

"Many of the friends I ran with in those days are dead from either a drug overdose or suicide," Hutchins says. "A good majority went to prison."

Today, Hutchins is a successful entrepreneur and says he's fortunate to be alive. A patented inventor and amateur astronomer, he began to notice the role imagination played in every major discovery in man's history. As he set out to explore the imagination of man, his search led him to consider the universe and its design: stars, galaxies, nebulas, planets—all of which Hutchins says are the result of one supreme imagination.

After researching the images and data from the Hubble and Spritzer space telescopes, collected since their launch, Hutchins was compelled to write about the universe as a product of intelligent design, fueled by superior imagination. In his new book, *Hubble Reveals Creation by an Awe-Inspiring Power*, Hutchins stitches together a photographic drama of the creation of the universe, examining the intricacies of the universe and invoking a "Grand Architect" as the creative force behind our world. With full-color photos, scientific data and a user friendly format, Hutchins takes readers on an awe-inspiring journey as he considers what lies beyond imagination.

The parents of three adult daughters, Hutchins and his wife currently reside in Orlando, FL.

Websites to visit for additional information:

http://HubbleRevealsCreation.com
http://TheSecretDoorway.com
http://hubblesite.org/
http://www.spitzer.caltech.edu/
http://www.jpl.nasa.gov/
http://www.nasa.gov/
http://www.jwst.nasa.gov/
http://www.worldwidetelescope.org/
http://chandra.harvard.edu/
http://oceancolor.gsfc.nasa.gov/SeaWiFS/HTML/SeaWiFS.BiosphereAnimation.Html