The heavens declare the glory of God;
the skies proclaim the work of his hands.
Psalm 19:1, NIV

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We live in an age of incredible advances in science and technology. As I watch children doing amazing things with their phones and computers, I am reminded of how things were when I was a kid. I remember seeing my first television set at an “Electricity in the Future” display at the Indiana State Fair in Indianapolis in 1946. The six-inch picture tube flickered and jumped around, but that black and white image was amazing to me and to the hundreds of other people who saw this technology being introduced. I also remember the first time that I used a telephone that was not a party line. As a child, all the phones in the neighborhood were on the same line. When you talked to someone on the phone, everyone in the neighborhood could listen in and even make comments. I make those kind of remarks now in the presence of my grandchildren, and they think I am just making up stories.

The implications of the rapid change in technology have also had a huge impact on science. One science that has seen a rapid growth of factual information is astronomy. I have been a witness to much of that change as well, because as a science teacher I was always interested in what we understood about space. I saw Sputnik from my back yard as a teenager. As a science major in college and as a pilot teacher in the Earth Science Curriculum Project I took large numbers of classes supported by the National Science Foundation. Those classes brought us up to date on the latest advances in space and provided us with techniques to teach these exciting new discoveries to our students.

Today astronomy is still expanding its horizons. We now have instruments that can see much farther into space with much greater clarity than we could even ten years ago. New telescopes have been constructed all over the earth, and special telescopes exist that “see” in different parts of the spectrum than what we could observe in the past. Ultraviolet, infrared, X-ray, radio waves of all wavelengths, and even devices that “see” neutrinos and quarks are now either in

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operation or under development. We are now looking at other solar systems orbiting stars far away from our Sun and its set of planets. We are able now to see objects much farther away than we ever could before because we have telescopes that gather much more light than those of the past. I recently heard an astronomer at a conference tell his audience that if someone standing on the surface of a moon of Mars lit a light equivalent to a match, our telescopes could see it from our vantage point on earth. Some of the light we are seeing is so far away that it left its source at a time very close to the creation of the cosmos.

What is amazing about all of this advancement in astronomy is that all this growth has added to the volume of evidence that God is the creator and the sustainer of the universe. The media tends to project all of this advancement as a threat to faith. Programs like the recent *Cosmos* series with Neil deGrasse Tyson devote a great deal of time to showing that historically, religious people were very wrong in their understandings about the creation and in some cases may have impeded science by their religious misunderstandings.

The Roman Catholic church is frequently vilified in this regard, and the incident with Galileo is well publicized as a demonstration of what is wrong with religion. In reality, there were some moral issues involved in Galileo’s situation that were more of a concern to the religious leaders of the day than his scientific views. But even in moral issues religion can be wrong. It is not what a denomination believes or teaches that is the issue in asking whether God is the creator of the cosmos. The question is what the evidence shows, not what philosophers and theologians believe. The Roman Catholic church has changed its position on science and faith enormously in the last century. In 1950, Pope Pius XII proclaimed that there was no opposition between evolution and Catholic doctrine, and in 1996 Pope John Paul II repeated and endorsed that view.

In October 2014, Pope Francis issued a position paper that showed a good understanding of the relationship between science and faith in the twenty-first century. The Pope said, “When we read about creation in Genesis, we run the risk of imagining God was a magician, with a magic wand able to do everything. But that is not so.” He went on to say that the beginning of the world was not a “work of chaos” and that “God is not … a magician, but the Creator who brought everything to life” (huffingtonpost.com/religion/2014/10/27/pope-francis-evolution_n_6057378.html).
What the new astronomy is telling us is how much greater, wiser, and more intelligent God has been in his creation of our world than we ever imagined. Here are a few of the new understandings that we have gained in recent years:

**THE CREATION IS EVEN GREATER THAN WE IMAGINED IN SIZE AND IN ENERGY.**

The size of the cosmos stagers the imagination. Right now, our measurements tell us that the distance from the earth to the edge of space is 14,000,000,000 light years. If you could travel at the speed of light, it would take 14 billion years to get to the edge of the creation, and by that time it would have expanded much further out. To translate that into miles would involve multiplying the speed of light (186,000 miles per second) by the number of seconds in 47 billion years.

In addition to telling us about the incredible size of the creation, we now know that the energy involved in the creation is massively beyond anything we imagined. In the old astronomy, we would calculate the energy in the creation by multiplying the amount of matter in the cosmos by the speed of light squared using Einstein’s famous equation \( E = mc^2 \). We now know that this figure would only be about 4.5% of the actual energy in the creation. That is because 95.5% of the energy of the creation is involved in dark matter and dark energy that we did not even know existed 50 years ago.

It is impossible for the human mind to completely grasp the size and amount of energy in the creation, and yet all explanations of the creation have to be able to embrace both features. Whatever your concept of God was when you were a child, it should now be massively larger and grander today. Modern astronomy has added a whole new dimension to “The heavens declare the glory of God; the skies proclaim the work of his hands.”

**THE COMPLEXITY OF CREATION IS FAR GREATER THAN WE EVER DREAMED IT COULD BE.**

Most of us have heard the title Big Bang used to describe what appears to be the history of the cosmos.
Frederick Hoyle invented the term while making fun of the model of the cosmos that researchers were promoting — and the name stuck. The big bang does not tell you what banged or who caused the bang. What it does is describe the pattern of motion and energy change that we see in the cosmos with our newest telescopes.

In March 2014, researchers announced the discovery of gravity waves. This discovery would open the door to uniting quantum mechanics and gravity into a workable explanation of the process of creation. What all of this is telling us is that before the creation process could even start, there were certain things that had to be in place. Time had to be created and have a particular direction. Space had to be created and with a proper shape. Space could be spherical, saddle-shaped, or flat. Which shape was chosen would radically affect how the creation could function and how long it could last. Space had to be created so that it could expand, and the expansion rate had to be precisely chosen. The evidence is that the entire universe was contained in a point a billionth the size of a nuclear particle. In less than a nanosecond (10^-9 seconds) the energy would fill the universe with quarks and in .01 milliseconds the quarks would clump into protons and neutrons. This is the current model of the process of creation based on the evidence available in 2014.

It is highly likely that this model is wrong, or at least incomplete. New evidence will change our understanding in the years ahead — so why even discuss it? A few years ago words like “quarks” and “gravity waves” were unknown. The wisdom and intelligence and power that is necessary to do such a simple thing as producing atoms give us a picture of God as the creator. In Proverbs 8:22–23 we find “Wisdom” speaking. Wisdom says, “The Lord possessed me at the beginning of his work, before his deeds of old. I was appointed from eternity [eternity meaning before there was time], from the beginning, before the world began” (ESV, and NIV, 1984). The new astronomy shows us God’s amazing wisdom and intelligence as our knowledge grows our appreciation of God as an engineer expands.

**THE COSMOS CONTAINS FAR MORE FEATURES THAN WE THOUGHT THAT HAD TO BE DESIGNED FOR LIFE TO EXIST.**

One of the major thrusts of the new astronomy has been to find other planets orbiting stars other than our sun. Our improved technol-
Technology has now shown us more than 1,800 planets orbiting other stars. This is no surprise to scientists. One of the design features of matter is that it attracts other matter. If two astronauts were floating free in space with no other masses around, they would be drawn together by gravity and would orbit one another if they did not collide. The creation is full of matter, and all of that matter experiences mutual gravitational pull throughout the cosmos. The sun and the moon both pull on the water in our oceans producing a multiplicity of tides depending on the relative positions of the sun, moon, and earth.

What is remarkable about all the exoplanets (planets orbiting stars other than our sun), is that we are seeing how special and extraordinary our earth is. The newspaper articles might suggest in their headlines, that hundreds of “earth-like” planets have been discovered. Every time a planet is found in the “Goldilocks zone” (the zone in which the planet’s location would allow water to exist as a liquid) the planet would be identical to the earth. For every star in the creation there is a distance from it that would allow a temperature range between zero and 100 degrees Celsius—the freezing and boiling points of water. That has led some to speculate that there must be billions of planetary systems out there with life like ours.

The fact is that the distance from a star is only one of many variables that must be carefully chosen for life to exist. (Please note that we are talking about carbon-based, oxygen-based life in this discussion. It is virtually impossible for life based on a radically different chemistry to exist, and rock people or fire people violate the definition of what life is.) Our studies of exoplanets have shown us that having a small, rocky planet large enough to retain an atmosphere is exceedingly rare. Having an orbit that is nearly circular, having a stable star, having a single star instead of a binary or trinary star, having adequate shielding from the dangers of interstellar space, and a variety of other factors are all necessary for life to exist. The unique character of earth is hard to deny and as more and more planets are discovered and studied the evidence of the earth’s uniqueness continues to grow. (Let us hasten to add here that we are not suggesting that there is no life in space. If God created it, then it will be there. We are just pointing out that extrasolar planets have added more evidence of how unique our planet is.)
THE NATURE OF GOD AS A BEING OUTSIDE OF SPACE/TIME IS REAL.

Every time modern astronomers start exploring the meaning of their observations and equations they find themselves encountering evidence of dimensions beyond the three dimensions in which we live. String theory proposes eleven spatial dimensions with $10^{500}$ different possible solutions to the equations that describe string theory proposals. Similar results come from studies of the structure of matter and the implications of quantum mechanics.

What is interesting about this is that the Bible has always presented God as a being outside of space/time. Consider this sampling of biblical descriptions of God:

Jeremiah 23:23 – 24: “Am I only a God nearby,” declares the LORD, “and not a God far away? … Do not I fill heaven and earth?” declares the LORD.
2 Chronicles 2:6: “But who is able to build a temple for him, since the heavens, and even the highest heavens, cannot contain him?
Acts 17:28: ‘For in him we live and move and have our being.’
John 4:24: “God is Spirit ….”
Numbers 23:19: “God is not a man, that he should … .”
Revelation 22:13: “I am the Alpha and Omega, the First and Last, the Beginning and the End” (All scriptures NIV).

There is a tendency of mankind to visualize God as an old man with the same limitations and problems that we as humans have. When we put God into a human box and limit him to human abilities and understandings, we make our God too small to explain the creation as we see it. The new astronomy should expand our visualization of God and truly glorify him as the creator. The design features in the creation which allow us to live on this remarkable planet show us other attributes of God. “For since the creation of the world God’s invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made, so that men are without excuse” (Romans 1:20). Sources: Scientific American, October 2014, page 59ff; and National Geographic “Cosmic Questions,” April 2014.

— John N. Clayton
Do the heavens declare the glory of God? Does the firmament show forth His handiwork? I’m sure [you] would be shocked if I simply said, “Yes,” and sat down. On the other hand, you would all be even more stunned if I said, “No, the heavens don’t declare the glory of God,” and sat down. So, I think you can all safely deduce that there is something more to be said about the Psalmist’s ancient declaration.

Back in my office in Cambridge I have a considerable collection of early astronomy textbooks, mostly small and cheaply printed. What was then the recent invention of letterpress printing made it possible for university students to have their very own copies of the textbook. This was particularly true at Martin Luther’s university in Wittenberg, where the cheap, small textbooks were essentially invented around 1530. So it’s inspiring to have a shelf-full of astronomy books written by authors who knew Martin Luther personally.

In these books I have placed my own bookplate, which includes the motto Coeli enarrant gloriam Dei — “The heavens are telling the glory of God” as translated in Haydn’s glorious Creation oratorio. It’s appropriate for my bookplate to be in Latin, since virtually all the astronomy books from that period are written in Latin.

When those authors looked up at the nighttime sky, they were perceiving a far different universe than we know today. They saw the moon and the stars that God had ordained. They knew the moon was 30 earth diameters away, actually a pretty good reckoning, and they thought the Sun was 20 times farther and therefore 20 times

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larger than the moon (since they both have the same apparent size during a total solar eclipse). Actually the Sun is 400 times farther and therefore 64 million times larger in volume than the Moon. Hell, deep inside the earth, was no doubt pretty much layered as Dante had described it, and as for hell fire, there was evidence for that any time a volcano erupted. As for heaven itself, it lay just beyond the shell of stars that enclosed the planetary system. It was the "habitation of the blessed" as the English astronomer Thomas Digges would describe it later in the century. So, altogether, it was a pretty cozy universe. When a Wittenberg astronomer looked up at the majestic Milky Way spanning the sky on a clear dark night, the sight was awesome, indeed glorious, and God was not so far away. His view and his appreciation was not all that different from the ancient Psalmist himself.

I, too, have witnessed the dazzling spangle of the Milky Way from the land of the Psalmist. I vividly remember the vista from a dark setting east of the Dead Sea, where I could almost reach up and pluck a star of my own. And besides the brilliance of the Milky Way, there was a much less common sight, the pyramid of a fainter glow in the west, the so-called zodiacal light, which I recognized as dust grains in the solar system reflecting the light of the sun. And to the east was the faint fuzzy patch of the Andromeda galaxy, an island universe two million light years away. It was the same sky the Psalmist saw, or Martin Luther saw, but in my 20th-century understanding the heavens were far vaster than either of them could have imagined. In both space and time in my mind’s eye, my universe was overwhelmingly different from the heavens they saw and envisioned. It was a long time ago that I was on the West Bank, seeing that star-filled sky, and we then did not know whether the universe stretched to a distant horizon ten billion or 20 billion light years away. Today, we would put the horizon 13.7 billion light years away, and with the Hubble Space Telescope we can record galaxies in their infancy, nearly that old, born of the Big Bang cataclysm that started it all in an inconceivably immense split-second blast of energy that Martin Luther’s astronomers could barely have imagined.

And so, asking the question, “Do the heavens declare the glory of God?” today, is not the same question, “Enarrantne coeli gloriam Dei?” that Martin Luther could have considered back in the days of Columbus, Leonardo da Vinci, or Copernicus.
We are no longer in ecstasy about the beauty of creation, but we are instead crushed down by our insignificance in the vastness of the universe. Rather than Psalm 19, we turn to Psalm 8: “When I consider thy heavens, the work of thy fingers, the moon and the stars which thou hast ordained; What is man that thou art mindful of him?” Where do we fit in as little specks in such an immense and ancient universe?

More than once I have been asked, “Why does the universe have to be so big and so old?” My answer is that I suppose the almighty Creator could have made the universe in many different ways, and our challenge as scientists is to discern how God did it. The mere fact that we creatures can ask this question tells us that there is some special relationship between ourselves as an intelligent species and the universe, itself. Of the millions of species that have been or are now on the earth, we uniquely have the ability to ask this question of how the universe and we ourselves in it have come to be. The mere fact that such a question can be asked in itself gives us some hint that a creative intelligence lies behind this universe. As Genesis 1:27 says, “God created man in his own image, male and female created he them.” That’s undoubtedly the most important verse in the whole first chapter of the Bible. God as Creator has endowed us with creativity in his own image, the ability to research, to imagine, to discover many fascinating details about the nature and origin of the universe.

So what is the consequence of a universe being so old? Our universe is made of many different things, atoms, dark matter, and dark energy, and most of these, we barely understand apart from their being significant in the large scale structure of the universe. But we know we wouldn’t be here without atoms, and in particular we need oxygen and carbon, the basis of organic chemistry. In the Big Bang, when pure energy was being turned into matter, huge amounts of the simplest atom, hydrogen, were produced. That happened in the first three minutes. But carbon and oxygen were not made, so these and other atoms required for life were lacking.

These critical elements came along much later, through nuclear reactions in the hot interiors of evolving giant stars, and they came about much, much more slowly.
Sunday morning is probably not the best time for a lecture on nuclear physics, but there is one detail of the story that is really quite astonishing — the reason there wasn’t any carbon in the initial brew. In principle, elements could be made by sticking the simple hydrogen atoms together and going up the ladder to form heavier and heavier atoms. If basic hydrogen atoms have a mass of one unit, stick two together and you get heavy hydrogen of mass 2, stick another onto that and get mass 3, and another for mass 4, which turns out to be a helium atom, and so on up the ladder to 12, which is a carbon atom. The problem is that mass 5 isn’t stable. It almost always falls apart in a split second before another hydrogen can be added, so the process simply didn’t climb the ladder. In those first few minutes, the universe was cooling down so rapidly that the Big Bang was over before the heavier atoms had a chance to be formed. To get around this obstacle requires lots more time, like billions of years. That’s why we need a very old universe, to get the building blocks for life.

In the 1950s, the maverick British astronomer Fred Hoyle made some calculations about how much time it would take to cook up these critical elements in the cores of giant stars, and found that with ordinary structures in the nuclei of carbon and oxygen atoms, ten billion years still wouldn’t be enough time to make significant quantities of these important elements. The missing mass 5 was a serious obstacle.

But because we do have carbon and oxygen, there had to be something else going on, some undiscovered feature in the structure of the carbon nucleus that raised the probability of its being formed, and Hoyle made a prediction of what it would be. There had to be what is called a resonance at a precise energy level in the carbon atom. Hoyle was at that moment on leave in Pasadena, so he went to physicist Willy Fowler, who had access to an atom-smashing accelerator that could probe the nuclear resonance levels. Fowler thought it was kind of crazy that this visiting Englishman believed he could predict the inner structure of the carbon nucleus, but he agreed to try, and there it was. Not only was it there, but at precisely the right energy level. Four percent lower, and there would be essentially no carbon.
Long ago, I had heard rumors that nothing had shaken Hoyle’s atheism as much as this discovery. From time to time, I had occasion to discuss one thing or another with him, but I never had quite enough nerve to say, “Fred, is it really true that the resonance level in the carbon atom has shaken your atheism? Do you believe the heavens declare the glory of God?”

But an answer of sorts came when he wrote about his discovery in the Cal Tech alumni magazine as follows: “Would you not say to yourself, ‘Some supercalculating intellect must have designed the properties of the carbon atom, otherwise the chance of my finding such an atom through the blind forces of nature would be utterly minuscule.’ Of course you would … . A common sense interpretation of the facts suggests that a superintellect has monkeyed with physics, as well as with chemistry and biology, and that there are no blind forces worth speaking about in nature. The numbers one calculates from the facts seem to me so overwhelming as to put this conclusion almost beyond question.”

That’s a truly remarkable quotation, especially considering the fact that Hoyle already had a reputation as a public skeptic. The numbers do give us some pause. If they had only slightly different values, we wouldn’t be here. And these are not the only physical settings that are so subtly configured. The British Astronomer Royal, Martin Rees, has written a book entitled Just Six Numbers. In it, he points out six numbers that describe our physical world whose precise values are essential for a life-bearing universe. Tweak them only slightly and our universe would be devoid of life. These and other very sensitively-set numbers are what we refer to as fine tuning.

We have to be very pleased about this situation, since our existence depends on it.
Is the universe declaring something? That makes many of my physicist friends very nervous. They don’t like the idea of a super-calculating intellect tinkering with the universe. That wouldn’t be natural; the universe wouldn’t be entirely subject to physical laws they could discover. It would be supernatural, and that would be superstitious.

When Isaac Newton described the role of gravity in keeping our moon in tow, the French scientists cried, “Superstitious!” How could the Earth affect the Moon if nothing was touching it? It was the same when Kepler proposed that the moon controlled the tides. Galileo declared, “I am surprised that the most astute Kepler gives ear to such superstitions.”

It doesn’t disturb me that the universe could be designed for life, superstitious as that might be. I must warn you that I’m psychologically incapable of believing that the universe is purposeless. I like the analogy that the distinguished physicist John Wheeler proposed. He likened the universe to a giant plant whose purpose was ultimately to bring forth one small, delicate flower. Wheeler suggested that we are that one small flower of the universe, and that our destiny and purpose is to understand the universe. Perhaps the universe is designed to be understandable, and we as human beings are at work trying to understand the universe and its laws. The human brain is the single most complex thing we know about in the entire universe. What better instrument to contemplate the universe? Ironically, our brains are complex enough even to contemplate the possibility that our brains might not be the most complex things in the universe!

But if our purpose in this universe is to understand God through the majesty of this universe, I have a problem. This opens us to a God of very large numbers. The energy required for the Big Bang is incomprehensibly large. As the physics is calculated back in time, the universe gets hotter and hotter, the elapsed time to the beginning of time, itself, becomes smaller and smaller, but the number gets huge in its tininess, 10 to the minus 43 seconds before which the physics runs out. And the time back to the beginning, nearly 14 billion years is staggering. (If you wanted to count to just one billion, two numbers per second, counting day and night, would take you 31 years.)

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A God of very large numbers is impressive, but it is not a God we would choose to worship. A God of incomprehensible majesty, yes. But trying to understand that God is like the puppy trying to understand Isaac Newton. Is it just wishful thinking when we say that the heavens declare the glory of God?

But wait a minute! A God of such magnificence and wisdom could well have power to limit itself, to wear a mask of himself or herself in order to relate to its creatures. And notice that word “creatures”—in itself, this carries the idea of our being created. Created creatures with the power to think, to think theologically, to think inspired thoughts.

If we regard God’s world as a site of purpose and intention and accept that we, as contemplative surveyors of the universe, are included in that intention, then the vision is incomplete without a role for divine communication, a place for God both as Creator-Sustainer and as Redeemer, a powerful transcendence that not only can be a something but can take on the mask of a someone; a which that can connect with us as a who. Such communication will be best expressed through personal relationships, through wise voices and prophets in many times and places. The divine communication will carry a moral dimension, only dimly perceived in the grandeur of creation, yet present through the self-limitation of the Creator who has given both natural laws and freedom within its structure. Here, implications for human morality are discernible, for this view implies a self-renunciatory ethic. As Jesus said to Pilate, “My kingdom is not of this world; if my kingdom were of this world, then my followers would fight.”

Within the framework of Christianity, Jesus is the supreme example of personal communication from God, an exemplary life of service, of forgiveness, of sacrifice.
When the apostle Philip requested, “Show us the Father,” Jesus responded, “Anyone who has seen me has seen the Father.” When Jesus, hanging on the cross and slowly suffocating, cried out, “My God, my God, why hast thou forsaken me?” the nature of God’s self-limited world became excruciatingly clear. God acts within the world, but not always in the ways most obvious to our blinkered vision.

This view of the central message of the biblical story is not closely tied to the heavens declaring the glory of God. Still, I can’t help but remember the thrill I had, as a ten-year-old, when I was able to see the rings of Saturn with a simple telescope my father helped to build, and the excitement of sharing that view with my fourth-grade teacher. Likewise, a year later, when I saw a stunning view of the moon with the 60-inch reflector on Mount Wilson, I had to be impressed with God’s glory. But it was not just when I was a kid. Watching the eclipsing moon slowly move across the disk of the sun, and then suddenly, like a light switch turning off the light, the darkness and the eclipsed sun, which you can admire directly without a dark filter, like a sparkling jeweled ring on black velvet—it’s enough to raise the pulse even of a skeptic.

We know we’re living at a very special time in the history of the universe, when the apparent size of the moon just covers the sun. In the far future it won’t be like this, but for now it is one of the most breathtaking views from or on our planet.
Yet I doubt that that’s enough to sway a skeptic. And perhaps that’s how it should be. There’s a telling passage in First Kings: “And, behold, the Lord passed by, and a great and strong wind rent the mountains, and brake in pieces the rocks before the Lord; but the Lord was not in the wind: and after the wind an earthquake; but the Lord was not in the earthquake: And after the earthquake a fire; but the Lord was not in the fire: and after the fire a still small voice.”

The message is in a still, small voice, God’s inspiration, literally the bringing in of the Spirit. The glory of the heavens doesn’t knock the skeptic from his perch. It’s in the eye of the beholder. For me the glory of the heavens inspires me to understand the handiwork of the Lord. However, it doesn’t work for everyone. But let me quote a public skeptic, in a little known passage from Fred Hoyle, near the end of his life: “The issue of whether the universe is purposive is an ultimate question that is at the back of everybody’s mind … . And Dr. [Ruth Nanda] Ashen has now just raised exactly the same question as to whether the universe is a product of thought. And I have to say that that is also my personal opinion, but I can’t back it up by too much of precise argument. There are very many aspects of the universe where you either have to say there have been monstrous coincidences, which there might have been, or, alternatively, there is a purposive scenario to which the universe conforms.”

As I said earlier, I’m psychologically incapable of believing the universe is purposeless. So, unlike Fred Hoyle, I’m not sitting on the fence. Let me simply say that the sheer beauty of the heavens declares the glory of God!

Not long ago scientific man considered himself quite wise. No need for God—an always-existing universe he did devise. But to leave God out and say no creation was a fatal mistake. It was a grand idea for a while, but later proven an awful fake.

Genesis 1:1 was wrong some scientist boldly did speculate. A few exceptions, like Einstein, a beginning did calculate. But the wrong theory eliminating God quickly had its ending. Hubble collected data implying the universe had a beginning.

Hubble’s data clearly showed the universe was expanding. Now, no one could refute, Genesis 1:1 was in good standing. The Bible, at least in part, had been proven absolutely correct. The always-existing scientific theory was now a total wreck.

Now on further and careful Bible reading there is much more. Stated eleven times, heavens are spreading, you must not ignore. This information accurately stated over 3,000 years before. Testifies the Bible is quite reliable not mythical folklore.

Another point worthy of our chatter “It is God’s glory to conceal a matter; It is your glory to search it out” (Proverbs 25:2). It’s what scientific research is about.

Carefully study God’s word and about science do not worry. Nature is from God’s hand; the heavens do declare his glory.
Note: Our 2015 Canyonlands Tour is now full. We are sorry that we cannot take any more reservations. Please keep this in mind for next year.

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“To me, God is personal yet omnipresent. A great source of strength, He has made an enormous difference to me.”

“Life may be very improbable, but it did happen and it happened in accordance with physical laws, and physical laws are laws that God made.”

“Science and religion are often viewed as separate aspects of our beliefs and understanding. But religion is an attempt to understand the purpose of our universe and science—an attempt to understand its nature and characteristics, so the two are necessarily related.”

“Religion, with its theological reflection, builds on faith. Science too builds on faith. How? For successful science of the type we know, we must have faith that the universe is governed by reliable laws and, further, that these laws can be discovered by human inquiry. The logic of human inquiry is trustworthy only if nature is itself logical. Science operates with the faith that human logic can in the long run understand nature’s laws and that they are dependable. This is the faith of reason.”

“I think all of science, in a sense, comes from belief in order in the universe. That’s part of scientific faith, that there is order and reliability, and so on, and that’s part of the Judeo-Christian tradition, that there is one God.”

“In my view, the question of origin seems to be left unanswered if we explore from a scientific view alone. Thus, I believe there is a need for some religious or metaphysical explanation. I believe in the concept of God and in His existence.”
I am not an apologist like my husband, nor am I scientifically trained like he is. Still I can see and understand that “the heavens declare the glory of God; the skies proclaim the work of his hands” (Psalm 19:1). Romans 1:19–20 says, “What may be known about God is plain to [us]” and “God’s invisible qualities — his eternal power and divine nature — have been clearly seen, being understood from what has been made … .”

We can look at the creation that God has made and see the wisdom and design in it. John has a lesson about the mathematical improbabilities of the creation, and our world in it, coming into existence by chance. Our existence on the earth in our solar system and our galaxy is dependent on so many variables that have to be precisely what they are and, therefore, carefully designed in order for us to exist. However, anyone can look up to the heavens and be in awe of the splendor and unfathomable vastness of the universe.

When John and I go on our Canyonlands Tour, John is enthralled by the complexities of the geologic processes that produced the Grand Canyon, the hoodoos in Bryce Canyon, the cross-bedded sandstone in Zion National Park, and the petrified logs in the Petrified Forest. I may not understand all of the processes that God used to create them, but I can appreciate the end result of God’s designs and admire their beauty and diversity.

You do not have to be a scientist to recognize and appreciate the complexity, diversity, beauty, and design seen throughout all of God’s creation. There are many scientists who have come to believe in an intelligent creator because of the things he has made. Albert Einstein said, “Religious feeling takes the form of a rapturous amazement at the harmony of natural law which reveals an intelligence of such superiority that, compared to it, all the thinking and acting of human beings is insignificant.”
Evidence for Jesus
by Ralph O. Muncaster, Harvest House Publishers, © 2004,

One of the challenges that those of us with a ministry in apologetics all have is getting people to look at the evidence. Many people would rather read a tabloid lie than a scientific dissertation of truth. The result is that they have grossly incorrect understandings of what the evidence really is. Ralph Muncaster has attempted to solve this by mixing facts with a novel-style of writing. The book has 19 chapters, each of which begins with a story in novel-style which is fictitious but based on what the situation could have been like. At the end of each section is a conclusion.

As an example, the first chapter deals with the empty tomb. The conclusion says “The inability of the Jewish leaders and Romans to produce the corpse of Jesus is powerful evidence that it didn’t exist—given that everything reasonable was done to protect it and there was no motivation for others to steal it. The logical conclusion would be that Jesus indeed rose from the dead.” The chapter begins with a description of four fictitious characters as they begin the day when it is discovered that the body of Jesus is missing. The views of all segments of society are given—the Romans, the disciples, the Jewish leaders, etc.

There are 18 conclusions, a wealth of historical facts, and biblical quotes given in an easy to read style. This book would be ideal for junior high and high school readers, but the charts and accuracy of the quotes makes it useful for any reader. We recommend it as a good source of support for the historical Jesus.
This book was a *New York Times* Best Seller, and its subtitle tells why—“Belief in an Age of Skepticism.” Keller has been phenomenally successful in attracting cosmopolitan urbanites to the church he started in Manhattan in the late 1980s. These are young professionals, highly skeptical, and pretty much disenchanted with religion. By 2007 the congregation had grown to more than 5,000 attendees and had spawned more than a dozen daughter congregations in the immediate metropolitan area.

Keller, who is not a scientist, was educated at Bucknell University and two seminaries. His material is not primarily from science, but he has an incredible knowledge of the issues that bother young adults in today’s world. In the book he gives multiple examples of the questions and objections he gets from these young adults. They are the same questions and challenges that we hear in our public programs and on our websites. In addition to knowing the issues, Keller has a very broad knowledge of scholars, literary works, and films, and he uses these resources extensively in the book.

The book is divided into two parts. The first part deals with issues that trouble young adults. Issues such as suffering, exclusivism, the reality of hell, why there is injustice, and objections to taking the Bible literally are examples of what is explored in this section. In the second section there is a discussion of reasons for faith. This section does not dwell on scientific evidence, but makes philosophical and theological arguments for the existence of God using sin and the wisdom of the gospel to make the case for the existence of God.

This is the kind of book you can give to a doubting college student or someone who is a professional and is struggling with faith issues. It is well enough written to be a *New York Times* Best Seller, and it is sensitive to the needs and issues of our day. Although Keller is a Presbyterian, he avoids doctrinal issues and confines his writing to apologetic issues. That makes the book especially useful to people dealing with issues of faith. We recommend this book highly.
I suppose this article may bring nightmares to some folks, but there actually is a snake that flies. The snake is called the Paradise tree snake or if you like scientific names it is *Chrysopelea paradisi* or the *Chrysopelea ornata* (ornate flying snake) shown in the picture. Like the flying squirrels we all know and enjoy in America, the Paradise tree snake is actually a glider. If you saw the snake sitting on the branch of a tree, it would look like any other snake. When it gets ready to fly, the snake anchors its tail on a branch and the front part of its body drops down and then shoots up and out headfirst. Meanwhile the snakes ribs splay out and its stomach is pulled in making a dome-shaped parachute like a mushroom cap. Researchers at Virginia Tech have found that this shape gives substantial lift to the snake, but the total lift is more than this change in shape alone would allow. One proposal is that the motion of the snake in the air causes drafting which increases lift — similar to what bicycle and car racers do.

The snake can actually glide over 60 feet when leaping from a 30 foot height. The design of the body, the rib structure, and the way the snake launches itself all bring some complex engineering into the picture. The question of why this behavior is in the snake got an interesting answer when the head researcher of the snake noticed that when an airplane flew over the area where the snake was living the snake snapped up its head and followed the airplane across the sky. The obvious need for the gliding behavior is to aid in the escape from predatory birds which find this non-venomous snake to be easy prey.

You can construct a possible chance scenario for this behavior by saying that snakes that can fly survive and those who cannot fly do not. However, to have the right equipment to be able to fly is as much of an issue as is the instinctive desire to do so. Another proposal is that to keep balance in nature, God has designed instinctive survival behaviors into all forms of life, and created equipment to make those behaviors possible. Source: *Science News*, March 8, 2014, page 4.
We often overlook how complicated it is to keep balance in nature. We see a video of an animal killing another animal and recoil in distaste at the violence and the death of what appears to be an innocent animal. We fail to realize how important it is for predators to exist. Without predators the plant-eating animals would quickly eat all of the plants and not only would they starve to death, but all life would eventually cease to exist. Maintaining balance between the food supply and the animals that depend upon that food supply is very complicated.

Nowhere is this more true than in the insect world. If we did not have animals that feed on insects the “bugs” in the creation would create ecological havoc. One of the best-designed bug-eaters is the dragonfly. Dragonflies eat incredible numbers of flies, and researchers have found that the design of the dragonfly allows this to happen. There is a circuit of 16 neurons that connect a dragonfly’s brain to its flight motor center in the thorax. This allows the dragonfly to track a moving target and intercept it. Robert Olberg in a recent issue of the *Proceedings of the National Academy of Science* has shown how the dragonfly uses vector mechanics in such a way that the image of the prey is always on the same spot in the retina of its eye allowing 100% sure contact with the target.

Also, dragonflies can hover, dive, fly backward, and upside down, and pivot 360 degrees. They reach speeds of 30 miles per hour and their eyes are giant spheres with 30,000 pixel-like facets that allow them to see every direction at once. With all of this hardware, the dragonfly brain is very simple having less than a million neurons. (Human brains have 100 billion neurons.) The dragonfly is a well-designed insect-eater that keeps a balance in nature among insects. Lions catch 25% of their prey and great white sharks about 50%, but the kill ratio for dragonflies is essentially 100%. Proverbs 8 proclaims God’s wisdom and calls us to understand the wisdom we see in every corner of the creation: “Does not wisdom call out? Does not understanding raise her voice? … You who are simple, gain prudence; you who are foolish, gain understanding. Listen, for I [wisdom] have worthy things to say” (NIV, 1984). Designing a planet that can last for years is incredibly complicated, and the design of predators like the dragonfly speaks of a God whose intelligence and knowledge of engineering principles is infinite. Source: *National Wildlife*, August/September 2014, page 32.
“WHAT HAPPENS IN THE FIRST YEAR IS PROFOUND.” That is the opening line of an incredible article in National Geographic (January 2015, page 59). The article is subtitled “A baby’s brain needs love to develop.” We have emphasized the importance of the nuclear family for over 40 years now, and our arguments have been mostly from personal experience and observation. This article gives solid scientific data to support God’s plan for the home. This is done by EEG brain patterns and exhaustive studies of children deprived of contact with their parents or other adult care-givers. In Romania in the 1960s the communist government pushed families to put their children into a state-run day care so their mothers and fathers could work in government factories. The day cares had 15 to 20 children per caregiver so the only attention the children got was when they were fed or bathed. The brain-waves of 136 of these children were studied by neuroscientists. One researcher said “It was as if a dimmer switch had been used to turn their brain activity down.” Half of the kids were placed with foster families at age 2 and showed remarkable recovery. Numerous other studies are reported, as well as a detailed explanation of how the brain develops during the first year of life. This is an important article for people working with families and for the families themselves to read.

DNA DESIGN. Imagine packing a string the length of two football fields into a sphere the size of the point of a pin. The designer of DNA had that kind of a problem to solve. DNA stretched out would be roughly six feet long. The designer of the cell had to compress that six feet into a nucleus that is about 5 micrometers or roughly .00002 inches in diameter. Science News has a video showing how it might be done. You can watch it at www.sciencenews.org/node/189585 or use this QR code.

WATER OUT OF ROCK? In Exodus 17:1–6 we find the story of Moses striking the rock at Horeb and water is delivered from the rock. The Hebrew word used in this verse is not sela indicating a cliff or elevation. The word used is tsur indicating the rock was not
where a spring would be. In August 2014, a 6.0 earthquake shook the South Napa area of Northern California. Even though the area was in a severe drought at the time, water began rushing down previously dry stream beds. Estimates are that there was enough water released from the rocks in the area to fill 400 Olympic-sized swimming pools. Isotope studies have shown that the water was not coming from high elevations, but from the groundwater in the area. The water in Exodus 17 may have been a miraculous act of God, but it also may have been a utilization of a resource humans have not yet tapped into. Source: *Science News*, January 10, 2015, page 10.

**Atheists as Ministers.** The Freedom From Religion Foundation, an atheist group originally from Madison, Wisconsin, has been engaged in a number of lawsuits to challenge tax breaks for churches and ministers. In December 2014, The Seventh Court of Appeals overturned a lower court’s decision that minister’s housing allowances, which had been allowed for 60 years, were unconstitutional. The Department of Justice argued that atheists would qualify as “ministers of the gospel” under IRS guidelines. The word “gospel” in the government’s view is any good news, and being free from religion would qualify. Source: *Christianity Today*, January/February 2015, page 16.

**ACLU Finally Gets Something Right—Or Did It?** “The ACLU’s Michigan branch filed a brief in support of Bible Believers for an incident in Dec. 2012.” That announcement released by the Associated Press (*South Bend Tribune*, December 27, 2014, page A4) and widely publicized in newspapers in Michigan might sound like the ACLU has finally decided not to continue attacking churches and believers in God. The title of the article in the papers was “ACLU stands by evangelists.” The fact is that Bible Believers is a radical denominational group which hurls hate filled messages at anyone who does not share their views. In 2012 they carried a pig’s head into a Muslim festival screaming that Dearborn Muslims were all going to “burn in hell.” Sheriff’s deputies told them to leave—which they refused to do, and thus were ticketed. The brief by the ACLU claims that free speech is the issue, but they have taken no such stance when reputable Christians have spoken up against abortion, prostitution, or drug related issues. It appears this was just another way for atheists to bash Christians.

**The Lifestyles of Pop Stars.** *The Week* (December 31, 2014, page 9) reported on a study showing that the life spans of popular musicians is roughly 25 years shorter than the average. Dr. Dianna Kenny looked at 12,000 popular musicians who died from 1950
to 2014 and found that early death was common. Kenny says “The culprit is a culture that glorifies outrageous behavior by emotionally immature artists. The pop scene is toxic and needs rehabilitation.” When our children and grandchildren get enamored with the current rock star, they need to understand that it is likely that rock star will die in their 50s, not their 70s or 80s. The Bible’s warnings about evil companions are truths we all need to listen to.

WANT TO BUY A CHURCH BUILDING? The Wall Street Journal recently published a study by the Pew Research Center of what used to be called “The Church of St. Joseph” in Arnhem, Netherlands. This church once had 1,000 in attendance every Sunday, but now it is a skate hall with obstacle courses and jumps. Those in attendance are children on skateboards. The article goes on to tell about the number of churches closed in Europe. In Denmark less than 10% of the population attend any church service and some 200 churches are up for sale. The Catholic church has closed 515 churches in Germany since 2005. Holland expects to close 700 churches by 2020. Governments of European countries are trying to sell the church properties, but most of the structures are beyond recovery and not useful for much of anything in the twenty-first century. Our experience with our lectureships in Europe has been that people desperately want to believe, but they have never been shown the evidence for God’s existence and the validity of Christianity. What people do not want is man-made churches who play around with the notion of faith, but do not live it.

NEW ORIGIN-OF-LIFE THEORY. Jeremy England is a physicist at MIT who has invented a new explanation as to how life began and why life exists here on earth. The theory is called “dissipation-driven organization.” Life exists, according to England, because living groups of atoms tend to be better at capturing energy from their environment and dissipating that energy as heat than are nonliving groups of atoms. Changes in biological systems according to England, are controlled by what physical constraints are the easiest to achieve. This simple explanation of a complex presentation is being hailed as a new way to think, and there will be debate about this idea for years to come. We would point out that this has no connection to the question of God’s creation. The creation of space and time and matter/energy is not addressed in this theory. The conditions that allow groupings of atoms have to be very carefully chosen and controlled. The laws of physics being employed, especially the second law of thermodynamics, are carefully crafted to be the architects of life. Could this be a method God designed to fashion life? Certainly that is possible, and future years of research
and study will help answer that, but it is not a threat to faith in God as the creator. Source: Natalie Wolchover in *Quanta Magazine*, December 8, 2014.

**PEER REVIEW SCAMS.** In order to get research accepted or taken seriously in the scientific community, there has to be peer review. What that means is that people who have academic credentials in the area of research being reported have to review the data and they report and indicate whether it has credibility and should be taken seriously and accepted as valid research. There have been times in the past when a scientist who was known for his Christian beliefs had his professional work ignored because he could not get peer review accomplished, sometimes apparently caused by the fact that the reviewers did not share his religious beliefs. In *Nature* magazine, 2014-515 (7528) page 480 there is an article by Ferguson, Marcus, and Oransky on peer review in recent years. Religion, politics, and science all have problems with the dishonest members of their associations violating ethics and using scams to accomplish their own ends. In *Discover* magazine (January/February 2015, page 20) and at www.discovermagazine.com/2015/jan-feb/8-the-year-in-fraud is another article by Marcus and Oransky titled “The Year in Fraud.” They have also founded a website called www.retractionwatch.com to deal with this subject.

**ALIEN LIFE-FORM DISCOVERED?** We define life in high school textbooks as that which can eat, move, breathe, reproduce, and respond to outside stimuli. In the past 50 years we have discovered some bizarre forms of life. There are forms of life that can survive in extreme conditions of temperature and pressure such as tardigrades, Dead Sea bacteria, deep sea bacteria, and shrimp that live in and near sea-vents. All of these fit the definition of life-forms even though it may be hydrogen sulfide they depend on instead of oxygen. Kenneth Nealson at the University of Southern California has been researching a microbe that essentially eats and breathes electricity. These bacteria power themselves with electrical charge. The bacteria, named *Shewanella*, get electrons from sources in their area—usually carbohydrates. They then release electrons to metallic oxides in the area completing the circuit. This is not really alien life because it has been found on earth and has been here from the beginning. It offers ways of providing all kinds of environmental and agricultural advances. It is just one more example of the design features that God has created to allow ecosystems to flourish even when all that is present is rocks and minerals. Source: *Popular Science*, February 2015, pages 32.
WHERE DID NOAH LAND? One of the main points of this journal is that if the Bible is taken literally, all conflict between science and the Bible disappear. Taking the Bible literally means looking at who wrote it, who they wrote it to, why they wrote it, and how the people of the time would have understood it. The word Ararat in Hebrew literally means “creation, holy land.” People of Moses’ day would have understood it as the district of Armenia between the river Araxes and the lakes Van and Urumia. Rather obviously the singular Mount Ararat of today was not the mountain the Bible is describing. In Jeremiah 51:27 we have mention of Ararat as a Kingdom. The Koran (Quran) refers to Mount Cudi as Ararat (Sura 11:44), and the Gilgamesh Epic identifies it as Mount Nisir. Claims of finding the Ark throughout the centuries have always been proven to be erroneous, and recent claims are also likely to be untrue because the researchers are on the wrong mountain. Rather than trying to find the ark, perhaps researchers should be trying to understand the message of the flood account. Source: Bible History Daily, November 27, 2014. (www.biblicalarchaeology.org).

PRISON WORK. The Does God Exist? ministry has an extensive correspondence-course program which people who are incarcerated are invited to participate in. The program is free and postage is paid with 11 courses offered, two in apologetics and 9 in Bible study. We have some 15,000 prisoners who are involved in our courses in one way or another, but the Kings Crossing Prison Ministries does far more. In the last year they have had 51,000 students take 296,000 courses and have distributed over 7,000 Bibles. Buck Griffith directs this wonderful work that involves overcoming addictions, programs after release, and becoming active Christians. Over 1,200 prisoners have been baptized in the last ten months. For more information contact them at 3833 S. Staples St., Ste. S101, Corpus Christi, TX 78411; phone: 361-855-3372 and e-mail at nibcasa@yahoo.com. Their website is www.kingscrossingprisonministries.org.

DIVORCES FOR ELDERLY SURGE. The divorce rate for people over 50 has doubled in the past 20 years. In 2010, 25% of all divorces were for people over 50. God hates divorce (Malachi 2:16) and anyone who has been divorced can tell you why. Not only is there emotional and psychological pain involved in divorce, but the ripple effect on families is huge. In addition, the average loss of income for a man is 23% and for a woman it is 41%. The divorce industry in America in 2010 earned $50 billion. More of an issue for the church is why this is happening. The ease of getting divorces is one factor,
but it also has to do with the weakening of faith, commitment, and involvement of seniors in spiritual activities and work. The world’s values and the pressure to look after number 1 have rubbed off on us. The weakness of faith in what the church teaches is a major contributor. Source: AARP Bulletin, November 2014, page 16.

**OCEAN WATER NOT FROM COMETS.** An amazing display of human intelligence and engineering was accomplished late in 2014 when the Rosetta spacecraft visited comet 67P/Churyumov-Gerasimenko and was able to measure the makeup of the water in the coma of the comet. Water on earth contains a small amount of deuterium, which is hydrogen that has a neutron associated with the proton that makes up the nucleus. Ordinary hydrogen is just a proton and an electron. The water on the comet had three times as much deuterium, and that suggests that comets did not bring water to the earth—at least not this type of comet. In 1986 the Giotto spacecraft flew through the coma of Halley’s comet and a very high level of deuterium was found as well. It appears that the water on earth was in some way specially formed during the creation of the earth. The repeated references to water in Genesis 1 would support that idea. God could certainly use comets to produce the water, but it is another support for the integrity of the biblical account. Source: Science News, January 10, 2015, page 8.

**DOES RELIGION CAUSE WAR?** Atheists have harped on the religious conflicts that have racked the planet during most of human existence as a reason to destroy religious belief. Dr. Karen Armstrong is a respected historian and has written a widely acclaimed book titled The Battle for God in which she shows that virtually all human conflict has been the quest for power, money, territory, and glory, with religion playing a distant second as a cause. She also shows that ancient religions exhorted the faithful to “care selflessly for all human beings as their brothers and sisters.” She also shows that until the American and French revolutions no “secular” societies existed, but historically much of the time religion has been only a veneer used to legitimize the power struggle. A review of this book may be found in The Week, November 14, 2014, page 24.
This journal is a part of a program of service titled **Does God Exist?** The purpose of the program is to provide thinking, seeking people with scientific evidence that God does exist and that the Bible is His Word. It is our conviction that all men can logically and rationally believe in God. In addition to this bimonthly journal, the **Does God Exist?** program offers DVDs and video tapes, CDs and audio tapes, courses, books, and other materials. These materials are offered on a loan basis or at our cost. We also are more than willing to correspond with you and answer any specific question(s) you might have. If you would like further information on borrowing or purchasing these materials, we would be glad to send it to you. Check the boxes below to describe what you would like and mail it to us. We will get it right out to you.

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