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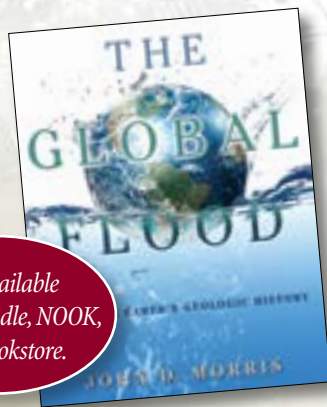
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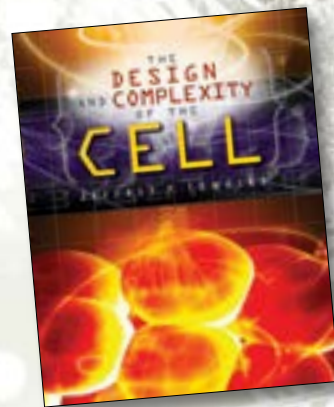


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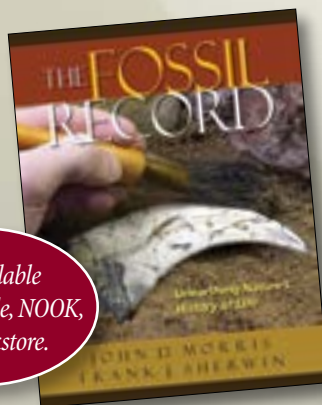
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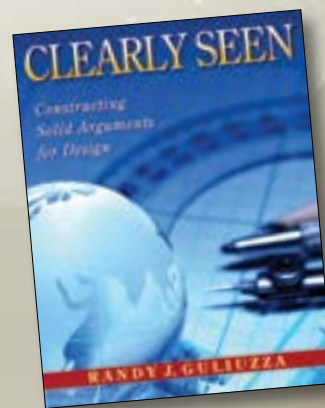
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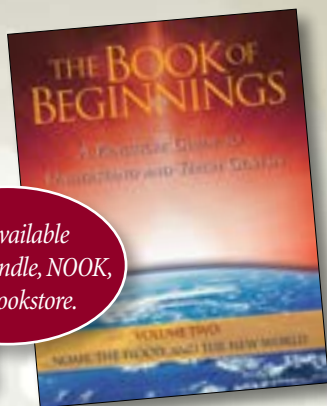
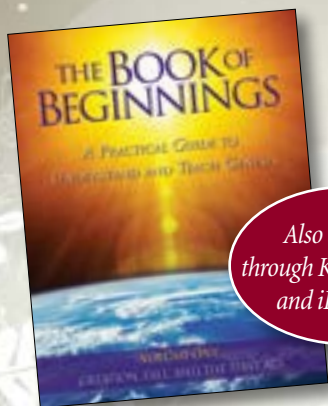


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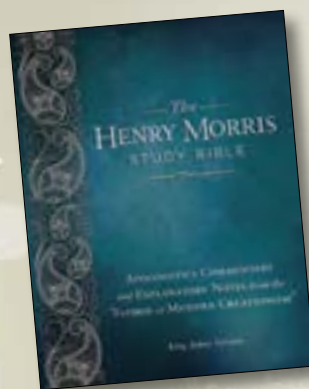


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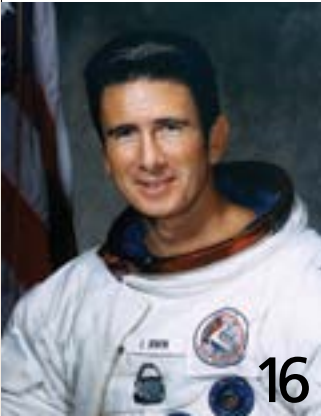
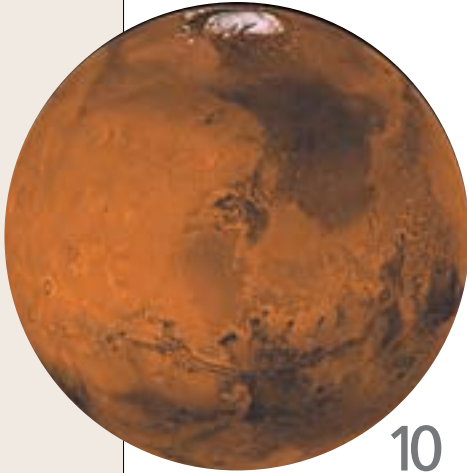
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Creative Ways to Share the Creation Message

“And this canyon was carved by the Colorado River over six million years.” The tour guide, seemingly oblivious to the majestic Grand Canyon surroundings, droned on about her assumptions concerning the age of the earth. Before I could turn around, Markus, the outgoing young man sitting next to me on the rock ledge, hopped down to the walk below and strolled to the tourists gathered around the guide.

“Have you ever considered that there might be another explanation for this incredible Grand Canyon?” Markus made eye contact with the individuals in the crowd, communicating genuine concern for them. “I mean, have you ever considered that maybe something catastrophic happened—like a worldwide flood like the Bible describes as happening in Noah’s day?”

The tour guide’s mouth dropped open, the tourists turned to look at this assured young man, and a gentleman in the crowd drew closer to Markus, asking the first of several questions.

I watched it all unfold from my perch on the ledge. Markus didn’t hesitate a second when he heard the false information. He responded instantly, and the crowd was hungry for his words of truth—his friendly demeanor and nonconfrontational approach sparked interest and drew the listeners to him. I was proud to be associated with someone who so willingly shared the creation message with total strangers. And I was reminded that so many others across our country and around the world need to hear those same words.

Markus and I were at the

Grand Canyon to film for ICR’s upcoming video series—a tool that we hope will help us reach beyond our normal scope of conferences, church services, and school seminars. As our articles in the October *Acts & Facts* discussed, we are looking for ways to reach churches and schools where we aren’t able to offer a large event or visit personally.

One of our goals at ICR is to share creation truths in creative ways—reflecting the design of our heavenly Father. In his article “Reaching the Millennials: A Crucial Connection” (pages 5-7), Dr. Henry Morris III points out the need to reach this generation with the creation message. We understand the necessity to use methods the tech-savvy millennials are familiar with. Our new video series will share the foundational truths of Scripture with cutting-edge science information in a package millennials will be drawn to—it will spark interest and pull the viewers in for a closer look at how the evidence supports the accuracy of the Genesis account of Earth’s history.

Also in this issue, we unveil a first look at our newest book, *Guide to Animals* (pages 22-23). This hardcover book, packed with hundreds of rich full-color illustrations, reflects our desire to reach the younger generation with the creation message, although people of all ages will be fascinated by the unique presentation of the wonders of God’s creative design in animals.

As Henry Morris IV reminds us in his article this month (page 21), “As long as we continue to honor God and His Word, we are confident that, through His people, He will supply our needs and accomplish the work He wants us to do.” Please partner with us as we look for unique ways to share the truths of Scripture and to reach those who have yet to hear the creation message.

Jayme Durant

Jayme Durant
EXECUTIVE EDITOR





REACHING THE MILLENNIALS: A CRUCIAL CONNECTION

Over 40 years ago when ICR's founder, Dr. Henry Morris, worked with Dr. Tim LaHaye to start Christian Heritage College (now San Diego Christian College), the baby boomers were the trailing-edge generation much like the millennials of today. Back in the '60s and '70s, the "greatest generation" struggled with their understanding of hippies—the rebellious youth of the time. Many church leaders scrambled in search of ways to reach them, and the gaps between the theologians and philosophers widened with each passing year.

Here's a list of the generations living in the United States today:

- The greatest generation: born before 1928
- The silent generation: born between 1928 and 1945
- The baby boomer generation: born between 1946 and 1964
- Generation X: born between 1965 and 1980
- The millennials or generation Y: born between 1980 and 1994^{1,2}
- Generation Z: born after 1995²

Now, the silent generation and even the boomers are beginning to wane, and generations X and Y are running the churches and the corporations of the country. Generation Z

is entering the workforce, and the electronic and technological world is changing faster than the latest cell phone. Social media have reached such a level that Internet startups are making millionaires out of teenagers, and initial public offerings for social media companies have raised billions within hours of their entry into the market.

Survey after survey has noted the rapid secularization of our country, and the younger folks seem to be deserting the churches faster than they can be replaced by babies born to young marrieds returning to the church of their roots. Over one quarter of millennials are unaffiliated with any particular faith.¹ Seminaries have stopped offering Christian education degrees since Sunday school is no longer a factor in many churches, and the rise of lay worship leaders has become such a phenomenon that young graduates work at Starbucks to supplement their weekend ministry roles.

Or so it seems.

The truth is somewhat less concerning—although it demands notice. Young people are leaving mainline churches and flocking to nondenominational assemblies that cater to a new paradigm: Emerging church movements that emphasize the non-

traditional are seeing exponential growth. Churches that insist on old hymns and expositional Bible-preaching seem to be waning and losing membership. Yearning for “the way it used to be” has become a common conversation topic for older church members—and even their social groups and Sunday schools are fading out.

Does this mean that we must “soften” or “water down” the Bible’s message so that these younger folks will pay attention to us? The Lord Jesus insisted that He would build His “church, and the gates of Hades shall not prevail against it” (Matthew 16:18). Was He

timeless command to disciple all nations. Door-to-door visitation was effective and well-received 50 years ago when neighborhoods were open and congenial. Today, everyone is afraid to open their doors to strangers. Flannelgraph presentations may work in some situations, but most children expect the hi-tech animation and visual presentations they have grown up watching on TV.

The means of delivering such a life-giving message must adapt and be attractive to the audience, or the audience will be drawn away by society’s sound and sensation overload. Yes, the gospel is “the power of God to salvation” (Romans 1:16). Yes, the Holy Spirit is still the One who is responsible to “convict the world of sin, and of righteousness, and of judgment” (John 16:8). And yes, we are each still responsible to be “a worker who does not need to be ashamed, rightly dividing the word of truth” (2 Timothy 2:15).

Well, how then do we reach those whose minds and hearts are being enticed away from the Word of God? How are we to capture their attention? The Bible tells us that our Lord has “given to us all things that pertain to life and godliness, through the knowledge of Him who called us”

---the message of the gospel does not change and the authority of God’s Word is not ever to be questioned---

mistaken? Has the authority and power of the Word of God become ineffective? How far do we take change in order to reach the young without altering the powerful message of Scripture?

While the message of the gospel does not change and the authority of God’s Word is not ever to be questioned, the means and methods by which we present that message to the hearers must adjust and use available technology if we are to be obedient to the



(2 Peter 1:3). So, we have the ability to discern from the Scriptures the appropriate means and methods necessary to meet the needs of those God entrusts to our care.

Permit me to suggest the obvious. When sharing the truths of God's Word, use tools that will grab the notice of your audience. Compel your listener to want the message.

Tell stories. (The Bible uses the word "parables.") Jesus often used this means of teaching throughout His ministry. He primarily had verbal discourse at His disposal. We have visual media. He was limited to the assembled crowd. We have the Internet and radio and television and movies and DVDs! He had the power of His vocal cords. We have microphones and, well, just about every conceivable means possible to amplify and multiply our message.

Remind your listener of our history. (The Bible is *mostly* history.) Genesis 1–11 is not an optional portion of Scripture—it is foundational! If we fail to set the stage with the great Book of Beginnings, then the sequence of subsequent developments will flounder in disconnected stories with no message other than perhaps character lessons. And again, we have at our disposal the means to *visualize* the stories! We can show what the Flood of Noah did to the earth! We can animate the wonders of life and the maj-

esty of science. If we only talk, then we are burying the opportunities available to us in the "ground" of disuse—and may well even be called a "wicked and lazy servant" (Matthew 25:26).

We live in a wonderful age of opportunity—this is the "challenge of plenty" we discussed last month.³ Yes, the opposition is strong and active, and the clearer the message of truth, the more active are the opponents. But we should "not grow weary while doing good, for in due season we shall reap if we do not lose heart" (Galatians 6:9). Of course, there are not only many cutting-edge ways to tell Scripture's great messages, but there are also audiences primed to receive them.

Millennials, for example, don't just use technological gadgets—they've "fused their social lives into them."¹ Three-quarters of millennials have created a profile on a social networking site.¹

ICR is actively seeking new ways to reach the younger generations of our world. We *must* do so—it is a crucial connection! The message of Scripture is as vital as it has ever been, and the need is as great as it has ever been. There are methods that will continue for the foreseeable future. We will still publish *Acts & Facts* and *Days of Praise*. We are still providing the radio programs *Science, Scripture, and Salvation* and

Back to Genesis. We are still writing and publishing books. We are still actively doing research in the sciences that deal with origins and the early chapters of Genesis. That will not change.

But we will be doing more, as well. We hope to produce publications generated and designed for children. We are currently producing youth-oriented online media. We have begun an extensive video series geared toward young people—specifically, the millennials. (See our team at work in the Grand Canyon location shots on page four.) Lots of things are going on at ICR. You will be hearing more about all of this in the days ahead. Please pray for the Lord's wisdom as we seek the best means and methods for these critical days, and join in supporting ICR as you are able. As always, we are grateful that you graciously partner with us—we function under God's provision through you. ●

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Dr. Morris is Chief Executive Officer of the Institute for Creation Research.



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Report on the 2013 International Conference on Creationism

In August, 354 creation scientists and supporters from nine different countries attended the 2013 International Conference on Creationism (ICC) in Pittsburgh, Pennsylvania. Dozens of authors presented their peer-reviewed papers—nearly all of them technical in nature. Well represented at this year's ICC, the Institute for Creation Research sent its entire science staff, several of whom presented a number of papers, which are also available for on-line viewing at www.icr.org.

Geologist Tim Clarey discussed gravity-driven “overthrusts,” showing that these geological features (in which older strata are found on top of younger strata) are exceptionally difficult to explain in an old-earth framework. However, they do fit the catastrophic, gravity-driven events that occurred during the Genesis Flood.¹ Dr. Clarey was also the lead author on another paper discussing catastrophic earth movements.²

Geneticist Jeffrey Tomkins co-authored a paper that described how a reassessment of evolutionary literature, including previously published data, reveals a huge gap in DNA similarity between the human and chimpanzee genomes.³ The oft-touted figure of 98 percent DNA similarity was shown to be based on “cherry-picking” only the highly similar data and ignoring the many dissimilar regions between the two genomes.⁴ Dr. Tomkins also presented his own independent systematic chromosomal comparison results of the chimp and human genomes, indicating an average DNA similarity of only about 70 percent overall.⁵

Biologist and science writer Brian Thomas presented the phenomenon of original tissue fossils, including the *Tyrannosaurus rex* soft tissue discovered by paleontologist Mary Schweitzer and dozens of similar finds.⁶ The existence of such original tissue fossils is an enormous challenge for those who believe in an old earth, as biochemical decay rates are much too fast for fragile soft tissue to have survived for tens of millions of years.⁷

In addition to technical papers, ICC speakers shared informative talks during the evening sessions, and a lively panel also discussed meteorites within a biblical framework.

Russell Humphreys (Ph.D., physics), John Baumgardner (Ph.D., geophysics), and Steve Austin (Ph.D., geology) received the Byron C. Nelson Award for their significant contributions to creation science. Ken Ham, founder and president of Answers in Genesis, was honored with the Luther D. Sunderland Award for his contributions to the cause of biblical creation.

Those unable to attend the 2013 ICC in person can access recordings of the five informative evening sessions, which are currently available for online viewing until the end of December at



Award recipient Dr. John Baumgardner and ICC Board Member Bob Walsh.

Image credit: ICC

www.creationicc.org. In addition, ICC attendees may view online recordings of the technical presentations and conference proceedings; proceedings from most of the earlier years may be purchased from the ICC website.

Many thanks to the Creation Research Foundation; Reid Moon, ICC Executive Committee Chairman; Mark Horstemeyer, ICC Editor; the technical referees; and all the other hard-working volunteers who helped to make this ICC a success! ●

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The Solar System: Mars

Although Venus has been called Earth's sister due to the similar size of these two worlds, the planet that appears most earthlike at its surface is undoubtedly Mars. A solid, rocky world, Mars is just over half the size of Earth in diameter. It appears as a vivid red star in our nighttime sky, giving rise to its nickname, the Red Planet. This is no illusion. The surface of Mars is composed of oxidized compounds of iron—essentially rust. This amazing planet has properties that both challenge secular ideas and confirm biblical creation. Its similarities to Earth make it a tempting target for enthusiasts of space colonization; however, the stark differences between the two planets should dampen such enthusiasm.

A Day on the Surface of Mars

Geologically, Mars has features strikingly comparable to those on Earth. With mountains, valleys, canyons, volcanoes, and polar ice caps, Mars even has some weather similar to Earth's, including seasons, clouds, fog, wind, dust storms, dust devils, and occasional frost. Although liquid water is not found in any abundance on Mars, scientists have discovered substantial quantities of water-ice near the poles and water vapor in the Martian atmosphere. Even the axial tilt and rotational period of Mars is much the same as that of Earth.

Mars takes 24 hours and 37 minutes to rotate once on its axis—almost identical to Earth.¹ Future visitors to the planet might find this slightly longer day enjoyable. They could sleep a half-hour longer compared to their friends on Earth, and it would never “catch up” with them. The sun would appear slightly smaller than it does on Earth and would shine at only half the brightness since Mars orbits farther from the sun. As a

result of this larger orbit, the Martian year equals 1.9 Earth years.

With a thin atmosphere composed mainly of carbon dioxide, Mars does not provide a breathable environment for humans. In order to survive, future astronauts would have to wear spacesuits with built-in oxygen supplies when walking on the Martian surface. The spacesuits would also need

Mars can appear in a telescope seven times larger and 50 times brighter at opposition than it does when on the far side of the sun.

to provide the atmospheric pressure and temperature necessary for human life. Because the force of gravity is only 38 percent of that on Earth, walking on Mars would take some practice. By comparison, the astronauts on the moon experienced a force of gravity only 17 percent of what is normal on Earth.

In the daytime, visitors on Mars would experience a bright sky, though not as bright as Earth's. The color of the Martian sky is interesting, complex, and often blue for exactly the same reason that Earth's sky is blue: The molecules in the atmosphere scatter shorter wavelengths (blue) more readily than longer wavelengths (red). But the Martian sky is a deeper, darker blue—partly because there is less sunlight than on Earth and also because the atmosphere is much less substantial. When wind kicks up fine dust from the planet's red surface, the Martian sky can also appear to be orange.

Martian Seasons

Due to sharing a similar axial tilt to Earth at 25.2 degrees, Mars also experiences four seasons. Observers on the planet's surface would see the sun high in the sky

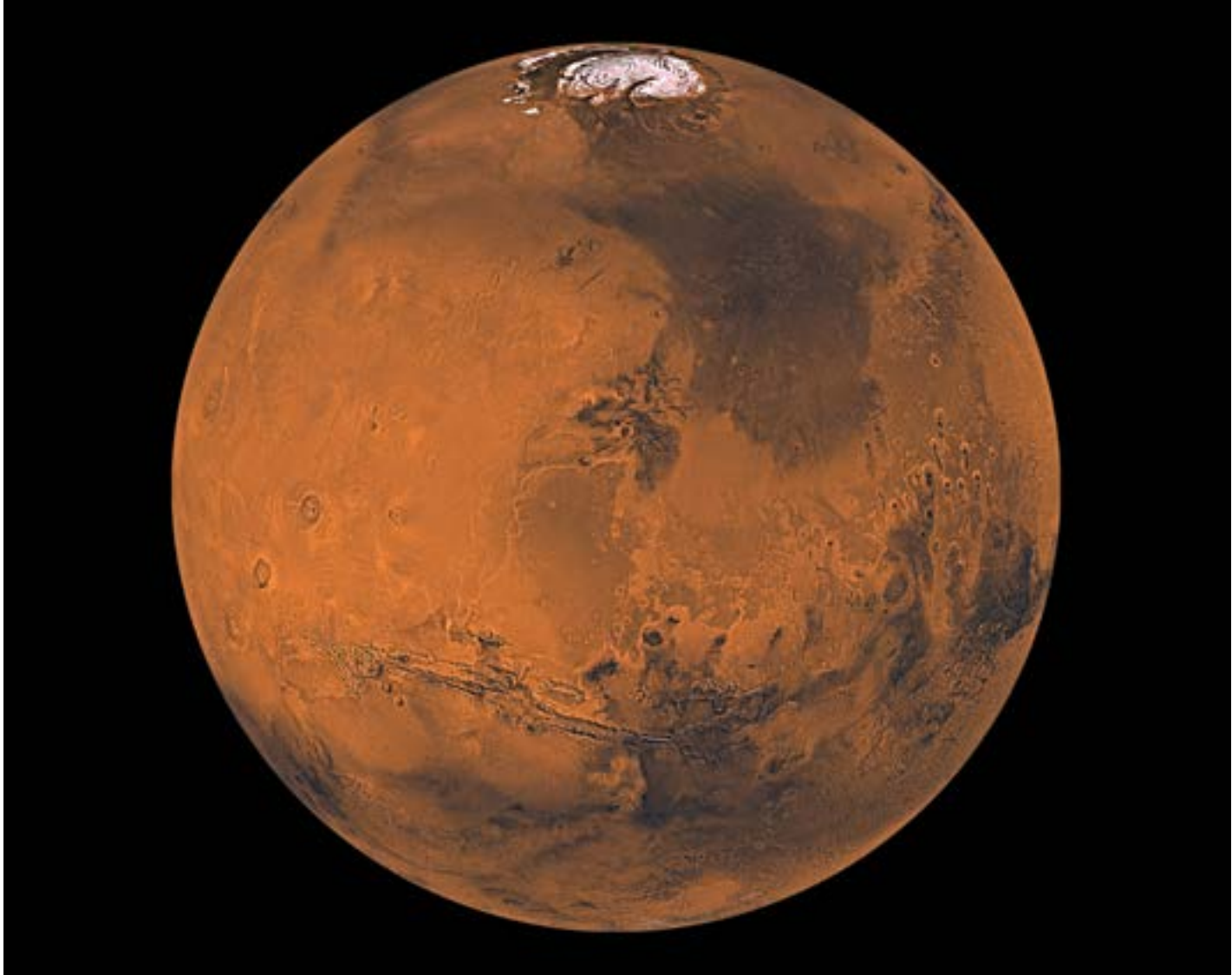
in summer and low in the sky in winter and would experience the same amount of sun exposure as they would at comparable latitudes on Earth during these seasons. Seasons on Earth result from axial tilt, *not* the changing distance to the sun caused by Earth's slightly elliptical orbit. This is also true for Mars; however, the orbit of Mars is significantly more elliptical than Earth's, which causes its distance from the sun to change, affecting the *severity* of its seasons. So, even though, like Earth, Mars is closer to the sun during its northern hemisphere winter and farther away during its northern hemisphere summer, the effects are different. Its greater distance to the sun partially compensates for the increased duration and direct angle of sunlight experienced in northern hemisphere summers. And while Earth's elliptical orbit barely affects the extremity of its seasons, the elliptical orbit of Mars causes seasons to be *less* extreme in its own northern hemisphere than in its southern hemisphere.

In addition, Mars has polar ice caps that are visible from Earth using a small telescope.² These ice caps grow during the winter in their respective hemispheres and shrink during the summer—just like the ice caps on Earth. But Earth's ice caps are water-ice, and Mars' ice caps are mostly water-ice layered underneath several feet of frozen carbon dioxide (dry ice).

In addition, Mars has polar ice caps that are visible from Earth using a small telescope.² These ice caps grow during the winter in their respective hemispheres and shrink during the summer—just like the ice caps on Earth. But Earth's ice caps are water-ice, and Mars' ice caps are mostly water-ice layered underneath several feet of frozen carbon dioxide (dry ice).

Martian Topography

Mars is flat—very flat. Most of its surface resembles the deserts we have on Earth, with rocks as far as the eye can see and very little relief. Though there are hills and even enormous mountains, they have gentle slopes that make them seem less magnificent than peaks on Earth. For example, Olympus Mons is a massive (extinct) Martian volcano and is actually the largest volcano known to



exist—nearly three times as tall as Mt. Everest. Yet, even though its base would cover the combined states of Ohio, Indiana, and Kentucky, a mild gradient makes Olympus Mons *seem* far less impressive than the rugged slopes of Everest. Several other immense volcanoes exist on Mars, dwarfing their terrestrial counterparts. Most astronomers believe that all of these volcanoes are extinct and that Mars currently has essentially no geologic activity.

One of Mars' most spectacular features is a canyon called Valles Marineris that is long enough to reach from one end of the United States to the other and is over 120 miles wide and about four miles deep.³ For comparison, this is ten times longer, nearly seven times wider, and four times deeper than the Grand Canyon. Valles Marineris is thought to be a tectonic fissure—a place where the surface cracked open.⁴

Scientists have been intrigued to learn

that the surface of Mars has dry river beds and deltas. Though there is essentially no liquid water on the planet today, evidence clearly suggests that Mars once had surface water. Such evidence is especially perplexing in light of the planet's thin atmosphere. Water can only exist as a liquid between certain temperatures and under sufficient atmospheric pressures, and the atmosphere of Mars is far too thin to allow water to be liquid for any length of time at any temperature. Heating an ice cube on Mars would cause it to sublime, not melt. That is, the ice would go directly to vapor, bypassing the liquid state entirely. Frozen carbon dioxide behaves in the same way under Earth's atmosphere.

So, was the atmosphere of Mars different in the past? Or was the water released catastrophically, boiling away almost immediately? Could volcanic eruptions increase the atmospheric pressure locally to the point

where liquid water could exist temporarily? These are mysteries that remain unsolved. It is noteworthy that secularists are willing to believe in catastrophic, planet-scale flooding on Mars—a planet that cannot support liquid water. Yet, they simultaneously deny the Genesis Flood on Earth—a planet that is 71 percent covered with water.

Martian Moons

The two moons of Mars are quite tiny compared to Earth's moon. Phobos is the larger of the two and only about 10 miles in diameter. Since Phobos has so little mass, its gravity is minuscule. In fact, you could pick up a baseball and toss it into orbit around Phobos. And, if you threw it just right, you could turn around and catch it as it completed a loop!⁵ Deimos is the other Martian moon and has a diameter of only eight miles.⁶ More like two large boulders orbiting

Mars, neither Phobos nor Deimos is spherical. This is common with small moons and asteroids since their gravity is insufficient to overcome the chemical bonds that prevent these bodies from collapsing into a spherical shape.

Phobos and Deimos have very circular orbits—both quite near to the Martian surface. Phobos orbits at an unbelievably close distance of only 3,700 miles above the surface—closer than any moon to its planet. To stand on this little world of Phobos and look up at an enormous Mars would be a truly spectacular sight. Its proximity to Mars—combined with Mars’ gravity—means that Phobos orbits very quickly. In only 7 hours and 39 minutes, this little moon can complete one orbit. A greater distance away from the surface, Deimos takes just over 30 hours to complete one orbit. Since Phobos orbits faster than Mars rotates, an observer on the Martian surface would actually see Phobos rising in the west and Deimos rising in the east (albeit very slowly), despite the fact that both moons orbit Mars in the same direction!

When taken from a secular perspective, the origin of these moons is perplexing. Were they once asteroids that have since been captured by the gravity of Mars, as many astronomers believe? This is possible but involves an improbable chain of events. Moreover, captured asteroids are expected to have exaggerated, elliptical orbits, but Mars’ moons orbit in nearly perfect circles. As with so many aspects of the universe, the creative diversity of the Lord seems the best explanation for this puzzle. While posing a challenge for natural processes, the creation of unique moons in well-designed orbits is no problem for God.

Martian Opposition

Outer planets (those beyond Earth’s orbit) are best viewed through a telescope when Earth passes between them and the sun. This is because the outer planet is about as close to Earth as it can be, is fully illuminated by sunlight, and is high in our



Remnants of ancient streambed on Mars

sky around midnight when the sky is darkest. During such a configuration, the outer planet is said to be in “opposition” because it is opposite the sun. But most outer planets still appear large and bright even when they are not in opposition, which happens about once per Earth year. Mars is the exception to both of these generalities.

Because it is so small, the planet only looks bright (and large in a telescope) for a month or so around opposition. And unfortunately, because its orbital period is nearly twice as long as Earth’s, Mars’ opposition only happens an average of once every 2.1 years. So don’t miss it.⁷ During opposition, Mars comes very close to Earth, which is why it looks so good, appearing in a telescope seven times larger and 50 times brighter than it does when on the far side of the sun. By contrast, Jupiter always looks about the same size and brightness, whether in or out of opposition, because it is a large planet and is only slightly closer to Earth at opposition than at other times.

Not all of Mars’ oppositions are equal. Since its orbit is quite elliptical, some oppositions bring the planet much closer to Earth than others. Mars can appear nearly twice as large during favorable oppositions as in unfavorable ones. In fact, on August 27, 2003, Mars and Earth came as close together as they ever have—34.6 million miles—about as close as is possible for these two worlds. This led to some wonderful telescopic views of Mars.⁸

Additionally, it is only when Mars is near opposition that the moons Phobos and Deimos are visible under good, dark conditions with a moderately sized backyard tele-

scope. Even then, it can be a challenge. The problem is not so much that these moons are faint—backyard telescopes can resolve stars significantly fainter—but that they are so close to Mars, which is 200,000 times brighter and covers them under its glare. The best way to see Phobos and Deimos is to move the telescope so that the moons are within the field of view and Mars is just beyond it.

Mars and Earth possess great similarities but also vast differences. This is yet one more mark of the creativity of the Trinitarian God of Scripture. God Himself (Father, Son, and Holy Spirit) embodies a multitude of characteristics—diverse and yet unified. In the same way, the planets, while not one-and-the-same, have unique variations representing the all-encompassing, endless ingenuity that the Creator exemplifies in all His forms. Indeed, the evidence of Him is clearly seen by what He has made—“even His eternal power and Godhead” (Romans 1:20). ●

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1. This is the sidereal day. By contrast, the solar day on Mars (sunrise to sunrise) lasts 24 hours, 39 minutes, 35 seconds.
2. Only one ice cap is visible at a time—whichever pole is tilted toward Earth at the time. There is also a large valley on Mars called Hellas not far from the South Pole. This valley often fills in with fog, making it appear quite bright. Amateur astronomers often mistake Hellas for one of the polar ice caps because they appear very similar. But Hellas is not exactly at the South Pole and therefore rotates with the planet. If a telescope reveals what seem to be two polar caps, rest assured that one of them is the northern polar ice cap and the other is Hellas, not the South Pole.
3. The valley is named after the *Mariner 9* spacecraft that discovered it.
4. Although there is abundant evidence that liquid water once existed on Mars, most astronomers believe that Valles Marineris Canyon was caused primarily by a tectonic crack rather than water erosion.
5. You would have to throw the ball in a direction horizontal to the surface at a speed between 17.9 and 25.3 miles per hour in order for it to orbit Phobos. At speeds less than 17.9 miles per hour, the ball would fall to the surface before it reached you. At speeds greater than 25.3 miles per hour, the ball would escape the gravity of Phobos—never to return.
6. The names Phobos and Deimos mean “fear” and “dread” (or “terror”) respectively. In Greek mythology, Phobos and Deimos are the twin sons of Ares (Mars), who was the god of war.
7. The next opposition of Mars will occur in early April 2014.
8. It also led to a popular Internet hoax that still circulates. The hoax claims that Mars will come so close to Earth *this* August that it will appear as large in the sky as the moon. Of course, this could never happen since the orbits are too far separated. The hoax is a distortion of an accurate prediction made in 2003 that Mars would appear (*that* August) as viewed through a telescope at 75 times magnification—just as the moon does without such magnification. Somehow, the part about the telescope was dropped, as was the year date of 2003, so every year people get an erroneous email claiming that they will see Mars as large as the moon.

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Tyrannosaurus rex: Scavenger or Predator?

Tyrannosaurus rex looms in recent history as likely the most famous dinosaur that ever lived. The *Jurassic Park* movies pumped new life into its image as a savage predator. But how much of this is Hollywood hype and how much reflects science?

Looking at the numbers, an adult *T. rex* weighed in at over five tons. If it were endothermic (i.e., warm-blooded), it would need to eat the equivalent of a full-grown, three-ton hadrosaur each week. If it were ectothermic (i.e., cold-blooded), it would only require a fifth to a tenth as much sustenance. Research on the eating habits and predatory patterns of *T. rex* lends some interesting results.

Studies of bite mechanics support the notion that *T. rex* was truly the “king of dinosaurs.” Scientists in England used dynamic musculoskeletal models to simulate its bite strength and found it nearly doubled that of an equivalent-size alligator.¹ Such strength explains the numerous teeth marks imprinted on dinosaur fossils and found to match *T. rex*’s unique, D-shape teeth. Gouges from large carnivore teeth were even identified on a *T. rex* toe bone, implicating possible cannibalism.² The question is, what was this great strength used for—scavenging, predation, or both?

Paleontologist John R. Horner thinks *T. rex* was exclusively a scavenger, surmising it was slow in speed and pointing to its massive olfactory lobe that likely enabled it to smell carcasses from afar. However, healed wounds, caused by an animal the size of *T. rex* and found on *Triceratops* and *Edmontosaurus* dinosaur skeletons, indicate these creatures survived predatory attack.³ Most recently, scientists reported finding the tip of a *T. rex* tooth embedded in the backbone of a duck-billed dinosaur.⁴ The backbone had healed around the tooth,

demonstrating survival after the failed attack. Such evidence aligns with conclusions by some paleontologists that there weren’t enough carcasses available for *T. rex* to subsist only by scavenging.⁵ Finally, contrary to perceptions of these creatures as “slow,” they were certainly fast enough to catch their dinner. A study using biomechanical models determined an adult *T. rex* could run about 18 miles per hour—fast enough

to capture prey.⁶ These findings imply that *T. rex* probably ate whatever it came across—as an opportunist, and not just a scavenger.

Regardless of its bite strength and teeth, in God’s original creation even *T. rex* was a vegetarian, like all other animals.⁷ It wasn’t until after the sin of man and the Curse that *T. rex* became a meat-eater—Genesis 3:14 extends the Curse to every beast, which included dinosaurs. With those massive teeth, it’s still a mystery as to exactly what type of vegetation *T. rex* ate.

Recently, scientists documented fruit and plant consumption in 13 of the 18 species of crocodylians, classifying them as “generalist predators that complement an otherwise carnivorous diet with fruit.”⁸ In the same way, fruit and plants probably served as supplements to the mighty *T. rex* after the Curse. In fact, according to Genesis 6:21, the Ark stored a wide variety of plants, grains, and nuts for the year-long journey during the Flood. Preservation of each species would have required animals on the Ark to survive exclusively on a vegetarian diet.

Although discoveries of some predators consuming plants may surprise evolutionary scientists, creationists expect them. *Tyrannosaurus rex* may have had the strongest bite and the biggest teeth of any dinosaur, but it once survived on a diet of plants alone. In spite of its reputation as a violent aggressor, *T. rex* actually reveals God’s creativity in its anatomy and the diversity of its eating habits, which allowed for survival in a variety of conditions. ●

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Ute Pass Fault: Sand Injectites and Rapid Deformation Fit the Flood

JOHN D. MORRIS, P.H.D.

In last month's edition of *Acts & Facts*, I mentioned studies that Dr. Steve Austin and I presented in a technical paper demonstrating that the deformations in sedimentary strata at two sites better fit with the biblical Flood than with evolution's long ages of deposition.¹ We featured the first project site, the Split Mountain Formation in southern California, in that issue. Now we will examine geological evidence from the second site, the Ute Pass Fault in Colorado.

Location and General Features

The Rocky Mountains of Colorado were formed by "large reverse" faults, with some having over 20,000 feet of vertical slip. A reverse fault generally places older rocks on top of or adjacent to younger rocks. The very abrupt Front Range is caused by the Ute Pass Fault, a prominent north-trending reverse fault more than 40 miles in length.² On the western side of the fault are the upthrust Pikes Peak granite and associated Precambrian metamorphic rocks (pre-Flood rocks), showing all sedimentary strata (Flood rocks) removed by erosion. On the eastern side of the Ute Pass Fault are flat-lying strata thousands of feet thick that are typical of the plains in eastern Colorado.

A generalized cross-section of the Ute Pass Fault is shown in Figure 1. According to a 1965 field study conducted by Geologist J. C. Harms, the Ute Pass Fault dips steeply westward near the surface then becomes nearly vertical with increasing depth.³ About 12,000 feet of Phanerozoic strata (Flood rocks) underlie Colorado Springs, with Precambrian basement rocks (pre-Flood) occurring at an elevation of about 6,000 feet below sea level. Because the adjacent Precambrian basement rocks on the western side of the Ute Pass Fault occur up to 14,000 feet above sea level (i.e., Pike's Peak), over 20,000 feet of vertical displacement occurred southwest of Colorado Springs!

Stratigraphy and Age of Faulting

The lowermost strata in the Colorado Springs area are in the Sawatch Sandstone (dated as Cambrian, or earliest Flood), which directly overlies the Precambrian basement. Also of importance in relation to the Ute Pass Fault is the thick, arkosic (composed of weathered granite and sand) Fountain Formation (dated as Pennsylvanian and Permian, or mid-Flood) overlying the Sawatch Sandstone.

The Ute Pass Fault truncates or folds strata assigned from the

Cambrian to Cretaceous systems (early to late Flood) and therefore must be a Cretaceous or post-Cretaceous event (late Flood). The Laramide Orogeny, which formed the Rocky Mountains themselves, is recognized to be the main deformational event responsible for the Ute Pass Fault and is conventionally assigned an age of Cretaceous to Oligocene (late Flood).³

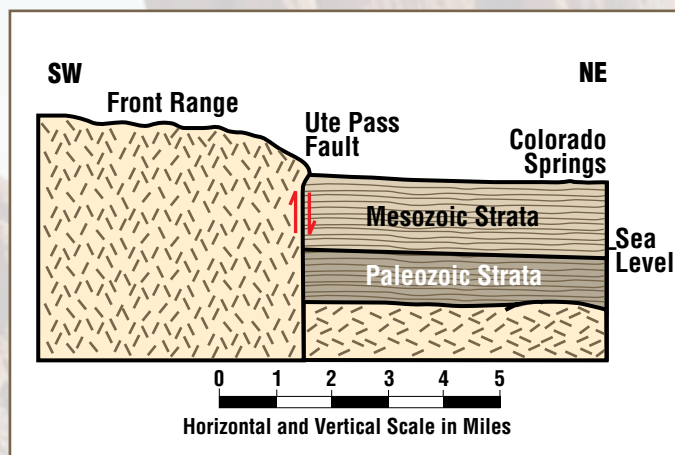


Figure 1. Cross-section of the Ute Pass Fault southwest of Colorado Springs, Colorado. Precambrian basement rocks have been uplifted many thousands of feet on the west side of the fault.¹

Monoclines and Tight Drag Folding

One of the most interesting characteristics of the Ute Pass Fault is the intensity of folding in the strata on the eastern side of the fault. As the strata approach the flank of the Front Range, 12,000 feet of once-horizontal strata are dramatically flexed into a nearly vertical orientation, as is visible in the Garden of the Gods. The strata bent excessively yet did not break! It appears that at the time of uplift the sedimentary deposits adjacent to the Ute Pass Fault were not yet solidified—they were still soft.

Evidence of soft-sediment deformation can also be seen in tight-drag folds very close to the Ute Pass Fault. Figure 2 shows how the red, arkosic sandstone of the Fountain Formation is strongly folded in contact with the fault near Manitou Springs, Colorado. This folding was caused by drag of the strata against the upthrust western side of the fault, consistent with the notion that the strata were ductile (soft) and not solidly cemented when deformed. The problem is that the strata involved are assigned an age of 300 million years while the

folding event, the Laramide Orogeny, is regarded as taking place less than 70 million years ago. How could the material remain moldable for 230 million years?

Sand Injectites Along the Ute Pass Fault

Among the most remarkable soft-sediment deformation features along the Ute Pass Fault are the sand injectites or clastic dikes of quartz sandstone associated with this fault and many other reverse faults of the Front Range.^{2,3,4} Over 200 of these sandstone injectites were mapped by Harms. The injectites vary in length up to several miles, in width from a fraction of an inch to 300 feet, and penetrate downward 1,000 feet or more through the bedrock, which is almost always the Precambrian basement (Pikes Peak granite or associated metamorphic rocks). Harms interprets the sandstone injectites to have been inserted from sandstone overlying the Precambrian basement along extension fractures in the upthrown block of the convex-upward reverse fault. Virtually all the injectites mapped have strikes parallel to the main reverse fault, and, because of their coincidence with the Laramide structures, are interpreted as having been emplaced during the Laramide Orogeny.

Although the sand injectites are variable in thickness, they are remarkably uniform in composition. Hematite cement is abundant and imparts a red or purple coloration to the injectites. Among investigators of these sand injectites there is agreement that the Sawatch Sandstone (the Cambrian strata just above the basement) is the original source. Not only is the Sawatch the closest sandstone to the in-

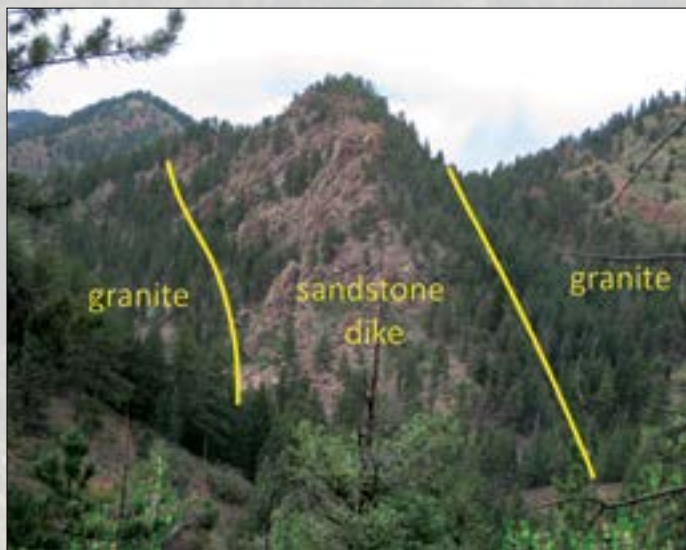


Figure 2. Vertical sandstone injectite within a fracture in Pike's Peak granite. The source of the sand in the Sawatch Sandstone is conventionally dated as 500 million years old. When squeezed into the fracture, supposedly 70 million years ago, it was still unconsolidated. How could the Sawatch Sandstone remain soft for so long? Evidently the assumption of deep time is in error.

Image credit: Bill Hoesch

jectites, but there is also nearly identical compositional and textural similarity between them.

Evidence for Unconsolidated Sand Injection

Many researchers have noted that the sand of the injectites was unconsolidated when forced downward into the open cracks.^{1,2,3} There is little evidence of breakage of sand grains, as if they were not cemented before injection, and there is a lack of fine matrix that would form from disaggregation of rock.

Some researchers recognize the fundamental impossibility of keeping the Sawatch Sandstone (with an assumed Cambrian age of 500 million years) unlithified and deeply buried in the presence of abundant cement for 430 million years until the Laramide Orogeny (with an assumed late Cretaceous age of 70 million years or less).¹

The actual field data strongly support the Laramide intrusion of the injectites. The Laramide event was of sufficient magnitude to open up the large extension fractures. Consequently, the coincidence of the injectites along the Ute Pass Fault, a proven Laramide structure, cannot be accidental, as Harms correctly claims.³ Geologists G.R. Scott and R. A. Wobus have mapped a quartz sandstone body one mile west of Manitou Springs on the east side of the Ute Pass Fault that penetrates Fountain arkosic sandstone (assigned to Pennsylvanian and Permian systems).⁴ In this case, the injectite cannot be Cambrian or Ordovician and would be naturally assigned to the time of the Laramide event.

Conclusion

A sequence of 12,000 feet of strata along the Ute Pass Fault was studied. The thick sequence of strata was still unconsolidated at the time of deformation, folding, or injection. The total time required for deposition of a sequence of strata, for regional flexing, for faulting, and for development of local deformational features *must be less* than the time it takes soft sediment—complete with necessary water and mineral cement—to harden into rock. The data support the creationist view that the deposition of strata and the actions of its folding/faulting/injections are concurrent, not consecutive. The violent continental plate movement and the vast amounts of sediment deposited during the Flood, as well as the deformation, happened during the same single-year event—just as described in Genesis! ●

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COLONEL JAMES IRWIN: CREATIONIST ASTRONAUT

JERRY BERGMAN, P.H.D.



James Benson Irwin (March 17, 1930–August 8, 1991), an American astronaut and scientist, was lunar module pilot for Apollo 15 on the fourth human lunar landing and was the eighth person to walk on the moon.¹

From childhood, Irwin dreamed of going to the moon.² After receiving a B.S. in naval science from the United States Naval Academy and a M.S. in aeronautical engineering from the University of Michigan, Irwin graduated from the Air Force Experimental Test Pilot School and the Air Force Aerospace Research Pilot School. In preparation for becoming an astronaut, he studied geology, astronomy, and spacecraft design, as well as lunar geology. Though a skeptic during his educational years, after extensive

research, Irwin became convinced creation was true and Darwinism false.

Apollo 15

Irwin realized his boyhood goal as part of the 1971 Apollo 15 flight. Called “exploration at its greatest,” the mission targeted the moon’s Hadley-Apennine region, an area noted for its high mountains and deep valleys.¹ After reaching orbit, the lunar module, *Falcon*, separated from the command module, *Endeavour*, and transported the researchers to the moon’s surface. Irwin’s tasks were more science-based than those of previous expeditions, and he spent more time on the moon than astronauts in earlier missions. Between July 26 and August 7, Irwin logged

over 295 hours as the *Falcon* pilot. He also spent over 18 hours of extravehicular activity on the moon’s surface, with a total lunar stay of over 66 hours.³

While on the moon, Irwin and Commander David Scott charted seismic activity, collected high-energy particles emitted by the sun, and obtained core and rock samples. The crew returned with 77 kilograms of rocks. The J-Mission (extended lunar stay) profile required intensive geological training, and this allowed the Apollo 15 team to make one of the most important discoveries of the entire Apollo era—the Genesis Rock.⁴

Irwin and Scott were also given the privilege of naming numerous geological formations on the moon.¹ In three separate excursions taken over three days, they explored the spectacular landing site, a narrow valley hemmed in on three sides by the 4,500-meter-high Apennine Mountains and on the fourth side by a two-kilometer-wide canyon called Hadley Rille.

For his many achievements, Irwin was highly decorated with awards, including the NASA Distinguished Service Medal, the United Nations Peace Medal, and the Haley Astronautics Award from the American Institute of Aeronautics and Astronautics. He also received two Air Force Commendation Medals, the Air Force Distinguished Service Medal and Command Pilot Astronaut Wings, and, for his time with the 4750th Training Wing, an Outstanding Unit Citation, among several other honors.⁵

Passion for Creationism

Beyond his NASA accomplishments, Irwin was well known for his involvement with Christianity and creationism. He wrote about the importance of his NASA experience to his Christianity:

I am now more than an earthling, because I have walked on the moon. Being on the moon had a profound spiritual

impact upon my life. Before I entered space with the Apollo 15 mission in July of 1971, I was...[a] silent Christian, but I feel the Lord sent me to the moon so I could return to the earth and share his Son, Jesus Christ.⁶

In 1972, Irwin left NASA, retired from the Air Force, and founded the High Flight Foundation. High Flight focused on helping others realize that science supports creation, not evolution. For almost 20 years, he consistently proclaimed that Jesus walking on the earth was far more important than mankind walking on the moon.⁶ Irwin was firm in his stance that “[it is critically] important to recognize the Creator of this great planet and the universe in which it exists. After all, He is the one who created the laws of science that make space travel possible.”²²



James Irwin and the lunar rover

He also frequently spoke about how his experiences in space made the presence of God far more real to him than ever before. One example is his account of the finding of the Genesis Rock:

Most of the rocks previously brought back from the moon were dark, dense basalt. Scientists knew that if the moon were composed entirely of this dense rock, it could not possibly be in its present orbit. It would be too heavy. They knew there had to be an abundance of lighter material, lighter in density and color. Our mission was to find a lighter rock from the mountains on the moon. While we were exploring...[we] found...a pure, white rock, the oldest rock brought back from the moon—part of the deep internal material which had been ejected to make the mountains—and the most important scientific discovery of our mission. The press

labeled it the “Genesis” rock, for it confirmed the fact that the earth and moon were created at the same time, giving scientific proof of the creation story of Genesis 1:14-18.⁶

This discovery was very significant for Irwin, who firmly believed that “in Genesis, the first book of the Bible, you will find the truth about where the moon, the earth, and the sun came from...how God created all things out of nothing in six days, [and] how God created the earth on the first day, and then, seventy-two hours later on the fourth day made the moon, the sun, and the rest of the universe.”⁶ Irwin accepted the mature-creation worldview that “God had created each thing with age built in; such as, on the third day, He had instantly made fully grown fruit trees...And on the sixth day...He created Adam—a fully grown man. Tracing Adam’s genealogy, he [Irwin] found God had made all these things less than ten thousand years ago.”⁷

Pursuing his strong convictions about creation and a young earth, in 1973 Irwin took several expeditions to Mount Ararat in Turkey, searching for remains of Noah’s Ark. In 1982, he even led an expedition supported by the Turkish president, Kenan Evren. Three elite Turkish commandos had to accompany the 14 researchers on the trip because the area they were traveling in bordered the old Soviet Union. In thanks for his help, Irwin presented President Evren with a Turkish flag that had once flown on the moon.⁸

Unfortunately, the journey turned out to be rather ill-fated. While the group was climbing, Soviet guards shot and killed two Turks who were not involved in the expedition. Irwin also ended up being struck by falling rock during the ascent. His injuries were so severe that he had to be transported by horse down the mountain and then driven to the nearest hospital, which turned out to be poorly equipped. Due to the accident and enormous difficulties involved in the climb, the team was eventually forced to abort the search for the Ark. Irwin returned to Mount

Ararat in 1983 and 1984 but found no compelling evidence of the Ark.⁸

Health Problems

The Ararat incident was not Irwin’s last health crisis. In fact, during an intense period of work on the moon the earliest symptoms of his heart problems appeared.⁹ In a 23-hour stretch, he conducted a moonwalk, performed the ascent from the lunar surface, and rendezvoused with the command module, *Endeavour*.¹⁰ Meanwhile, flight surgeons back on Earth were monitoring the astronauts’ physiological vital signs and noticed irregularities in Irwin’s heart rhythms.¹¹ However, they ultimately concluded that Irwin was not in serious danger. Whatever strain his heart was under then, *Endeavour*’s oxygenated cabin produced ideal ICU conditions.

It wasn’t until later, near his home in Colorado Springs, that Irwin suffered a serious heart attack. A subsequent heart attack on August 8, 1991, ultimately took his life. Survived by his wife, Mary Ellen, and their five children, his name was honored by the founding of the James Irwin Charter Schools in Colorado.

Colonel James Benson Irwin is an excellent example of a creationist who achieved enormous accomplishments in science. His guiding faith was that, as “God-designed creatures,” humans were “meant to relate to our creator.”⁶ He was memorialized with burial in Arlington National Cemetery. ●

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OPTIMIZATION IN CREATION

B R I A N T H O M A S , M . S .

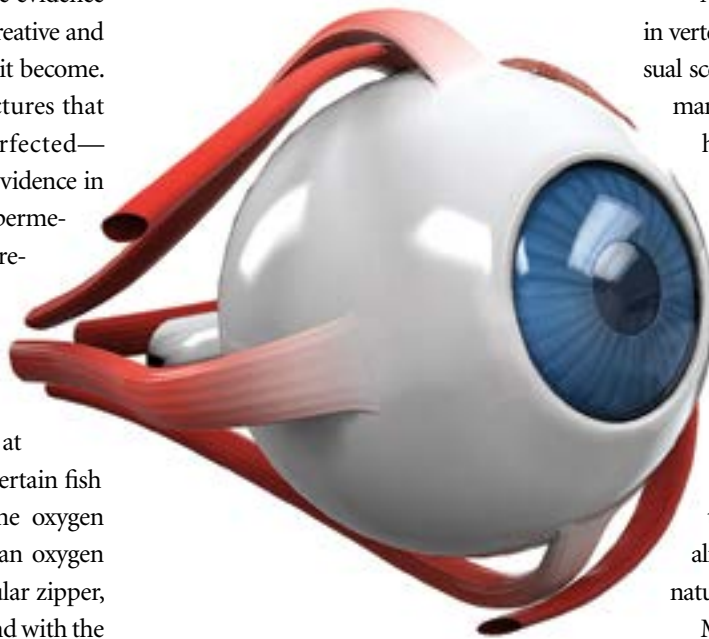
It seems that the clearer the evidence is for creation, the more creative and crazy the stories rejecting it become. Specific examples of structures that God optimized—those He perfected—for their roles often highlight evidence in favor of creation. Optimizations permeate creation from the tiny to the tremendous.

The Lord Jesus optimized the sizes and shapes of molecules when He commanded them to materialize at creation. Antifreeze proteins in certain fish illustrate this by positioning one oxygen atom every 16.1Å.¹ Ice exposes an oxygen atom every 16.6Å. Like a molecular zipper, antifreeze proteins hydrogen-bond with the leading edge of a growing ice crystal at these oxygen junctures to resist ice formation in fish tissues.²

Another biomolecule, DNA, manifests the optimum characteristics for recording and preserving the most information in the smallest space while keeping that information accessible with a double spiral structure that unwinds, separates, rejoins, and winds back at high speeds.

Other bacteria collaborate with legume (e.g., bean) root tissues to manufacture the nitrogenase complex. This molecular machine suspends a tiny cage with an electronic charge optimized to temporarily trap a single-nitrogen molecule.³ Nitrogenase thereby converts nitrogen gas into a form that plant tissues can use and animals can thus consume. Similarly, hemoglobin's electron distribution is optimized to temporarily hold an oxygen molecule for delivery to body tissues.

Even miniscule organisms exhibit maximized efficiency. As one researcher found when investigating a tiny round-



worm's nervous system, its 302 neurons are optimized for minimum connection length. They present the very best of 40 million calculated, alternative layouts.⁴

In testing model tube strengths, scientists working in Ireland discovered optimization in certain animals' tube-like skeletal structures. They wrote that a locust tibia (lower leg bone) "is close to optimal for resisting bending forces, and it appears to be adjusted its detailed shape to improve resistance to ovalization during bending," which occurs when locusts jump.⁵ Of course, the suggestion that the locust somehow adjusted its own leg's shape shows creativity but breaks with observation and logic. Earlier research also found that vertebrate bone thicknesses and shapes are optimized for weight-saving strength.⁶

Biological optimizations even address time-saving. After discovering a flower, a bee's return flight to that specific flower from the hive follows the optimum route—the shortest distance.

And what did scientists recently find in vertebrate eyes? They "may sample the visual scene with high precision, perhaps in a manner that approaches the optimum for high-resolution vision."⁷ A related *New York Times* article told the typical creative-yet-crazy story of eyeball origins: "Key features of the natural world have been honed by evolution to the highest possible peaks of performance."⁸ But this ignores the fact that features key to life could not have been honed unless life already existed, and life's key features could not exist unless they had already been honed. Creation solves this naturalistic paradox.

More examples await study. Plants make the optimum animal food. Microbes maintain optimum levels of atmospheric gases. The universe is even optimized for investigating stars from Earth!⁹ Optimizations paint a clear picture of intentional design. ●

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J E F F R E Y T O M K I N S , P H . D .

Explaining Organismal Complexity with Non-Coding DNA

Scientists have wondered why the number of protein-coding genes in an organism doesn't strongly correlate with its "apparent" complexity. The emerging answer to this question is contained in the DNA regions *outside* the protein-coding genes—once thought to be "junk DNA."

To understand this paradox, it is first important to define the term "organismal complexity" as the number of different cell types found in an organism. For example, the nematode worm (roundworm) has 28 different cell types, fruit flies have 64, and humans have about 200 and perhaps as many as 300.¹ However, the classification of what constitutes a specific cell type can be difficult due to overlapping features, so these numbers are estimates.

In addition, genomics studies are collectively revealing that animal genomes contain a large, basic core set of protein-coding genes plus a smaller group of genes called "orphan genes" that are highly specific to that particular organism.^{1,2} In general, most multicellular animals have about 20,000 to 30,000 protein-coding genes. However, the amount of non-coding DNA located outside the protein-coding genes generally corresponds to the organismal complexity of the animal in question—the more

complex the animal, the greater amount of non-coding DNA it will have. A recent DNA sequence analysis of 153 different animal genomes confirmed this general trend.¹

In this same study, the researchers also analyzed the total amount of non-coding DNA sequence that was expressed (copied into RNA) in four different and increasingly complex organisms: the nematode worm, fruit fly, zebrafish, and human. They found that the levels of expressed non-coding DNA increased in correspondence to the creature's organismal complexity. Not only do more complex animals generally have larger amounts of non-coding DNA, but it is also pervasively expressed in each organism.

Previous work indicates that more than 85 percent of the human genome is expressed in a dizzying array of non-coding RNA molecules that serve many different functional and structural purposes in the cell.^{3,4} Researchers are fervently studying these genomic regions because about half of the genetic variation associated with heritable diseases lies in these "intergenic areas."⁵

In fact, scientists are finding that every type of well-studied, non-coding animal RNA is associated with a specific cell type, growth stage, physiology, or disease.^{1,3,4} These intergenic expressed sequences even tend to be more functionally specific than

protein-coding genes, on average. This refutes the common evolutionary claim that just because a DNA sequence is expressed does not mean it is functional.

Research is showing that the mysterious whereabouts of information underpinning organismal complexity is not entirely associated with just basic protein-coding gene sets. Instead, much of this important information is located in the highly functional, non-protein-coding portions of the genome.⁶

The main points can be summarized as follows:

- 1) Any given animal genome is a complete storehouse of important information, and this fact negates the concept of "junk DNA."
- 2) The more complex an animal's genome is, the larger that genome's amount of information expressed through non-coding DNA will be.
- 3) Protein-coding genes are largely a basic set of instructions within a complex and larger repertoire of regulatory DNA sequence.

As research progresses, the revealed structure and function of genomic information across the spectrum of life show pervasive design and complex engineering. ●

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Q: Does “Y-Chromosome Adam” Refute Genesis?

NATHANIEL T. JEANSON, P.H.D.

A: Secular geneticists believe that modern humans can trace their male genetic ancestry back to one man and their female genetic ancestry back to one woman.¹ Two new studies suggest that female “mitochondrial Eve” and male “Y-chromosome Adam” lived a couple hundred thousand years ago. However, the assumptions researchers used to reach this dating concordance demonstrate the circular reasoning that is common in evolutionary age calculations.

Reviewing some basic genetics helps expose this circularity. Each person inherits two copies of the approximately three billion chemical “letters” (DNA sequence) of the human genome—one copy from each parent for a total of six billion letters. However, offspring do not inherit perfect copies. Mutations—changes to the sequence—happen every generation. The accumulation of these differences resembles “ticks” of a clock, counting the time since any two people last shared a common sequence. In principle, winding back the clock might reveal the approximate date when their shared ancestor lived. However, most of the billions of letters of DNA sequence do not act like simple clocks. Only two types of DNA sequences could act, hypothetically, like a simple clock—the male-specific Y-chromosome DNA and the maternally inherited mitochondrial DNA.

Calculating the date of origin for the ancestors of modern Y chromosomes and mitochondrial DNA might seem straightforward: First, simply count the number of Y-chromosome differences among all males

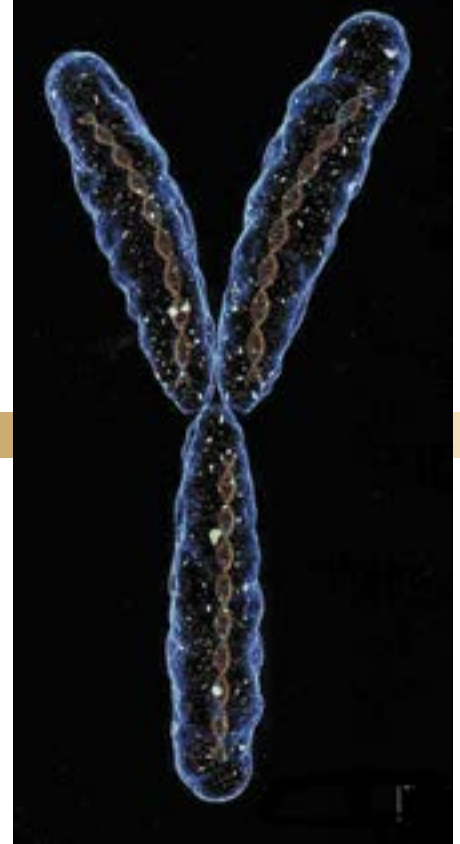
and the number of mitochondrial differences among all females. Second, measure the rate of mutational change that is occurring today. And last, make assumptions about the rate of change in the past and calculate when the mutational clock started ticking. But past studies yielded vastly different age estimates for the origin of modern males and females. Recently, *Science* published two studies that obtained many more Y chromosome sequences, bringing the formerly discordant results into general agreement with an origin date of 120,000 to 200,000 years ago.^{2,3}

Only two types of DNA sequences could act, hypothetically, like a simple clock—the male-specific Y-chromosome DNA and the maternally inherited mitochondrial DNA.

However, this new “agreement” does not disprove the origin of Adam and Eve as occurring roughly 6,000 years ago, because these studies were grounded in a set of invalid assumptions. For example, rather than directly measuring mutation rates in various ethnicities, the authors assumed a constant rate across ethnicities. Previously published research undermines this assumption.⁴

The authors also assumed a constant rate of change through time. Yet, the environmental changes associated with the Flood of Noah (e.g., possible accelerated radiometric decay) may have affected the rates of DNA change.⁵ Furthermore, in the approximately 4,000 years that have elapsed since the Flood, why should we assume that the human genetic mutation rate has been uniform?

Finally, the authors calibrated their molecular data to archaeological “dates.”



These age assignments depend on notoriously unreliable radiometric dating techniques and thus are not independent validations for the molecular data.⁵

All molecular-clock calculations require the observer to speculate about the past, and the *Science* study authors selected assumptions based on their model of evolutionary deep time, resulting in circular reasoning. Clearly, the hundred-thousand-year dates for “Y-chromosome Adam” and “mitochondrial Eve” do not bear up under careful scrutiny. ●

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Sowing vs. Foraging

HENRY M. MORRIS IV

If you are like me, each day's mail—both at home and at the office—brings a good number of urgent appeals for donations. These are roughly divided among political, religious, and charitable causes, and no doubt most are legitimate and worthy of support. But their very numbers are wearisome to me, and I've quit reading many of them.

The same is true for telephone solicitations. Why do telemarketers always seem to call at dinnertime or on Sunday afternoons after church? I now routinely screen my calls and even turn the ringer off on occasion (especially during political campaigns). This has been my experience at least, and I suspect most of you can relate.

There was a time when I evaluated all such appeals carefully, and I have given to many of them. But my contributions seem to quickly proliferate into additional appeals—not only from the organizations that I've given to but also from many others I've never heard of. This is known as “foraging,” the practice of buying mailing lists from other groups in order to send frequent appeals to more people. The idea is that the

larger the foraging area, the more you can expect to take in—and there is some wisdom in this approach. Unfortunately, most institutions do it too much and too often, which can cause donor fatigue in those who may be truly concerned about giving.

Such appeals are often written by professional fundraising organizations that receive a generous portion of the campaign results as part of their compensation. These missives typically contain multiple pages of touching stories and emotional pleas filled with frequent underlining, highlighted text, and plenty of exclamation points (!!!). This approach seems to work for many companies, and perhaps the end justifies the means when the mission is for a worthy cause. But we have never felt that ICR should operate this way.

Obviously, ICR needs a significant amount of financial support, and most of this must come from concerned believers on our mailing list. However, our methods have always focused more on “sowing” in the lives of believers rather than “foraging” for potential donors. This approach has certain distinctions that we believe are soundly biblical.

For instance, ICR does not buy, rent, or borrow mailing lists from other organizations, nor do we allow others to buy, rent, or borrow ours. As far as we know, everyone on our mailing list has personally requested to be on it. And judging from the wonderful testimonies we receive after each free issue of *Acts & Facts* and *Days of Praise* goes out, many people have been helped or blessed in some way by these publications.

ICR never uses telephone solicitors. Nor do we send many appeal letters—usually one or two each year and, even then, we only contact those whom we have not heard from in a while.

We also do not go into debt. Consequently, we do not need to make urgent appeals in order to function.

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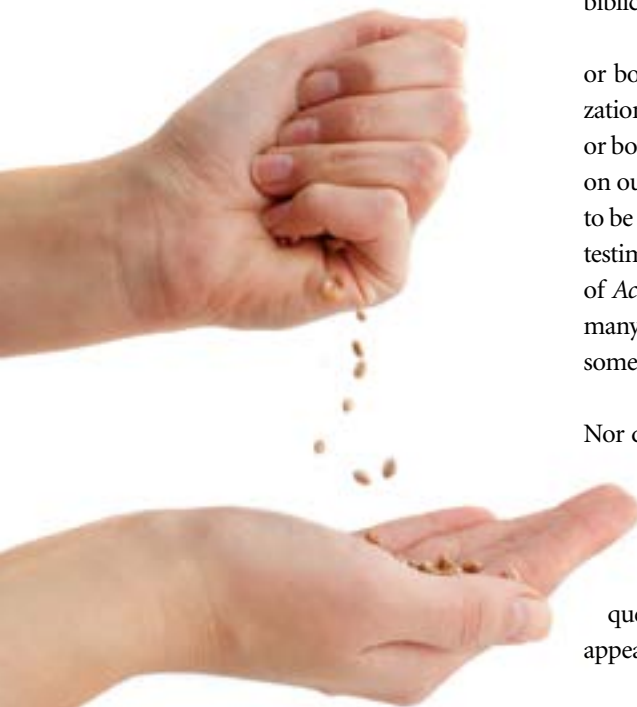
ICR is a recognized 501(c)(3) nonprofit ministry, and all gifts are tax-deductible to the fullest extent allowed by law.

Lastly, ICR sends gifts to all our recent donors every quarter and to every donor at Christmas (usually a book, tract, or DVD), which we hope will be a blessing in their personal ministry. We include a short letter with each gift that primarily expresses our thankfulness for our supporters. Its final paragraph contains a sentence or two about our financial needs and asks our supporters to consider ICR in their giving plans as the Lord leads.

And that's it.

In spite of our low-key fundraising approach, God has blessed these policies and the ICR ministry for over four decades now. We see no need to forage anyone's mailing list for support, preferring instead to sow in the hearts and minds of fellow believers, encouraging and strengthening their witness for Christ. As long as we continue to honor God and His Word, we are confident that, through His people, He will supply our needs and accomplish the work He wants us to do. ●

Mr. Morris is Director of Donor Relations at the Institute for Creation Research.





GUIDE TO ANIMALS

FRANK SHERWIN, M.A.

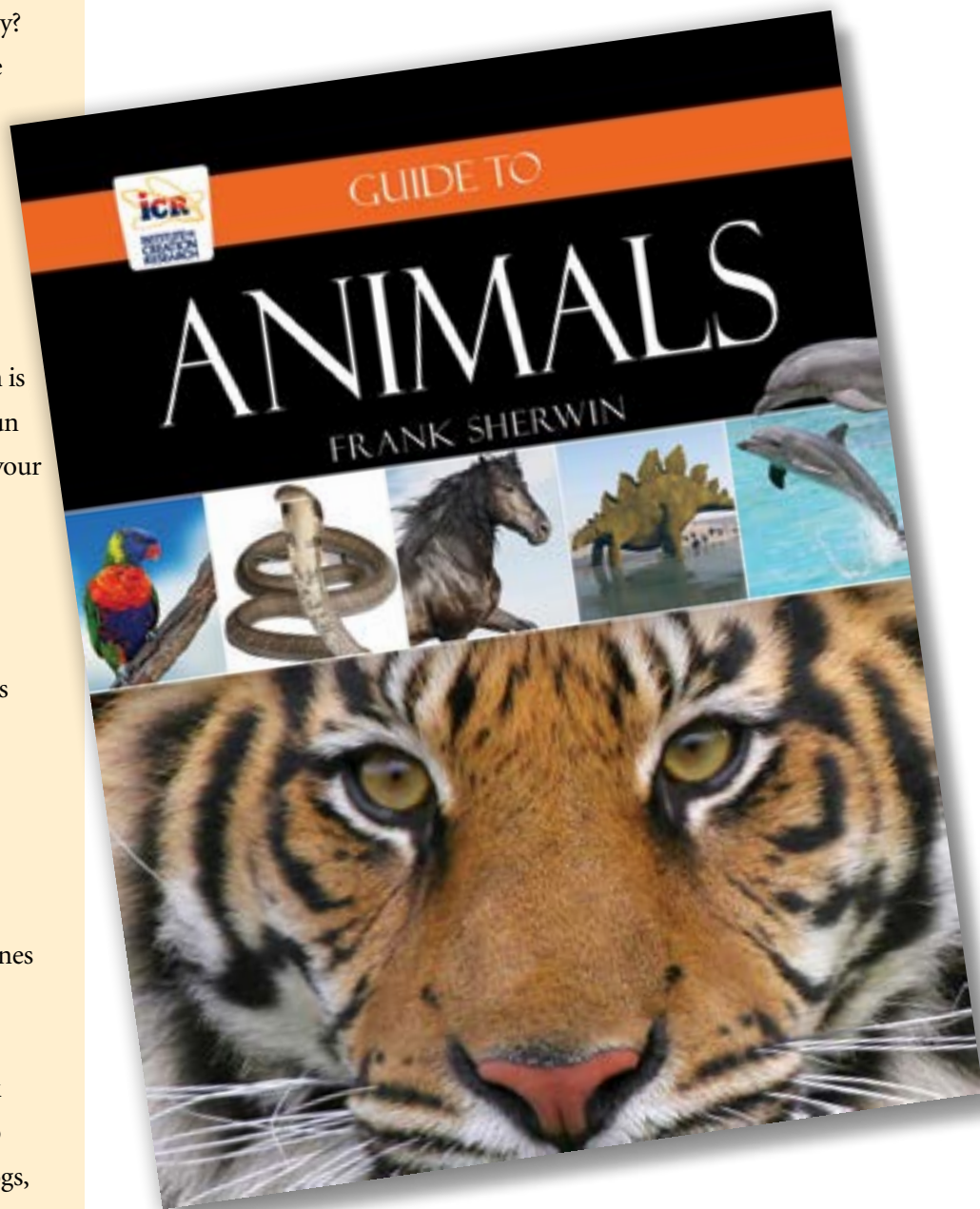
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DISCOVER HOW THE LORD CREATED EACH ANIMAL TO

Basic Animal Types

The book of Genesis says that God made animals on Days Five and Six of the creation week. He created each one "according to its kind" (Genesis 1:25, 26:18), with the Hebrew word translated as "kind." Later, God commanded Noah to take a male and female of each kind to save itself of each animal on board the ark for preservation from the impending great Flood. While the Bible does not list the specific animal kinds, it does agree that animals within a kind can only breed with animals of the same kind.

Coelenterates
Animals with radial symmetry, often a gastrovascular cavity, and a nervous system. Includes jellyfish, sea anemones, and corals.

Porifera
Animals with a porous body structure, often called sponges.

Platyhelminthes
Flatworms with a flat body and a gastrovascular cavity.

Mollusca
Animals with a soft body, often a shell, and a muscular foot.

Arthropoda
Animals with a jointed body and a hard exoskeleton.

Chordata
Animals with a backbone and a brain.

Animals in God's Creation

How do fish live in the sea? How do birds fly in the air? Why do some animals migrate seasonally, and why do others live in groups? What are the reasons for the differences between species? And what happened to dinosaurs and other extinct animals?

The animal kingdom is a diverse and amazing part of God's wonderful creation. We find animals living all over the world—in the water and on the land, in valleys and on mountains, in deserts and on glaciers, and even in our own yards and backyards. Whether they fly, swim, slither, gallop, crawl, or scurry through trees, each animal is unique and well-suited to live in its habitat.

Animals in God's Creation

The word "angel" comes from the Latin and Greek words which mean "being sent" or "being ministered." Angels are pure spirit, created from nothing, living in the unseen world. They are not made of matter, and they do not have a physical body. They are not like humans, and they do not have a soul. They are not like demons, and they do not have a conscience. They are not like gods, and they do not have a creator. They are not like anything else in the universe, and they are not like anything else in the world.

Rainforest Animals

Rainforests, on three major tropical, equatorial highlands of the world. There are two types of rainforests—tropical and subtropical. Tropical rainforests are located between the tropics and the equator, and subtropical rainforests are located between the tropics and the equator. Rainforests are found in South America, Africa, and Southeast Asia, and they are home to many of the world's most diverse and colorful animals.

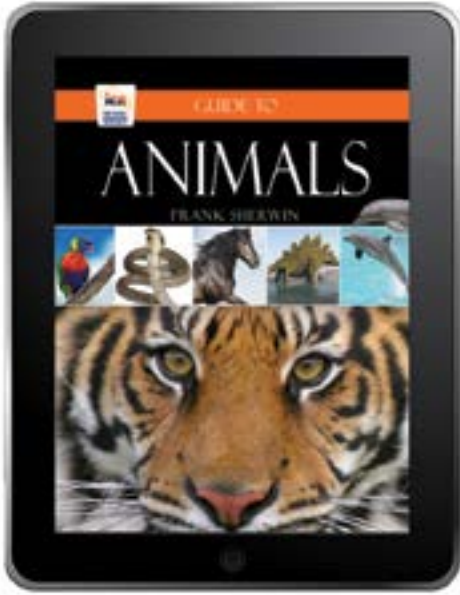
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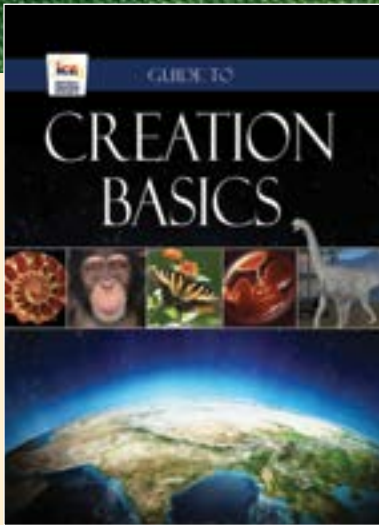


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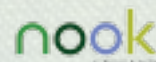
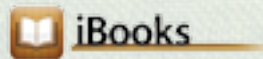
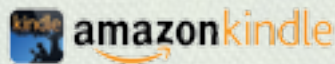
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