

ACTS & FACTS

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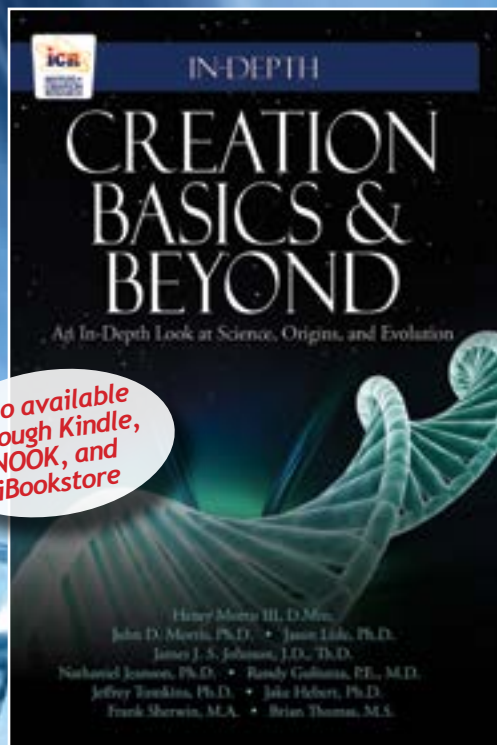
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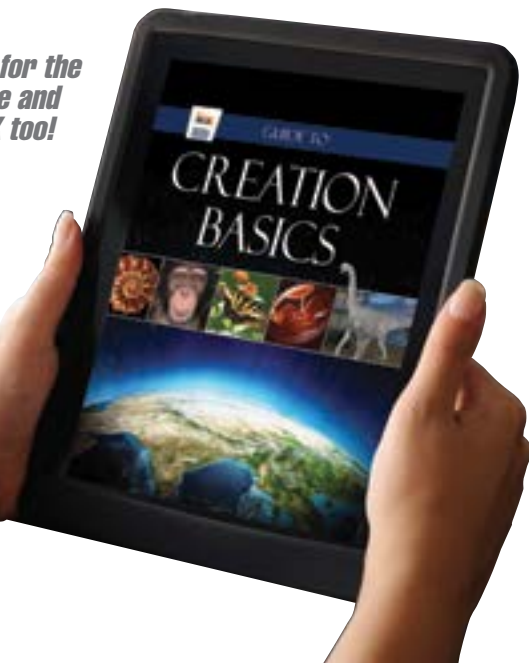
Creation or evolution? This debate is one of the most vital issues of our time. It is extremely important for all people to know the truth about origins and the Genesis account of creation. If the Bible is false on its very first page, then how can any rational person have confidence in what follows from it? Fortunately, you don't need a doctorate in science to understand the basic lines of scientific evidence that surround this controversy. Written and reviewed by experts, *Creation Basics & Beyond* offers a thorough, yet understandable, introduction to the basic questions involved in the creation-evolution debate.

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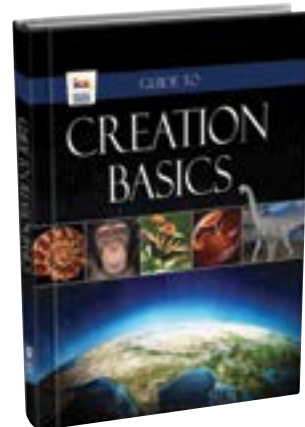


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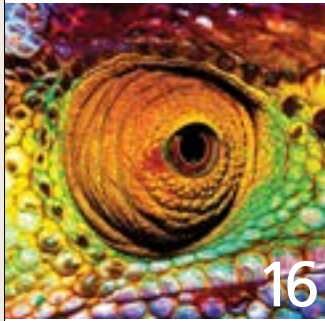
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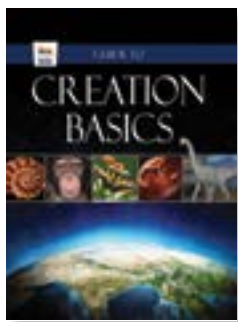
HENRY M. MORRIS IV



Our Newest Resource Offers an In-Depth Look at Creation Issues

As someone who homeschooled for over 22 years, I know the frustrations of looking for science resources. I searched for solid science with biblical creation as a foundation, but the few books I could find often appeared boring, lacked convincing science, or contained drab images. Homeschool parents understand the dilemma—we want accurate content, but we also want a resource that will draw our kids to the truth. We want them to be fascinated with the amazing world God has created! But if the book is unappealing, the kids will only spend mandatory time with the pages open and do only what is required.

To motivate my kids to love science, I sometimes purchased secular books with evolutionary teaching simply because the illustrations were stunning. I actually used a marker to black out sections or told my kids “ignore that part” when they came to the “millions and billions of years” teachings. And while it wasn’t hard to convince my kids that we didn’t come from apes, some things were confusing to them and too difficult for me to explain, such as dinosaurs living with humans, the ice age, and starlight and time. I searched for a beautifully-illustrated, cutting-edge science book with creation truth—one with fun facts and amazing images that would compel my kids to turn pages. I’m thrilled to tell you that the ministry team at the Institute for Creation Research kept you in mind when we developed our book *Guide to Creation Basics*.



Many of you have expressed your appreciation for this book—parents, grandparents, and students alike. Pastor John MacArthur offered

his endorsement as well:

ICR’s *Guide to Creation Basics* is elegantly produced and powerfully presented. The favorite dogmas of evolutionary theory are boldly examined and dismantled with clear logic and simple facts—starting with the obvious truth that God’s handiwork is clearly visible everywhere. Whether we look through a telescope, a microscope, or with our own unaided eyes, what we see is a universe filled

with incontrovertible evidence of God’s ingenious design, His magnificent glory, and His vast power. This book sets forth a generous sampling of that evidence, making a vivid and compelling case for the biblical account of creation. This is an invaluable resource for students, teachers, or anyone confused by authoritative-sounding skeptics.



And for readers who have enjoyed *Guide to Creation Basics*, you’ll be pleased to see our newest book: *Creation Basics & Beyond: An In-Depth Look at Science, Origins, and Evolution*. This paperback presents an even deeper look at even more creation information from our team of scientists and scholars. Chapters include:

- Dinosaurs and the Bible
- Was There an Ice Age?
- The Junk DNA Scam
- Day-Age Theory: A Day Late and a Scholar Short
- Gap Theory: A Formless and Void Error
- The Mistakes in Evolutionary Arguments Against Life’s Design
- The Origin of the Species: Did Darwin Get it Right?
- Ape-Man or Image of God?
- The Young Earth in Geology

Please visit our website www.ICR.org/store or call 800.628.7640 to order your copy of this incredible new resource. It’s also available for the Kindle, NOOK, and through the iBookstore. For those who are visually-impaired or prefer to listen to books, the Text-to-Speech option is available on the Kindle version. (See the inside front cover of this issue for more information about these resources.) We hope you’ll like both *Guide to Creation Basics* as well as *Creation Basics & Beyond: An In-Depth Look at Science, Origins, and Evolution* so much that you’ll spread the word!

Jayme Durant

Jayme Durant
EXECUTIVE EDITOR

Determined to DISCIPLE


HENRY M. MORRIS III, D.MIN.

GO therefore and
make disciples of all the
nations, baptizing them
in the name of the Father and of
the Son and of the Holy Spirit,
teaching them to observe
all things that I have commanded you;
and lo, I am with you always,
even to the end of the age. Amen.

(MATTHEW 28:19-20)

This Great Commission is central to Christians all over the world ever since it was issued by the Lord Jesus just prior to His ascension back to heaven after “He had by Himself purged our sins” and “sat down at the right hand of the Majesty on high” (Hebrews 1:3). Most churches cite this passage from Matthew 28 in their doctrinal statements or bylaws as fundamental to their responsibility to serve the One who is Head of the church (see Ephesians 1:22).

“Make disciples” is the translator’s choice for the Greek verb *matheteuo*, which is simply the verb form of the noun *matheto*, “disciple.” Together, the words for disciple and its companion term *manthano*, “to learn,” are used nearly 300 times in the New Testament. Hence, the obvious application for the commission to “make disciples” is to “make learners”



Clearly, a disciple is a learner who follows what Jesus taught and did.

of those who would embrace the person and teachings of the Lord Jesus Christ.

A parallel Greek term, *akoloutheo*, is used by the Lord Jesus to describe what would characterize His disciples. “Then Jesus said to His disciples, ‘If anyone desires to come after Me, let him deny himself, and take up his cross, and *follow Me*’” (Matthew 16:24). On another occasion, Jesus noted, “If anyone serves me, let him *follow Me*; and where I am, there My servant will be also. If anyone serves Me, him My Father will honor” (John 12:26). The rather specialized term that Jesus chose on those occasions—and used some 90 other times in the New Testament—describes one who “walks on the same road.”

Clearly, a disciple is a “learner” who “follows” what Jesus taught and did.

There are, however, three key action verbs in this commission. After conversion, disciples are then to baptize new disciples as a public sign and demonstration that they have been born into the fellowship and family of Jesus Christ. Even though there is debate on the mode, efficacy, and administration of baptism today, no biblically based church would disagree that this baptismal sign replaces the old covenant sign of circumcision, since there is “neither Jew nor Greek, there is neither slave nor free, there is neither male nor female; for you are all one in Christ Jesus” (Galatians 3:28). The third action requirement is to teach the baptized disciple “all things” that the Lord Jesus has commanded. That, by any standard, is a life-long and never-ending process.

Basic Requirements for Disciples of Jesus

Although one could easily make the case that the entire Bible holds the requirements for the disciples of the Lord Jesus, there are several key passages that provide summaries of the responsibilities of those who claim to be disciple-learner-followers of the Creator.

- † Then Jesus said to those Jews who believed Him, “If you abide in My word, you are My disciples indeed” (John 8:31).
- † “By this all will know that you are My disciples, if you have love for one another” (John 13:35).
- † “By this My Father is glorified, that you bear much fruit; so you will be My disciples” (John 15:8).

† “If anyone comes to Me and does not hate his father and mother, wife and children, brothers and sisters, yes, and his own life also, he cannot be My disciple. And whoever does not bear his cross and come after Me cannot be My disciple” (Luke 14:26-27).

Simply put—stay in the Word because it has great power in it (Colossians 3:16); demonstrate godly love especially for the brethren (1 John 4:11-12); produce godly fruit in your life (Ephesians 5:8-9); and love the Lord Jesus more than anything in this world (Mark 12:30-33).

Being a disciple of the Lord Jesus is much more than merely being “saved.”

Thinking Like a Disciple of Jesus

The apostle Paul wrote a large portion of the New Testament. Many of his letters were written to specific churches and addressed various aspects of living as a disciple of the Lord Jesus. The letter to the church at Philippi was especially poignant and personal since Paul had been instrumental in starting that church, and he had developed a lasting friendship and fellowship with many of those folks. He loved them.

As Paul wrapped up that letter, he summarized most of the instructions with a concise command to “think” on the things that they had “learned” (the disciple’s responsibility), “received” (taken to yourself), “heard” (paid attention to), and “seen in me” (watched me)—we are to “do” (practice) them!

Notice that disciples are supposed to think about the things that will enable them to do what they have learned from an “older” brother or sister:

Finally, brethren, whatever things are *true*, whatever things are *noble*, whatever things are *just*, whatever things are *pure*, whatever things are *lovely*, whatever things are of *good report*, if there is any *virtue* and if there is anything *praiseworthy*—meditate on these things. (Philippians 4:8)

Obviously, being a disciple of the Lord Jesus is a lifelong and seriously conscious activity of paying attention to the truth of God’s Word, submitting to those who are responsible for teaching us about that Word, and conducting our lives so that we are continually participating in the work of the Kingdom.

ICR as a Discipleship Ministry

Although ICR is not a church, and we do not see ourselves as substituting for a church, we are compelled to minister to churches as a resource to help disciple the Lord’s people.

Surely it is beyond biblical argument that Jesus Christ is the Creator (John 1:1-3; Colossians 1:16; Hebrews 1:2), and as such, His

work as Creator is the foundational premise upon which all faith rests (Hebrews 11:3). Perhaps it is necessary to point out that one cannot be a disciple of Christ unless one believes who He *is* as well as what He has *done*. The authority and power to save us is inextricably bound up in the omnipotent and omniscient Being who spoke everything into existence (Psalm 33:6-9; Psalm 148:5).

The holy, loving, and merciful God revealed to us in the Scriptures is hardly consistent with the awful eons of death and chaos of evolutionary naturalism. If the Creator misled us when He spoke of how He created the heavens and the earth, then it makes absolutely no sense to trust Him for our eternal destiny! In fact, if the evolutionary scenario is accurate and death and chaos are the “facts” of science, then sin is not the cause of death (Romans 5:12) and Jesus Christ’s death on the cross was a totally wasted and unnecessary martyrdom that has absolutely no efficacy for salvation. If evolution is true, then the gospel message of the Bible is false and Christian disciples are of “all men the most pitiable” (1 Corinthians 15:19).

More than that, if we cannot trust the historical accuracy of the book of beginnings, then there is little reason to trust the rest of biblical teachings. Discipleship becomes a false learning process, rather than a fundamental liberty through the truth of God’s Word.

Surely, part of the “all things that I have commanded” includes the great Ten Commandments that were written with the very finger of the Creator Himself (Exodus 31:18). All Scripture is *inspired*, but the Ten Commandments were *inscribed* by God (see 2 Timothy 3:16). The fourth commandment insists that we are to remember the rest day and keep it holy: “For in six days the LORD made the heavens and the earth, the sea, and all that is in them, and rested the seventh day” (Exodus 20:11).

Without a confidence in the beginnings, a disciple can be troubled and doubtful about the rest of Scripture. When Jesus proclaimed His deity to the wavering crowd, He told them that if they couldn’t believe what He said, they should “believe Me for the sake of the works themselves” (John 14:11). Those works were the great creation miracles that Christ demonstrated for all to see. Even the “invisible things” of our Creator are “clearly seen” by the wonders written in His created universe (Romans 1:20).

That’s what ICR is all about. We are entrusted with impeccably trained godly men and women who can uncover and display the marvelous evidence of God’s creation—confirming the words of Scripture. Our purpose is to provide teaching about the things that God has done, so that His disciples can grow and gain confidence in the accuracy and authority of God’s Word. ●

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



All Scripture is inspired, but the Ten Commandments were inscribed by God.

I C R S E P T E M B E R E V E N T S

■ **September 1**

Southlake, TX – Countryside Bible Church
(N. Jeanson) 817.488.5381

■ **September 3**

Farmers Branch, TX – Metroplex Institute of Origin Science
(T. Clarey) 972.965.2110

■ **September 8, 15, 22, 29**

Dallas, TX – First Baptist Dallas Discipleship University
(H. Morris III) 214.969.0111

■ **September 13**

Lakewood, CO – Rocky Mountain Creation Fellowship
(J. Morris) 303.250.4403

■ **September 13-16**

Philadelphia, PA – Calvary Chapel of Philadelphia
(J. Lisle) 215.969.1520

■ **September 15**

Littleton, NH – Faith Bible Church
(T. Clarey) 603.444.2763

■ **September 20**

Murrieta, CA – Calvary Chapel Bible College
(N. Jeanson) 951.696.5944

■ **September 20-21**

San Bruno, CA – Church of the Highlands
(J. Hebert, B. Thomas) 415.640.4009

■ **September 21**

Santa Ana, CA – Your Origins Matter Family Conference
(H. Morris III, R. Guliuzza, J. Lisle, N. Jeanson, T. Clarey, J. Williams, C. Smith) 714.979.4422

■ **September 22**

Camarillo, CA – Pleasant Valley Church
(R. Guliuzza) 805.987.5051

SOUTHERN CALIFORNIA SEMINARY PRESENTS

Did God Use Evolution?

A Debate Between Biblical Creation and Theistic Evolution

(IN HONOR OF DR. DUANE T. GISH)

Featuring Karl Giberson, Ph.D, and Randy Guliuzza, P.E., M.D.

**September 30
6:30 p.m.**

Shadow Mountain Community Church
2100 Greenfield Dr.
El Cajon, CA 92019
619.201.8956

■ **September 22**

Murrieta, CA – Calvary Chapel Hot Springs
(N. Jeanson) 951.696.5944

■ **September 22**

Murrieta, CA – New Hope Murrieta Church
(N. Jeanson) 951.813.2943

■ **September 22**

Roseville, CA – Grace Bible Church
(J. Hebert, B. Thomas) 916-786-6857

■ **September 22-25**

Decatur, MI – Volinia Baptist Church
(F. Sherwin) 269.464.8050

■ **September 23**

Santa Ana, CA – Calvary Chapel Christian School
(R. Guliuzza, N. Jeanson) 714.979.4422

■ **September 23**

Santa Clarita, CA – The Master's College
(J. Lisle) 800.568.6248

■ **September 25**

El Cajon, CA – San Diego Christian College
(L. Gunther) 619.441.2200

■ **September 26**

Dallas, TX – D6 Conference 2013
800.877.7030

■ **September 26-27**

Greensboro, NC – 2013 NCCSA Educators' Convention
(J. Hebert) 919.731.4844

■ **September 26-27**

Daytona Beach, FL – FACCS Christian Educators' Convention 2013
(B. Thomas) 954.517.9500

■ **September 28**

Santee, CA – Creation & Earth History Museum: Museum Day
(J. Morris, R. Guliuzza, R. Comfort, G. Parker)
619.599.1104
www.CreationSD.org

■ **September 28**

Fort Worth, TX – 2013 Awana Ministry Conference
(T. Clarey) 630.213.2000

■ **September 28-29**

El Cajon, CA – Foothills Christian Church
(R. Guliuzza) 619.442.7728

■ **September 29-30**

Biddeford, ME – New Life Christian Fellowship
(J. Johnson) 207.284.4840

■ **September 30**

El Cajon, CA – Shadow Mountain Community Church
(R. Guliuzza, K. Giberson) 619.201.8956

For more information on these events or to schedule an event, please contact the ICR Event Department at **800.337.0375** or visit www.icr.org/events or email us at events@icr.org

Study Debunks Beta-Globin Pseudogene Evolution

A popular argument for human evolution and our shared ancestry with apes has lost its steam in light of new genetics research at the Institute for Creation Research and a recently published article in a scientific journal.¹ The research is related to the beta-globin pseudogene and shows it to be functional and important to hemoglobin gene regulation.

Hemoglobin is a protein in human red blood cells that transports oxygen. The hemoglobin protein is a cluster of two different protein chains. One of these chains is called the *alpha-globin* and remains similar in composition during human development. The second is called the *beta-hemoglobin* chain, which specifically changes in composition at the embryo-to-fetal transition and again at the fetal-to-adult transition. This allows the developing embryo-baby to receive oxygen at optimum levels.

The human beta-globin proteins are encoded by five genes inside a cluster of six genes on chromosome 11. The embryo-to-adult growth stage expression of each gene in the cluster depends on that specific gene's interaction with a control region preceding the whole cluster called the *locus control region* or LCR.

While five out of the six genes in the beta-globin cluster produce proteins, one of the genes called HBBP1 does not because of several stop sequences in its code previously postulated to be mutations. This gene was classified as a pseudogene (a broken defunct remnant) because of its assumed non-functionality. Because the gene—along with its presumed errors—is also found in chimpanzees and gorillas, evolutionists claimed it as proof of inherit-

ed “shared mistakes” from an ape ancestor.

A key problem with this idea is the actual evidence for the claim. Evolutionists have wondered why, if the HBBP1 gene is non-functional, its DNA has not mutated significantly since no selection has been acting on it. The so-called evidence for common ancestry with this sequence actually argues against it. It also indicates that the HBBP1 gene may actually be functional and serving a common purpose in both humans and apes.

A recent report showed that the HBBP1 gene is highly non-variable within both human and chimpanzee populations.² That same report also showed that the HBBP1 gene interacts with the LCR region and is highly functional. Shortly following this, another research paper was published indicating the HBBP1 gene exhibited the more genetic regulatory connections in the various regions of the globin-gene cluster than the other beta-globin genes.³

Inspired by these reports, I began a public DNA database mining project looking for more evidence of genetic function for the HBBP1 gene. The data were overwhelming! Multiple RNA transcript variants are produced by this gene that are thought to be involved with the regulation of beta-globin gene expression. The databases also showed that key regulatory proteins called *transcription factors* were binding to the HBBP1 gene and that the DNA surrounding the gene had

all the tell-tale epigenetic marks of actively transcribed DNA, indicating that it was highly functional.⁴ Perhaps the most spectacular finding was data that showed the HBBP1 gene was expressed in at least 251 different human cell and/or tissue types.

In addition to the functional genomics data, my research uncovered three different recently published research reports showing that mutations in the HBBP1 gene caused various forms of a blood disease called beta-thalassemia. The data mining work also uncovered unpublished genetic information showing that mutations in the HBBP1 gene area may also be partial contributors to osteoarthritis.

Instead of being a useless genomic fossil according to errant evolutionary predictions, the HBBP1 beta-globin pseudogene is genetically active and plays a key functional role in the genome as a cleverly engineered feature programmed by God the Creator. ●

References

1. Tomkins, J. P. 2013. The Human Beta-Globin Pseudogene is Non-Variable and Functional. *Answers Research Journal*. 6: 293-302.
2. Moleirinho, A., et al. 2013. Evolutionary constraints in the β -globin cluster: The signature of purifying selection at the δ -globin (HBD) locus and its role in developmental gene regulation. *Genome Biology and Evolution*. 5 (3): 559-571.
3. Sheffield, N. C., et al. 2013. Patterns of regulatory activity across diverse human cell types predict tissue identity, transcription factor binding, and long-range interactions. *Genome Research*. 23 (5): 777-788.
4. Epigenetics is the analysis of chemical tags in DNA and the proteins associated with chromosomes that reveal genetic activity.

Dr. Tomkins is Research Associate at the Institute for Creation Research and received his Ph.D. in Genetics from Clemson University.



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

The Solar System:

Venus

For millennia, people have enjoyed the sight of the “evening star” shining brightly in the western sky shortly after sunset. Outshining all other stars, this remarkable beacon seems to brighten to unbelievable glory as twilight fades to night. It rises higher night after night and then stops and begins to sink lower each evening until it vanishes below the horizon. Sometime later, it reappears just before sunrise in the eastern sky as the bright “morning star.”

What did the ancient astronomers think about this magnificent object and its peculiar celestial dance? They called it “Venus,” after the Roman goddess of love and beauty.¹

Physical Properties

With modern technology, we have learned a great deal about Venus. It’s not a “star” at all, but a planet—a small rocky world that shines only by reflected sunlight.² In fact, Venus is about the same size as Earth.³ So when we look at Venus, it’s fun to think that this is also how tiny Earth would appear if viewed from Venus.

The composition of Venus is also similar to Earth, and its orbit is physically closest to Earth’s of all the planets. For these reasons Venus is sometimes referred to as “Earth’s sister” or “Earth’s twin.”⁴ But there are far more differences than similarities.

An examination of the surface of Venus has proved quite challenging because Venus is permanently enshrouded in thick clouds of sulfuric acid and toxic sulfur dioxide, masking all surface features. The atmo-

sphere is comprised mainly of carbon dioxide and is the thickest atmosphere of the four terrestrial planets. At the surface, Venus has a crushing air pressure that is 92 times greater than Earth’s! This thick atmosphere acts like a blanket, trapping solar energy and warming the planet to unbelievable temperatures. And since Venus orbits 26 million miles closer to the sun than Earth does,

Venus already endures nearly twice the solar energy. The greenhouse effect causes the surface temperature of Venus to approach 900°F—the hottest of any planet in our solar system.

In 1990, the NASA spacecraft Magellan was inserted into orbit around Venus and began systematically mapping the surface using radar. Since radar is not blocked

J A S O N L I S L E , P H . D .



Venus is sometimes referred to as “Earth’s sister” or “Earth’s twin.” But there are far more differences than similarities.

Venus, these “continents” are recognized only by their high elevations.

Venus also has geological features *not* found on Earth, such as arachnoids, novae, tesserae, coronae, and pancake domes. Arachnoids are regions where the terrain has been folded and broken into a gossamer-looking structure resembling a spider web. Novae are “radially fractured centers” between 60 and 200 miles in diameter. Sixty-four novae have been discovered on Venus.⁵ Tesserae are complex ridged terrains found on plateaus. “Corona” is from the Latin meaning “crown.”⁶ They are oval-shape features thought to be produced by plumes of upwelling magma that cause the surface to bulge and then collapse in the center, forming a crown-like ring. Pancake domes are similar in most respects to shield volcanoes on Earth, such as Mauna Loa in Hawaii. However, pancake domes are flatter and broader than their terrestrial counterparts. Venus has no moons and virtually no magnetic field.

Such similarity, yet with differences, is consistent with the nature of God. God is the source of creativity and has created a diversity of objects within the universe, and yet there are similarities since the entire universe was created and is upheld by the same God. Differences and similarities are seen in the biological world, the world of particle physics, and in the solar system as well. But in the secular view, how can we make sense of this? Earth and Venus are nearly identical in size and bulk composition and have similar orbits. In the secular view, they have a similar history too. So why would Earth’s “sister” be so radically different from Earth? There are secular speculations for such things—but such diversity is expected in the Christian worldview.

by clouds, Magellan was able to map the topography of Venus in unprecedented detail. The four-year-long mission revealed that Venus has many of the same geological features found on Earth, including mountains, valleys, canyons, volcanos, lava flows, craters, and plains. Venus also has two major “continents”—*Ishtar Terra* and *Aphrodite Terra*. But since there is no liquid water on

A Day on Venus

Venus has the most circular orbit of any planet in the solar system. Its axial tilt is only three degrees, so there are no seasons on Venus. Since it orbits closer to the sun than Earth does, Venus orbits faster and completes a circuit every 7.4 months. But its day is much longer than Earth’s. Venus rotates once every eight months, so its day is actually longer than its year. This is the *sidereal* day—the rotation of Venus relative to the stars.⁷ What is even more intriguing is that Venus rotates *backward*. All eight planets orbit the sun counterclockwise, as viewed from the solar system’s North Pole. Most of the planets also rotate counterclockwise,⁸ but Venus is the exception.⁹ On Venus, the sun would rise in the west and set in the east—although it would be difficult to see the sun in such overcast skies.

Secularists do not have a good explanation for the backward rotation of Venus. In the secular scenario, the solar system is supposed to have formed from the collapse of a rotating nebula. The natural expectation of this would be that all planets would rotate in the same direction at about the same rate, and they would all have very little axial tilt. Venus is the worst offender to this concept, since it rotates exactly the opposite of what the evolutionary models require. But we expect such diversity in the biblical view.

The backward rotation of Venus causes its solar day to be much *shorter* than its sidereal day—a unique phenomenon in the solar system. Recall that the solar day is the average time from one sunrise to the next as viewed from a planet’s surface (e.g., 24 hours for Earth). This is different (and normally slightly longer) from the sidereal day because planets orbit the sun and not the stars. Since Venus rotates in the opposite direction, its solar day is reduced to 3.8 months. Strangely, this is shorter than Mercury’s solar day, even though Venus physically rotates slower than Mercury.

Phases and the Nature of the Solar System

Venus is a great target for telescope beginners. Its brightness makes it easy to find, and its size and proximity to Earth allow viewers to discern its shape through even a small, inexpensive telescope. Although the clouds on Venus prevent observations of any surface features, observers will immediately notice that Venus has phases; it is not uniformly illuminated, but appears bright on one side and dark on the other. Viewers sometime describe it as a tiny craterless “moon,” since the moon is the only other object that we readily recognize as going through phases. Just like the moon, Venus goes through new, crescent, quarter, gibbous, and full phases.¹⁰ And like the moon, these phases make it obvious to the eye that Venus is spherical, not a flat disk. But there are three differences in the phases of Venus compared to the moon.



ly as close to Earth as it gets. Conversely, when Venus is on the far side of the sun, we see it nearly fully illuminated. Galileo was the first person to observe and document this effect. His telescopic observations of Venus led him to realize that planets orbit the sun—not the earth. This was in contrast to the prevailing scientific view of the

All eight planets orbit the sun in the same direction—counterclockwise as viewed from the solar system’s North Pole. Most of the planets also rotate in this direction, but Venus is the exception.

First, the moon takes roughly one month to go through its phases, whereas Venus takes over 19 months. Since Venus orbits the sun faster than Earth does, it physically overtakes and passes the Earth every 19 months. This is called the *synodic* period of Venus. Since the phase of Venus as seen from Earth depends on the relative positions of Earth, Venus, and the sun, phases correlate with the synodic period.

Second, whereas the moon remains approximately the same apparent size as it goes through its phases, Venus does not. Venus appears very small when in its gibbous phase (nearly full) and appears very large when in its crescent phase.¹¹ This is because Venus orbits the sun, not the Earth. Hence, when Venus is nearly in-between the sun and Earth and we are viewing only a thin sliver of the illuminated side, Venus is near-

day. The earth-centered (geocentric) solar system predicts that Venus will only appear as a crescent. The sun-centered (heliocentric) model can make sense of the phases of Venus and their correlation with its apparent size.

Finally, the phases of Venus (and Mercury) are reversed relative to the moon. In other words, when the moon is illuminated on the right side (toward the western horizon), it is in a waxing phase and will appear more illuminated on the following night. But when Venus is illuminated on the right side, it is in a waning phase and will appear less illuminated over the following weeks. Both Venus and the moon orbit in the same direction. So how can this be? The difference is because Venus orbits the sun, whereas the moon orbits Earth. So when the moon is in-between Earth and the sun, it is moving to the left (eastward). But when

Venus is in between the sun and Earth, it is moving to the right (westward).

From our perspective on Earth, Venus stands out as a pure white light, superior in splendor and luminance. Venus is mentioned in Scripture as the “morning star,” where its brilliance is used as a symbol for Christ (Revelation 2:28; 22:16).¹² None of the other nighttime stars can compete with Venus, so it is a fitting symbol of the beauty and glory of our Lord. ●

References

1. Venus is the second-brightest regular object in our night sky. Only the moon is brighter.
2. Venus is not a star in the modern sense of the word. However, the ancient term for star (*aster* in Greek, *kowkab* in Hebrew) includes both stars and planets. A planet is a “wandering star”—a star that moves relative to the majority of fixed stars.
3. Venus is 95 percent as large as Earth in diameter.
4. Though they do have the same Father (James 1:17), they cannot be “twins” because Earth is three days older than Venus (Genesis 1:1, 14-19).
5. Krassilnikov, A. S. and J. W. Head. 2003. Novae on Venus: Geology, Classification, and Evolution. *Journal of Geophysical Research: Planets* (1991-2012). 108 (E9): 1-48.
6. Coronae are found only on Venus and Uranus’ moon Miranda.
7. See the Mercury article for a discussion of sidereal versus solar days: Lisle, J. 2013. The Solar System: Mercury. *Acts & Facts*. 42 (8) 10-12.
8. This is relative to the North Pole of the solar system. Alternatively, we could define the North Pole of a planet as the pole under which the planet rotates counterclockwise. By this definition, all planets rotate in the same direction and Venus is merely “upside down.” There is no physical difference between Venus being tilted 3° and rotating backward (clockwise), as opposed to Venus being tilted 177° and rotating forward (counterclockwise). Both conventions are used in astronomy.
9. Since the planet Uranus is tilted 97°, it too could be considered a backward-rotator with a tilt of 83°. However, since this is nearly a right angle, it makes little difference.
10. The outer planets can only be seen in gibbous and full phases. This is because quarter and crescent phases require the planet to be closer to the sun than the observer is. This can never occur for an outer planet as seen from Earth.
11. This effect is also visible in the planet Mercury for the same reason. However, the effect is much less noticeable on Mercury since its distance from Earth does not vary as much. Also, Mercury is much smaller than Venus and closer in angle to the sun, making observations of its apparent diameter far more difficult.
12. In some English translations, Lucifer is called the morning star in Isaiah 14:12. It may bother some people that the same symbol is used for Christ, but Isaiah 14:12 may simply indicate that Lucifer was one of the most glorious angels before he rebelled. Satan attempts to parrot Christ in some ways—Christ is the Lion of Judah (Revelation 5:5), and Satan prowls about as a roaring lion (1 Peter 5:8). We note that the word “star” does not appear in the Hebrew text of Isaiah 14:12. “Son of the morning” or “son of the dawn” appears to be a more literal translation from the original text.

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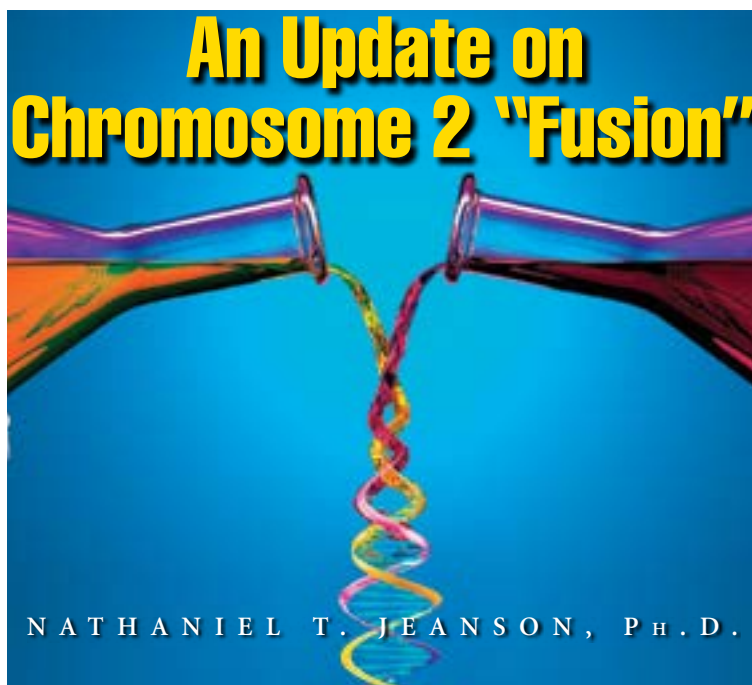


Do humans inherit their DNA sequence from an ape-like ancestor? One of the common evolutionary arguments for shared ancestry between humans and chimpanzees is the existence of a so-called human “chromosome 2 fusion.”

But what is a chromosome fusion? If we think of DNA sequence as a language consisting of four letters, the complete DNA sequence in a human is a molecular “book” that is 3,000,000,000 letters long. Books have chapter divisions, and the human DNA sequence has 46 “chapters” or chromosomes. If, in the process of electronically editing a book, the division between two chapters were somehow lost, the two chapters would run together and “fuse” into essentially a single chapter.

This is, in essence, what evolutionists think has happened for human chromosome 2 with one additional detail: Evolutionists believe the second chapter also “flipped”—its top-to-bottom textual orientation was reversed sometime in the past. These scientists believe there were more than 46 chromosomes in the human-chimpanzee ancestor and that two of the chromosomes “fused” in the lineage leading to modern humans. As evidence of this event, evolutionists claim that signature fusion sequence exists in the middle of human chromosome 2, and they claim that the order of sections of DNA sequence (“genes”) along both human chromosome 2 and the two corresponding chimpanzee chromosomes are similar.¹

So what? According to the evolutionists, “there is no good biological reason to find the same genes [sections of DNA sequence] in the same order in unrelated organisms, and every good reason to expect very different gene orders.... Should God have wished to avoid the ap-



pearance of common ancestry between humans and chimpanzees, there seem to have been many gene orders and chromosome structures available to Him to use for either species.²¹

Have evolutionists convincingly refuted the biblical model? Several biological facts invalidate their evolutionary claims. First, research by the Institute of Creation Research’s geneticist Dr. Jeffrey Tomkins has revealed that the signature fusion sequence is ambiguous or, in evolutionary terms, “degenerate.”^{22,3} Thus, the main line of evidence for fusion is based on weak data.

Second, the precise match in gene order between human chromosome 2 and the corresponding chimpanzee chromosomes is unknown. Unfortunately, when the chimpanzee DNA sequence was elucidated, the researchers did not independently determine the gene order along *all* of the chimpanzee chromosomes, and this led to gross overestimates of the overall genetic similarity between the two species.^{4,5} Conversely, of the two chimpanzee chromosomes for which the gene order has been more precisely determined (e.g., the Y chromosome and chromosome 22), the Y chromosome possesses a gene order dramatically differ-

ent from humans.⁶ Hence, the overall match in gene order between human chromosome 2 and the appropriate chimp chromosomes is still an open question.

Even if the gene order among these chromosomes turns out to be highly similar, would this strengthen the evolutionists’ claims? Is there really “no good biological reason to find the same genes in the same order in unrelated organisms”?¹ No.

These claims represent premature assumptions stated as fact. No one has comprehensively tested whether

gene order along human chromosome 2 has a functional impact on the gene’s function. Furthermore, when human chromosome 21 was inserted into mouse cells, this experiment revealed that the chromosomal context—and gene order—for a gene does impact its function.⁷

Evolutionary scientists continue to make lofty claims about the human chromosome 2 “fusion” without rigorous analysis of the relevant biological facts. ●

References

1. Venema, D. and D. Falk. Signature in the synteny. The Biologos Forum. Posted on biologos.org April 19, 2010, accessed June 26, 2013.
2. Bergman, J. and J. Tomkins. 2011. The chromosome 2 fusion model of human evolution - part 1: re-evaluating the evidence. *Journal of Creation*. 25 (2): 106-110.
3. Tomkins, J. and J. Bergman. 2011. The chromosome 2 fusion model of human evolution - part 2: re-analysis of the genomic data. *Journal of Creation*. 25 (2): 111-117.
4. Tomkins, J. 2011. How genomes are sequenced and why it matters: Implications for Studies in Comparative Genomics of Humans and Chimpanzees. *Answers Research Journal*. 4: 81-88.
5. Tomkins, J. 2013. Comprehensive Analysis of Chimpanzee and Human Chromosomes Reveals Average DNA Similarity of 70%. *Answers Research Journal*. 6: 63-69.
6. Hughes, J. F. et al. 2010. Chimpanzee and human Y chromosomes are remarkably divergent in structure and gene content. *Nature*. 463 (7280): 536-539.
7. Wilson, M. D. et al. 2008. Species-Specific Transcription in Mice Carrying Human Chromosome 21. *Science*. 322 (5900): 434-438.

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Up and Down Like a Cork?

J O H N D . M O R R I S , P H . D .

In a prior column, I pointed out that Earth's strata, which often lay conformably one on top another, are believed to be separated by millions of years of time, according to traditional thinking.¹ The dates—derived by radioisotope dating, the fossil content, or whatever means—often indicate that the top of one bed is much older than the bottom of the overlying bed. This age difference claim is made in spite of the fact that the layers are right on top of each other—clearly appearing like their deposition was continuous. The contact between them is frequently parallel and neatly stacked with no evidence of erosion or anomalous deposition at all in between the layers. Of course, there are some places where erosion has taken place or where the removal of an intervening bed is obvious, but I want to call your attention to the “layer-cake” stratification of multiple parallel beds similar to those plainly seen in Grand Canyon and other places.

Keep in mind that the layers are clearly underwater deposits and typically contain marine fossils. A few rare strata exhibit what might be proposed to be a terrestrial origin, but these are exceptions to the rule, and the claims concerning them are often quite controversial. Without a doubt, nearly all geologists conclude that the vast majority of strata were water-deposited.

As a general rule, if a surface is underwater, it receives sediment. Even in a calm ocean,

a steady stream of sediments will collect on the ocean floor. But if the surface is above water, it normally undergoes erosion. Continental erosion incessantly gouges out stream beds and river valleys. It almost never produces flat pancake-like surfaces.

Exceptions to the rule involve fast-flowing water. Flat, past erosion surfaces imply “sheet erosion,” during which equivalent depths of large, rapidly flowing volumes of water rush over a wide surface, eroding it down to a common elevation. This seldom happens today except with devastating floods or hurricanes, and even then the affected area is local. Moving water erodes every geologic surface—even hard rock.

How then can we account for the near-ubiquitous presence of flat, parallel strata, especially where no evidence of erosion of any sort can be found? According to standard thinking, millions of years passed between the deposition of each of the individual layers, but where is the evidence of exposure and erosion? Where are the drainage ditches and the river valleys that should have been carved into the exposed sediment surfaces during all that time?

The uniformitarian model proposes that flat-lying sediment layers deposited underwater must have been uplifted above sea level and undergone neither deposition nor erosion, then down-dropped below sea level again to receive the next layer of sediment. This hap-

pened again and again with each surface experiencing simultaneous non-deposition and non-erosion while it was above sea level. In Grand Canyon, the flat layers must have been uplifted and dropped at least six times. Uniformitarians sometimes claim strata sequences like these must have “bobbed up and down like a cork” over millions and millions of years, all the while resisting deformation and signs of erosion and maintaining their flat and parallel geometry.

How realistic is it to propose exposure above sea level for millions of years without erosion? The normal weathering processes of rainfall and violent storms would have carved out channels and gullies across the exposed land surface, but we see no evidence that this ever occurred! Instead, we see flat layers upon flat layers as if they were neatly deposited one on top of the other—just what you'd expect in deposits from a continuous and global flood.

Once again, we see that uniformitarianism fails a simple geologic test. Rather than relying on human wisdom-based uniformitarianism, Bible-based catastrophism is a much better perspective within which to interpret Earth's strata. The Grand Canyon “layer-cake” stratification is yet another sign of God's handiwork. ●

Reference

1. Morris, J. 2012. Gaps in the Geologic Column. *Acts & Facts*. 41 (2): 16.

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Endocrine System Evolution: A Textbook Example?

A student of zoology would be surprised to learn that, although researchers know much about the function of our endocrine system, they know essentially nothing about its supposed evolution.¹

The creationist sees the incredible detail of the living world as part of God's plan, purpose, and special design. Indeed, the various systems (e.g., digestive, muscular, circulatory, endocrine, etc.) of the human body working together is called *homoeostasis*, meaning the body is designed to maintain itself in a state of stable, healthy equilibrium.

The endocrine system is a complex arrangement of ductless glands that secrete hormones into the bloodstream. Hormones are regulatory substances (i.e., chemical messengers such as insulin and prolactin) produced by specially designed cells and are effective in low concentrations. As you read this article, dozens of hormones are flowing in your bloodstream—and these hormones are designed to impact only the cells that have special receptor molecules on their surfaces. If the matching receptor molecules are not on a given cell's surface, the corresponding hormones do not affect that cell. Most of these receptor molecules are called *G protein coupled receptors*. God designed them to “sense” molecules (such as hormones or odors) *outside* the cell and activate special pathways *inside* the cell, resulting in a specific response.

The endocrine system is nothing short of fantastically complicated, and scientists are learning more about it every day. With each function and pathway elucidated, evolutionary explanations make less and less sense.

A 2013 zoology textbook by Stephen

FRANK SHERWIN, M.A.

Miller and John Harley discussed the “evolution of endocrine systems.” With students and the public being overwhelmed daily with “the fact of evolution,” the authors committed just 220 words to endocrine system evolution! They wrote, “Endocrine systems could only arise following the evolution of circulatory systems that could carry hormones.”² And they did not discuss “the evolution of circulatory systems” at all. They have, however, an evolution-based diagram that shows the “phylogenetic [evolutionary] trends in the circulatory systems of animals” (Figure 26.6).³ To the left of the diagram are black solid lines connecting the major groups of animals (e.g., mammals, birds, crocodylians, most reptiles, etc.). At the point where the solid lines meet one another, the name of the ethereal transitional animal is absent. To the right of these major animal groups is listed the kind of heart each group supposedly had. But these charts and descriptions do not address circulatory system evolution.

Returning to endocrine systems evolution, the authors simply wrote “that endocrine systems arose multiple times.” But they do not discuss how endocrine systems *actually* evolved. They do appeal to “a shared set of basic signal transduction mechanisms involved in paracrine communication [a type of cell-to-cell commu-

nication] in ancestral animals,” but this is hardly an explanation.² How exactly did this intricate cell-to-cell communication evolve? “Basic signal transduction” is an oxymoron, since transduction is incredibly complex. Readers are invited to look this up online or in a recent physiology text, but they will not be able to find the names of these “ancestral animals” since they do not exist.

Miller and Harley also used two well-worn words that are ubiquitous in evolutionary literature and explain nothing: “over time.” Darwinists often use generous portions of “time” to gloss over macroevolutionary problems—but this is not evidence for evolution. The zoology student is left knowing less about endocrine system evolution than he or she did before reading those cryptic 220 words.

The similarities of function and structure of vertebrate circulatory systems (including hearts) and endocrine systems reflect that they all have the same wonderful Creator. Truly, His amazing work is “clearly seen” in all of His creation (Romans 1:20). ●

References

1. Even more surprising, this statement can be made regarding virtually every biological system in people and animals.
2. Miller, S. and J. Harley. 2013. *Zoology*, 9th ed. New York: McGraw Hill, 479.
3. *Ibid.*, 487.

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Animals benefit from a variety of unique eye designs, but where did they come from? Two clearly seen eye observations point to Genesis origins.

First, animals within a single, broad group often use different eye designs. For example, most vertebrates have the classic “camera eye.” They use a transparent cornea and convex lens to refract (i.e., bend) images onto a light-sensitive layer of tissue lining the back of the eye called the retina.

The supposed evolutionary ancestor of all vertebrates should have passed its specific camera eye design down to its descendants—modern vertebrates. But certain vertebrates use completely different eyes. For example, the deep sea “spookfish” uses reflective mirror lenses, not refractive lenses.¹ Also, the chameleon’s pinhole eye design uses *concave* lenses that spread out a narrow section of incoming light onto a broader retina.

Now for the second observation. *Similar* eye designs occur in animals from very *different* groups. Eye designs crisscross imagined evolutionary tree branches.

Those branches should show similar designs within similar groups. Instead, for example, *spineless* squids and octopi use the same basic camera-eye anatomy as *vertebrates*—albeit with a few optimizations for life underwater. Even some jellyfish use small camera eyes.²

Arthropods illustrate both observations. The classic and unique arthropod compound eye works effectively, as anyone who has tried to catch a fly knows. Its many *refractive* lenses fit into round or hexagonal light-sensitive, tiny, tube-like units called *ommatidia*.

With evolution, the ancestor of all arthropods should have passed its compound eye design on to its descendants. But some arthropods use completely different eyes, again illustrating the first observation that points to Genesis origins—a single animal grouping contains a variety of radically different eyes.

For example, lobster and shrimp *ommatidia* gather images from light *reflected off* each *ommatidia*’s perfectly proportioned

sea stars, and clams have almost nothing in common with the arthropod body plan.

Yet, the giant clams use pinhole eyes. The chambered nautilus, a cephalopod along with squid, hunts its prey with pinhole eyes, albeit without lenses. Many more examples could illustrate both observations that

- 1) Animals within one group use very different—and always fully formed—eyes, and
- 2) Certain animals from very different groups share the same basic eye structure.



AMAZING Animal Eyes

BRIAN THOMAS, M.S.

square side walls. And the mantis shrimp’s eyes detect 12 primary colors, not just three!³

However, some worms have compound eyes. They also illustrate the second observation, that different animals share similar eye designs. Sabellids are marine tube worms, and each of their *ommatidia* consists only of two cells. Similarly, “most known starfish species possess a compound eye at the tip of each arm, which, except for the lack of true optics, resembles [the] arthropod compound eye.”⁴ And clams from the family Arcidae use compound eyes. Other than their compound eyes, worms,

Neither observation fits the expected evolutionary pattern. This forces proponents to speculate that the same eye designs evolved multiple times in separate organisms. But this assertion lacks an important detail—evidence. Typically, magic words like “emerge,” “evolve,” and “appear” substitute for evidence or for a realistic explanation of each supposed gradual step in eye evolution. No wonder Charles Darwin wrote to Asa Gray in 1860, “The thought of the eye made me cold all over.”⁵

According to Genesis, God formed all the required parts for each animal eye in all their required sizes,

shapes, and opacities in a single step when “He commanded, and it stood fast.”⁶ ●

References

1. Thomas, B. Fish’s Mirror Eyes Reflect the Creator. *Creation Science Update*. Posted on icr.org January 15, 2009, accessed July 8, 2013.
2. Sherwin, F. 2007. The Eyes of Creation. *Acts & Facts*. 36 (7).
3. Thomas, B. Shrimp Eye May Inspire New DVD Technology. *Creation Science Update*. Posted on icr.org November 4, 2009, accessed July 8, 2013.
4. Seeing starfish: The missing link in eye evolution? Society for Experimental Biology Press Release via EurekAlert! Posted on eurekaalert.org July 4, 2013, accessed July 8, 2013.
5. Darwin’s letter quoted in Bergman, J. 2011. *The Dark Side of Darwin*. Green River, AR: Master Books, 118.
6. Psalm 33:9.

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Dark Matter, Sparticles, and the Big Bang

J A K E H E B E R T , P H . D .

Why do many cosmologists claim that only a small fraction of all the matter in the universe is the “normal” everyday matter with which we are familiar?

In particle physics, protons and neutrons are the best-known examples of a group of particles called *baryons*. Since protons and neutrons comprise almost all the mass of an atom, matter composed of atoms is known as *baryonic matter*. The everyday matter that we see, touch, and feel is baryonic matter.

Surprisingly, many astronomers have concluded that most of the matter in the universe is invisible! In other words, it is thought that the vast majority of the matter in the universe does not emit significant amounts of electromagnetic radiation. Since electromagnetic radiation includes visible light—as well as other forms of radiation—this inferred matter is invisible to us and is therefore called *dark matter*.

One of a number of arguments in favor of the existence of dark matter involves rotating spiral galaxies. The stars and gases in any given spiral galaxy rotate around the galaxy’s center. Physicists and astronomers expected that their rotation speeds would not all be the same but would rather decrease in a particular gradual fashion at greater and greater distances from the center of the visible galactic bulge. Instead, these speeds tend to plateau so that the speeds are es-

entially constant beyond a certain distance from the galactic center. The discrepancy can be resolved by assuming the existence of large amounts of “invisible” matter in “halos” that surround these spiral galaxies. From this line of reasoning, astronomers concluded that the mass of this invisible dark matter is typically ten times *greater* than that of the visible stars and gas within spiral galaxies.¹

It should be noted that dark matter was *not* invoked simply as a “fudge factor” to rescue the Big Bang from perceived difficulties. A number of arguments for dark matter, such as the galaxy rotation curve argument described above, do not necessarily assume the validity of the Big Bang model.² However, the claim that most of the universe’s matter is non-baryonic is based not upon direct observations but on theorists’ understanding of how the Big Bang supposedly produced the “light” chemical elements (hydrogen, helium, lithium, etc.) in a process called Big Bang nucleosynthesis. Lawrence Krauss, a theoretical physicist and Big Bang proponent, explains it this way:

The very same calculations that so beautifully explain the observed abundance of the light elements (hydrogen, helium, and lithium) in the universe also tell us more or less how many protons and neutrons, the stuff of normal matter, must exist in the universe.... Yet the initial density of protons and neutrons in the universe arising out of the Big Bang, as determined by fitting to

the observed abundance of hydrogen, helium, and lithium, accounts for about twice the amount of material we can see in stars and hot gas. Where are those particles?

It is easy to imagine ways to hide protons and neutrons (snowballs, planets, cosmologists...none of them shines), so many physicists predicted that as many protons and neutrons lie in dark objects as visible objects.³

Since the number of protons and neutrons within visible stars and interstellar gas clouds is thought to be only about half of what should have been produced by the Big Bang, theorists concluded that the “leftover” baryons must be hidden within some kind of baryonic dark matter. Since there are multiple lines of evidence for dark matter, this is not necessarily a problem for the Big Bang. Krauss continues:

However, when we add up how much “dark matter” has to exist to explain the motion of material in our galaxy, we find that the ratio of total matter to visible matter is not 2 to 1, but closer to 10 to 1. If this is not a mistake, then the dark matter cannot be made of protons and neutrons. There are just not enough of them.⁴

If one uses the round numbers Krauss provides, the visible baryonic matter in the universe would comprise only about 10 percent of all the matter thought to exist, and dark baryonic matter would comprise another 10 percent. Since this is all the baryonic matter that the Big Bang can produce, theorists concluded that the remaining 80 percent *must* be some form of non-baryonic matter

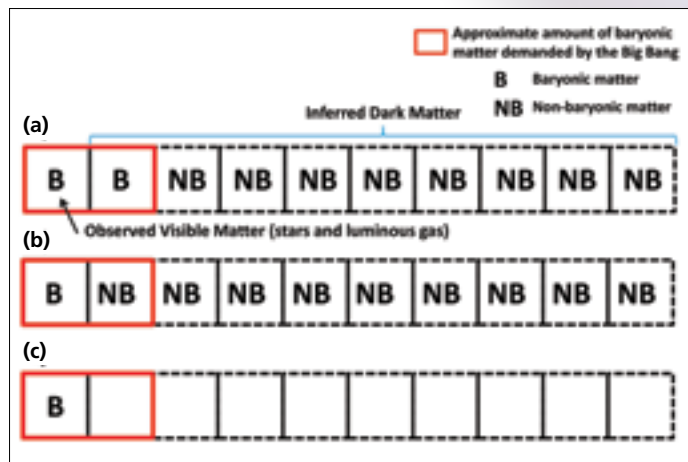


Figure 1. (a) Big Bang nucleosynthesis (BBN) accounts fairly well for the relative abundances of the “light” chemical elements, provided that the baryon-to-photon ratio η_B lies within a narrow range of values, corresponding to about 2 billion photons per baryon. Once η_B has been chosen, BBN produces ~twice as many baryons as are estimated to be found in visible matter. So theorists assume that about 10 percent of the universe’s matter is baryonic dark matter, and about 80 percent is non-baryonic dark matter. Two problematic scenarios for BBN include items (b) and (c). (b) Dark matter is composed nearly entirely of non-baryonic matter. (c) Our inference of dark matter is incorrect, and enormous quantities of dark matter do not exist. In both cases, BBN is wrong, as it has over-predicted the number of baryons by a factor of two. Each square represents 10 percent of the total matter in the universe that is currently thought to exist.

(Figure 1a). Hence, the claim that most of the matter in the universe is non-baryonic comes from the requirements of Big Bang nucleosynthesis, as is routinely acknowledged in astronomy and cosmology textbooks.⁵

Note that Krauss said the initial baryonic density of the universe has been determined by *fitting* to the observed abundances of the light elements. What does this mean?

The theory of Big Bang nucleosynthesis contains a “free” or “undetermined” number called the “baryon-to-photon ratio,” indicated by the symbol η_B . Photons are “particles” of electromagnetic radiation, and this ratio specifies the number of baryons compared to the number of photons in the Big Bang universe. Again, the theory itself does not actually specify the value of η_B . Instead, η_B may be *chosen* so that the abundances of hydrogen and helium that would have been produced in the Big Bang *match* those actually observed in nature—about 75 percent hydrogen and nearly 25 percent helium by mass with trace amounts of lithium, etc.⁶ These theoretical abundances match the observed abundances fairly well if one chooses η_B so that there are roughly two billion photons per baryon in the universe.

It is believed that nearly all the photons in the universe are part of the cosmic microwave background radiation (CMB), believed by Big Bang theorists to be “left over” radiation from a time about 380,000 years after the Big Bang. Since the number of photons (per unit volume) in the very uniform CMB can be estimated, and since Big Bang cosmologists assume that matter on the largest scales is uniformly distributed throughout the universe, they can calculate the number of baryons in the universe (per unit volume) by multiplying η_B by the estimated number of photons per unit volume. Since the resulting number of baryons is only a small fraction of all the matter thought to exist, secular theorists concluded that the bulk of matter in the universe *must* be non-baryonic.

Furthermore, they have concluded that most of this non-baryonic dark matter cannot be composed of *known* forms of non-baryonic matter (free electrons, neutrinos, etc.), since these known forms of non-baryonic matter do not have the properties that would make them suitable candidates for dark matter.⁷ Hence, secular cosmologists have concluded that almost *all* the matter in the universe is composed of exotic, never-before-observed particles (Figure 2)!

Candidates for these exotic particles include “axions” and supersymmetric particles called *sparticles*. Axions are hypothetical elementary particles that have been postulated to explain certain observations in particle physics. *Sparticles* are hypothetical particles thought to be “partners” of the known elementary particles, which are predicted by a theory called *supersymmetry*. So far, there is *zero* experimental evidence for the existence of *sparticles*.⁸

Big Bang theorists claim that the amount of baryonic matter in the universe may be precisely determined from measurements of the cosmic microwave background radiation.⁹ Using the most recent data from the Planck satellite, one can calculate that in the Big Bang

BIG BANG REASONING

Big Bang nucleosynthesis can only produce enough baryonic "normal" matter to account for about 20 percent of all matter thought to exist.



Therefore, 80 percent of matter in the universe is non-baryonic.



Known forms of non-baryonic matter are unsuitable dark matter candidates.



Therefore, most matter in the universe is "exotic," never-before-observed forms of non-baryonic dark matter.

Figure 2. Reasoning used by Big Bang cosmologists to conclude that most of the matter in the universe consists of exotic, never-before-observed forms of non-baryonic dark matter.

model baryonic matter makes up about 15 percent of all the matter in the universe.¹⁰ However, because these calculations incorporate Big Bang assumptions, they do not really provide an independent determination of the actual amount of baryonic matter in the universe. Of course, when one stops to think about it, it should be obvious that images of the CMB cannot possibly tell us anything about the actual number of protons and neutrons in the universe—unless one has first made assumptions about how the CMB data should be interpreted. Unfortunately, a truly independent determination of the number of baryons in the universe is essentially impossible, as that would require us to somehow actually *count* all the protons and neutrons in the entire universe!

The Big Bang model does a fairly good job of accounting for the relative abundances of the light chemical elements because it has been retrofitted to agree with observations. But does it also correctly predict the total amounts of baryonic and non-baryonic matter? If exotic non-baryonic particles do exist, do they exist in abundances that are consistent with Big Bang requirements? Successfully accounting for the abundances of the light elements is not really all that impressive if the Big Bang also incorrectly predicts the total amount of baryonic matter in the universe.

It is not difficult to imagine hypothetical scenarios that would falsify Big Bang nucleosynthesis. Consider these two cases: Suppose, for instance, that massive amounts of dark matter *do* exist but that this dark matter is almost entirely non-baryonic (Figure 1b). Or suppose, instead, that large quantities of dark matter *do not* really exist and that our inference of dark matter's existence is a result of an incomplete understanding of physics, as has been suggested by both creation and evolution scientists.^{11, 12} In this second case, the visible matter (stars and luminous gas) that we see is virtually all the matter in the universe (Figure 1c). In both cases, the Big Bang is wrong, since it has over-predicted the amount of baryonic matter in the universe

by a factor of two. Of course, one can easily imagine other scenarios that would also falsify Big Bang nucleosynthesis, such as a universe composed of 30 percent baryonic matter and 70 percent non-baryonic matter. In any of these cases, the Big Bang's ability to successfully account for the abundances of the light chemical elements would be a hollow victory, since it would be accompanied by an inability to account for the *total* amount of baryonic matter in the universe.

It seems premature for secular cosmologists to cite the Big Bang's apparent success in accounting for the abundances of the light elements as an argument for the Big Bang, since this success has been accomplished by 1) retrofitting the Big Bang model to match these observed abundances, and by 2) simply *assuming* that most of the material in the universe is composed of exotic, never-before-observed forms of matter.

Moreover, even if dark matter *does* exist in the amounts and compositions that seem consistent with Big Bang requirements, does this mean that the Big Bang model has been vindicated? No. The fact that Big Bang cosmologists have not made definite predictions about the composition of this possible exotic matter (they only have possible candidates for it) is a tacit admission that the Big Bang model in its current form does not readily account for the existence of enormous amounts of exotic, non-baryonic matter. So even if dark matter *does* exist in the quantities and compositions required by Big Bang expectations, theorists would still have to modify their model to explain how such vast quantities of exotic matter would have been produced shortly after the Big Bang!

In either case, the current model would have to be modified.

Of course, secular scientists would insist that this newer version of the Big Bang is established fact. But they said the same thing about *previous* versions of the Big Bang! Christians should resist the temptation to believe ever-changing secular origins stories. Rather, they should believe the clear teaching of God's inerrant Word: "The grass withers, the flower fades, But the word of our God stands forever" (Isaiah 40:8). ●

References

1. Rubin, V. 1998. Dark Matter in the Universe. *Scientific American Presents*. 9 (1): 106-110.
2. Faulkner, D. R. 1998. The Current State of Creation Astronomy. In *Proceedings of the Fourth International Conference on Creationism*. R. E. Walsh, ed. Pittsburgh, PA: Creation Science Fellowship, 201-216.
3. Krauss, L. M. 2012. *A Universe from Nothing*. New York: Free Press, 24-25.
4. *Ibid*, 25.
5. See, for example, Bergström, L. and A. Goobar. 2008. *Cosmology and Particle Astrophysics*, 2nd ed. Chichester, UK: Springer Praxis Publishing, 6-8.
6. *Ibid*, 167-176.
7. Possibilities for Dark Matter. NASA's Imagine the Universe! NASA Goddard Space Flight Center. Posted on imagine.gsfc.nasa.gov February 3, 2009, accessed June 14, 2013.
8. Krämer, M. Searching for supersymmetry: some frustration but no despair. *The Guardian*. Posted on guardian.co.uk March 14, 2013, accessed June 13, 2013.
9. Bergström and Goobar, 204-206.
10. Peplow, M. Planck telescope peers into primordial Universe. *Nature News*. Posted on nature.com March 21, 2013, accessed June 13, 2013.
11. Hartnett, J. 2007. *Starlight, Time, and the New Physics*. Queensland, Australia: Creation Book Publishers, 34-54.
12. Reich, E. S. 2011. Alternate theory poses dark matter challenge. *Nature News Blog*. Posted on nature.com on February 23, 2011, accessed on July 1, 2013.

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Q: Does “Homology” Prove Evolution?

NATHANIEL T. JEANSON, P.H.D.

A: Why do you share DNA with an ant? Why do mammals generally have four limbs? Why do different creatures’ limbs often develop via similar genetic programs? Evolutionists attribute these biological similarities—this “homology”—to a “common ancestor” among diverse creatures.

For example, evolutionists like Stephen Matheson reject “common design” by an omnipotent Designer as an explanation for these facts. “As a competing explanation, design is currently a failure.... *We have no good reason* to suppose that [shared anatomical patterns and genetic programs] could not have been otherwise, and in some cases, we know that it can work in other ways.... To unseat common ancestry, or at least to rival it, design theory has to show that life could not have been otherwise” (emphasis added).¹

Is the creationist explanation of “design” in trouble? Do we really have no good reason—from a design perspective—to expect similarities among the anatomical, developmental, and genetic patterns we see? Let’s apply what I call the “parking lot test” to Matheson’s evolutionary claims.

A quick trip to the nearest parking lot helps us to unravel evolutionary logic and arrive at the true explanation for motor vehicle origins. Do cars share a similar “anatomy”? By far, most run on four wheels rather than three or five. Is the “developmental program” (e.g., the construction process) for each vehicle shared? Is the “genetic program” (e.g., the blueprint) for a Honda Civic fundamentally different from the blueprint for a Ford Focus? Profound similarities underlie vehicles whose origins are continents apart!

By evolutionary standards, these vehicles should have originated from a common ancestor millions of years ago. “We have no good reason to suppose” that all cars should share a similar chassis or overall structural pattern. We might search in vain for the definitive scientific paper showing that four wheels are the optimum design for cars. We might never find the peer-reviewed papers which performed exhaustive tests of every possible car blueprint. Yet we know that all cars were designed by intelligent designers and were not the product of time and chance. Evolutionary logic fails the “parking lot test.”

What does this discussion reveal? It reveals that some evolutionists are very poor at reasoning from a design perspective. Hence, if evolutionary logic and reasoning cannot correctly explain the origin of things whose intelligent design has been directly observed



(e.g., motor vehicles), why should we trust evolutionary logic when applied to things whose origins we have not directly observed (e.g., dinosaurs)?

Simple “parking lot” type tests expose even more weaknesses in evolutionary reasoning about the existence of shared features. For example, evolutionists cite so-called “transitional forms” in the fossil record as premier evidence of descent with modification from a common starting point. Real transitional forms do not exist—we only see fossils that blend features of two fundamentally different categories of creatures (e.g., *Tiktaalik*, a supposed transition between sea and land creatures). Evolutionists might again assert that we have “no good reason” to think that these creatures were designed.

Yet a trip to a military base—or even to the Wisconsin Dells for a “duck” tour—reveals the error of this reasoning.² Not only have intelligent military engineers designed both motorized land vehicles (e.g., tanks and troop carriers) and sea vehicles (e.g., aircraft carriers, destroyers, and submarines), they have also created amphibious assault vehicles. These vehicles are “transitional” in their design in that they blend the characteristics of fully functional land and sea vehicles. Hence, creatures that blend features of two fundamentally different categories of creatures are products of deliberate engineering.

We may have “no good reason” to expect that “homology” is the product of intelligent design—until we take a trip to the parking lot. ●

References

1. Matheson, S. 2011. New Limbs from Old Fins, Part 6. The BioLogos Forum. Posted on biologos.com on October 20, 2011, accessed June 26, 2013.
2. For example, those offered through wisconsinducktours.com.

Dr. Jeanson is Deputy Director for Life Sciences Research and received his Ph.D. in Cell and Developmental Biology from Harvard University.

SEASONAL GIVING *Opportunities*

H E N R Y M . M O R R I S I V

The coming fall season heralds an important time for non-profit Christian ministries like ICR. Annual Workplace Giving Campaigns often begin this month, providing employees the occasion to support qualified charities. And as the end of the tax year approaches, there may be no better time to take advantage of certain tax-deductible giving opportunities that might not be available next year. Now is the time to consider ways you can help ICR fulfill its unique mission for the cause of our Creator, the Lord Jesus Christ.

For starters, the popular IRA Charitable Rollover is *set to expire at the end of 2013* unless Congress acts to extend it. This special provision allows owners of traditional or Roth IRAs who are age 70½ or older to authorize a charitable gift directly to ICR without having to declare it as income. Such IRA gifts also count toward your required minimum distribution, providing a twofold opportunity to support ICR while avoiding taxes on income you would otherwise be required to take. IRA gifts are easy to make through your administrator, so please contact them today if this opportunity is right for you.

This month also marks the traditional start of Workplace Giving Campaigns sponsored by government organizations and large corporations. These special programs

provide unique benefits to their employees by offering the convenience of automatic payroll deduction to fund charities of the employee's choosing. ICR must meet high standards to participate, and as a federally recognized 501(c)(3) nonprofit ministry, all donations to our ministry are fully tax-deductible as allowed by law.

For federal government and military personnel, ICR is approved by the Combined Federal Campaign—the largest public sector workplace charity program in the world and the only one authorized to collect contributions from U.S. federal employees and military personnel. Those who serve our country can support ICR's work with one easy penstroke. Look for ICR in the National/International Organization section of your local CFC brochure (CFC #23095) when making your pledge this fall.

ICR is also approved by the two largest State Employee Giving Campaigns—in California and Texas—offering state employees an opportunity to support our ministry work by designating the *Institute for Creation Research* on the pledge form. Similarly, employees of large corporations that offer workplace giving campaigns can designate gifts to ICR by providing our name and address in the "Write-In Organization" section of the pledge form this season.

Finally, the improvement in the stock market in recent years may present a mar-

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While we cannot know "what a day may bring forth" (Proverbs 27:1), all Christians should use these opportunities to the best of their ability in support of God's work here on Earth. ICR is deeply grateful for all those who choose to co-labor with us in our mission, but we are especially pleased when our ministry partners are able to "reap bountifully" with their gifts as well (2 Corinthians 9:6). Please prayerfully consider these special advantages in support of our ministry this fall. ●

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



Thank you, Nathaniel [Jeanson], for defending the compassionate character of our Creator [in your July article “Did Lions Roam the Garden of Eden?”]. As a family counselor, biology teacher (and former caretaker of elephants, lions, tigers, bears, wolves, etc., and a rehabilitator for the Dept. of Wildlife), Christian insensitivity and cruelty deeply grieves me and dishonors the Good Shepherd. For decades now, our family ministry and resource website, Good Shepherd Initiative, have emphasized the biblical mandate to treat God’s animals the way He says in His Word (especially those with the *nephesh* capacity to think and feel). From Genesis 1–2 to Genesis 9 to Leviticus 17:13–14 to 2 Samuel 12 to Isaiah 11 and 65 to Romans 8, it is clear that compassion is God’s way. Wilberforce was a powerful witness to the world because he lived the consistency of Christ’s compassion, fighting against both human slavery and animal abuse. My hope and prayer is that more and more believers will not only teach the truth of our Creator’s Eden character, but also live it out as a testimony to His infinite goodness. While I am not opposed to humane hunting and am not a vegetarian, I believe Christ’s followers should reflect His goodness consistently before a watching world.

—S.G.

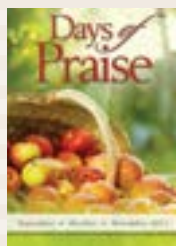


I just finished “Insect Arithmetic—Pure Genius!” by Frank Sherwin, M.A., and Brian Thomas, M.S. I am neither strong in math nor an insect fan, but I found this article fascinating. Once again, the Creator is glorified as we examine the designed-in capabilities of these marvelous creatures! Thank you, Mr. Sherwin and Mr. Thomas!

—J.K.

I would just like to thank the Institute for Creation Research for all that you guys do there! I have a passion for science and God and thank you for helping fuel my beliefs! I’m sure that you face a lot of hate from lost people. But keep on doing what you’re doing because it is changing many lives daily! May God bless you all and work in your minds and empower you to do His good works. If it wasn’t for me discovering you a year ago, I would still be lost and confused. I hated learning evolution in school because it contradicted everything I believed in and really confused me for a large part of my high school years. I am now in college and hold a young earth view. Thanks again. God bless.

—T.H.



I would like to express my thanks to you for your excellent *Days of Praise* articles. I find these very encouraging and challenging. They also form a good basis for further extended study. Many thanks for your ministry; it is much appreciated. Yours in Christ.

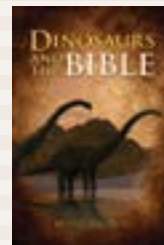
—C.L.



My 13-year-old daughter, 15-year-old son, and I were blessed with the opportunity of hearing Dr. Jason Lisle speak at the Homeschool Book Fair in Arlington, Texas, this year. With his presentation being scheduled for the end of a long day, we nearly left before it started, but I’m so glad we stayed. He did an excellent job of presenting a tremendous amount of information about astronomy without it being difficult to understand. Even my kids were very interested and mentioned specific things—such as the

speed of light issue—that they had not understood previously. We are so thankful for ICR and the resources you provide which give solid support to the truths of God’s Word. We frequently recommend ICR speakers like Dr. Lisle to other families. May God continue to bless your ministry!

—G.T.



Thank you so much for *Dinosaurs and the Bible*. I loved it! And please tell Brian [Thomas] what a conversation starter it was! Not only with my grandchildren in Denver, but also with my seatmates on both legs of my flight home. Everyone was so interested! One lady wanted to know more about ICR (I gave her the website), and she is going to order the book for her son who is flirting with evolution! Each chat led to a great discussion about the Bible and Christ! Guess I better start carrying it everywhere! Thanks.

—K.S.



Correction to the *Acts & Facts* June 2013 edition, in the article “The Solar System” on page 12, center column:

The article states: “Specifically, the period of the orbit (in years) is equal to the cube of the planet’s average distance from the sun in AU.”

The article should read: “Specifically, the square of the period of the orbit (in years) is equal to the cube of the planet’s average distance from the sun in AU.”



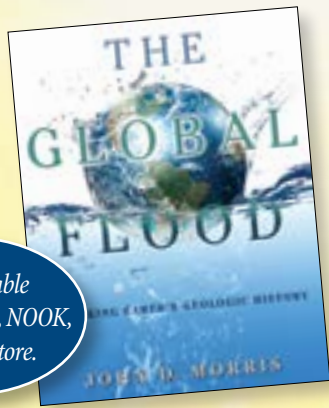
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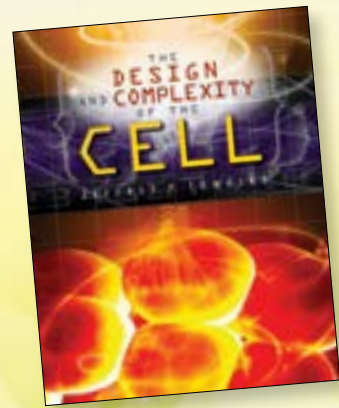
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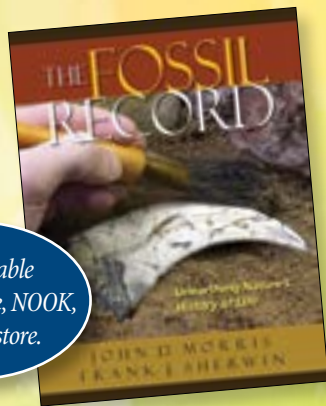


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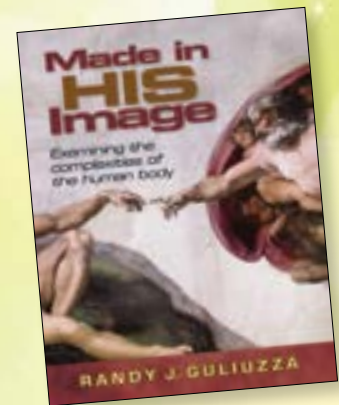


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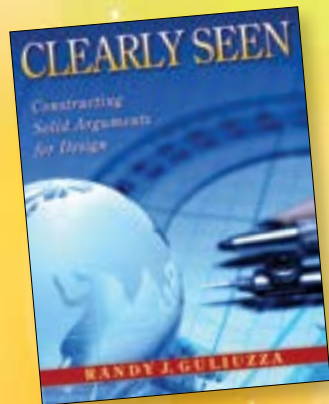


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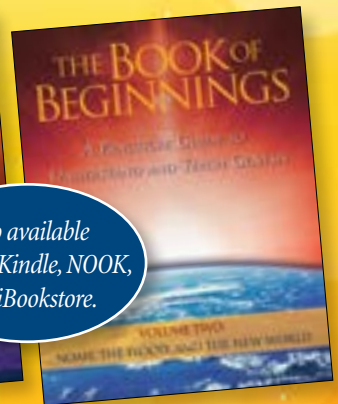
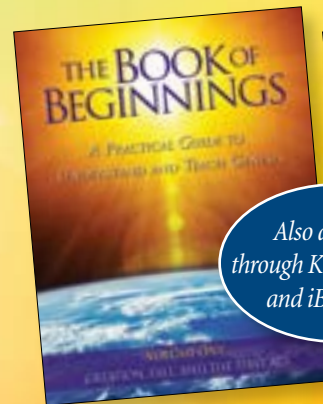
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