

Anne Marie Ault

Mrs. Pautrat

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The Case for an Old Earth:  
How the Bible and Science Support the Old-Earth Theory

In a speech given at a creationism conference, famous young-earth apologist Ken Ham said, “When I look at what's happened in America today, when I look at the collapse of Christianity in America...I believe that a lot of it relates to the fact that much of the church hasn't believed in six literal days.” Ham, like many others, believes that young-earth creationism is foundational to Christianity, yet fails to recognize the value, not only of discussion between differing viewpoints, but also of the strong arguments supporting the old-earth theory. Old-earth creationism is defined as the belief that the days of the Genesis creation account are long periods of time, rather than six 24-hour periods. Old-earth creationism is different from beliefs such as theistic evolution in that it requires the direct, ex-nihilo creation of everything by God. As far as this paper and the research supporting it is concerned, old-earthers believe that all accounts recorded in Genesis, particularly that of Adam and Eve, are literal, historical events. Biblical and scientific evidence strongly support old-earth creationism, and insisting on a strictly young-earth viewpoint creates an unnecessary stumbling block for non-Christians.

Henry Morris, famous young-earth apologist, says, “The continued insistence on an ancient earth is purely because of the philosophic necessity to justify evolution and the pantheistic religion of eternal matter” (*Creation and Time* 82). His words, and those of others,

have created a false concept of what old-earth creationism really is or why it is supported. This, unfortunately, encourages the immediate dismissal of old-earth creationist beliefs and old-earthers themselves. An honest, careful examination of both sides of the debate must be made before accusations of heresy or false teaching can be thrown. Unfortunately, people like Ken Ham and Henry Morris have been unwilling to do so. Ken Ham writes, “It is these leaders who affect so many people with their persuasive arguments of whom we have to be aware... Satan will use people with clever words who can sound scientific, to undermine this foundation. Such people, I believe, are described in Matthew 7:15: ‘Beware of false prophets, which come to you in sheep’s clothing, but inwardly they are ravening wolves’” (*Creation and Time* 84). These strong words leave little room for acceptance or reconciliation between Christians with differing views on the age of the earth. Such language would be appropriate only if the issue were of primary doctrine, or central to the message of Christianity. Although Ken Ham would argue that old-earth creationism undermines the message of the gospel, nothing in old-earth creationism denies the Gospel message, the saving work of Jesus Christ, man’s sinfulness, or the salvation of believers. Therefore, although it is important to examine, the matter can and should be discussed without animosity or false accusations.

As stated earlier, there is a widespread misconception about what old-earth creationism is. Many young-earthers attempt to discredit it as a compromisingly atheistic or evolutionist theory. It is commonly argued that old-earth creationism didn’t emerge until a much later era and that all early church fathers believed unequivocally in a young-earth and literal 144-hour creation week. In actuality, early Jewish historians and church fathers, including Josephus, Philo, Justin Martyr, Augustine, Irenaeus, and Origen, didn’t believe in literal 24-hour creation days (Stoner 118) (*The Genesis Debate* 69). Dr. Hugh Ross writes that “Throughout the Middle

Ages, church scholars maintained a tolerant attitude toward differing views and interpretations of the length of creation days” (*A Matter of Days* 21). Furthermore, the PCA Creation Study Committee says, “In the fourteen centuries prior to the Westminster Assembly numerous commentaries on the days of creation in Genesis 1-2 were produced.” And while the much older date for the age of the universe is a more recent discovery, this is only logical, since the age is determined from advanced, modern scientific discoveries, not from any specific interpretation of Genesis. If an appeal to early church fathers as authorities on all matters is to be made, however, then young-earthers must be logically consistent and support geocentrism as well. Martin Luther, to whom they appeal as a fellow young-earthier, said of Copernicus, “This fool wishes to reverse the entire science of astronomy, but sacred Scripture tells us that Joshua commanded the sun to stand still, and not the earth” (Snoke 14). Dr. Johnny V. Miller, professor of Bible and New Testament at Columbia Biblical Seminary, writes, “As we saw in the case of Galileo, when science seems to disagree with Scripture, it may be because the interpretation of Scripture is wrong.”

Given that the Bible is considered an infallible authority to evangelical Christians, the biblical evidence for old and young-earth creationism must be examined. On the young-earth side, proponents argue that the Bible is a greater authority than science or scientists and that no scientific argument for an old earth can outweigh the evidence found in the Bible (“When Does ‘Day’ Mean ‘Day’?”). First of all, while young-earthers are correct in their belief that the Bible is of greater authority than science, the God who wrote the Bible is the same God who created the world and the laws of science. Secondly, the comparison between the Bible and science is faulty, given that the Bible is not a scientific document. Throughout history, the interpretation of it as such has led to grievous error. The story of Joshua commanding the sun to stand still in

Joshua 10 led both the Catholic church and Protestants, including Martin Luther, to believe that it was the sun that moved around the earth, despite scientific evidence to the contrary. Dr. C. John Collins, professor of Old Testament at Covenant Theological Seminary, says, “The literary form, language, and architecture of Genesis 1-11 support the notion...that the early chapters of Genesis exhibit a style for which a scientific reading is unsuited” (153). Similarly, Dr. Miller writes, “The assumption that a scientific reading of Genesis 1 is the only way, or even a necessary way, of reading the Bible has to be challenged” (Miller). Any apparent contradiction, therefore, found between science and the Bible, such as that between Psalm 104:5 – “He set the earth on its foundations, so that **it should never be moved**” - and scientific discoveries, may be a result of an improper interpretation of the Biblical text rather than a fault in science.

The debate between young and old earthers hinges mainly on the interpretation of the word translated “day” in the creation account found in Genesis 1. In Hebrew, the word is *yôm* and has three commonly accepted translations: a 24-hour period of time, a roughly 12-hour long period of daylight, or a long period or age (Strong 55). In fact, there is no other Hebrew word for a long period of time or age, since the only possible alternative, *olam*, meant only forever or perpetual in biblical Hebrew (Stoner 43) (*The Genesis Debate* 148).

Young-earthers such as John Morris, son of Henry Morris, attempt to argue that *yôm* must be translated as a literal 24-hour day when used with an ordinal (J. Morris 28). However, Hosea 6:2 uses the phrase “the third day,” which commentators believe does not refer to our literal 24-hour day (Hagopian 148). Another verse, Zechariah 14:7, refers to the day of the Lord as one day, but is still understood to be a longer period of time. Scholars have also pointed out the unusual way the days of creation are numbered, without the use of the definite article “the.” “The point is that Genesis does not state the sequence like a Hebrew reader might have expected.

Instead, it uses a very unusual way of expressing the days and makes a significant change in the last two days. It is as if the writer is telling the reader to pay attention because this is not a normal week” (Miller).

Another common argument for the translation of *yôm* as a 24-hour day is the reference to evening and morning, days one through six. However, evening and morning would necessarily be figurative, at least for days one, two, and three, given that, according to young-earthers, the sun was not created until day four. Another example of evening and morning being used figuratively is in Psalm 90, which, in reference to grass, says, “in the morning it flourishes and is renewed; in the evening it fades and withers.” The lifespan of grass is not literally one day, nor does it always thrive in the morning and die at night. The Hebrew words for evening and morning can be used in a more general sense to mean a beginning and an end, and their noticeable absence on day seven reveal that neither the day itself, nor the evening and morning are to be taken literally.

Other uses of *yôm* in the creation account imply longer periods of time. Genesis 2:4 refers to the “day (*yôm*) that the Lord God made the earth and the heavens.” In Genesis 2:17, God commands Adam not to eat of the tree of the knowledge of good and evil, “for in the day (*yôm*) that you eat of it, you shall surely die.” Neither of these uses of day refer to 24-hour days, leaving open the possibility that the six creation days don’t refer to 24-hour days either. Once all the possibilities are established, the correct translation can be inferred from the context and other clues.

The strongest contextual clue for the interpretation of *yôm* as a long period of time is the seventh day. As noted earlier, there is no “and there was evening and morning, the seventh day” to be found in the Bible. Not only does this hint that this day is unusual, it also would seem that

the day has not yet had its closing, and is still ongoing to this day. This idea is further strengthened by a passage much later in the Scriptures, in Hebrews 4. In the chapter, the seventh day is referred to as God's rest, which some were not permitted to enter. The author encourages his audience to strive to enter that rest, which is only possible if it is an ongoing event. God's rest is a cease from creating. Though God continually sustains and is involved in His creation, He did not return to creating after 24-hours had passed, as though restarting his work week. There is no one specific day on which God took a break from creating; if there had been, there would still be the emergence of new species and planets ex nihilo. Dr. Hugh Ross says, "If the seventh 'day' continues, as Scripture indicates, we have a significant clue for interpreting the word *yôm*, or 'day,' for each of the six creation intervals as a time span longer than twenty-four hours." (*The Genesis Question* 65)

An objection to interpreting the creation week and the seventh day as figurative is that the pattern of six work days and one day directly corresponds to the human work week and Sabbath day (Foley). Our six work days and one Sabbath are literal, the argument goes, and so God's must have been. However, such a correspondence between the two does not necessitate a literal creation week, given that the pattern is still evident even if the days of creation were much longer. Dr. Collins writes, "That is, these creation days are God's workdays, and, since the divine Sabbath does not correspond in length and character to a human Sabbath, we need not concern ourselves with the exact relationship of this work week to a human work week" (163). Similarly, Dr. Miller writes, "The point is that if the seventh day is not a literal twenty-four-hour day, then the first six days probably are not literal days either. But a creation 'week' was a necessary framework in order for there to be a Sabbath, in order for God to declare time to be

holy, and so he could call people to the regular observance of rest and worship that make our lives meaningful.”

Another important clue in the search for the correct interpretation of *yôm* is the sixth day. On it, God creates land animals, then Adam, then Adam names all the animals, then a lack of a suitable helper is discovered, then Adam enters a deep sleep, then Eve is created, then the two meet. Dr. Gleason Archer say, “As we have compared Scripture with Scripture (Gen. 1:27 with 2:15-22), it has become very apparent that Genesis 1 was never intended to teach that the sixth creative day, when Adam and Eve were both created, lasted a mere twenty-four hours. In view of the long interval of time between these two, it would seem to border on sheer irrationality to insist that all of Adam’s experiences in Genesis 2:15-22 could have been crowded into the last hour or two of a literal twenty-four-hour day” (60). There is no evidence to support the theory that Adam had enhanced brain power to help him name all the animals in a ridiculously short amount of time. Furthermore, upon meeting Eve, Adam uses the word *happa’am* – “at last” (*The Genesis Debate* 145). Such language makes no sense if it only a couple hours had passed since Adam’s own creation, again supporting the idea that these days were longer than 24-hours.

Aside from the translation of *yôm*, other portions of the creation account appear to support an old earth. Genesis 1:1 has no place in the creation week; it does not refer to action performed on a specific day, nor can it simply be a header or title for the rest of the chapter. “What many people fail to realize is that such an understanding of Genesis 1:1 rules out a fundamental notion in the traditional view – the idea that God created the world ‘out of nothing’” (Sailhamer, 23). Genesis 1:2 refers to an already-existing earth, so its creation must have occurred prior, presumably in Genesis 1:1. Genesis 1:1 must then describe a singular

creation event. “‘Hashamayim we ha’erets’ (heavens and earth) consistently refers to the totality of the physical universe...All of the stars, galaxies, planets, dust, gas, fundamental particles, background radiation, black holes, physical space, time dimensions, and voids of the universe...would be included in this term” (*The Genesis Question* 20). This doesn’t contradict the creation of the sun, moon, and stars on day four. The Hebrew language does not have verb tenses compatible to English; verb forms denote “actions already completed, actions not yet completed, and commands” (*The Genesis Question* 44). Therefore, “and God made the two great lights” (Genesis 1:16) does not necessitate the action occurring on day 4 itself – the making could have occurred at any time prior. Instead, the fourth day establishes the purpose of the sun moon and stars. According to Dr. John Sailhamer, “In the Hebrew text of verse 14, God does *not* say, ‘Let there be lights in the expanse to separate the day and night’...Rather, according the Hebrew text, God said ‘Let the lights in the expanse be for separating the day and night...’” (132). Dr. Hugh Ross argues that day four describes the historical event when the sun, moon, and stars became visible from the Earth’s surface as a result of the forming of Earth’s atmosphere (*The Genesis Question* 44).

One major issue arises from old-earth creationism: it necessitates thousands of years of death prior to the Fall. This appears to be the greatest point of contention for young-earthers, who believe that this undermines the belief in death as a result of sin. The Bible-Science Association goes so far as to say, “[Old-earth] theology denies the central teaching of Christianity...and rejects the connection that Scripture establishes between sin, death, and Christ’s atonement...In [this] theology death is natural. Death was a reality for millions of years before man ever arrived to sin. This leaves Christ’s death on the cross as, at best, well-meaning, but beside the point” (*Creation and Time* 85). However, even if man’s sinless state was only for



a few days, some death would be necessary. The eating of a plant causes the death of cells, skin cells die off and replenish over and over, and fungi survive on decay. Overpopulation of some species would occur even in a short period of time (Snook 51). Even Adam and Eve were created mortal; they ate from the Tree of Life and died when banished from it. Animals were never even given access to the Tree of Life. **The issue at stake is man's death. Christ's sacrifice was for man, and man alone.** To believe otherwise would require a belief in an entire redesign and recreation of everything from the teeth and digestive system of carnivores to the mayfly, which would contradict God's ongoing rest from creation. There is no evidence that the basic makeup and nature of animals radically changed with the Fall. No part of God's curse on Adam, Eve, or the serpent mentions that animals will now eat each other and have limited lifespans.

Furthermore, the nature of Eve's curse should stand out to any careful reader. In Genesis 3:16, God says, "I will surely **multiply** your pain in childbearing." This is not an introduction, merely an increasing of pain. Adam and Eve must have been aware of the concept of death for God's warning to them about the tree of the knowledge of good and evil to make sense. Young-earthers object to prelapsarian death with Romans 5:12: "sin came into the world through one man, and death through sin." However, this verse ought to be understood as referring to human death, since it continues by saying "and so death spread to all men because all sinned," and since no animal or plant has either the capability of sinning or being redeemed. According to Old Testament scholar Dr. John Walton, "Not only does the verse not make a claim for death in general, everything we know logically repudiates the absence of death at any level prior to the Fall." Animals are simply not on the same level as humans, despite our tendency to anthropomorphize them. God receives the glory for His creation, even His carnivores. Humans

are not in a position to declare parts of creation good and other parts bad; God's creation was declared good both before the Fall and long after, in 1 Timothy 4:4.

A problem that arises in figuring out just how far back events, such as Creation and the Flood, occurred, is that the genealogies in Genesis are not necessarily complete records. Much like the genealogies of Jesus found in the beginning of the gospels of Matthew and Luke exclude certain ancestors, so can the ones in Genesis. The Hebrew word for father, *'ab*, can also mean grandfather, great-grandfather, etc., and the word for son, *ben*, can likewise mean grandson, great-grandson, etc. (*The Genesis Question* 109). While the number of gaps in the Genesis genealogies is uncertain, "the lack of great discordance in these parallel genealogies argues for relatively few and small gaps. Scholars in this camp date Adam's creation somewhere in the tens of thousands of years ago" (*The Genesis Question* 110).

Another point of contention between old and young-earthers is the Flood. While young-earthers believe the Flood covered the entire globe, old-earthers believe the Flood was limited to the parts of the world inhabited by humans. "Such a geographically limited Flood would still be 'universal' or 'worldwide,' given that people, not the globe, defined 'world' among the ancients" (*The Genesis Question* 140). Genesis 41:56 says that the famine of Joseph's time spread over the whole Earth, yet this is not interpreted to mean a global famine, but rather a large one in Egypt and the surrounding Middle East. Dr. Hugh Ross says, "Likewise, when 1 Kings 10:24 states that 'the whole world sought audience with Solomon to hear the wisdom God had put in his heart' we do not conclude that the New Zealand Maoris or the Patagonian natives sent yearly delegations to Jerusalem" (*The Genesis Question* 143). The word for 'earth' and 'world' in these verses, *'erets*, is the same word used throughout the Flood account. Dr. Sailhamer notes that "While the Hebrew word in [Genesis] 1:2 can mean 'earth' in the modern sense, in the Bible it

more often means the ‘land’ where human beings dwell” (191). It is important to understand the scope of the Flood from the perspective of the ancient world, whose idea of the shape and size of the earth was far different from that of today. 2 Peter 3:6 mentions that “the world that then existed was deluged with water and perished.” The word in that verse, *kosmos* (whence our ‘cosmopolitan’), can be interpreted as anything from the entire universe to all of humanity. The phrasing ‘that then existed’ points to an interpretation as humanity or the known world. Dr. Snoke writes, “Likewise, the most natural meaning, in Moses’ day, of ‘the water covered all the land,’ is ‘the water covered everything as far as the eye could see,’ and not ‘Mount Everest, on the other side of the globe, which you don’t even know about, was covered’” (166). Genesis 7:20, often translated to mean that the mountains were covered twenty feet deep, can literally read: “the water rose twenty feet and all the high hills were covered” (Snoke 165).

Multiple issues arise if the Flood is a global event, both in and outside the ark. Eight people could simply not feed, clean, and care for every animal in the world. Furthermore, “Even using the most generous cubit imaginable, we discover that the ark was too small to accommodate a pair of every land animal species existing (not to mention those that have become extinct)” (*The Genesis Question* 150). However, according to Dr. Snoke, “The size of the boat would be about right for the number of animals in the Middle East” (169). Young-earththers attempt to explain the size discrepancy by claiming that ancestors of related species were taken on the ark, not each species itself. For instance, one ancestor on the ark evolved into a horse, a zebra, a donkey, etc. (Belknap). However, such drastic changes in animal biology in so short an amount of time would require far more rapid microevolution than any Darwinist believes possible. A worldwide flood presents other difficulties as well. According to Dr. Snoke, “By normal laws of physics, that much water would destroy the crust of the earth”

(163). There was also no way to bring sea animals onto the ark, and the mixing of the oceans would have destroyed any fresh-water environment, and all fresh-water organisms along with it. Furthermore, a Flood of that magnitude would have wiped out any pre-existing rivers, including those surrounding the garden of Eden: the Euphrates, the Tigris, the Gihon, and the Pishon. However, the first three rivers still exist, and evidence of the fourth, the Pishon, has been discovered. Moreover, the Euphrates, Tigris, and the ancient riverbed which most likely was once the Pishon lie atop sedimentary layers. Since the rivers existed prior to the Flood, the sedimentary layers must also have existed, and have some other cause besides the Flood (Snoke 154-155).

Biblical evidence supports the theory that the creation days were periods of undefined length, but scientific evidence is necessary to discover just how old the universe really is. Christians should study science and trust what science reveals. Science and the Bible are not at odds with one another, and Christians are not forced to choose between the two. Romans 1:20 says that God's "invisible attributes...have been clearly perceived, ever since the creation of the world, in the things that have been made." Psalm 19 describes creation revealing God: "night to night reveals knowledge." God and, by extension, his creation, do not trick or mislead. "God is not man that he should lie, or a son of man that he should change his mind" (Numbers 23:19a). In fact, Christians are called to "test everything" (1 Thessalonians 5:21). If Christians believe that God is the author of creation and source of all truth, they shouldn't fear that science (or any truth) will contradict the Bible.

The most obvious evidence for an old universe lies in astronomy. Using various methods, including the parallax method and Hubble's red shift, the distance from Earth to the stars can be measured (Snoke 25). Given the speed of light and the distance of the stars, it must

have taken millions, and sometimes billions, of years for light from many far-off stars and galaxies to reach earth and become visible. Although this is a fairly basic concept and a very straightforward way to understand just how old the universe must be, young-earthers have come up with three main explanations for the discrepancy between the determined age and their own beliefs. The first claims that the methods of measurement are inaccurate, that stars are actually quite close and quite small. However, this view ignores the drastic consequences of a densely-packed universe to gravitational forces and radiation. The second view claims that the speed of light was once much faster, and decreased over time to the rate it travels at today. The speed of light is connected with a host of other effects, including radio, magnetic and electric fields, X-ray, and friction, all connected in what is known as Maxwell's equations. Any change to the speed of light would affect all other phenomena (Snoke 28). Matter and energy, connected by Einstein's famous equation  $E=mc^2$ , would be affected by any change to the speed of light. The third explanation, commonly known as the apparent-age theory, can explain the scientific difficulties raised by an old earth. It argues that light was created en-route to Earth, and thus could have been traveling for only thousands, not millions of years. However, **young-earthers must logically pick one side or the other: either that scientific evidence actually supports a young-earth or that the earth has an apparent age.** The issue with apparent age is that it makes God appear to be a deceiver, which contradicts Christian doctrine, and discredits the value of scientific discovery. According to this theory, scientists could see light from exploding stars which never existed. Aside from this, scientists can discover how long light has been traveling based on its broadening and reddening (*Creation and Time* 97). While other attempts at explaining the distance of stars have been made, they fail in some aspect and have not been accepted by the scientific community (*A Matter of Days* ch. 15).

Another method of determining the age of the universe is by its expansion. Based on how fast galaxies are travelling away from us, scientists can determine when the Big Bang occurred. While “Big Bang” is often a trigger word for young-earth creationists, it doesn’t require or even imply evolution. God is perfectly capable of creating – and the only possible cause of - an explosion of light and matter. Based on data collected from the Hubble Space Telescope, scientists determined the rate of cosmic expansion and, through that, how long it has been expanding (*A Matter of Days* 147). Scientists can also measure this by measuring the cooling of cosmic background radiation. Astronomer Hugh Ross says, “There is no escaping the precision, rigor, and trustworthiness of this cosmic age determination” (*A Matter of Days* 152).

While anyone who believes in an old earth claims that sediment layers were laid down one by one over millions of years, young-earthers claim that the layers are a result of Noah’s Flood or other major catastrophes. These sediment layers, much like the rings on a tree, can tell the story of the Earth’s age. One sediment layer formation is the Green River formation in Colorado, which contains an estimated 4 million layers. The fossils in the formation do not cut across layers, meaning that the layers must have been laid down gently, one at a time (Stoner 85). In order to explain the formation, some young-earthers claim that the layers resemble those laid down by Mt. St. Helens and could be a result of a similar volcanic eruption. However, the layers at the Green River formation contain elements, such as calcium carbonate, which are not found in volcanic eruption deposits. Fish fossils neatly interlayered among the formation negate the claim that the layers are a result of any sort of volcanic eruption (Stoner 86).

The second explanation for the layers is that they were laid down by the Flood. However, given the vast number of layers and the length of Noah’s Flood, the layers would have been deposited at an impossible rate of one every eight seconds, switching rapidly from

limestone to fine-grained particles as they were laid down (Stoner, 86). The most logical explanation, and, in fact, the only viable one, is that the layers formed slowly by deposits in the lake over millions of years.

Another way scientists measure the age of the earth is through carbon-dating. This method is highly controversial for young-earththers, who claim the method is unreliable (Answers in Genesis). Scientist use carbon dating by measuring the transition of Carbon-14 atoms to Nitrogen-14 atoms. Based on how much Carbon-14 is left, they can determine the age of the studied sample. Although carbon dating is not perfect, it does have tremendous value. “In summary, with a reasonable amount of caution, and with moderate corrections for known past variations, carbon-14 can be a useful method for dating organic specimens as old as 9,000 years with a high level of confidence. The method can be tested this far back. At present, the method can be extended to an upper limit of about 50,000 years with increasingly reduced confidence” (Stoner, 101).

Various young-earththers have claimed that scientific evidence actually supports a young earth. Websites such as Answers in Genesis post hosts of articles claiming that an old earth is impossible due to various reasons. At the same time, young-earththers admit that, to their knowledge, no one has become a young-earthther through science alone (*A Matter of Days* 14). In fact, young-earththers come up with such elaborate explanations for discrepancies in what appears to be and what is, particularly in the distance of stars issue, that their argument becomes more and more an apparent age issue, in that it claims that the most obvious and logical explanation is misleading, which, as addressed earlier, would contradict beliefs that God does not mislead and that God reveals Himself through his creation. The issue of apparent age by nature cannot be scientifically disproven, but it undermines the value of discovery and the Christian’s call to learn

more about God's creation. Other young-earththers produce scientific arguments which they claim support their young-earth theory.

The first argument is that there is not enough dust accumulation on the moon for it to be millions of years old. It is worth mentioning that this argument has, for the most part, been retracted by young earthers (Snelling and Rush). The argument is based on calculations made by Hans Pettersson in the 1960s. More recent measurements of dust accumulation show that it is 1,000 times less than Pettersson's prediction, and therefore no longer supports the young-earth interpretation, but rather concurs with the old-earth theory (Stoner 90).

A book by Henry Morris called *Scientific Creationism* put forth two scientific arguments for a young earth that, when viewed separately, appear very convincing. The first claims that 27.5 billion tons of sediment are eroded into the ocean every year, which would completely erode the continents in a matter of 14 million years, not nearly as long as scientists claim the Earth has been around. The second argument, presented two pages later, claims that, given the rate of volcanic deposits and crust buildup, the Earth's crust is not thick enough to be billions of years old. Taken together, the erosion and buildup balance each other out, invalidating both arguments (Stoner, 95)

Another, and quite common, scientific argument for a young earth is that Earth's magnetic field is decaying so rapidly, the Earth could be no more than 20,000 years old (Snelling). However, scientific evidence shows that the magnetic field periodically reverses direction. The rate of decay is sinusoidal, not linear. This reversal of polarity is revealed in geological strata (*Creation and Time* 106). Young-earth creationists respond by claiming that the magnetic field reversals occurred during the upheaval of the flood (Snelling). Dr. Hugh Ross points out that "only a few of Earth's past magnetic reversals were rapid" (*A Matter of Days* 199-



200). Moreover, in a mapping of magnetic fields on the ocean floor, the U.S. Navy discovered that the magnetic orientation of particles surrounding a ridge in the Atlantic Ocean switched about every 10 miles, proving that the reversal rate of the magnetic field has remained constant and is not a result of rapid changes during the Flood (Snoke 36-38). As early as 2002, models have accurately predicted all present paleomagnetic data, showing a mostly stable oscillation of the magnetic field, punctuated by only a few slight rapid changes (*A Matter of Days*, 200).

In order to explain geological formations old-earthers claim were formed over billions of years, young-earthers point to catastrophes, such as other massive floods or volcanic eruptions, causing major landscape changes. No old-earthier denies that catastrophic formations can and do occur, but it does not follow from the young-earthers' argument that therefore all formations are a result of a catastrophic event. Some formations, such as the Green River formation and coral atolls, cannot be explained by catastrophic processes, but only by slow, natural processes (*A Matter of Days* 207) (Stoner 86).

“Assuming [young-earth creationism] is scientifically accurate...studies set out to find any scrap of evidence to support it. If one data point among 10,000 appears to support the [young-earth creationism] view, then they claim to have proven it. This approach therefore suffers from a lack of scientific objectivity,” says Jeffrey Mays. The vast majority of scientific evidence supports an old-earth, and any data that initially appears to contradict it can often be explained with further study; no piece of young-earth evidence comes anywhere close to overturning the overwhelming old-earth evidence. Scientific study should continue to clear up any misconceptions about the age or nature of the earth on both sides of the debate, but trumped up claims that science has proven a young-earth are simply based on faulty reasoning, outdated statistics, or wishful thinking.

Nothing in either the young-earth or the old-earth view contradicts the message of the gospel. While stronger evidence supports the old-earth creationist belief, both beliefs can be accepted and valued among the Christian community. The issue arises when old-earth creationism is not respected or accepted. Few scientists are not open to accepting the idea of a young earth. Issues with the age of the earth have existed for a long time: in the 1600s, John Lightfoot and James Ussher published works citing 4004 B.C. as the year of the creation of Adam. Though this was accepted as gospel throughout Europe, even being published in Bibles' margin notes, Christian missionaries encountered difficulty in China, whose national origins appeared to predate Adam (*The Genesis Question* 108). This naturally led to a rejection of the missionaries and their message. By letting the age of the earth take precedence, Christians created a stumbling block keeping others from the true message of the gospel.

According to scientists Allen Hammond and Lynn Margulis, "Adoption of creationist 'theory' requires, at minimum, the abandonment of essentially all modern astronomy, much of modern physics, and most of the earth sciences" (*Creation and Time* 101). Forcing believers to accept a strictly 24-hour day interpretation of Genesis is neither biblically nor scientifically supportable, and closes the door to people who might otherwise be willing to accept the gospel. Dr. Hugh Ross, pastor and astronomer, says, "I know of many scientists and engineers who rejected Christianity because they thought it required accepting the young-earth doctrines" (Facebook). Others, like Dr. Michael Strauss, have witnessed atheists become Christians when presented with old-earth creationism and the gospel (Strauss). The Christian's duty is to spread the gospel (Matthew 28:19-20). Much like the Jews' insistence on circumcision for salvation in Acts 15, insistence on adherence to the young-earth doctrine creates an unnecessary stumbling block that can and has kept scientists and others from being willing to recognize the value and

truth of the Bible. Young-earthers should be careful not to hold their beliefs too highly, and both young and old earthers should never compromise the gospel for their view on the age of earth.

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