

# **THE CREATION WARS**

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## CHAPTER 2: THE YOUNG EARTH AND ITS PROPONENTS

### A. THE BIBLICAL EVIDENCE FOR A YOUNG EARTH

In the Evangelical orbit, the Documentary Hypothesis, Redaction Criticism and Form Criticism are viewed as being irrelevant. Defenders of these positions usually deny the inerrancy of the Biblical autographs, so their works are beyond the borders of the conservative world. The Evangelical orbit is split by many practical and theological conflicts. One of the most contentious issues in the conservative orbit for the last century has been the battle between creation science and mainstream science. This battle is waged within the Evangelical community. It is also waged between some conservatives and the mainstream culture. This conflict has been waged on theological, political, cultural, and educational fronts. It has involved Biblical interpretation, geology, biology, archaeology, and paleontology. On both sides of this conflict, the heat of the debate has at times risked obscuring the evidence and clouding clear reasoning. It may be of value to begin this study with an overview of the evidence for the age of the earth as it is seen on both sides, and at least to attempt at an objective evaluation of the evidence.

Authors from a wide variety of theological positions have argued that the Genesis text must be interpreted as a claim that God created the world in six 24 hour periods. This claim has been common among both evangelical and critical authors. Critical scholars like Gunkel and von Rad have found support for their own skeptical theology by affirming that Genesis 1-3 taught that the earth began in six 24 hour creation days.<sup>1</sup> They argued from this that the Biblical text was self-evidently incorrect and can not be accepted. Within the evangelical camp, a variety of young earth and old earth positions have been defended. Perhaps the strongest support for a young earth position has come from the Dispensational camp because of their stress on a literal interpretation of the Old Testament text. Other evangelical groups have usually had representatives in both young earth and old earth camps. Young earth authors often speak of a widely held hermeneutical principle that the Biblical text should be interpreted literally unless there is a compelling reason to interpret it in a non-literal fashion.

A key issue in the debate has been the meaning of the Hebrew word *yom*, or day, in Genesis 1. In the creation account, God gave a series of commands which were each fulfilled within a single day. These days were made up of evenings and mornings. Some authors argue that the evening and morning description of these days must refer to literal 24 hour periods and can mean nothing else. Others argue that these words described symbolic or non-literal days. Several authors argue that Hebrew grammar requires that these periods be only 24 hours long.<sup>2</sup>

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<sup>1</sup> Gerhard von Rad, *Genesis: A Commentary*, (Philadelphia: Westminster, 1961), 63. Hermann Gunkel, *Genesis*, (Macon: Mercer, 1997), 108.

The Hebrew word *yom*, or day, was not preceded by a preposition as was usually the case when *yom* refers to a period other than 24 hours. So it is claimed that *yom* must refer to a literal day when it is used with an ordinal number. A parallel to Gen. 1 may then be seen in Num. 29 where a series of days were described which were clearly 24 hour days. Old earth authors respond that this meaning was not used consistently in the Old Testament. Exceptions can be seen in Hos. 6:2, Zech. 14:7, and Amos 4:4. These exceptions weakened the argument that the "days" of Gen. 1:1 must be 24 hour

Supporters of a 24 hour creation day also frequently argue from Exodus 20:11 which grounded the Sabbath in God's creation week. Just as the Sabbath was a literal 24 hour period, it is argued that the creative days should then also be 24 hour periods. This argument seems more compelling to those who accept a young earth than to those who do not. Those who defend an old earth would argue that Exodus 20:11 drew an analogy to the creation account without requiring that the creation days be 24 hours long.

Perhaps the strongest evidence for a young earth can be seen in genealogical passages in Genesis. These passages record both a person's age when his descendant was born and his total life span. In theory, the age of the earth should be obtainable by simply counting the ages at which descendants were born. These genealogies give an apparent date for Adam somewhere in the vicinity of 4000 BC if the MT dates are used instead of the LXX or SP dates.<sup>3</sup> Any rejection of this date for Adam would seem to require understanding the genealogies in a different way than they appear to mean at first reading. This interpretation of the Bible's genealogies may be strengthened by the presence of genealogical records in the ancient Near East. Genealogies were not just fictional histories, but were ancient records of real people. For example, Ukhhotep lived during the reign of Pharaoh Amenemhat II. Depending on how Biblical and Egyptian chronology is understood, this ruler might have been a contemporary of Joseph. Kitchen noted that Ukhhotep included in his tomb chapel the names of 59 people who had forebearers and predecessors with the names of their wives. Kitchen noted that this list appeared to be in chronological order stretching back to around 2500 BC. So the record covered a period of 600 years.<sup>4</sup> Genealogies

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periods.

The MT is the Massoretic Text. It is the text behind most published Hebrew texts today. The LXX is the Septuagint. It is a Greek translation of the Old Testament that was produced around 300 BC. Actually, there are a number of Greek texts of the Old Testament. They tend to be called in general the LXX. The LXX is probably a translation of a different Hebrew text family than the MT, so it often reads rather differently than the MT. This difference is most striking in the book of Jeremiah where whole blocks of text appear in different places in the book. The LXX of Jeremiah is 1/3 shorter than the MT of Jeremiah. The Qumran scrolls contain Hebrew copies of Jeremiah that resemble both the MT and the LXX. The SP is the Samaritan Pentateuch. The Samaritans accepted only the Pentateuch and not the rest of the Old Testament. They preserved a slightly different version of the Pentateuch than the MT. The chronology of the LXX and the SP are longer than the MT. Several recent authors have noted that the LXX simply added one hundred years to the date at which a first child was born by several people in the list. They may have done so out of concern that the MT chronology had Noah's son Shem living 37 years longer than Abraham. For recent studies of this question, see Ralph W. Klein, "Archaic Chronologies and the Textual History of the Old Testament," *Harvard Theological Review* 67 (1974): 255-263. Donald V. Etz, "The Numbers of Genesis V 3-31: A Suggested Conversion and Its Implications," *Vetus Testamentum* 43 (1993): 171-189. Gerhard Larsson, "The Chronology of the Pentateuch: A Comparison of the MT and the LXX," *Journal of Biblical Literature* 102/3 (1983): 401-409.

Kitchen also noted a text written by Ankhef-en-Sekhmet. He was a priest in the 22<sup>nd</sup> Dynasty. He traced his ancestry back 60 generations to around 2050 BC. Kitchen noted that a priest named Harkhebit lived around 700 BC. He recorded his ancestors for the last 650 years. Kitchen noted that two priests in the 25<sup>th</sup> Dynasty recorded their ancestry back 13 and 16 generations. Khnumibre lived around 496 BC. He recorded his ancestors for at least 750 years. Patjenef lived around 350 BC. He

were often recorded in the ancient Near East, and they were often quoted to justify current decisions. Shortly before Esther came to the Persian court, Xerxes fought with his uncle about his intended invasion of Greece. Xerxes told his uncle the following.

Without thy aid I will accomplish all of which I spake. For let me not be thought the child of Darius, the son of Hystaspes, the son of Arsames, the son of Ariaramnes, the son of Teispes, the son of Cyrus, the son of Cambyses, the son of Teispes, the son of Achaemenes, if I take not vengeance on the Athenians.<sup>5</sup>

In this passage, Xerxes<sup>6</sup> explained his decisions on the basis of his genealogy, and he traced his ancestry back nine generations. It would seem only consistent to give the genealogies in the Old Testament the same level of historical validity as so many other genealogical records in the ancient Near East. The genealogies in the Old Testament seem clear enough that many Christians feel required by the text to defend a young earth against any evidence that can be raised against it. They defend a young earth in the face of all evidence to the contrary because they love God and love His Word. Whether they do so from a real understanding of God's Word is another question.

## **B. SURPRISING CRITIQUES IN THE DEBATE**

One of the more unfortunate results of the creation debate has been a tendency to attack as either liberal or unbiblical any author who has questioned a young earth interpretation of Genesis 1-3. This kind of attack has been divisive since half of the conservative, evangelical, Bible believing Christians in the United States defend old earth interpretations of one kind or another. Young earth authors have at times claimed that all who reject their interpretation of the text must deny God's Word itself. One example of a young earth critique can be seen in James Holding's response to Paul Seely's work. Holding noted that skeptics have commonly attacked the Bible by claiming that it contained a primitive view of the earth's cosmology. Skeptics have often claimed that the Bible taught that the earth was flat and that the sun went around the earth. Holding wrote that skeptics used this argument to claim that Scripture could not be God's Word because God could not make such errors. Holding argued that this claim has been refuted repeatedly by conservative Christian authors who have shown that the Bible does not teach a primitive cosmology. Holding argued that Christ's enemies have recently found an ally in Paul Seely who claimed to be an evangelical author. Like the skeptics, Seely claimed that the Bible made scientific errors. Holding argued that Seely gave ammunition to those who wished to destroy

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recorded his ancestry back 12 generations, which was roughly 400 years. Kitchen noted that Joseph would have had the ability to record the Patriarchal traditions and to transmit them to his descendants. K. A. Kitchen, "Some Egyptian Background to the Old Testament," *The Tyndale House Bulletin* 5-6 (1960): 14-7. Kitchen would disagree strongly with a young earth perspective.

<sup>5</sup> George Rawlinson, trans. *The History of Herodotus*, (New York: Tudor, 1941), 361.

<sup>6</sup> Xerxes is the Greek spelling of the name spelled as Ahasuerus in the Old Testament. Such rather radical spelling differences were not uncommon when names in one language were spelled in another language. Different languages use different sounds, and it was often not possible to spell a sound used in one language very accurately in another language.

Scripture. By doing so, Holding argued that Seely strengthened the "world system," and that he was in some ways more dangerous to Christianity than the faith's atheistic opponents.<sup>7</sup>

A somewhat milder critique can be seen in Jonathan Sarfati's review of Hugh Ross' book *The Genesis Question*. Sarfati claimed in part,

The worst part of Ross's (sic.) teaching is the gross liberties he takes with the scriptural text. He does this to fit the canonical 66 books into what he calls the '67<sup>th</sup> book', nature. What he means by 'nature' is the *uniformitarian* interpretation of nature. However, the creation is cursed (Genesis 3:17-19, Romans 8:20-22) and man's heart is deceitful (Jeremiah 17:9) and the thinking of a godless man is 'futile' (Romans 1:21), while Scripture itself is 'God-breathed' (2 Timothy 3:15-17). So a biblical Christian should not re-interpret the perfect, unfallen Word of God according to fallible theories of sinful humans about a world we know to be cursed (Genesis 3:17-19, Romans 8:20-22).<sup>8</sup>

While Sarfati's evaluation of Ross may not be fair, it is hard to argue with his basic claim as far as it goes. God's Word is certainly true while all of the sciences are tainted by man's fallen intelligence. God's Word is always correct while the sciences may or may not be correct. Wieland, Ham, and Sarfati recognized that this problem even affected creation science, and they used it to explain why young earth speakers often disagreed about the strength of various creation science arguments. They wrote in part,

Actually, we need to realize that: a) all humans are fallen and fallible; b) science itself is a wonderful, but fallible human tool; c) all the hypotheses and speculations which one uses to explain things within the framework of Biblical history can only be tentative, since humanity will never have all knowledge, and new data is constantly becoming available. For the same reason, hypotheses and submodels within evolutionary theory are constantly changing. So the same thing will inevitably be true in the creationist scientific world.<sup>9</sup>

Wieland, Ham, and Sarfati made an important point in this passage. All scientific claims are somewhat tentative, and that applies even the claims made by the creation science movement. Young earth writers have at times failed to realize that this observation must also be made in reference to the science of Biblical exegesis. While God's Word is always true, the Word is also always interpreted by fallen men. No one understands the Word as he should. Every interpreter brings to the Word his own presuppositions, and everyone tends to find in the Word what he seeks there. That is simply the fallen human condition. Having done so, far too many authors then give their own interpretation of the Biblical text a level of authority that only properly

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James Patrick Holding, "Is the *raqiya*' ('firmament') a solid dome? Equivocal Language in the Cosmology of Genesis 1 and the Old Testament: a Response to Paul H. Seely," *Creation Ex Nihilo Technical Journal* 13 (1999): 44. Perhaps the most troubling aspect of Mr. Holding's claim is the assumption that God must reveal Himself in a specific way if He is God. Could that claim carry the ring of *hubris*?

<sup>8</sup> Jonathan Sarfati, "Exposé of The Genesis Question," <http://www.answersingenesis.org>.

<sup>9</sup> Carl Wieland, Ken Ham, Jonathan Sarfati, "Maintaining Creationist Integrity," <http://www.answersingenesis.org>.

belongs to the Bible itself. This is one reason that Bible believing Baptists, Presbyterians, and Lutherans see the same Word in such different ways, while each is convinced that his own interpretation is the clear teaching of Scripture.

Wieland, Ham, and Sarfati's comment above represents a young earth perspective, but it is surprisingly similar to a claim made by J. R. Van de Fliert in an article titled "Fundamentalism and the Fundamentals of Geology." Van de Fliert represents an old earth interpretation of the geological and Scriptural evidence. Van de Fliert criticized very strongly Witcomb and Morris' book *The Genesis Flood*. Van de Fliert claimed in part,

We deal a death-blow to the Christian religion when we bring the Holy Scriptures down to scientific level by teaching that the Bible should give us a kind of scientific world-picture or axiomata of historical geology, or of Western science of history, or physics, biology, jurisprudence or whatever science it be. Thus, we lose the Bible as a reliable Word of God completely, because we then make its teachings dependent on the poor state of our scientific knowledge today ... which will change tomorrow.<sup>10</sup>

So authors on both sides of the creation science debate recognize the limitations of modern science and are concerned that a misapplication of the scientific evidence may lead to the distortion and perhaps even loss of God's Word.

The difference between Witcomb and Morris on one side and Van de Fliert on the other can be seen in the way that the Biblical and scientific evidence is used. This difference can be seen in the way that Van de Fliert evaluated Witcomb and Morris' book *The Genesis Flood*. Van de Fliert argued that any attempt to write about a global flood would require training and thorough knowledge in geology. Van de Fliert noted that neither Witcomb nor Morris were geologists. One was a theologian while the other was a civil engineer. Van de Fliert noted that it is almost impossible today for any person to master more than one branch of science. (There is simply too much to be known in any field.) Van de Fliert noted that Witcomb and Morris cite an impressive list of publications in their book, but that list is rather misleading. Van de Fliert argued that Witcomb and Morris used their sources in an improper way. He noted that theologians realize how dangerous it is to take a Bible passage out of its context. Yet Witcomb and Morris lift facts out of their context and use them to prove something very different from the positions assumed by the authors they cite. Van de Fliert argued that this was scientifically dishonest. Van de Fliert noted that Witcomb and Morris did sometimes recognize that the authors they quoted would have used their words in a different sense. Yet other times, they did not seem to understand the meaning of the words that they quoted. Van de Fliert argued that professional work in the discipline requires a high level of professional knowledge, and that level of knowledge is not represented in *The Genesis Flood*.<sup>11</sup> Van de Fliert has a legitimate point. It is a problem for the young earth position that its key supporters are often not geologists. They tend to be engineers of one kind or another. It is fair to ask then whether they have mastered the geological evidence. Too often, young earth publications have had the appearance of competence but not the substance of it.

Just as young earth authors have at times condemned strongly those who support an old earth, the old earth wing of the evangelical world has seen its share of authors who have made

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<sup>10</sup> J. R. Van de Fliert, "Fundamentalism and the Fundamentals of Geology," *Faith and Thought* 98 (1970): 12.

<sup>11</sup> Van de Fliert, "Fundamentalism and the Fundamentals of Geology," 13.

rather strong claims about the young earth position. Paul Seely replied to an attack by Rolland McCune in the following words.

When I think of the years I spent fighting the sciences and defending the faith via Witcomb and Morris et al ... til snatched like a brand from the burning by reading the writings of genuinely competent Christian scientists in the Journal, I am again impressed to call for more effort on the part of the members of the ASA to make the sciences as they really exist more widely known.

The Witcomb and Morris delusion, mythology, or whatever one wishes to call such a well-meant, but ill-advised pseudo-science has captured literally hundreds of Christian high schools, Bible schools, and seminaries ... and through the graduates of these schools, the minds of thousands of Christians. It spreads like a giant cancer ... unfelt by the Church for a time, but in the end ... making its obscurantism result in disillusionment, debacle, and spiritual death.<sup>12</sup>

While there is much to be said for Seely's comments, the general tone may not be helpful.

### ***C. CREATION SCIENCE ARGUMENTS FROM GEOLOGY AND THE FOSSIL RECORD***

Before roughly 1910, the most popular geological evidence offered for an old earth centered on the geological rock layers and salt formations. After roughly 1910, the most popular evidence for an old earth became the radioactive decay of elements within the rock layers. Radiometric dating became a vital part of the debate because it offered at least theoretically verifiable numbers. With radiometric dating, it became possible not only to claim that the earth was very old but to estimate how old it was.<sup>13</sup> Beginning around World War II, the young earth faction of the church began to defend their position from the same kinds of geological evidence that had been used to demonstrate an old earth. In doing so, they drew on a tradition of interpreting the geological evidence that was over two hundred years old, although this approach to the evidence is no longer widely in use outside of the young earth community.

In the last few years, the young earth community has seen an increasing number of authors who attempt to defend their position with credible research. The evidential cases developed by these authors attempt to prove several points including the following. 1) The dating methods used to defend an old earth are inadequate. 2) The geological evidence is consistent with a young earth. 3) Evidence from other sciences can also be used to argue for a young earth. While some arguments raised by these authors have force, a number of them have shared a logical fallacy. The assumption has often been made that there are only two alternative positions: mainstream geology and young earth geology. If a problem can be demonstrated in mainstream geology,

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Paul H. Seely, "Reaction and Rebuttal: 'Adam and Anthropology,'" *Journal of the American Scientific Affiliation*, <http://www.asa3.org/ASA/PSCF/1971/JASA3-71McCune.html>.

<sup>13</sup> For an outstanding Evangelical overview of the issues here, see Davis A Young, *The Biblical Flood: A Case Study of the Church's Response to Extrabiblical Evidence*, (Grand Rapids: William B. Eerdmans Publishing Co., 1995).

young earth geology has been assumed to be supported. Actually, a number of models can often be used to explain the geological evidence. If a problem is demonstrated in the most common mainstream geological interpretation of the evidence, that problem only demonstrates the need to rethink the application of the evidence. It often does not prove a young earth alternative.

One of the more interesting recent arguments for a young earth was proposed by A. A. Snelling. He noted that 140 million year old pelagic limestone has been found near the Mid-Atlantic Ridge in the center of the Atlantic Ocean. Since the sea floor is spreading at this ridge, all rock found in the area should be much more recent if dating techniques currently in use are accurate. Snelling argued that the Atlantic basin itself only opened 20 million years after this date. Snelling argued that the presence of old rock at the Mid-Atlantic Ridge suggested that the limestone should be seen instead as the result of Noah's flood.<sup>14</sup> While this argument may have some merit if correct, it really only argues that the interpretation of the evidence should be reconsidered. The evidence as such does not argue either for a young earth or flood geology.

Another rather strong argument for a young earth has been that fossils of very different apparent ages are at times mixed together in the fossil record. This suggests that the dating sequence assumed for these fossils must be problematic. An example of this problem has been found in the Netherlands where silicified Cretaceous sea urchin fossils have been found in Pliocene fluvial gravel deposits. Mainstream geologists would argue that Cretaceous fossils have at times been released from rock layers by natural weathering of the rock.<sup>15</sup> These fossils have then been washed into new sediment layers.<sup>16</sup> Whether this is seen as an adequate explanation will depend on the presuppositions brought to the evidence.

Quite a few geological studies have appeared in the creation science literature. These have often given a fairly good survey of the geological column at each site. Then these studies have suggested levels in the geological column that should be associated with Noah's flood. One problem with these studies has been a lack of consistency in their interpretations. Levels from the top to the bottom of the geological column have been suggested as evidence for Noah's

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<sup>14</sup> A. A. Snelling, "Old' Rocks Where They Shouldn't Be," *Creation Ex Nihilo Technical Journal* 11 (1997): 257-58.

<sup>15</sup> An example of this kind of weathered fossil may be the petrified trees in the western United States. Some of these trees were originally covered by volcanic ash and they still stand upright. Soft deposits around the petrified trees erode away leaving the trees free standing. If the exposed petrified trees were covered today by volcanic ash, the resulting layer might include ancient petrified trees and automobiles. For a discussion of petrified trees, see <http://www.nps.gov/yell/nature/nhighlights/picpages/petrified.htm>

<sup>16</sup> Van de Fliert, "Fundamentalism and the Fundamentals of Geology," 34-35. Van de Fliert argued that geologists have identified the rock strata from which the urchin fossils were released. Van de Fliert gave another example of this problem. He noted that the Royal Dutch Shell oil company was working in North Borneo. Geologists at an oil well site found that washed residue of a shale sample appeared to contain Paleocene Foraminifera and also very poorly formed Miocene Foraminifera. These two types of fossils should have been separated by 30 or 40 million years. A study of the shale layer proved that blocks of Paleocene rock were incorporated into the younger shale. This Paleocene rock was re-deposited into the younger rock.

flood.<sup>17</sup> Writing in defense of a young earth, Reed and Froede noted that this has been a problem for defenders of Catastrophic Plate Tectonics. Within this young earth perspective, there has been ongoing confusion about whether the flood should be associated with the end of the Precambrian period or the end of the Paleozoic.<sup>18</sup> Reed and Froede deny that the geologic column offers any reliable chronological data.<sup>19</sup>

A key creation science argument has been that no transitional forms have been found between species in the fossil record. If correct, the lack of transition fossils could be the strongest evidence against the theory of evolution. This argument was first proposed in the 1700's by the French biologist Baron Cuvier. When evolutionists offer fossils like Archaeopteryx as transition forms between reptiles and birds, the young earth community insists that the offered examples are either forgeries or species in their own right. A large part of the debate has centered on what constitutes a transitional form, and recent research has moved away from calling Archaeopteryx a transition fossil. Thousands of species have been identified in the fossil record. Almost none of them are alive today. Often, a species is common in a rock layer, but it does not exist above or below that rock layer. The fossil record as it actually reads suggests that most species have simply appeared and have gone extinct. However, this is as consistent with a Creator acting over a long time period as it is with an evolutionary process.

The relative lack of transitional fossils has led some authors to argue that evolution occurred in brief periods of rapid change followed by long periods of stability. This is an adequate, but not a necessary, interpretation of the evidence. The relative lack of transitional fossils could suggest that God created a long succession of species that only existed for a limited time. However, recent years have seen the identification of several species that could represent transitional fossils. If more of these possibly transitional forms are found, some variety of theistic evolution may eventually become more common in the evangelical world. Two factors limit the popularity of theistic evolution. One is that God does sometimes form complex animals instantly by a miracle. This can be seen in Biblical passages like Exodus 4:3-6; Numbers 12:10; II Kings 4:2-6; 13:21; Matthew 14:19-21, and Mark 6:41-44. The second fact is that an evolutionary process can not create an eternal soul. If people survive their death to stand before God, that fact requires supernatural intervention in the normal course of species development. The creation Adam and Eve in the Garden of Eden would seem to be the most likely explanation for the fact that human beings are eternal creatures instead of animals.

Young earth authors have claimed that life sprung up in a wide variety of forms at the same time. They claim that there were no pre-Cambrian fossils and that Cambrian fossils already took a wide variety of forms. This claim is used as evidence that evolution is impossible, and by implication that the young earth model is to be preferred. To support this claim, Duane Gish quoted an article written by Axelrod in 1958. This article read:

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A number of creation science articles have tried to explain both Paleozoic and Mesozoic levels of the geological column as products of Noah's flood despite the significant differences between the fossils found in these levels.

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John K. Reed and Carl R. Froede, Jr. "The Chaotic Chronology of Catastrophic Plate Tectonics," *Creation Research Society Quarterly* 39 (2002): 149-59.

<sup>19</sup> Carl R. Froede Jr. and John K. Reed, "Assessing Creationist Stratigraphy with Evidence from the Gulf of Mexico," *Creation Research Society Quarterly* 36 (1999): 51-60.

One of the major unsolved problems of geology and evolution is the occurrence of diversified, multi-cellular marine invertebrates in Lower Cambrian rocks on all the continents and their absence in rocks of greater age. ... However, when we turn to examine the Precambrian rocks for the forerunners of these Early Cambrian fossils, they are nowhere to be found.<sup>20</sup>

This was a valid evaluation of the field in 1958, but the field has advanced quite far in the last fifty years. In 1998, the Royal Ontario Museum began excavating the Burgess shale deposits in Yoho National Park in Canada. The Burgess shale was unique. It was made originally from very fine grain mud. So it has preserved the imprint of even soft body parts. The Burgess shale at the Yoho National Park produced the first detailed record of Cambrian fossils ever found, although other sites have recently been discovered in China and elsewhere. The study of Cambrian fossils has only taken off in the last few years. Before 1998, only a limited number of Cambrian level fossils were available for study. The limited size of the fossil record for Cambrian fossils suggests that it is hazardous to argue about the nature of Precambrian life forms from the silence of the fossil record. So Gish's argument was at least a little premature. Carl Wieland recently argued that a fossil of an early vertebrate has now been identified in Precambrian limestone from Australia. This could change significantly current views of the Cambrian period.<sup>21</sup>

The best young earth arguments related to geology demonstrate the limitations of Darwin's theory of evolution.<sup>22</sup> There is a rather serious problem behind evolution. It is hard to explain the origin of life. The assumption has often been made that life easily appears if the proper environmental features are present. There is no evidence to suggest that this is true. Even the simplest forms of life are vastly complex. There is no compelling evidence that life can appear spontaneously in a chemical soup.<sup>23</sup> Believing that life can appear in this way requires far more faith than the belief in a Creator. Recently, a number of non-traditional authors have proposed that the earth may have been seeded with life from a different planet. This simply moves the problem back to an earlier time and a distant planet. At some point, the origin of life must be explained, and there is no really compelling evidential explanation available. This calls into question Darwin's version of evolution, but it does not really call into question the earth's age. God may have created all species in a very young earth, or He may have been creating species on earth over a very long time period.

D. Russell Humphreys recently used the earth's magnetic field to argue for a young earth. Humphreys argued that the earth's magnetic field weakened between 1970 and 2000. Humphreys argued that the field strength of the earth's magnetic field has been decreasing as the magnetic field is converted to heat. Humphreys argued that the rate of decrease of the earth's magnetic

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<sup>20</sup> Duane T. Gish, *Evolution: The Challenge of the Fossil Record*, (El Cajon: Creation-Life Publishers, 1985), 56. D. Axelrod, *Science* 128 (1958): 7.

<sup>21</sup> Carl Wieland, "Holy Grail' or Another Evolutionary Tale?" *Creation* 27 (2005): 20-2.

<sup>22</sup> Darwin was a radical Hegelian, and it could be argued that Darwin's evolutionary scheme was grounded as deeply in philosophy as biology.

Perhaps the most likely research that could produce a model to explain the origin of life may be research being carried on in extreme environments like the acidic hot springs and mud pots in Yellowstone Park. Yet even research in areas like this has not yet found an explanation for the rise of life that can be demonstrated.

field is consistent with a 6000 year age for the earth.<sup>24</sup> This suggestion is rather speculative. The rock layers at the Mid-Atlantic Ridge have opposite magnetic polarity because the earth's poles have frequently reversed. As the poles fluctuate, the field strength of the earth's poles may well increase and decrease. So it is hazardous to project current trends in the earth's magnetic field endlessly into the past.

Duane Gish offered an argument that has been surprisingly common in the young earth movement. Gish wrote:

The uniformitarian concept of historical geology is accepted by almost all evolutionists. According to this interpretation of earth history, existing physical processes, acting essentially at present rates, are sufficient to account for all geological formations. As originally formulated by James Hutton and Charles Lyell, any appeal to catastrophes for the explanation of geologic phenomena is rejected. The phrase "the present is the key to the past" was coined for this concept.

According to this interpretation, the formation of sedimentary deposits hundreds of feet thick would have required millions of years. It was also realized that evolution would have required many millions of years. Accordingly, the age of the earth as estimated by evolutionary geologists began to increase at an astounding rate.<sup>25</sup>

When discussing the age of the earth with young earth thinkers, the assumption is often expressed that anyone who does not accept a young earth must be a uniformitarian. Other young earth authors claim that the great refutation of uniformitarian geology must be Mount St. Helens that produced a very thick layer of sediment in a single day.

One problem with this argument is that today there are very few (if any) uniformitarian geologists in this sense. Daniel Wonderly wrote,

Instead of attributing great age to rock strata by applying uniformitarian theory, modern sedimentary geologists examine and evaluate the characteristics of the strata. We now have many reliable ways of determining the characteristics of rock layers and of the depositional activities which produced them. As a result we frequently find, in a given geologic formation, that some of the strata were deposited rapidly whereas other layers in the sequence were deposited very slowly. A high percentage of the methods which are used for such an analysis were unknown in the early 1960's when Whitcomb and Morris first published their ideas regarding "Flood Geology." At that time many geologists did tend to rely too heavily on uniformitarian theory, but that picture has changed rapidly, beginning in the late 1950's.<sup>26</sup>

When geologists do use the word uniformitarian today, they use the word to mean that the rules of physics remain constant over time. They mean that the geological layers are all produced by

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<sup>24</sup> D. Russell Humphreys, "The Earth's Magnetic Field is Still Losing Energy," *Creation Research Society Quarterly* 39 (2002): 3-13

<sup>25</sup> Gish, *Evolution: The Challenge of the Fossil Record*, 46-7 Whether Lyell's work actually ruled out catastrophes in the fossil record has been debated by other authors.

<sup>26</sup> Daniel E. Wonderly, *Neglect of Geological Data: Sedimentary Strata Compared with Young-Earth Creationist Writings*, (Hatfield: Interdisciplinary Biblical Research Institute, 1987), 11.

natural process that can be understood.<sup>27</sup> When the term is used this way, uniformitarianism is not called into question when sediment layers are created in a very brief time. Geologists pay very careful attention to the evidence for the way that different rock layers were produced. Some rock layers are recognized as having taken a very long time to produce. Other rock layers are recognized as having been formed at a very rapid rate. Almost no one today would argue that all rock layers were laid down at a very slow and gradual rate.

#### **D. CREATION SCIENCE ARGUMENTS FROM ASTRONOMY**

Young earth supporters have often noted that the moon is currently around 238,000 miles from the earth and is slowly moving away from the earth at about an inch and a half further a year. This distance is measured by bounding laser beams off reflectors that were placed on the moon by astronauts. If this rate is assumed, a billion years ago the earth would have touched the moon. So it is argued that the moon must be less than a billion years old, and claims of a greater age must then be wrong. There are several problems with this argument. First, the math seems to be wrong. At the moon's current rate of retreat from the earth, the moon would only have been between 20,000 and 25,000 miles closer to the earth a billion years ago. The earth and the moon would still have been over 200,000 miles apart.<sup>28</sup> The moon would have had roughly the same influence on the earth that it has today. A second problem with this argument is that there is no reason to believe that the moon's rate of acceleration has remained a constant.<sup>29</sup> The moon simply can not drift away from the earth. The moon can only move to a higher orbit if some force is accelerating the moon in its orbit.<sup>30</sup>

Young earth speakers sometimes note that comets lose part of their mass every time that they approach the sun. The tail that is visible from earth is largely evaporated water vapor that is lost in each pass. Since they reappear every century or two, they must be very young. The solar system itself must then be very young since comets are thought to have been formed the same

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<sup>27</sup> Van de Fliert, "The Fundamentals of Geology," 14-15.

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Beyond this, current changes simply can not be projected endlessly into the past. This argument really is based on same kind of uniformitarian logic has often been condemned by young earth authors.

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"Indicators that the earth is young, with rebuttals: Indicators in the Solar System." <http://www.religioustolerance.org/young2.htm>.

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Newton noted that the moon's acceleration was measured from the shadows cast on the earth by solar eclipses. Robert R. Newton, *The Moon's Acceleration and its Physical Origins*, 2 vols. (Baltimore: Johns Hopkins University Press, 1979). The moon's movement away from the earth was measured by bouncing light off reflectors left on the moon during moon walks. For the moon to move away from the earth, the moon must be continually accelerating. The assumption has been that the earth's rotation accelerates the moon as the moon is pulled by the tidal surge. For a study of this acceleration, see: C. F. Yoder, et al. "Tidal Dissipation in the Earth and Moon from Lunar Ranging," *Conference on the Origin of the Moon*, (Houston: Lunar and Planetary Institute, 1984), 31. By that model, the moon's acceleration may slowly have increased as the moon's inertia was overcome. At the same time, the rate of acceleration may decrease as the force of gravity decreases with distance. The history of the moon's acceleration may be difficult to reconstruct, and claims of uniform acceleration may be problematic.

time as the solar system itself. Walter Brown argued that there are more short period comets in the solar system than can reasonably be explained. He justified this observation by citing Heisler's article, "Orbital Evolution of Comets."<sup>31</sup> The difficulty with this argument is that many of the rocks flying around in solar orbit today may once have been comets with water vapor tails. Beyond that, two sources for comets have been identified by astronomers. Short period comets seem to come from the Kuiper Belt which was detected in 1992. The Kuiper Belt is a disk of comets extending out from the orbit of Neptune to a distance of about 100 astronomical units from the sun.<sup>32</sup> Objects in the Kuiper Belt interact with the gravitational fields of the outer planets Neptune and Pluto. As they pass through the gravitational fields of these planets, their orbits can be redirected toward to sun and they can become comets. Long period comets may come from the Opik-Oort Cloud at the far edge of the solar system. The Oort cloud is located up to 50,000 astronomical units from the sun. There is no direct evidence for the existence of the Oort cloud. It is often postulated because there are a surprising number of comets that have orbits going out 50,000 AU. The Oort cloud seems to contain many rocks and ice balls. As they hit each other, new comets may be redirected into a closer solar orbit.<sup>33</sup> Of course, the existence of the Oort cloud can not yet be proven, and its existence is denied by some authors.<sup>34</sup>

Young earth authors often claim that the sun's diameter is shrinking by about 5 feet per hour or 8.3 miles per year.<sup>35</sup> They argue that 11.4 million years ago, the sun would have been so large that its surface would have reached the earth. So both the earth and the sun must have been very recent creations. There are four problems with this argument. The first is that the sun has no set diameter. It is a burning and rolling ball of gas. It has temporary promontories thousands of miles high and flares that arc a quarter of a million miles from its surface. The surface of the sun is never the same from one second to the next. How could a specific diameter for the sun be established that is accurate to the foot?<sup>36</sup> A second problem with this argument is that the

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Walter T. Brown, Jr., *"In the Beginning..."*, (Phoenix: Center for Scientific Creation, 1989), 54.  
<sup>32</sup> Julia Heisler, "Orbital Evolution of Comets," *Nature* 324 (1986): 306.

An astronomical unit is the distance between the earth and the sun. So the furthest edge of the Kuiper Belt is 100 times as far from the sun as the earth. A few objects in the Kuiper Belt have been photographed.

<sup>33</sup> "Indicators that the earth is young, with rebuttals: indicators in the solar system."

<sup>34</sup> R. A. Lyttleton, "The Non-Existence on the Oort Cometary Shell," *Astrophysics and Space Science* 31 (1974): 385-401.

<sup>35</sup> For a discussion of the solar diameter, see: G. B. Lubkin, "Analyses of Historical Data Suggest Sun is Shrinking," *Physics Today*, (September, 1979): 17-9. David W. Dunham, et al. "Observations of a Probable Change in the Solar Radius between 1715 and 1979," *Science* 210 (1980): 1243-245.

<sup>36</sup> S. Sofia et al noted that the solar diameter is usually calculated from the size of the shadow cast on the earth during a solar eclipse. Sofia noted that the moon has an irregular surface and the sun does not have a stable surface. Sofia et al argued against any claims of precision for the sun's radius that were closer than 0'.01 arc, even though such claims have been made in the literature. Sofia et al suggested that the sun's radius may have decreased by roughly 740 kilometers since 1715 AD. Sabatino Sofia, et al, "Determination of Variations of the Solar Radius from Solar Eclipse Observations," 147-57 in R. O. Pepin, et al, eds., *The Ancient Sun*, (New York: Pergamon Press, 1980), 148. Sofia et al could also have noted that the earth's surface is irregular. That irregularity

evidence for the rate of the sun's shrinkage is rather weak. The Greenwich Observatory estimated that the sun has only shrunk by 0.008% over the past 300 years, and that this figure was only accurate with a margin of error of 0.007%. So the figure is almost meaningless.

The sun clearly does lose mass every day as the sun's material streams out in the solar wind. However, it is difficult to calculate how fast it lost mass in the distant past. Mass is lost much faster from a violent sun as it sends solar flares past the planets. Mass is lost much more slowly from a quiet sun. The sun is a variable star, and it does not have a fixed rate of solar flare activity. It is very difficult to determine the rate of solar flare activity before the time of Galileo, and there is little reason to claim that the rate of solar flare activity has remained constant throughout the sun's history. A third problem with this perspective is that the sun also grows every day. Just as meteors constantly fall into the earth's atmosphere, they also constantly fall into the sun. It is hard to know how the rate that material fell into the sun changed in the past. So it is hard to determine how the size of the sun may have changed in the past. A final problem is that the diameter of the sun changes with the temperature of the sun. Any estimation of the sun's diameter must take into account the changing chemical processes within the sun itself.

Young earth authors sometimes note that it was once believed that the planet Mercury could not have a magnetic field. It was thought to be too hot to have a magnetic field because it was so close to the sun. However, an unmanned space probe detected a faint magnetic field in Mercury in 1974. This is taken as proof that the planet Mercury could only be a few thousand years old. The problem with this argument is that Mercury was assumed not to have a magnetic field because it was so small, not because it was hot. Magnetic fields are assumed to grow from a planet's liquid core and Mercury's core solidified a long time ago. Rocks on earth can gain a weak magnetic field when they solidify and they can retain that weak magnetic field indefinitely. The same could be true of Mercury. As close as Mercury is to the sun, it may also be worth exploring whether the sun's lines of flux may induce a field in the planet even if it has a solid core. A similar problem may be seen in Jupiter's moon Io. Young earth authors often note that the Voyager spacecraft took pictures of volcanoes on the surface of Io. They argue that if the solar system were billions of years old, the moon would have lost all of its heat and volcanoes would be impossible. The problem with this argument is that Io is a very small moon that approaches very closely to Jupiter. Massive gravitational forces distort the shape of Io and this distortion produces heat. If Io were farther from Jupiter, it would be a cold and hard rock.<sup>37</sup>

Walter Brown argued that stars could not have formed without God's creative activity. He noted that the process of star formation is not well understood.<sup>38</sup> He quoted from Novotny's book *Introduction to Stellar Atmospheres and Interiors*.<sup>39</sup> Novotny noted that the process of star formation is not understood. It is not known how an interstellar cloud is able to concentrate its gas enough for a proto-star to develop. Novotny noted that two factors inhibit the formation of a proto-star. Gas tends to disperse before its density becomes high enough for self-gravitation to be effective. Also, initial angular momentum would cause a rapid rotation of the gas which would prevent the gas cloud from collapsing into a star. Novotny's observations were appropriate

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could also influence the exact location of shadows cast on the earth during an eclipse. While the difference would be minor, the degree of accuracy sought is quite precise.

<sup>37</sup> "Indicators that the earth is young, with rebuttals: indicators in the solar system."

<sup>38</sup> Brown, *"In the Beginning..."*, 48.

<sup>39</sup>

Eva Novotny, *Introduction to Stellar Atmospheres and Interiors*, (New York: Oxford University Press, 1973), 279-80.

in 1973, but the field has advanced far since that time. Since then, the Hubble Telescope has been placed in earth orbit. The Hubble Telescope has been used to study star formation in the crab nebula and similar locations. There are still many aspects of star formation that are not clearly understood, but the questions are different than they were when Novotny wrote the work cited by Brown. It is recognized today that stars form through accretion disks with angular jets. Today research centers partly on the relationship between the mass emitted by the angular jets and the mass of the developing star. It would seem very strange today to argue that stars could never form without God's direct creative activity. Star formation can now be photographed and studied in detail.<sup>40</sup>

Young earth authors sometimes argue that Saturn's rings could not have survived for over 10,000 years. As meteorites bombarded the rings, a small amount of material would be knocked out of the rings. Over time, this would destroy them. There are several problems with this argument. Saturn's gravity would attract material knocked out of the rings. The rings are maintained by a combination of gravitational and centrifugal force rather like a ball that is being spun around on a string. Beyond that, many meteorites are composed of ice. Many tons of water are added to the earth's atmosphere every day as balls of ice strike the atmosphere. Similar ice balls would strike the rings of Saturn and would augment the ring ice instead of destroying the rings.

Brown argued that the speed of light is not a constant but is decreasing. Brown argued that the decreasing speed of light requires that special relativity be modified, and that the techniques for measuring distances in space be rejected.<sup>41</sup> Brown noted that the French astronomer Gheury de Bray first proposed in 1927 that the speed of light was slowing down. Brown argued that Barry Setterfield summarized 164 measurements of the speed of light. Setterfield argued that the speed of light has decreased so rapidly that the decrease can not be explained by experimental error. Brown argued that the decreasing speed of light can be demonstrated by the difference between atomic clocks and dynamic clocks. Atomic clocks are based on the vibrational period of the Cesium-133 atom. Dynamic clocks are based on the orbit of astronomical bodies. Brown cited Van Flandern's argument that if one clock is "correct," both the rate of atomic vibration and the speed of light are decreasing. If the other clock is "correct," the orbital speeds of Mercury, Venus, and Mars are increasing.<sup>42</sup> Of course, such an increase in orbital speed is not impossible. It would parallel the moon's gradual increase in orbital speed as it moves away from the earth. Gravitational attraction to the spinning earth may be gradually increasing the moon's orbital speed. Gravitational forces might also be accelerating the inner planets in some way.

The greatest problem with the argument for a decreasing speed of light is that the earliest measurements of the speed of light were done three centuries ago. The earliest measurements were accurate within 1%. This was an amazing accomplishment at the time. For the speed of light to be decreasing rapidly, the first measurements necessarily must have been much more

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<sup>40</sup> Max Domaschko, "On the Mechanics of Star Formation Binary Stars and Nemesis," <http://aplg.com/nemesis.htm>.

<sup>41</sup> M. E. J. Gheury de Bray, "The Velocity of Light," *Nature* 24 (1934): 464

<sup>42</sup> Brown, "In the Beginning...", 89-90. Trevor Norman and Barry Setterfield, *The Atomic Constant, Light, and Time*, (Blackwood, 1987), 90. T. C. Van Flandern, "Is the Gravitational Constant Changing?" *The Astrophysical Journal* 248 (1989): 813-16.

accurate than 1%.<sup>43</sup> This is an unreasonable requirement for the technology available three centuries ago. Measurements of the speed of light taken since World War II seem to suggest that the speed of light may actually be increasing slightly. These figures are ignored by those who wish to believe that the speed of light is decreasing. The speed of light is probably a constant, and speed differences probably result from inaccuracies in the measurement process.

The young earth community has made a series of arguments that are all loosely related to "the second law of thermodynamics." The basic principle behind these arguments is that nature consistently moves from order to disorder and from high energy levels to lower energy levels. Henry Morris expressed one version of this argument when he wrote the following.

According to the Second Law of Thermodynamics, this planet on which we live is going to die. The sun which supplies its energy will someday burn out and the entire solar system will then quickly perish. Indeed, so far as we can tell, the universe itself is dying.<sup>44</sup>

The suggestion is that the earth must have been created at a high energy level. This is essentially what the "big bang" model suggests. The "big bang" formed the universe at a very high energy level, and that energy level has been spreading out and running down. Morris' "second law" is actually a "big bang" model linked with the assumption that the universe does not contain enough "dark matter" for "closure." If there is enough "dark matter" for "closure," gravitational collapse will eventually make the universe collapse back on itself into a new "singularity state."<sup>45</sup>

There is a rather serious problem lurking behind the "entropy" arguments. The problem can be seen in Einstein's claim that "space/time/matter/energy" is one thing. According to Einstein, space, time, matter, and energy are all different expressions or forms of the same basic stuff. Matter and energy are clearly different expressions of the same thing. Matter converts to energy at the square of the speed of light. This is the famous equation  $E=MC^2$  which explains why nuclear weapons have such power. A very tiny amount of matter is converted to energy at the square of the speed of light, and the energy produced can destroy a city. The problem is that no one today understands the relationship between space and energy, or space and time. If space is expanding as the "big bang" model claims, what would be continually producing the new space?<sup>46</sup> No one knows. Beyond that, if space/time/matter/energy is one "stuff," most of the

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For a "J" shaped deceleration curve to be read into the data, the earliest few measurements of the speed of light must have been more accurate than can be expected of technology centuries ago.

<sup>44</sup> Henry M. Morris, "The Remarkable Re-Birth of Planet Earth," 75-81 in Henry M. Morris and Donald H. Rohrer, eds. *The Decade of Creation*, (San Diego: Creation-Life Publishers, 1981),

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Recent studies suggest that there may be much more dark matter in space than was once thought. 90% of the matter in the universe is now regarded as producing no light and thus as being invisible from earth. While the evidence is still unclear, this would tend to support a yo-yo universe that continually expands and collapses into a "Big Crunch." The collapse of the universe might be occurring on a small scale in the formation of super-clusters, although that is also rather speculative. The theological implications of either universal expansion or collapse are difficult to evaluate.  
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It is not even clear whether new space is being formed or if space is somehow becoming "thin." It is also not clear how this question might in the future affect questions like the stability of the speed

"stuff" in the universe is space and energy instead of matter. If space is "bent" by a large gravitational field like a black hole, then the total volume of space must enter into calculations for "closure" of the universe. Unfortunately, no one knows how to do this. Arguments from entropy ignore the fact that much of the physics involved in gravitational collapse is not yet completely understood. So conclusions in the field are at best premature.

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of light. If space becomes "thin" as it expands, could this affect the speed of light? If new space is being formed, does light convert to space as it reaches the edge of the universe? When the basic nature of physical reality is sought, there are more questions than answers. Confident claims about the second law of thermodynamics and entropy are probably premature.