

A Model of the Genesis Flood

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Introduction

The Flood was one of the greatest catastrophes to engulf the earth. The Bible (1) clearly reveals the magnitude of this event.

And God said to Noah, "The end of all flesh has come before Me, for the earth is filled with violence through them; and behold, I will destroy them with the earth"... "And behold, I Myself am bringing floodwaters on the earth, to destroy from under heaven all flesh in which is the breath of life: everything that is on the earth shall die. (Genesis 6:13, 17)

For after seven more days I will cause it to rain on the earth forty days and forty nights, and I will destroy from the face of the earth all living things that I have made. (Genesis 7:4)

Many people have wondered how God could have completely destroyed the earth and covered its surface with vast sheets of water? What global forces were used to accomplish his purpose? In this paper we will examine what the natural record reveals about this catastrophe. Using the Bible as our foundation the physical and geologic processes that created this earth wrecking scenario will be examined (2).

Since the Bible is written as a historical and not a scientific document the forces that caused the flood may not be totally discovered. Much can be gleaned from the evidence of science, especially in the fields of physics, geology, biology, and astronomy, which fully harmonizes with the Biblical record. A fully satisfying picture of the Genesis flood will nevertheless emerge once many of the scientific and Biblical facts are married. As more evidence is revealed from the various disciplines the picture presented here may change.

When dealing with the concepts involved in what caused the flood it is best to keep an open mind to various and differing hypotheses. The attitude of one of the great geologists of the 18th century, Thomas Chamberlain (3), should be imitated. He states that when exposed to new information multiple hypotheses should be examined concurrently. This will be the attitude taken in this study.

Early Geologic Theories

The Geology textbooks frequently mention that plates on the Earth's surface are moving. This is called plate tectonics and it is one of the foundations of modern geology. What the textbooks fail to mention is that this theory (4) is not new—it has been known for hundreds of years.

Among the early works on plate tectonics (see fig. 1) was a little known book called *La Creation et ses Mysteres Devoiles* (The Creation and Its Mysteries

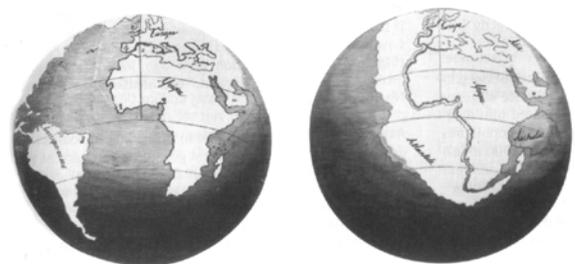


Figure 1. French naturalist Antonio Snider-Pelligrini drawing for his work *La Creation et ses Mysteres Devoiles*, showing how the continents fit.

Revealed) published in France in 1859 by Antonio Snider–Pelligrini. Snider–Pelligrini was a creationist that believed that the movements of the earth's landmasses had been caused by Noah's Flood. He noted how the land masses on either side of the Atlantic ocean seem to fit very nicely together. Interestingly plate tectonics, which is now married to evolutionary assumptions, was originally considered to have been the mechanism for the Genesis flood.

Other early well know scientists that delved into plate tectonics included Benjamin Franklin (1706-1790). In 1782 he said, "The crust of the Earth must be a shell floating on a fluid interior. Thus the surface of the globe would be capable of being broken and disordered by the violent movements of the fluids on which it rested." Sir Francis Bacon (1561-1626) also conjectured about the tectonic movements of the earth in relation to the flood. Bacon noted this in his writings in 1620 after viewing recent maps that had been produced by the 16th century marine explorers (5).

When Alfred Wegener (1880-1930) proposed the controversial idea of plate tectonics he was building on the foundation laid by scientists many hundreds of years before. Ironically all of these early scientists were creationists. Wegener's early, in reality borrowed, theory of plate tectonics was bitterly opposed and ridiculed by early 19th century geologists and earth scientists.

What Wegener proposed was that the early continents were floating on the dense interior of the earth and they had over the course of eons of time broken up and were very slowly moving apart. He believed that all of the earth's continents had at one time been joined together in a super continent called Pangaea (all lands). This giant land mass was surrounded by one large ocean (6), see figure 2 (5), called Panthalass (Greek goddess of the sea). According to Wegener about 189 million years ago (7) Pangaea broke up and become several continents which have continued to migrate to all regions of the present day earth.

Modern university textbooks when writing about Wegener's theory are correct about two general principles involved in plate tectonics: plates exist and they move. What most textbook authors conveniently do not mention is this idea has been borrowed from Bible believing catastrophists (8). There are many differences between the modern theory of plate tectonics and the catastrophic theory that the flood was caused by rapidly moving continental masses. These differences include but are not limited to: how did it occur, when did it occur, and how long did it take (speed of the plates).



Figure 2. A reconstruction of Pangaea showing how all the continents were originally one land mass.

Using the early catastrophist's model of the flood as a starting point several conclusions can be formulated. The first is that the present motion of the plates is no indication of the past motion of the plates. Since the continental plates are moving relatively slowly at the present time, in the order of a few centimeters (1-2 inches) per year, it is assumed that this has always been the speed of the plates. This is not necessarily so. If a child grows several inches per year when he is

young it does not necessarily mean that the same child will grow several inches per year when he is forty or fifty years old. If this were true adults would be more than 200 inches tall! Most adherents to the plate tectonic theory postulate that the plates moving slowly have sculpted the earth. This sculpting includes mountain building, sea floor spreading, volcanoes, and continental adjustments we call earthquakes. In reality these features are more likely to be produced by the fast motion of the continental plates. This fast motion of the plates has been the result of the forces which occurred at the time of the Noachian flood. Before we can examine how this happened we must examine the structure and nature of the pre-flood world.

The Pre-Flood World

One of the most misunderstood concepts (9) in the study of the scriptures is a correct view of Genesis 1:1-2. Most creationists are young earth creationists. By this it is meant that they believe the earth and the universe have come into existence in the last few thousand years, this usually means within the last 10,000 years or in some cases less. In reality, although man is only a few thousand years old the earth is older. How much older? We are not sure because the Bible is silent on the subject. We do know that the creation week in the first chapter of Genesis is simply a re-creation account (10). A paraphrased translation of Genesis 1:1-2 should read as follows:

In the beginning God created the heavens and the earth. The earth *had become* without form and void (empty chaotic and confused) and darkness was on the face of the deep. And the Spirit of God was hovering over the face of the waters.

The Hebrew word, *hayah*, translated *was* in the second verse can easily be translated *became*, or *had become*. An example of this occurs a few verses later in Genesis 2:7:

And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man *became* (*hayah*) a living being.

This time period that predates the creation week has profound implications for our understanding of the Biblical record and the Noachian flood. If there is a time period between Genesis 1:1 and 1:2 then several things become obvious, including the following: There is no need trying to fit all the geologic work that has shaped the earth into a few thousand years or the flood time period, some of this work occurred before the time of Adam. The earth has been affected by other catastrophes before the flood of Noah. For example according to the second verse in the first chapter of Genesis "God was hovering over the face of the waters," which implies that the earth had been covered by a flood and or water at this time period. There are fossil that predate the creation week. Also the pre-flood/post-flood geologic boundary will be different than that proposed by young earth creationists and it may be convoluted and difficult to interpret.

Uniformitarianism—Catastrophism

The flood changed the earth. This fact is overlooked by the current geologic establishment that has made the principle of uniformitarianism the overall guiding precept of modern geologic thought. Uniformitarianism is defined (11) as "the fundamental principle or doctrine that geologic processes and natural laws now operating to modify the Earth's crust have acted in the

same regular manner and with essentially the same intensity throughout geologic time, and that past geologic events can be explained by phenomena and forces observable today; the classical concept that 'the present is the key to the past'."

The concept and doctrine of uniformitarianism was popularized by James Hutton (1726-1797) in his book (12), *Theory of the Earth* (1785). Hutton influenced Sir Charles Lyell (1797-1875), who became known as the father of modern geology when he published (13) *Principles of Geology* (1830-1833). Charles Darwin was greatly influenced by Lyell. Darwin later formulated the modern theory of evolution when he wrote (14) *The Origin of Species* in 1859. For the last 170 years Lyell has been the driving force for the general acceptance of uniformitarian concepts among modern day geologists.

The principle of uniformitarianism goes against spiritual principles revealed in the scriptures.

Knowing this first: that scoffers will come in the last days, walking according to their own lusts, and saying, "Where is the promise of his coming? For since the fathers fell asleep, all things continue as they were from the beginning of creation." For this they willingly forget; that by the word of God the heavens were of old, and the earth standing out of water and in the water by which the world that then existed perished, being flooded with water. (2 Peter 3:3-6)

The flood was not a uniformitarian event, it was a catastrophic event. It affected all of the planetary systems of the earth including but not limited to: changes in the atmosphere, reorganization of the length of the year and day (15), reorganization of the oceans, formation of many of the world's mountains, changes to the hydrocycle, deposition of vast amounts of sediment, and creation of worldwide fossil beds, to name but a few.

The current geologic and evolutionary establishment does not accept the flood scenario because it violates one of their sacred cows, the concept of "the present is the key to the past." If there are no great earthwide floods occurring now there have been none in the past. Also if the flood occurred then strata can be deposited very quickly. This affects the dating systems invented by man. The implication of fast strata deposition is that long periods of time are not needed. If this is true then evolution is denied one of its tenets, vast amounts of time numbering in the million and billions of years. Even though much of geologic and scientific data supports an earthwide flood, it is overlooked or rejected not on scientific grounds but for purely philosophical reasons (16).

Pre-Flood Considerations

The earth's interior is made up of several components, see figure 3. These components include the core, mantle, and crust (17). The inner core made up of solid iron rich material is about 1216 km in diameter (756 miles). The outer core is composed of a molten metallic layer about 2270 km thick (1410 miles). On top of the core sits the

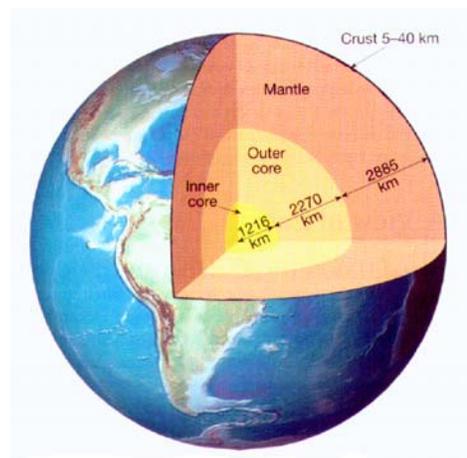


Figure 3. View of the various layers of the earth. These layers include the core (inner and outer), mantle, and crust.

mantle. The mantle is about 2885 km in thickness (1789 miles). The mantle has an upper layer and it is semi-plastic because of heat and pressure. Overlying the mantle is the upper layer termed the crust. This contains the continents and oceanic floors. The continental crust and the oceanic crust are of different thickness and of different compositions. The continental crust averages about 30 km, although where mountains thicken the crust it can be more than 60 km thick. The total crust thickness, not including the continental mountain masses, is about 5-40 km which is about 3-25 miles thick.

Before the flood the interior of the earth was very similar to what it is today. Many creationist have maintained that there was a major reorganization of the mantle components which occurred during the flood episode. This is not a realistic assessment since any repositioning of the various components of the mantle-core-crust layers would have created too much frictional heat. This heat would have dissipated into the atmosphere and oceans raising global temperatures to a level that would have destroyed all life (18). The various magmatic deposits that now exist were created by the movement of the continental plates during the flood. These areas of molten rock were emplaced in localized areas.

Some of the sedimentary deposits that had accumulated before the creation week were reworked during the flood crisis. This includes some of the Mesozoic, Paleozoic, and Precambrian era strata. When the evidence that convinced the modern day geologist of plate tectonics is analyzed from the point of view of a flood mechanism many problems that have plagued the young earth creationists disappear. For example one of the arguments that geologists level at the young earth creationists is that some fossils deposited in the sedimentary strata indicate that the continents were once joined together (see figure 4). The creationist are hard pressed to explain how the sediments and fossils were emplaced before the coming of the great Noachian flood which supposedly deposited the majority of the sedimentary strata and separated the continents. The problems disappears once it is understood that the earth has had a preexistence before the creation week. These fossils were deposited during the pre-Adamic destruction mentioned in Genesis 1:1-2.

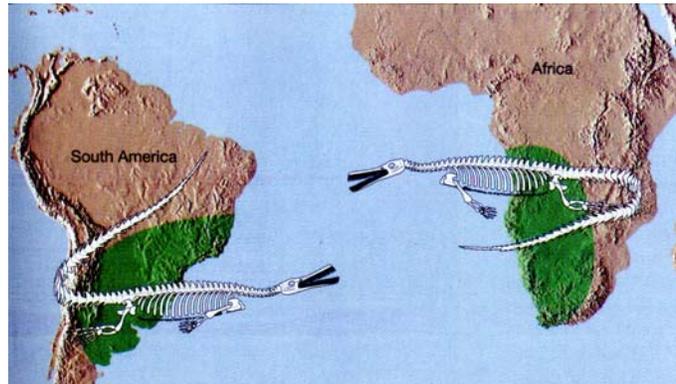


Figure 4. Fossils of *Mesosaurus* in Africa and South America. This indicates that the shaded areas were once joined together during the late Paleozoic and early Mesozoic eras.

Other large scale geologic activity indicates the continents were joined together. This would include the glacial striations found in South America, Africa, Antarctica, and southern Australia. The orientation of these marks reveals that these land masses were all joined together in one super continent. The rocks of eastern North America are similar to the rocks in southern Africa. Once again this indicates that these masses once joined together have moved apart. These examples show that previous to the rearrangements of the continents by the flood the continents had undergone major modifications. Enough time had to pass for large bodied reptiles to come

on the scene and then go extinct. Glaciers had to form and melt and large scale sedimentary rock deposits had to be laid down. These factors all indicate that the flood was only one of several catastrophes that reworked and affected the earth.

What Split the Earth

The evidence indicates that at the initiation of the flood the Mid-Oceanic ridge was formed. The Mid-Atlantic ridge, which is part of the Mid-Oceanic ridge, runs down the center of the Atlantic. These ridges are areas where the continental plates are separating. This ridge-like fracture wraps around the globe. It is a large earth-encircling crack. This separating or cracking of the ocean floor was started by some catastrophic event. The exact cause of the cracking of the earth's crust is unknown, although some interesting possibilities exist.



Figure 5. Evidence indicates that the earth has been struck by asteroids, comets, and planetoids in the past.

Geologic and astronomical evidence indicates that the earth has encountered large planetoids in the past (figure 5). It is very likely that a large astral body passed close to or struck the earth at the beginning of the flood. This is a common theme in the scientific and early creationist (19) literature. A large comet or asteroid impact has been cited as the reason for the Cretaceous-Tertiary extinctions (20). This earlier astral encounter is considered to have caused the extinction of the dinosaurs. Consider the following small selection of information from the scientific literature (21).

Here we present evidence for a multiple impact event that occurred on Earth...These structures may thus represent the remains of a crater chain at least 4,462 km long...We therefore suggest that the five impact structures were formed at the same time (within hours) during a multiple impact event caused by a fragmented comet or asteroid colliding with Earth. (22)

Violent earthquaking would have been the first event, perhaps due to proximal passage of a cosmic body...Duration might have resulted from slow passage of a large, distant, cosmic body. Repetition might have resulted from a smaller body returning periodically...A more difficult structure arising from the evidence is the need for a duration sufficient to allow development of beaches and deposition of tick silt beds. Required would be either a very slowly passing, perhaps large and distant, cosmic mass, or a smaller, faster-moving mass that traveled in comet-like fashion within the solar system on an elliptical orbit. (23)

Evidence from the lunar and terrestrial crater record indicates that this population has bombarded Earth over the age of the solar system, and related geologic evidence indicates that the collision of a multi-kilometer asteroid with Earth can wreak regional-to-global devastation on our biosphere. (24)

The tidal forces caused by the gravitation attraction of a small planet or moon would have split the crust of the earth and initiated the plate movement. If the earth were struck by a small asteroid or comet the energy released would be adequate to begin crustal separation. The internal friction caused by the gravitational attraction of the earth and the visitor, or it directly striking the

earth, would have provided enough energy to melt large segments of rocks forming large internal magma pools. Once plate movement had begun it would be self feeding.

The scriptures describe this time period as follows:

In the six hundredth year of Noah's life, in the second month, the seventeenth day of the month, on that day all the fountains of the great deep were broken up, and the windows of heaven were opened. And the rain was on the earth forty days and forty nights. (Genesis 7:11-12)

Global Rearrangements

The Formation of the Mid-Oceanic Ridge: Once the rift in the Atlantic began, the Mid-Atlantic Ridge was formed rather quickly (figure 6). The Mid-Atlantic ridge expanded at an enormous rate of speed. Most earthquakes travel at the speed of between 2.5 to 7 km per second (1.5 to 4 miles per second). If the opening which later created the Mid-Atlantic ridge was traveling the speed of most earthquakes, it would have taken a little less than an hour to completely encircle the globe and form the rest of the Mid-Oceanic ridge. Bear in mind that the Mid-Atlantic and Oceanic ridges actually encircle the globe. It began in the Atlantic ran under Africa, India, around Australia and the into the Pacific basin.

Creation of Magma Pools: This rapidly widening vent was traveling at supersonic speeds! As it formed, large amounts of magma would have been created due to frictional heating. This magma would have come in contact with the super cool oceanic water cascading into the ever widening rift. This would have created steam and pressure that would have eroded and ejected large amounts of water, silt, and rocks into the upper atmosphere. Many of these rocks and much water would probably escaped the pull of the earth's gravity and would have settled into earth orbit.

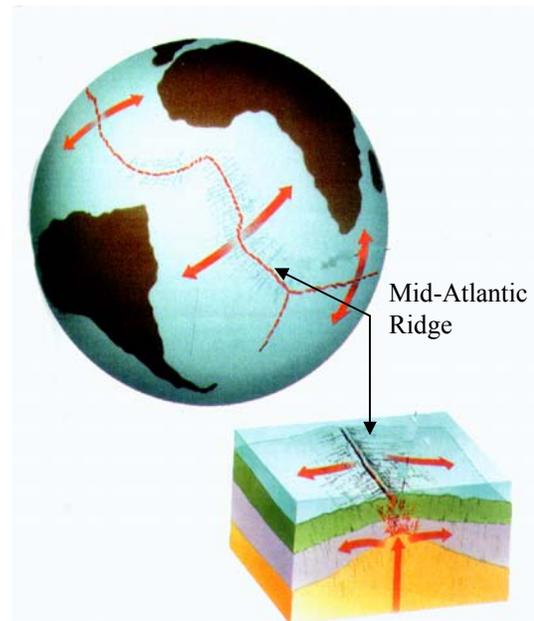


Figure 6. The formation of the Mid-Atlantic ridge. This rupture of the earth is tied directly to the flood.

Rain and the Ice Age: This ejected material would have had two forces acting upon it. The first would have been the pressure from the rising crescendo of water which through heat and pressure would have been forced upward as it contacted the magma beds. Secondly, if the rift had been initiated by the close passage or of a small planet or moon, or the interaction of a large comet then planet-wide gravitational forces were also involved. The interacting gravitational fields of the earth and the visitor would have helped to eject and pull vast amounts of water and rocky material from the earth's surface. This material would later leave the cold depths of the upper atmosphere and outer space, where the water become frozen, and would have pummeled the earth as it re-entered the earth's ecosystems (25). Other parts of the earth's crust would have also been broken open. At these ruptures friction would created magma that would mix with in-

rushing water. This would form large geysers of water which would propel enormous quantities of moisture into the air. The earth would be covered by vast sheets of falling rain and ice. This is aptly described in the Bible as "...the windows of heaven were opened..." later it states that "...the windows of heaven were also stopped..." (Genesis 7:11; 8:2) . This falling rain and ice coupled with the deforestation of the earth's surface and the lowering of the earth's albedo would cause a new ice age to begin.

Mountain Building: As the crust that overlaid the Atlantic ocean was eroded away the lower oceanic rock layers buckled up. Once the oceanic lithosphere buckled up the continental plates positioned on the top of them began to slide down. This moved the North and South American continents west and the African and European continents slid east. This was facilitated by the magma that was created from the melting of the sliding plates. This magma lubricated the sliding plates. As the plates slid more and more, more heat was created which further lubricated the movement. This caused the plates to slide even faster and further apart from each other carrying with it the continental land masses. As the trench/ridge widened it removed more rock which was laying over the oceanic layers. This caused the cycle to continue and soon the movement of the rocks was rapid, probably in feet per second as opposed to today's slower rate. The movement of the plates very rapidly became self sustaining.

The continental plates, many of them covered by vast sheets of re-deposited sediments, probably sliding at the speed of feet per second had to eventually slow down or come to rest. This occurred when fast moving plates ran into each other, see figure 7 (26). When this happened mountains were formed because of the horizontal compression associated with the plates jamming into each other. An example of mountain building involves the Himalayan mountains. This massive mountain range was produced when two plates collided. The northern moving plate carrying India and Australia collided with the southern moving plate carrying Europe and Asia. These colliding plates formed a thick large plateau known as the Tibetan plateau.



Figure 7. Mountains near Sullivan River in British Columbia, Canada. These mountains were horizontally compressed while they were still wet, forming accordion like wrinkles.

Most mountains with the exception of a few volcanic peaks have two very interesting features. First, all the mountains of the world even Mt. Everest (27) have marine fossils at their summit. Secondly most mountains are composed of sedimentary rock that has been faulted, folded and compressed. This indicates that mountains have been covered by and or laid down in water.

Sedimentary Deposits: Some of the mountains were formed out of sediment that originally had been at the bottom of the ocean. They were uplifted and reworked during the flood. Other mountains had sedimentary layers that were formed by large tidal surges which swept over the

continents. This would catastrophically deposit fossil beds over large areas of the continents. This would be repeated in a tidal fashion. If the earth was interacting with an astral visitor (19) the tidal action would have been immense. This tidal scouring would occur twice a day with periodic frequency. This would deposit large beds of sediment. Some of these deposits while still soft were faulted and folded by the action of the flood.

Sedimentary rock covers 75 percent of the earth's continents. Also 75 percent of the earth's surface is covered by water. This is very compelling evidence for an earthwide flood. During the flood episode which lasted more than 370 days (compare Genesis 7:11 and 8:13-14) the earth's surface was under water for 110 to 150 days (Genesis 7:17-24). The amount of time and the amount of area covered by water would have provided ample opportunity for vast beds of sediments to form.

There are many different types of sedimentary rock that cover the North American continent see figure 8. Some of these sedimentary rocks are called evaporites and they have a very interesting past. They are produced when saltwater evaporates. Evaporate deposits in North America overlay large parts of Texas, the Gulf of Mexico, New Mexico, Michigan, Arizona, Colorado, Utah, and major portions of western Canada. Some evaporite minerals include gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$), Halite also known as rock salt (NaCl), and Dolomite $\text{CaMg}(\text{CO}_3)_2$. Some parts of Michigan have salt deposits 750 meters thick or about 2475 feet. This means that an ocean of 22 kilometers (13 miles) deep would have to evaporate to leave as much salt as covers Michigan today.

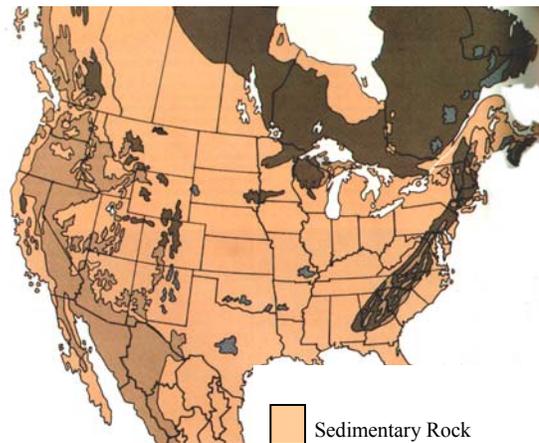


Figure 8. Sedimentary rock covers most of North America.

Salt deposits 2000 meters (6600 feet) thick also underlie the sediments of the Mediterranean sea (28). Also this area has many salt domes many of these domes are 10 km in height. Since salt is less dense than normal sediment it tends to rise and form huge pillars and domes. The areas between the salt dome and the pushed up sedimentary rock layers usually contain oil, gas, and methane that has been trapped in the strata. This is very important economically because where salt domes exist usually large volumes of fossil fuels exist.

Another intriguing type of sedimentary rock, dolostone formed from the mineral dolomite, is found in evaporite deposits. Dolomite is a calcium-magnesium-carbonate mineral $\text{CaMg}(\text{CO}_3)_2$ and it covers much of North America. Dolomite deposits are responsible for the Dolomite mountains in the Italian Alps. This mountain range is hundreds of miles long. Strangely dolostone is only forming today in very small amounts. For dolostone to form oceans and tropical climates must exist. Large dolostone deposits like those that formed the Italian Alps indicate that this section of the Alps was under water. Evaporites such as halite, gypsum, dolostone, and salt dome structures are only a small sample of the large body of scientific

evidence that the North American continent and vast areas of the globe have been inundated by large inland bodies of water.

Volcanic and Earthquake Activity: The flood of Noah and its crustal movements rearranged the crust of the earth which caused much volcanic activity. The volcanism associated with the rapidly moving plates would have been of an immense magnitude. The friction of the sliding plates would have created large pockets of magma which would be concentrated along the edges of the cracked and sliding plates. This magma would create hot spots of volcanic activity around the world as the magma would be forced upward through the cracks in the continental plates. Some areas that were affected includes the pacific area of the United States which is home to many volcanic peaks. These include Mt. Rainer, Mt. Hood, Mt. Shasta, Mt. Baker, and the famous Mt. St. Helen's which erupted in the 1980s.

Much of the world is covered in plateaus of hardened magma. These plateaus formed when volcanic activity forced magma up to the surface of the earth. These plateaus are evidence of past volcanic activity that was worldwide. Cooling magma usually is called basalt. Basalt is the most common igneous rock and it is the main constituent of the basalt plateaus.

Basalt plateaus cover many areas of the world. The Columbia River basin is covered in basalt which is estimated to be more than 200,000 square kilometers (80,000 square miles) in area. This plateau created by immense volcanoes is more than 1 kilometer in thickness. Other parts of the United States that were covered in molten magmatic basalt include Idaho, Oregon, and California. Worldwide some of the most famous basalt outpourings include India, Siberia, Iceland, parts of South America, the rift valley in Africa, and the Sierra Nevada. In India the Deccan Plateau covers most of this nation. It is estimated to be more than 10,000 feet thick. These plateaus all formed when molten lava belched onto the surface of the earth and they indicate that the whole globe was undergoing vast tectonic changes and readjustments.

Many of the ocean peaks are remnant of volcanoes which have formed important geographic areas. These include the Hawaiian Islands, Easter Island, Tonga Island, and the famous Galapagos Islands. The nations of New Zealand and Japan are areas formed by volcanic mountain chains. These volcanic changes are all located near fracture zones.

Many notable volcanic eruptions took place in harmony with the crustal movements. This included the eruption of La Garita, which created environmental havoc on an unprecedented scale. This eruption put more than 20,000 times the ash flow created by Mt. St. Helen's 1980 eruption. In Indonesia another ash flow eruption was the Toba eruption. It created a layer of ash more that 300 meters thick (1000 ft) which covered an area of 25,000 square kilometers or about 10,000 square miles. The amount of carbon-based material that was ejected into the atmosphere is credited by many scientists with the beginning of the ice age. Global temperatures fell 6° C (12° F) shortly after this eruption. All of these eruptions put massive amount of particulates into the atmosphere. These served as the nucleus for raindrops which contributed to the massive amount of rain that fell during this time period.

Earthquakes are simply adjustments that are made to deformed rocks when energy is released. Most earthquakes occur where tectonic plates meet. During the flood as the Mid-Oceanic Ridge

was created and plates slid, collided, and subducted under each other much energy was released and many earthquakes occurred. The fact that earthquakes are still occurring indicates that the total energy stored in sliding crumpled plates has not yet been dissipated.

Canyons and Oceanic Trenches: The sliding plates, tidal forces, large inland seas, heavy precipitation, and seismic activity created vast drainage system that are evident in the geologic record. Large canyons that dot the surface of the earth are remnants of these drainage systems. Although many of these canyons are attributed to uniformitarian processes they in reality can be harmonized with the catastrophic activity that engulfed the earth during the flood.



Figure 9. Grand Canyon. Notice the alternating sedimentary deposit in large wide layers. This canyon was a drainage canyon. Its rock layers were cut while still wet and soft.

Much evidence exists in the scientific literature which is in full agreement with what would be expected by an earthwide flood. An article published in the prestigious journal *Scientific American* (28) is a good example. This article indicates that the Mediterranean was dried up and refilled several times. This created large deposits of salt and salt domes. Large canyons comparable to the Grand Canyon, figure 9 (29), have been found under the silt of the Rhone river in southern France. In an attempt to explore the geologic region near the Nile river for the Aswan Dam Soviet scientists discovered a deep gorge filled in with sediments. Both of these gorges had cut through bottom layers of solid granite. Consider the following quotes in the article:

It was entirely unexpected, however, that salt domes would be discovered under the abyssal plains of the Mediterranean. Where could the salt have come from? (p. 27)

Near the end of the 19th century a deep gorge buried under the plain of the Valence in southern France was discovered during a search for ground water. The gorge was cut into hard granite to a depth of hundreds of feet below sea level. Filling the gorge are Pliocene oceanic sediments, which in turn are covered by the sands and gravels of the Rhone river. When the gorge was first discovered, it was found to extend for some 15 miles between Lyons and Valence. Eventually the buried channel was traced for more than 100 miles downstream to La Camargue in the Rhone delta, where the valley was reached by drilling 3,000 feet below the surface. Obviously the modern Rhone is a lazy weakling compared with its ancestor, which sculptured a system of gorges almost comparable in size to the Grand Canyon of the Colorado. What caused the deep incision of the Rhone? (p. 27)

One can picture the desiccated Mediterranean as a giant bath tub, with the Strait of Gibraltar as the faucet. Seawater roared in from the Atlantic through the strait in a gigantic waterfall...Cascading at the rate of 10,000 cubic miles per year, the Gibraltar falls would have been 100 times bigger than Victoria Falls and 1,000 times more so than Niagara. (p. 33)

In an effort to find hard rock for the dam's foundation 15 boreholes were drilled. To the Russians' amazement they discovered a narrow deep gorge under the Nile valley, cut 700 feet below sea level into

hard granite...In the Nile delta boreholes more than 1,000 feet deep were not able to reach the bottom of the old Nile canyon. Chumakaov estimated the depth of the incision there might reach 5,000 feet, and he visualized a buried Grand Canyon under the sands and silts of the Nile delta. (p. 35)

The late Jacques Bourcart of the University of Paris reported in 1950 the discovery of numerous submarine canyons indenting the continental margins off the coast of France, Corsica, Sardinia and North Africa, The canyons are typically river-cut and are filled with alluvial gravels. Most of them can be relate to a river on land and can be traced to a depth of 6,000 or 8,0000 feet at the edge of the abyssal plain. Similar canyons have been found in all parts of the Mediterranean. Their genesis had never been satisfactorily explained until it was realized that the Mediterranean was desiccated six million years ago. (p. 36)

The Grand Canyon of Colorado is simply a smaller version of what exists in many places underwater. These canyons give evidence of being old stream beds that were rapidly enlarged. After they were enlarged they were buried under hundreds of feet of sediment and then rising water finally buried them in watery graves. This is all consistent with the events that would occur during a worldwide inundation.

On the opposite side of the Mid-Atlantic ridge is the Pacific Ocean which is marked with deep ocean trenches. Some of these trenches are hundreds of kilometers deep. These trenches are associated with volcanoes and deep-focus earth quakes (30). These earthquakes originate more than 300 km (190 mile) below the surface of the ocean basins. Chains of volcanically formed islands such as Japan often run along side these trenches. These trenches and volcanoes associated with them are in arc shaped curved patterns. Because the earth is spherical an indentation on its surface will take on a arc-pattern. This can be demonstrated by depressing a ping pong ball. The depressions will be in the same stylized pattern of arcs and cusps.

When the Mid-Atlantic ridge was formed (see figure 10) it removed much material from the Atlantic side of the globe through erosion and ejection. This caused the core of the earth to bulge toward the Atlantic area which would have created a vacuum or downward pull in the Pacific. If the earth interacted with an astral visitor at this time the planet-wide gravitational force would have accentuated and accelerated this process. This created the deep ocean trenches.

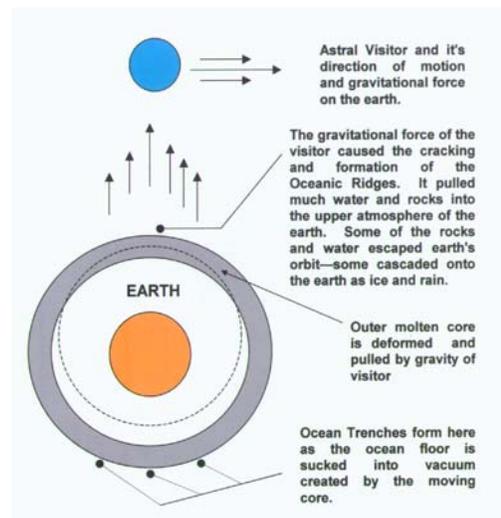


Figure 10. The earth's interaction with an astral body could have created the Oceanic ridges and trenches. Note that the Mid-Atlantic ridge and the Pacific trenches lie exactly opposite each other.

Conditions After the Flood

As the flood came to a climax many of the earth's systems were reorganized or changed. The most obvious would have been the climate. Immediately after or in conjunction with the flood an ice age would have begun. This was brought about by several factors that would have altered the previous tropical climate.

Tectonic activity would have put much carbon monoxide and carbon dioxide into the atmosphere along with a tremendous amounts of water vapor, soot, ash, dust, and other ejected material. This would have reduced the amount of sunlight hitting the surface of the earth. The earth's surface also would have been wiped clean of large amounts of vegetation and the reflective properties of the earth would have changed. This change in the albedo would have radiated heat back out into outer space and the temperature of the earth would have dropped a few degrees. This slight drop in temperature would have had a cascading effect and the earth would have become colder and less hospitable.

Other changes hinted at in the geologic record (31) would have included a shift in the poles of the earth (32). This would have started the seasonal changes that we presently take for granted (33). The large scale mountain building and the change in the earth's tilt would have initiated large scale wind systems. This would affect climate and the meteorological cycle. The world after the flood would have been vastly different than the world that existed before.

Conclusions

High speed plate tectonics could account for the changes that we see in the geologic record. This concept meshes nicely with the Biblical account of the flood. In summary it could account for the various oceanic rearrangements, deep terrestrial and marine discharge canyons, oceanic trenches, volcanic activity, mountain building, change in climate, commencement of an ice age, global rains, rearrangement of the polar regions, and the vast sedimentary deposits scattered over seventy-five percent of the earth's continents.

These globe altering forces would have destroyed all land living, air breathing animals and most marine organisms.

Works Cited and Research Notes

1. All scriptural notations are from: The Bible. The New King James Version. Thomas Nelson Publishers. Nashville, TN. 1994.

2. Many readers of the Bible are unaware of the magnitude of catastrophism that is mentioned in the scriptures. The Bible is a very catastrophically oriented book. Bear this in mind as you examine the flood evidence presented in this paper. Some of the themes discussed may be considered overly dramatic. In reality, what actually occurred during flood of Noah is probably beyond human comprehension. There have been many past catastrophes mentioned and there are many yet to occur. The following are just a few examples.

God is our refuge and strength, A very present help in trouble. Therefore we will not fear, even though the earth be removed, and though the mountains be carried into the midst of the sea: Though its waters roar and be troubled, Though the mountains shake with its swelling. (Psalm 46:1-3)

O God, when You went out before Your people, When you marched through the wilderness, The earth shook: The heavens also dropped rain at the presence of God: Sinai itself was moved at the presence of God, the God of Israel. (Psalm 68:7-8)

You divided the sea by Your strength; You broke the heads of the sea serpent in the waters. You broke the heads of Leviathan in pieces, And gave him as food to the people inhabiting the wilderness. You broke open the fountains and the flood; You dried up mighty rivers. The day is Yours, the night also is Yours; You have prepared the light and the sun. You have set all the borders of the earth; You have made summer and winter. (Psalm 74:13-17)

The Lord reigns; Let the earth rejoice; Let the multitude of isles be glad! Clouds and darkness surround Him; Righteousness and justice are the foundations of His throne. A fire goes before him, And burns up His enemies round about. His lightnings light the world; The earth sees and trembles. The mountains melt like wax at the presence of the Lord of the whole earth. (Psalm 97:1-5)

Bless the Lord , O my soul! O Lord my God, You are very great: You are clothed with honor and majesty, Who cover Yourself with light as with a garment, Who stretch out the heavens like a curtain. He lays the beams of His upper chambers in the waters, Who makes the clouds His chariot. Who walks on the wings of the wind. Who makes His angel spirits, His ministers a flame of fire. You who laid the foundations of the earth. So that it should not be moved forever, You covered it with the deep as with a garment: The waters stood above the mountains. At Your rebuke they fled: At the voice of Your thunder they hastened away. They went up over the mountains; They went down into the valleys (margin: The mountains rose up; the valleys sank down). To the place which You founded for them. You have set a boundary that they many not pass over, That they may not return to cover the earth...May the glory of the Lord endure forever: May the Lord rejoice in His works. He looks on the earth, and it trembles; He touches the hills and they smoke. (Psalm 104:1-9, 31-32)

When Israel went out of Egypt, The house of Jacob from a people of strange language, Judah became His sanctuary, And Israel His dominion. The sea saw it and fled; Jordan turned back. The mountains skipped like rams. The little hills like lambs. What ails you, O sea, that you fled? O Jordan, that you turned back? O mountains, that you skipped like rams? O little hills like lambs? Tremble, O earth, at the presence of the Lord, At the presence of the God Jacob, Who turned the rock into a pool of water, The flint into a fountain of waters. (Psalm 114)

He removes the mountains, and they do not know when He overturns them in His anger: He shakes the earth out of its place, and its pillars tremble: He commands the sun and it does not rise; He seals off the stars; He alone spreads out the heavens and treads on the waves of the sea. (Job 9:5-8)

Where were you when I laid the foundations of the earth...Or who shut in the sea with doors, When it burst forth and issued from the womb: When I made the clouds its garment, And thick darkness its swaddling band: When I fixed My limit for it, And set bars and doors: When I said, This far you may come, but no further, And here your proud waves must stop! (Job 38:4, 8-11)

Isaiah 24 is a prophetic chapter full of catastrophic themes. This future judgment comes on the earthly globe because of the disobedience of its inhabitants (v. 4-6).

Behold the Lord makes the earth empty and makes it waste, distorts its surface and scatters abroad its inhabitants...The earth mourns and fades away, The world languishes and fades away; the haughty people of the earth languish. The earth is also defiled under its inhabitant, Because they have transgressed the laws changed the ordinance, Broken the everlasting covenant. Therefore the curse has devoured the earth and those who dwell in it are desolate. Therefore the inhabitant of the earth are burned, And few men are left. For the windows from on high are opened, and the foundations of the earth are shaken. The earth is violently broken, The earth is split open, The earth is shaken exceedingly. The earth shall reel to and fro like a drunkard, And shall totter like a hut; Its transgression shall be heavy upon it. And it will fall, and not rise again. (Isaiah 24:1, 4-6, 18-21)

Future prophetic events seem to indicate destruction coming from the sky. Possible scenarios include the earth being struck by meteors, comets, and its orbit being perturbed by the passing of various astronomical bodies. This would devastate the earth through gravitational and tidal forces. Astral impacts would likely have earthwide consequences for humanity and the ecosystem. The following are examples as described in the book of Revelation.

The first angel sounded: And hail and fire followed, mingled with blood, and they were thrown to the earth. And a third of the trees were burned up, and all green grass was burned up. The second angel sounded And something like a great mountain burning with fire was thrown into the sea, and a third of the sea became blood. And a third of the living creatures in the sea died, and a third of the ships were destroyed. Then the third angel sounded; And a great star fell from heaven, burning like a torch, and it fell on a third of the rivers and on the springs of water. The name of the star is Wormwood. A third of the waters became wormwood, and many men died from the water, because it was made bitter. The fourth angel sounded; And a third of the sun was struck, a third of the moon, and a third of the stars, so that a third of them were darkened. A third of the day did not shine, and likewise the night. (Revelation 8:7-12)

And there were noises and thundering and lightning; and there was a great earthquake, such a mightily and great earthquake as had not occurred since men were on the earth. Now the great city was divide into three parts, and the cities of the nations fell. And great Babylon was remembered before God, to give her the cup of the wine of the fierceness of His wrath. Then every island fled away, and the mountains were not found. And great hail from heaven fell upon men, each hailstone about the weight of a talent (75 pounds). Men blasphemed God because of the plague of the hail. Since that plague was exceedingly great. (Revelation 16:18-21)

3. Chamberlain TC. The method of multiple working hypotheses. *Journal of Geology*. 5:837-48. 1897.
4. Snider-Pelligrini, Antonio. *La Creation et ses Mysteres Devoiles* (The Creation and Its Mysteries Revealed). Dentu. Paris. 1859.
5. Chernicoff S. *Geology: an Introduction to Physical Geology*. Houghton Mifflin Co. Boston. p. 24-25. 1999 (figure 2, p. 25; figure 5, p. 21).

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6. Genesis 1:9-10 states that there was originally one giant land mass and one giant sea. Thus the Bible anticipated Wegener's theory by thousands of years.
 7. The author does not accept the evolutionary dates. They are simply used here for illustrative purposes.
 8. Uniformitarianism is the foundational underpinning of modern geology. It postulates that the present rate of geologic activity is slowly, very slowly, accomplishing all the geologic restructuring of the earth's surface. Before the 1900s most geologists were catastrophists. They believed that the earth had been through many catastrophes which had quickly reshaped the earth. Noah's flood was a catastrophic event and much geologic work was very quickly done by it, according to these early geologists.
 9. For a good defense of this important Biblical concept consult the following:
Custance, Arthur C. *Without Form and Void a Study of the Meaning of Genesis 1:2*. Doorway Pub. 1989. or online at <http://custance.org>
 10. Although the Bible is silent on how much time elapsed between Genesis 1:1 and 2 the earth does not have to be extremely old. The only reason that long ages are necessary is to accommodate the evolutionary theory or theistic evolution. Since these are not viable options then long eons of time are not needed. The time period between these two verses is unspecified for two reasons. First the Bible gives no indication; secondly the dating systems of men are erroneous. These dating systems are based on constants and assumptions that were jumbled by the earth's catastrophic past.
 11. Bates R. Jackson J. *Glossary of Geology*, 2nd ed. American Geological Institute. p.677. 1980.
 12. Hutton J. *The Theory of the Earth*. William Creech. Edinburgh. 1795.
 13. Lyell C. *Principles of Geology: Being an Attempt to Explain the Former Changes of the Earth's Surface by Reference to Causes Now in Operation*. 1830-1833, John Murray. London. Vol. 1 (1830); Vol. 2 (1832); Vol. 3 (1833).
 14. Darwin C. *The Origin of Species* 1859. Random House. New York. 1979.
 15. Many ancient records, from the Mayans, Hindus, and other cultures, indicate that the earth at one time had a year that was 360 days long. Examples include the Babylonians who divided the circle (year) into 360 degrees. We still use that system in geometry. This would correlate with 12 lunar cycles of 30 days each ($12 \times 30 = 360$). A comparison of the Genesis account (Gen. 7:24, 7:11, and 8:4) shows that five months consisted of 150 days. This would mean each month had 30 days. The earth now has an annual rotational period of $365\frac{1}{4}$ days. It is rotating faster now as compared to its rotation before the flood. If the earth had become denser it would rotate faster, much like a spinning ice skater rotates faster when she pulls in her arms and legs closer. Mathematically the earth's day before the flood, based on a 360-day year, was 24.28 hours long.

Presently the earth rotates once every 23.94 hours. The earth is presently rotating about 20 minutes faster per day.

What caused these changes to the length of the year and day? The flood of Noah was a great catastrophe. There was tremendous tectonic activity. This crustal rearrangement would cause internal friction which would generate heat and cause much of the earth's interior to melt. This melting would gravitationally settle the more denser melted elements, rocks, and minerals closer to the interior of the earth. This would cause the earth to become denser and it would spin faster. The earth's year would change from 360 days to 365¼ days in length. This would also require adjustments to the various ancient calendars. There is also the possibility that the earth interacted with an astral visitor. This would have altered its orbit thus changing the day and year's length. For information about the density of the earth and its spin see the articles below, for information about astral visitors see reference (19).

Song X. Richards PG. Seismological evidence for differential rotation of the Earth's inner core. *Nature*. 382:221-24. 1996.

Vidale JE. Dodge DA. Earle PS. Slow differential rotation of the Earth's inner core indicated by temporal changes in scattering. *Nature*. 405:445-448. 2000.

16. Other reasons for rejecting the flood as described in the Bible have to do with the rejection of spiritual knowledge or principles. If God sent a flood on wicked humanity to judge mankind then two things are obvious. There is a God and we must conform to his will. Neither of these concepts are popular to most people intent on "doing their own thing."

17. Tarbuck EJ. Lutgens FK. *Earth-An Introduction to Physical Geology*. 5th ed. Prentice Hall. Upper Saddle River NJ. 1996 (figure 3, p. 13; figure 4, p. 423).

18. A large planetoid impacting the earth would produce the kinetic energy of 5×10^8 megatons of exploding TNT. A megaton is the amount of energy released in the explosion of a million tons of TNT. This amount of energy released would extinguish all life on the earth. The rearrangement of the earth's core would release a greater amount of kinetic energy destroying all earthly life, see:

Napier WM. Clube SVM. A theory of terrestrial catastrophism. *Nature*. 282:455-59. 1979.

19. An early writer of the concept of the flood being caused by astral catastrophism was William Whiston. Whiston who believed that the close passing of a comet caused the flood was a friend of Sir Isaac Newton. Newton formulated the law of gravity and was involved in studying celestial mechanics. They were both friends of Edmund Halley the discoverer of the comet that bears his name. After Newton's death Whiston took charge of his laboratory. Whiston was also the translator of the *Complete Works of Josephus*. A modern version of astral catastrophism and its relation to the flood that builds on Whiston's work was published by Donald Patten in the 1960s, see:

Whiston, William. *A New Theory of the Earth: From its Original, to the Consummation of all Things Wherein the Creation of the World in Six Days, the Universal Deluge and General Conflagration as Laid Down in the Holy Scriptures are Shewn to be Perfectly Agreeable to Reason and Philosophy*. B. Tooke. London. 1697.

Patten, Donald W. *The Biblical Flood and the Ice Epoch: A Study in Scientific History*. Pacific Meridian. Seattle, WA. 1966.

20. Alvarez L. Alvarez W. Asaro F. Michel HV. Extraterrestrial cause for the Cretaceous-Tertiary extinction. *Science*. 208:4448:1095-1108. 1980. (figure 5, Don Davis-NASA)

21. A proper understanding of the time period before the creation week is very important in order to understand the Cretaceous-Tertiary extinctions. The world of the dinosaurs included the Cretaceous, Jurassic, and Triassic periods which make up the Mesozoic era. This world was destroyed and then the earth was later re-created in six literal days. The young earth creationist try to fit all of this geologic period into the world of Adam. This is a source of much contention among the geologists and creationist. A proper understanding of the Pre-Adamic world will not completely eliminate this contention although it will lessen it greatly.

22. Spray JG. Kelley SP. Rowley DB. Evidence for a late Triassic multiple impact event on Earth. *Nature*. 392:171-73. 1998.

23. Hunt C. Catastrophic termination of the last Wisconsin ice advance, observations in Alberta and Idaho. *Bulletin of Canadian Petroleum Geology*. 25:3:456-57. 1977.

24. Bottke Jr. WF. Jedicke R. Morbidelli A. Jean-Marc P. Gladman B. Understanding the distribution of near-earth asteroids. *Science*. 288:2190-94. 2000.

25. Woolly Mammoths (*Mammuthus primigenius*) and many other mammals have been found buried in vast numbers in Siberia and Alaska. As the Mid-Atlantic ridge was formed (astral visitor providing the energy), ocean water met the hot magma that was created by the friction of the moving plates. This caused steam, water, mud, and sediment to be ejected into the upper atmosphere. This mixture was then super-cooled by the vacuum of space and descended as a mixture of ice and sediment. This encased the woolly mammoths in ice and slush. When the poles shifted along with the more dense, recently created Himalayan mountains, the mammoths that had been living in a temperate region were moved closer to the frigid poles. They have been encased in ice since the flood. What happened to the woolly mammoths is mute testimony to the catastrophe that engulfed the earth.

26. Price. RA. Photo no. GSC-180345. Courtesy of Geological Survey of Canada. 1965.

27. Odell NE. The highest fossils in the world. *Geology Magazine*. 104:173-74. 1967.

28. Hsu. KJ. When the Mediterranean dried up. *Scientific American*. 227:29-31. December 1972.

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29. Hamilton WB. United States Geological Survey. Photo no. hwb00218. 1948 (figure 9).
30. Stanley SM. *Earth and Life through Time*. W H Freeman Co. New York. p. 189-95. 1986.
31. Byrd RE. Exploring the Ice Age in Antarctica. National Geographic. p. 456-7. October 1935.

"When the South Pole Suburb was Semitropical (Section title): In the moraines they passed many hours picking over the fragments tumbled from the mountainside. Invariably these finds included plant fossils, leaf and stem impressions, coal, and fossilized wood. Here, at the most southern known mountain in the world, scarcely 200 miles from the South Pole was found conclusive evidence that the climate in Antarctica was once temperate or even subtropical.

32. A shift in the poles is evident for several reasons. As mountains were being built and uplifted during the flood the earth would have had to alter its spin (a tilt in the axis would have been caused by the external torque/gravity supplied by an astral visitor). A spinning object that has a recently created dense spot (e.g. newly formed mountains) would begin to try to move this spot towards the equator as it spins because of centrifugal force. The consequences of this altering would have been magnified by the bulge on the equator. As the formerly centered bulge moved out of the equatorial region the earth would have made crustal readjustments and would have developed a new equatorial bulge. Great rips and tears would have been created. These tears or wrenching of the earth's surface correspond to the Rift Valley in Africa. This valley extends for some 5,000 miles and is 5-50 miles across. The change in the poles locations would bring areas that were in the poles into more tropical area and vice-versa. This accounts for the location of tropical fossil at the South Pole buried under thousands of feet of ice. See note (31).

33. Many believe that the Bible states that the seasons began at the creation week. This is incorrect. This is based on a faulty understanding of Genesis 1:14. The seasons actually began after the flood.

The word translated seasons in this verse is the Hebrew word *mowed* which means appointments. In Leviticus 23:2,4 the word translated feasts is the same word—*mowed*. The sun, moon, and stars were used to develop chronological systems, calendars, months, etc. on which the observance of the feasts, God's appointments, were based.

Then God said, "Let there be lights in the firmament of the heavens to divide the day from the night; and let them be for signs and seasons (*mowed*), and for day and years." (Genesis 1:14)

And the LORD spoke to Moses, saying, "Speak to the children of Israel, and say to them: 'The feasts (*mowed*) of the LORD, which you shall proclaim to be holy convocations, these are My feasts (*mowed*)...' 'These are the feasts (*mowed*) of the LORD, holy convocations which you shall proclaim at their appointed times (*mowed* KJV-seasons). (Leviticus 23:1-2, 4)

The cycle of the seasons began after the flood due to the changes in climate, relocation of the poles, and the changes in the tilt of the earth's axis (torque being supplied by the gravitation of an astral visitor), brought about by the flood, see (32) above. Also notice Genesis 8:22 spoken by God to Noah at the end of the flood experience and Psalm 74:17.

While the earth remains, seedtime and harvest, cold and heat, winter and summer, and day and night shall not cease. (Genesis 8:22)

You have set all the borders of the earth; You have made summer and winter. (Psalm 74:17)

These scriptures indicate that the time after the flood was when the seasons began.