Splitting Pangaea:

The Evidence Proving the Genesis Flood

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Author Note

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Abstract

Plate tectonics is the science of how the Earth's crust moves due to thermal forces far beneath the surface. While now the Earth has seven continents, originally it had only one: Pangaea. Many secular geologists disagree over the cause and process of the Pangaea: some believe it was the slow process of continental drift, while others take the position of the catastrophic plate tectonics theory. However, analysis of Pangaea both before and after its separation directly aligns with the flood in Genesis. God flooded the Earth via the water gates of the heavens and of the ground, which is believed to have been the main cause of separation of the plates upon which our continents and oceans lie. Through scientific and historical evidence and the accounts written in the Bible, it becomes clear that God used the discovery of catastrophic plate tectonics to reconfirm His creation and plan for us all.

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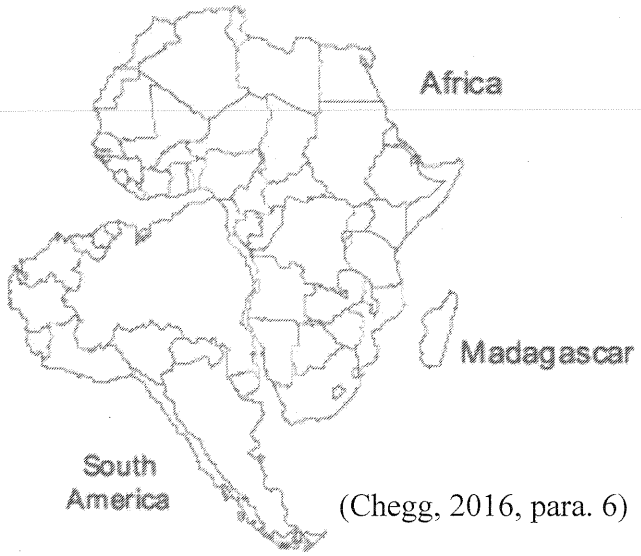
"If the spreading rate is constant, then no existing Pacific Ocean rock should be older than 250 million years. To date, no rocks older than 200 million years have been found in the Pacific Ocean basin. Thus evidence supports the plate tectonics model" (Hesser and Leach, 1989, p.49). This exemplifies the stereotypical theory about the split of supercontinent, Pangaea, found in most science textbooks across the world. This giant landmass, surrounded by a single giant ocean known as Panthalassa, is said to have separated approximately 300 million years ago (Ghose, 2014). Obviously things have changed since then, considering there are now seven continents and five oceans. What could have caused this drastic change in the earth's topography? Many, like Hesser and Leach, believe it was the process of continental drift in which the continents slowly drifted apart at a steady rate throughout time. However, according to Sir Issac Newton's First Law of Motion, an object at rest must stay at rest unless acted upon by an outside force. As a result of this, many scientists and philosophers believe in an alternative cause for the supercontinent's split: catastrophic plate tectonics. In short, this means that a massive force caused some cataclysmic natural disaster to trigger such an enormous change to occur in the earth's crust. Some scientists refer to the Bible when discussing catastrophic events that could have potentially caused this rift. In Genesis, God sends a massive flood in which "all the springs of the great deep, and the floodgates of the heavens were opened" (Genesis 7:11, New International Version). It is this Flood that often aligns with evidence found in plate tectonic discoveries over the past century, and makes many wonder is there actually a God? Is there actually an omniscient Creator behind this massive split of the supercontinent Pangaea?

Alfred Wegener first proposed the idea of a supercontinent, which he named Pangaea, in 1915 (Ghose, 2014). Though it was a very unpopular notion during his time, he continued to pursue the evidence and found, perhaps, the most obvious clue: the shapes of the Atlantic coastlines of South America and Africa were similar (Lehnhoff, 2015). Looking at a world map, it is easy to see how the east extension of South America would almost perfectly fit into the indent of Africa's west coastline. Another finding was the "similarity of rock and other geological formations like beds of coal exist on opposite sides of the Atlantic" (Lehnhoff, 2015, p.15). For example, coal deposits found in European countries like Poland and Great Britain have similar compositions and come from the same time period as coal beds found in Pennsylvania. This indicates that North America and Europe must have been combined at some point (Ghose, 2014). Another indication of Pangaea is the findings of fossil bands across continents. The most commonly known example of this is the Glossopteris, a fossilized fern that has been found in South America, southern Africa, southern India, Antarctica, and Australia (Lehnhoff, 2015). The Bible corresponds with the Pangaea theory when it states, "And God said, 'Let the water under the sky be gathered to one place, and let dry ground appear. And it was so" (Genesis 1:9). Although the Bible never directly says all the land was gathered together, many theologians infer that if all the water was in one place, then all the land was too.



(Chegg, 2016, para. 6)

The idea of Pangaea is widely accepted in the scientific and historical community by both secularists and Christians alike; however, it is the continental split that causes controversy. Many

scientists prefer to take a non-biblical approach to addressing the split due to religious preferences. "About 200 million years ago, the supercontinent began to break up. Gondwana (what is now Africa, South America, Antarctica, India, and Australia) first split from Laurasia (Eurasia and North America). Then 150 million years ago, Gondwana broke up. India peeled off from Antarctica, and Africa and South America drifted. Around 60 million years later, North America and Eurasia split off" (Ghose, 2014, para. 9). This is a common explanation that most scientists give for the split: a slow, dragged-out process of continental drift. The continental drift theory is a uniformitarian take on plate tectonics. However, this argument is often refuted by directing attention to the physics behind it. "Since we see the continents drifting only a few centimeters a year at present, then, according to uniformitarian thinkers that must be the rate at which they have moved for millions years. This explanation fails to account for geologically catastrophic events on a massive scale" (Butt, 2006, para. 4). For those who do not take the uniformitarian side, catastrophic plate tectonics is typically the most common theory. Those who take the route of catastrophe agree that a major event would have caused this massive destruction of the supercontinent Pangaea. In recent findings, there was a rapid subduction of ocean plates that existed underneath Pangaea. This subduction made the earth's crust and continental plates more vulnerable to being pulled apart (Baumgardner, 2002). In addition to what was happening to the ocean's floor, far beneath earth's crust, energy and other materials flowed through the earth's mantle affecting and disrupting the earth's dynamic, leading to catastrophic environmental changes (Santosh, 2010). Both the ocean floor subduction and disruption of energy in the earth's mantle would have made earth very vulnerable to a catastrophe, a catastrophe large and powerful enough to break about the continental plates in which Pangaea rested upon.

Catastrophic plate tectonics doesn't just stop at catastrophe causing the continents to separate, but goes further on to answer the question: what *kind* of catastrophe could have caused this? One theory is CAMP (Central Atlantic Magmatic Province). In 1999, Paul R. Renne, a geology professor at the University of California at Berkeley, and his team suggested the idea that at some point, volcanic activity and a large amount of magma began a process that had the potential to drive apart continents and create the Atlantic Ocean, while simultaneously dispersing evidence of the eruption; during this research, Renne and his colleagues first suggested this idea of CAMP (Butt, 2006). "Their thesis was that… CAMP can be related 'to a single brief magmatic episode…' In layman's terms, their thesis was the split of Pangaea began to take place in one huge, cataclysmic volcanic eruption" (Butt, 2006, para. 5). Even though Renne and his colleagues don't explicitly argue that the Genesis Flood caused the split, their findings show that a powerful, cataclysmic force was responsible suggests the idea of a catastrophe, like the Flood that occurred in Genesis.

"The existence of Pangaea overlapped with the worst mass extinction in history, the Permian-Triassic extinction event. Also called the Great Dying, it occurred around 250 million years ago and caused most species on Earth to go extinct" (Ghose, 2014, para. 14). A multitude of conflicting theories agree on this mass extinction period. It is said that "a cataclysm of incomprehensible proportions struck a fatal deathblow" (Marusek, 2004, para. 2). This is often the time period where many suggest a meteorite destroyed the dinosaurs. However, more species than dinosaurs were affected by this cataclysm. Of all marine animals, 96 percent became extinct, along with 70 percent of all land vertebrate species. This rapid die-off also included all rooted plant life and insects, even though insects are said to be capable of surviving some of the worst catastrophes known to man. The Great Dying is easily the largest die-off of life on Earth

(Marusek, 2004). So how did man and animal continue to exist after this catastrophe? CAMP and meteorite theories have failed to provide a legitimate excuse for life after this great catastrophe. The Genesis Flood, however, accounts for both man and animals survival after the flooding. The Bible says that God told Noah to build an ark and place his family in it; along with his family, Noah was instructed to place every kind of animal and its mate on the ark "to keep their various kinds alive throughout the earth" (Genesis 7:1-3). This would explain the life that resulted after such massive destruction.

Genesis 7:11-12 goes on to say, "In the six hundredth year of Noah's life, on the seventeenth day of the second month—on that day all the springs of the great deep burst forth, and the floodgates of the heavens were opened. And rain fell on the earth forty days and forty nights." Even some who find the Bible credible doubt the proportions of the Flood. Some claim that the Genesis Flood was just a rainy season. However, recent research at the Black Sea has proven that one should not underestimate the scale of the Genesis Flood. Based off deep drilling studies of sea levels, "salt water poured through the deepening channel, creating a waterfall 200 times the volume of Niagara Falls… The ocean moved inland at the rate of a mile a day" (Trefil, 2000, p. 2). Never in the history of the world had the Black Sea or any sea been taken over with such force. For the Black Sea to have reached such an overflow, the Mediterranean Sea must have been first conquered by this powerful force. In addition to the Black Sea's mixing of freshwater and saltwater, shells have been found in layers of sediment. The shells found in this area are typical of what was in the Black Sea when it was composed of freshwater. Mixed within these shell findings are "saltwater species previously unknown to the Black Sea" (Trefil, 2000, p.1).

In addition to the shell findings in the Black Sea, marine fossils have been found in unexpected places. While at first this doesn't seem to be particularly notable, at 7,000 to 8,000 feet above sea level, the Kaibab Limestone has been exposed at the rim of the Grand Canyon. Though in the uppermost layer of the Canyon, this limestone must have been sunken underneath ocean waters to be loaded with the lime sediments it carries today (Snelling, 2008). The Bible describes the flood as "...the waters rising over all the high mountains under the entire heavens and covered the mountains to a depth of more than 15 cubits" (Genesis 7:19-20). The "15 cubits" can be converted to 23 feet of water. A flood so vast and so deep that Mount Everest (almost five and a half miles tall) was covered by at least 23 feet of water. The extent of the flood described throughout Genesis, as well as throughout fossil and shell findings, definitely would have had the capabilities to have separated the supercontinent of Pangaea.

What happened after the flood? It is believed that retreating floodwaters stripped away at the sediments from the continental interiors and redeposited them as continental shelves on the edges of each continent. Findings show that the present ocean basin is no older than the Mesozoic era of the fossil record. This requires that any ocean floor prior to the Flood as well as any during the Flood itself to have vanished (Baumgardner, 2002). The Genesis Flood was not just rain falling from the sky, but springs of the great deep and the floodgates of the heavens opening onto Pangaea (Genesis 7:11). This particular verse has been recognized as proof for volcanic and magmatic activity during the Flood. The ocean floor would also give reason to sea-floor spreading (Butt, 2006). The idea of sea-floor spreading allows for the creation of new, additional sea floor through cracks on the abyss. The largest is the mid-ocean ridge, the edge of two tectonic plates. If the "springs of the deep" mentioned in verse 11 were to have broken apart this continental plate, it would have created not only the present day mid-ocean ridge, but also a

force strong enough to break apart Pangaea. As more water continued to fill this gap or "ridge," the distance between the two plates would have greatly increased considering how long the flood is said to have lasted. When the flood retreated, sea-floor spreading could have taken place and slightly filled the gap in between the two continental plates. This would explain not only the distance between the Western Hemisphere and the Eastern Hemisphere, but would explain why the ridge is now so narrow.

The history of Pangaea is often discussed around the world from all aspects: geodynamics, physics, plate movements, history, etc. However, the existence of Pangaea is not even questionable thanks to men like Alfred Wegener and Francis Bacon. Even though Pangaea is proven, it still causes controversy in the scientific and historical communities. The question of how Pangaea went from one to seven is often disputed. Evidential findings show that catastrophic plate tectonics offer some look into how the plates moved so drastically. Christians provide evidence through the Bible's account in Genesis of a global, cataclysmic flood. "Catastrophic plate tectonics promises to provide a positive and unstoppable apologetic for the Genesis Flood and a time-scale consistent with literal reading of the Scripture" (Baumgardner, 2002, para. 22). In this, Baumgardner encourages Christians to take advantage of the obvious alignment of the Genesis Flood and that of proven plate tectonics. If living by faith is hard, catastrophic plate tectonics offers a legitimate source of what the Bible has said to have happened with a perfectly correlated scientific fact that even secular scientist and historians agree on. Like it says in Genesis 1:31,"God saw all that he had made and it was very good...." One should embrace God's creation and plan and allow it to strengthen their faith and use it to strengthen others.

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