

## Geophysics, The Flood, and The Ice Age (two part lesson)

(appropriate for High Schoolers and older)

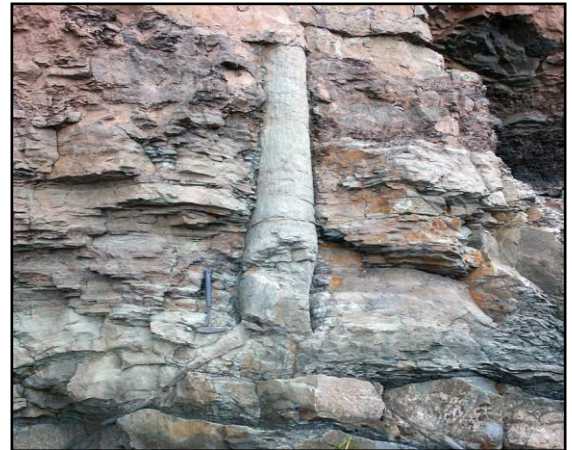
Michael R. Daily December 2015

Other youth bible studies by Michael Daily available at: <http://gciweb.org/2011/04/youth-bible-study-materials-michael-r-daily/>

- Reference #1: Dr. John Baumgardner, *Catastrophic Plate Tectonics: The Physics Behind The Genesis Flood*, Fifth International Conference on Creationism, August 4-8, 2003 <http://www.globalflood.org/papers/2003ICCcpt.html>
- Reference #2: Dr. John Baumgardner, *The Genesis Flood – A Tectonic Catastrophe as Well as a Hydrological One*, April 12, 2014, (free downloadable video) <https://archive.org/details/SLS20140412>
- Reference #3: Michael Oard, *Frozen In Time: The Woolly Mammoth, The Ice Age, and The Bible*, Master Books, 2006.
- Reference #4: Michael Oard, *The Ice Age: Only The Bible Can Explain It*, Creation Ministries International, 2010, (downloadable video for purchase) <http://usstore.creation.com/catalog/bible-explains-viddl-p-1729.html>
- Reference #5: Dr. Danny R. Faulkner, *How Long Did the Flood Last?*, Answers Research Journal 8 (2015), pp. 253-259.

When I was a young student we were taught that it was not possible for layers of sediment to be laid down in a short period of time. Therefore, the layers of sediment around the world (about 1 mile thick in total) must have been laid down over millions of years. But during my lifetime it has been demonstrated that layers of sediment actually can be laid down rapidly. The Mount Saint Helens eruption of 1980 and the bursting of naturally dammed water (i.e. glacial lake outburst floods such as the Lake Missoula Floods) have provided clear observational evidence that layers of sediment can be laid down rapidly. Today, it is undeniable that local floods have laid down multiple layers of sediment rapidly, in just a few weeks.

There is also evidence that rapid sedimentation has occurred in the past as demonstrated by the existence of severely folded layers of sedimentary rock and polystrate fossils. A polystrate fossil is a fossil of a single organism (usually a tree trunk) that extends through more than one geological stratum (layer). For example, if there are ten layers of sediment with a long tree trunk fossil sitting in the middle vertically cutting across all ten layers, it is obvious that the layers of sediment were laid down rapidly around the tree trunk before the top of it had time to rot away



[http://en.wikipedia.org/wiki/Polystrate\\_fossil](http://en.wikipedia.org/wiki/Polystrate_fossil)

As a result, the debate today is no longer around sedimentation rates but around local floods versus a global flood. The reason people argue that the flood described in Genesis was a local flood is because it is difficult to believe that the entire world could have been completely covered in flood water with only 40 days of rain, no matter how hard the rain came down. Rain is just evaporated sea water that condenses, falls, and returns to the ocean. On a global scale, rain has no net effect on the level of the oceans. Heavy rain can cause local flooding but has no effect on a global scale. Besides, after the Flood where would the water go?

Our challenge then is to come up with a model of how the global flood could have occurred that is compatible with the Biblical record and with the laws of physics. Will this model exactly describe what really happened during the Flood? No. We were not there to observe and measure it so our model won't be perfect. But if we can come up with a realistic model that, from a physics perspective, is defensible and is also compatible with the Biblical record, then we can remove a roadblock and make it easier for people to believe that the Bible is true and can be trusted. If our model also turns out to provide a better explanation for other things compared to secular models (such as with the Ice Age), then so much the better.

The model we will be looking at was developed by Dr. John Baumgartner as part of his thesis work from which he received his PhD in Geophysics from UCLA (1983). Dr. Baumgartner also has a B.S. in Electrical Engineering from Texas Tech (1968), an M.S. in Electrical Engineering from Princeton (1970), and an M.S. in Geophysics from UCLA (1981). He was working on his PhD while at Los Alamos National Laboratory and was given permission to use the Los Alamos supercomputer (at the time one of the nation's most powerful computers) to run his model on.

His computer simulation model (Terra) was intended to be used by any geophysicist wanting to run any kind of tectonic plate simulations, not just for modeling catastrophic plate tectonics. Terra continues to be used, with improvements, by the secular geophysical research community today and, with the dramatic increase in available computing power that has occurred, the model can now be run using a laptop computer.

### **What Can We Learn from the Biblical Record?**

We learn that God is going to not only destroy those living on the Earth but also the Earth itself is going to be significantly altered using a flood of water.

### **Genesis 6:13, 17**

**Then God said to Noah, “The end of all flesh has come before Me; for the earth is filled with violence because of them; and behold, I am about to destroy them with the earth.**

**17 Behold, I, even I am bringing the flood of water upon the earth, to destroy all flesh in which is the breath of life, from under heaven; everything that is on the earth shall perish.**

The primary mechanism of the flood is tied to ocean fountains that were all initiated at the same time along with continuous rain for 40 days.

### **Genesis 7:11-12**

**In the six hundredth year of Noah’s life, in the second month, on the seventeenth day of the month, on the same day all the fountains of the great deep burst open, and the floodgates of the sky were opened. <sup>12</sup> The rain fell upon the earth for forty days and forty nights.**

The floodwaters grew and reached their peak depth at day 40 of the flood at which time every piece of land was covered with at least 22 feet of water. After reaching its peak on day 40 the waters took another 150 days to recede to the point where the ark was lodged on Mt. Ararat (around day 190). Three months after that the tops of other mountains could be seen (around day 280). By the time the ark was opened and everyone disembarked, the Flood had lasted about a year from start to finish (ref #5: depending on what calendar was used at the time Genesis was written, the duration of the Flood from entry into the Ark until leaving the Ark was somewhere between 365 days and 386 days long).

### **Genesis 7:17-24**

**Then the flood came upon the earth for forty days, and the water increased and lifted up the ark, so that it rose above the earth. <sup>18</sup> The water prevailed and increased greatly upon the earth, and the ark floated on the surface of the water. <sup>19</sup> The water prevailed more and more upon the earth, so that all the high mountains everywhere under the heavens were covered. <sup>20</sup> The water prevailed fifteen cubits higher, and the mountains were covered. <sup>21</sup> All flesh that moved on the earth perished, birds and cattle and beasts and every swarming thing that swarms upon the earth, and all mankind; <sup>22</sup> of all that was on the dry land, all in whose nostrils was the breath of the spirit of life, died. <sup>23</sup> Thus He blotted out every living thing that was upon the face of the land, from man to animals to creeping things and to birds of the sky, and they were blotted out from the earth; and only Noah was left, together with those that were with him in the ark. <sup>24</sup> The water prevailed upon the earth one hundred and fifty days.**

### **Genesis 8:1-5**

**But God remembered Noah and all the beasts and all the cattle that were with him in the ark; and God caused a wind to pass over the earth, and the water subsided. 2 Also the fountains of the deep and the floodgates of the sky were closed, and the rain from the sky was restrained; 3 and the water receded steadily from the earth, and at the end of one hundred and fifty days the water decreased. 4 In the seventh month, on the seventeenth day of the month, the ark rested upon the mountains of Ararat. 5 The water decreased steadily until the tenth month; in the tenth month, on the first day of the month, the tops of the mountains became visible.**

## Genesis 8:13-16

Now it came about in the six hundred and first year, in the first month, on the first of the month, the water was dried up from the earth. Then Noah removed the covering of the ark, and looked, and behold, the surface of the ground was dried up. 14 In the second month, on the twenty-seventh day of the month, the earth was dry. 15 Then God spoke to Noah, saying, 16 “Go out of the ark, you and your wife and your sons and your sons’ wives with you.

Watch the 20 minute Baumgardner video clip at this time.

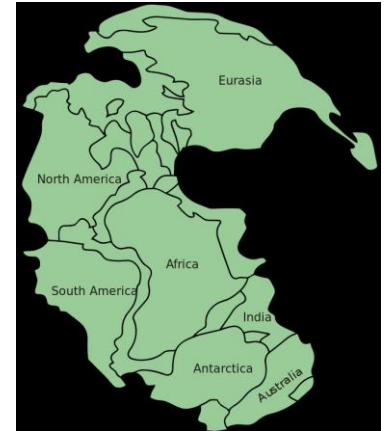
The video can be downloaded for free at this link: <https://archive.org/details/SLS20140412>

John Baumgardner, “The Genesis Flood - A Tectonic Catastrophe as Well as a Hydrological One”, April 12, 2014.

The 40 minute section of interest starts at 29:50 and ends at 1:10:00. If you have editing software you can download the video and edit this section down to 20 minutes by removing some of the extraneous material.

## Discussion of the Baumgardner Video

According to this model, the Pangaeian tectonic plates, once initiated, would have accelerated up to about 5 miles per hour, travelled across the globe roughly to their present positions, and then decelerated down to near zero velocity. At 5 miles per hour, the continents could have moved apart by 240 miles per day or 9,600 miles over 40 days. Since the circumference of the Earth is about 25,000 miles, 40 days provides enough time for all the continents to move into their present positions from a Pangaeian starting point (see picture on right). As the plates moved apart, the seafloor was torn open and the Earth’s seafloor was replaced with hot magma (molten rock) at a rate of 10 miles per hour (5 miles per hour in both directions). As seawater hit the uprising magma, it would have created supersonic steam jets that would have carried large amounts of entrained water into the stratosphere where it would return as rain. Perhaps these steam jets were the “fountains of the deep”.



<http://en.wikipedia.org/wiki/Pangaea>

In addition, the new seafloor would now be made out of hot magma which is not as dense as cold rock. As a result the magma would raise the bottom of the seafloor to a higher level. While this was happening the plates subducting under the continents would pull the continents down. So, the continents would be pulled down at the same time that the seafloor was rising. This is most likely what caused the flooding of the whole Earth with the rain being a side effect. This rapid rising of the seafloor would push large amounts of water over the continents resulting in extremely high rates of erosion with some water moving at up to 100 miles per hour. Once the tectonic system had reached equilibrium the continents would stop moving and the steam jets and rain would stop (day 40). However, the sea level would not fall until the magma on the seafloor cooled off enough that its density increased, resulting in the seafloor sinking. As the seafloor sank, water would move back into the oceans from the continents depositing sediment along the way. As more water ran off into the ocean, the weight over the seafloor would increase helping to push the seafloor back down. By day 365 or so this process had completed and the waters would have been at their current levels.

This process would have resulted in massive heating of the ocean. Some of this heat would have to have been removed volumetrically by God (miraculously) or the waters would not have receded fast enough and the seafloor today would be hotter than what we measure it to be. However, the Bible notes in **II Peter 3:3-6** that both Creation and the Flood were special cases that were supernatural events that did not follow normal patterns. Even so, the oceans must have been dramatically warmed during the Flood. Also, a high level of volcanic activity likely occurred for some time after the Flood due to the rapid tectonic movements during it.

## II Peter 3:3-6

Know this first of all, that in the last days mockers will come with their mocking, following after their own lusts, <sup>4</sup> and saying, “Where is the promise of His coming? For ever since the fathers fell asleep, all continues just as it was from the beginning of creation.” <sup>5</sup> For when they maintain this, it escapes their notice that by the word of God the heavens existed long ago and the earth was formed out of water and by water, <sup>6</sup> through which the world at that time was destroyed, being flooded with water.

**END OF PART 1**

## **BEGIN PART 2 (The Ice Age)**

At the end of the Flood, Noah would have entered a different world from the one he lived in before the Flood. The ocean would have been filled with warm water, perhaps as warm as 30 C (86 F). Today, the average temperature of Earth's oceans is 4 C (39 F). If the Earth's oceans before the Flood were similar to today, that represents a large temperature increase. There would also be extensive worldwide volcanic activity as a result of all of the tectonic plate movements during the first 40 days of the Flood which would put volcanic ash into the stratosphere reducing the amount of sunlight that reached the Earth. The result being unusually warm oceans and abnormally cold summers over high and mid latitude land masses. It should be noted that secular science does not currently have a robust model that can explain how the Ice Age ice sheets can be initiated, progress, stop, and melt back. However the conditions after the Genesis Flood would have been ideal for initiating, progressing, stopping, and reversing an Ice Age.

Watch the 20 minute Michael Oard video clip at this time.

The video can be downloaded for a small fee at this link: <http://usstore.creation.com/catalog/bible-explains-viddl-p-1729.html>

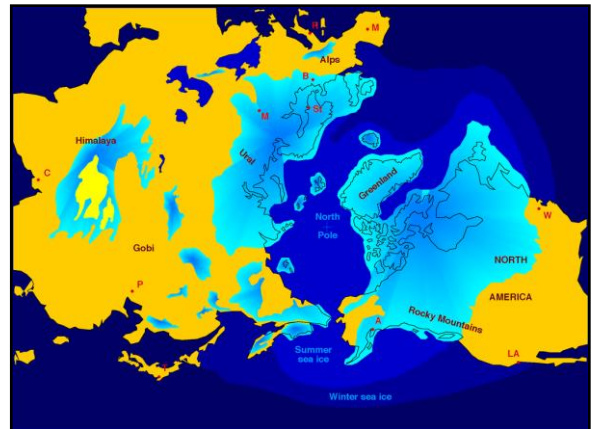
Michael Oard, *The Ice Age: Only The Bible Can Explain It*, Creation Ministries International, 2010.

Sections of interest are: 00:00 to 00:20, 4:12 to 4:47, 17:00 to 24:00, 31:57 to 38:42, 39:09 to 43:20, 46:43 to 47:50, 49:44 to 50:15

If you have editing software you can download the video file and combine these sections into a 20 minute video for presentation.

### **Discussion of the Ice Age Video**

There is overwhelming evidence that at least one Ice Age has occurred in the past. An ice sheet is 1,000 feet thick or more and has enough weight and movement that it is able to leave large amounts of residual evidence in the geology of the land which is why the occurrence of an Ice Age is not in dispute. The debate today is about the number of Ice Ages and the cause of Ice Ages. Secular science for many years believed in four Ice Ages but today believes in over thirty Ice Ages. For purposes of this study we will speak of one Ice Age. The map on the right shows that during the Ice Age, ice sheets completely covered all of Canada, most of Alaska, and northern Siberia and northern Europe. Over North America the ice sheets extended down to Portland, Minneapolis, and down past Chicago into parts of northern Ohio.



[http://en.wikipedia.org/wiki/Ice\\_age](http://en.wikipedia.org/wiki/Ice_age)

For the secular scientists, a defensible model of what causes the initiation, progression, and reversal of the ice sheets (1,000 to 2,000 feet thick) has been difficult to create. For an ice sheet to develop, the summer temperatures at the edge of the ice sheet (say close to Minneapolis) had to stay below 14 F (between 14 F and 32 F sunshine will melt snow) which is 56 F lower than current average summer temperatures there (i.e. 70 F) and it would have to be this cool every summer for centuries. The problem with secular models is that anything that would cause this large a drop in summer land temperatures would also cause the ocean temperatures to drop as well. Lower ocean temperatures mean less evaporation resulting in less snow over the land masses. If the air stays cold enough to not melt the snow that falls, it also results in less snow falling! For example, Antarctica and Greenland are technically considered deserts due to the small amount of snow they receive each year.

We know that the Ice Age had to occur after the Genesis Flood otherwise the current physical evidence for the Ice Age would have been destroyed by the Flood. So, the Ice Age occurred sometime after the Flood. Could the Flood itself set up the conditions that resulted in the Ice Age? As we learned in our previous lesson the Flood would have resulted in magma warmed oceans and cooler air over the land masses due to reduced sunlight caused by volcanic ash interference. The warm oceans would have had a very high evaporation rate which would have result in heavy and continuous snows as the water vapor moved over the cold land. The high evaporation rate would continue as the oceans cooled and the ice sheets grew. Eventually, the oceans would cool enough and the volcanic ash would clear enough that the snow storms would slowly shrink in size and the summer temperatures would warm up causing the ice sheets to stop their southern progression and

then melt back. The analysis shown in the video results in an Ice Age having a duration of around 700 years with maximum ice sheet average thicknesses of 2,300 feet over North America and 4,000 feet over Antarctica. As a result, the Genesis Flood provided the right initial conditions for a rapid, short Ice Age model that is reasonable and defensible and perhaps is more compelling than any secular model currently available.

The occurrence of an Ice Age is perhaps the best physical evidence that the Genesis Flood was, in fact, a global flood.

### **The Observable Impact of Volcanic Activity**

The most powerful volcanic eruption in recorded history occurred in Indonesia on April 10, 1815 with the eruption of Mount Tambora. The eruption lowered global temperatures and caused worldwide harvest failures and made the year 1816 come to be known as the “year without a summer”. In May 1816 frost killed off most crops in the higher elevations of New England and New York and snow fell in June in Albany, NY. Frost and occasional freezing temperatures occurred in these areas during all the summer months. Pennsylvania experienced lake and river ice in July and August. The numerous crop failures that year resulted in a shortage of food across the globe.



[http://en.wikipedia.org/wiki/Mount\\_Tambora](http://en.wikipedia.org/wiki/Mount_Tambora)

### **Psalm 29:10**

**The LORD sat as King at the flood; Yes, the LORD sits as King forever.**

**QUIET TIMES ALONE WITH GOD**

*JEREMIAH 15:16*

**THEME: *Geophysics, The Flood, and The Ice Age***

**PASSAGE FOR MEDITATION: *Genesis chapter 6***

**How does this passage relate to the theme?**

**When I reflect on this passage, does it primarily convict, encourage or challenge me? Explain why:**

**How will I apply this passage to my life in the coming week and is there anything I can do today to make this passage a part of my Christian life?**

**PASSAGE FOR MEDITATION: *Genesis chapter 7***

**How does this passage relate to the theme?**

**When I reflect on this passage, does it primarily convict, encourage or challenge me? Explain why:**

**How will I apply this passage to my life in the coming week and is there anything I can do today to make this passage a part of my Christian life?**

**PASSAGE FOR MEDITATION: *Genesis chapter 8***

**How does this passage relate to the theme?**

**When I reflect on this passage, does it primarily convict, encourage or challenge me? Explain why:**

**How will I apply this passage to my life in the coming week and is there anything I can do today to make this passage a part of my Christian life?**

**QUIET TIMES ALONE WITH GOD**

*JEREMIAH 15:16*

**THEME:** *Geophysics, The Flood, and The Ice Age*

**PASSAGE FOR MEDITATION:** *Genesis chapter 9*

How does this passage relate to the theme?

When I reflect on this passage, does it primarily convict, encourage or challenge me? Explain why:

How will I apply this passage to my life in the coming week and is there anything I can do today to make this passage a part of my Christian life?

**PASSAGE FOR MEDITATION:** *II Peter 3:3-6*

How does this passage relate to the theme?

When I reflect on this passage, does it primarily convict, encourage or challenge me? Explain why:

How will I apply this passage to my life in the coming week and is there anything I can do today to make this passage a part of my Christian life?

**PASSAGE FOR MEDITATION:** *Psalms 29:10*

How does this passage relate to the theme?

When I reflect on this passage, does it primarily convict, encourage or challenge me? Explain why:

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