

# Hurricanes, Tropical Storms, and the Need for Christians to Practice Good Stewardship

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*The origin of the Great Unconformity in the Grand Canyon has been a mystery. Likely, it is the result of erosion of Precambrian Archean and Proterozoic rocks by powerful hurricanes and by stream erosion generated by these storms. In the recent 200 years, humans have not practiced good stewardship and have influenced powerful hurricanes and tropical storms to be regenerated that may cause the extinction of life and dire problems for the human population on Earth. On that basis, Christians need to follow the command of Jesus to practice good stewardship and hospitality and welcome the migrants (foreigners) who will be displaced because of climate warming, rising sea levels, and unbearable temperature increases in some localities.*

## Introduction

In recent times powerful hurricanes and tropical storms have hit the Earth as is illustrated (a) by the category 5 hurricane Katrina that struck Texas and Louisiana in late August 2005 (**Figure 1**) (b) and the category 4 hurricane Helene that struck Florida, September 26, 2024, and then moved north to cause devastating flooding in North Carolina, (c) and Milton that struck Florida, October 9, 2024 with devastating flooding, and (d) by the tropical storm with great amount of flooding that hit North Carolina, September 17, 2024, and (e) an equivalent “tropical storm” that hit east-central Europe and Czechoslovakia, September 16, 2024, with huge amounts of flooding. This storm meteorologists call a “medicane” instead of a hurricane and is a cyclone that moves counter-clockwise.



**Figure 1.** Category 5 Katrina hurricane, hitting coast of Texas and Louisiana in late August, 2005.

All these hurricanes, tropical storms, and cyclones are controlled by the Coriolis Force which in North American causes atmospheric rotations of storms in a counter-clockwise motion. Central Europe is now being affected by the warming of the Atlantic Ocean and the Mediterranean Sea in the same way that warming of the ocean waters occurred in the Gulf of Mexico south of the United States. This warming in the Atlantic Ocean has produced counter-clockwise, vortex, cyclone storms that are loaded with water and stuck between two high-pressure cells and cannot go anywhere and just keep “weeping.” These storms usually come in via the Gibraltar Seaway, skirt Morocco and Algeria, get filled with extra African heat, then move over

Italy into Slovenia and finally get stuck in east-central Europe and release most of their moisture in Poland and Czechoslovakia.

## **How do These Hurricanes and Storms Relate to the Bible**

In the Bible humans are commanded to be good stewards.

*“The Lord God took the man and put him in the garden of Eden to work it and keep it.” (Genesis 2:15 ESV)*

In other words, humans are supposed to be good stewards of the Earth (work and keep it). Unfortunately, humans in their greed have not done so, and because of this greed, they have amplified normal climate warming because of increasing quantities of carbon dioxide and methane put into the atmosphere. This has triggered the formation of hurricanes and tropical storms described above and which could eventually cause the death of many humans, the extinction of many species of life, and extensive erosion of the continents on Earth. In order to understand what humans have done, it would be helpful to examine the origin of the Earth and its subsequent evolutionary history that are described below.

## **Origin of the proto-Earth and its Evolutionary History**

According to current theories, the proto-Earth was formed by zillions of impacts of meteorites, and the energy produced during the collective bombardment of these meteorite masses and the heat released from the decay of radioactive elements

would have melted the whole proto-Earth so that heavy iron atoms sank to form its core. This proto-Earth would have had oceans made up of magma. Overlying this iron core would be a thick mantle of elements in silicate compounds. Subsequent outgassing, volcanic activity, and further meteorite impacts produced an early atmosphere of nitrogen, carbon dioxide, and water vapor. Then, after these gases in the atmosphere had accumulated over millions of years and after significant cooling, the water vapor would have condensed to form the Earth's first oceans. Then, the Earth during the Archean Eon (**Figure 2**) was mostly a water world that had a continental crust that was mostly under a shallow ocean below the overlying atmosphere of nitrogen, carbon dioxide, and water vapor.

# Geologic Time Scale

Eras	Periods	millions of years ago
Cenozoic	Quaternary - Q	Holocene 0
		Pleistocene 0.01
	Neogene - N	Pliocene 2.6
		Miocene 5.3
	Paleogene - P <sub>G</sub>	Oligocene 23
		Eocene 34
		Paleocene 56
	Mesozoic	Cretaceous - K 66
		Jurassic - J 145
Triassic - T <sub>R</sub> 201		
Paleozoic	Permian - P 252	
	Pennsylvanian* - P 299	
	Mississippian* - M 323	
	Devonian - D 359	
	Silurian - S 419	
	Ordovician - O 444	
	Cambrian - C 485	
Precambrian	Proterozoic - P 541	
	Archean - A 2,500	
		4,600

\*Mississippian and Pennsylvanian were known first in the UK as 'Carboniferous'.

Figure 2. Geologic Time Scale

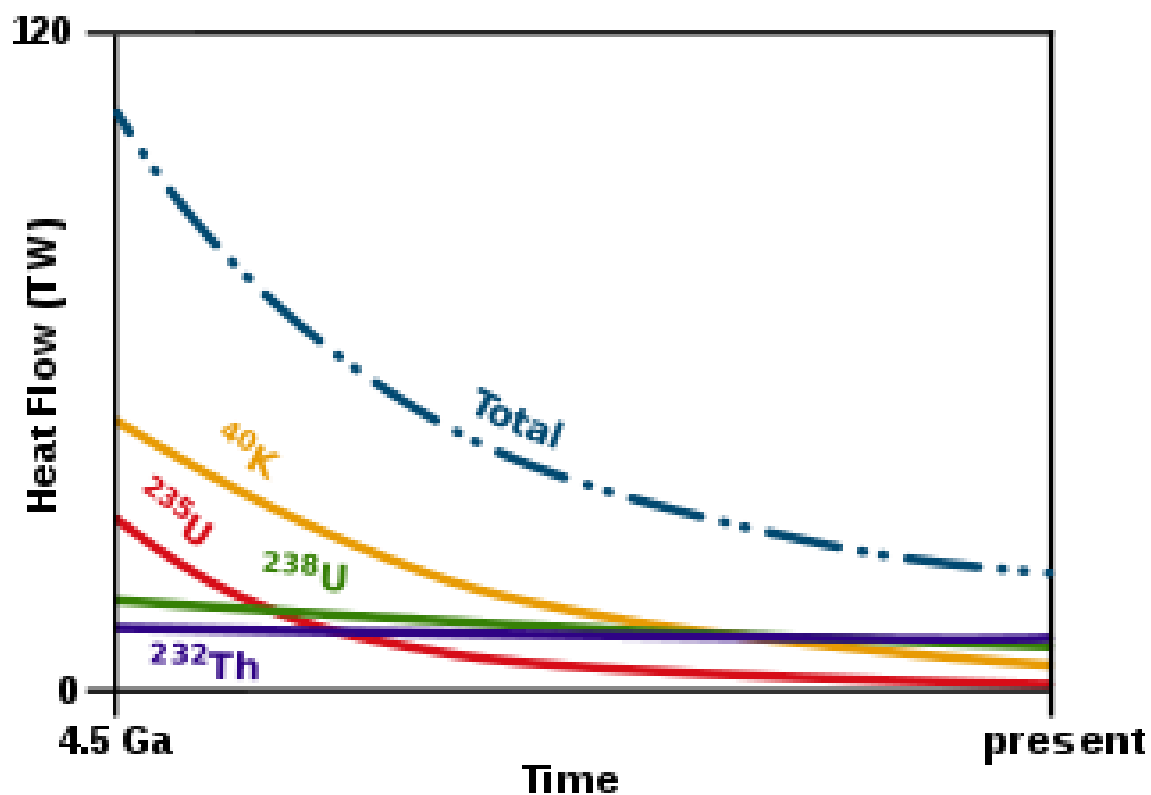


The laws of atmospheric physics indicate that for today's atmosphere, it can hold only 0.01 to 4.0 percent water by volume. Therefore, the early Archean atmosphere could not have held as much water as would have created oceans with as much water as occurs in the present oceans. On that basis, most water on the early Earth's surface actually came from the Earth's interior.

Mantle minerals, such as Mg-sursassite,  $\text{Mg}_2\text{Al}_3(\text{SiO}_4)(\text{Si}_2\text{O}_7)(\text{OH})_3$  in Earth's interior have OH as part of its chemical formula and are not likely the source of water that eventually diffused up in the mantle to cause basalt melts to form and which later caused the explosive eruption of water-bearing basalt lava and ash from volcanic vents. That is, this OH is structurally bound and not free to migrate. More likely the sources of mantle water for basaltic eruptions are free  $\text{H}_2\text{O}$  or OH molecules in the interstices or crystal boundaries between iron-magnesium silicate minerals. Probably, although the amount of water in the original mantle was only in trace amounts, the volume of the mantle is so enormous, that once there were 4 to 5 times as much water in the mantle as the volume of water in the world's oceans now.

## **Heat Flow in the Early Earth**

It is true that when the Archean began, the Earth's heat flow was nearly three times higher than it is today (**Figure 3**).

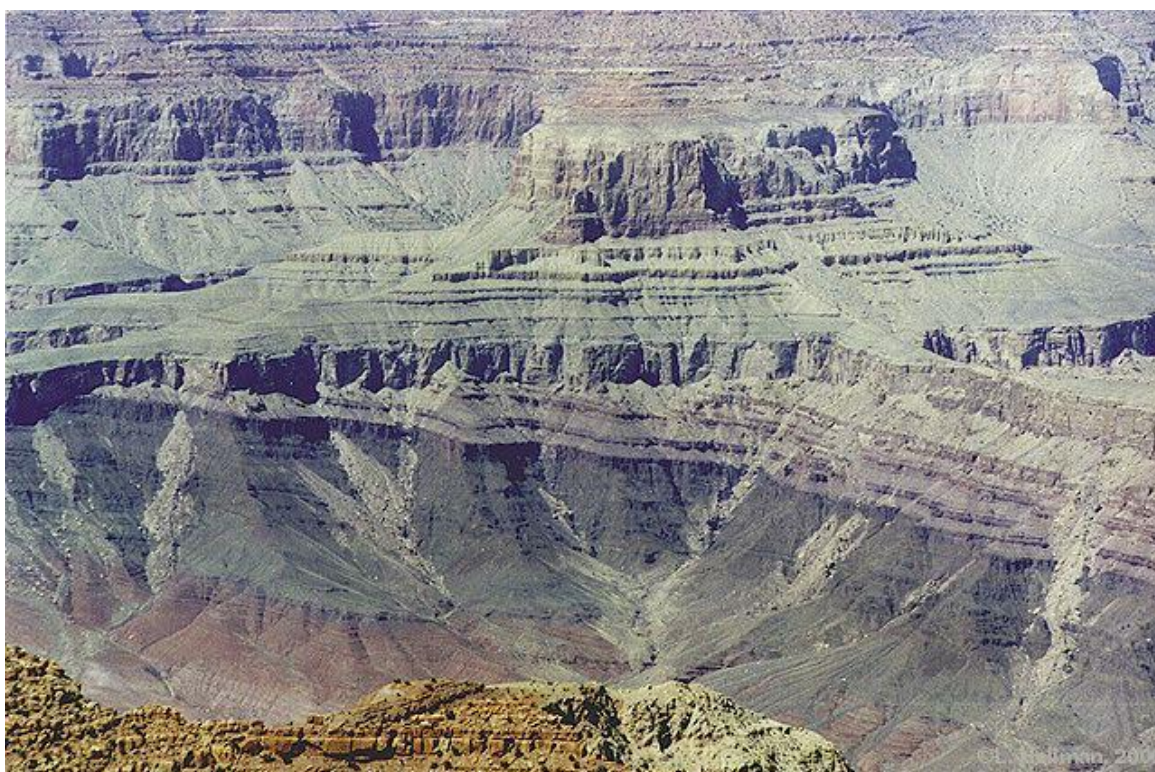


**Figure 3.** The evolution of Earth's radiogenic heat flow over time is illustrated by heat released from the decay of  $^{232}\text{Th}$ ,  $^{235}\text{U}$ ,  $^{238}\text{U}$ , and  $^{40}\text{K}$ .

This heat was still twice the current level at the transition from the Archean to the Proterozoic (2,500 years ago; **Figure 2.**) The extra heat was (a) partly a remnant heat from the zillions of meteorite accretionary bombardments, (b) from the crystallization of the iron core, and (c) partly from the decay of radioactive elements as shown in **Figure 3** that provides the extra heat. As a result, the Earth's Archean mantle was significantly hotter than today.



In the Flood Geology theory, those people (young-Earth creationists) who want to promote the idea (a) that the Earth is 6,000 years old and (b) that Noah's flood occurred in one year about 4,350 years ago and deposited the sedimentary layers in the Grand Canyon during this flood believe that this flood eroded the nearly flat surface that is called the Great Unconformity (**Figure 4**), and this erosion supplied the sedimentary detritus that became the sedimentary layers deposited in the Grand Canyon area.

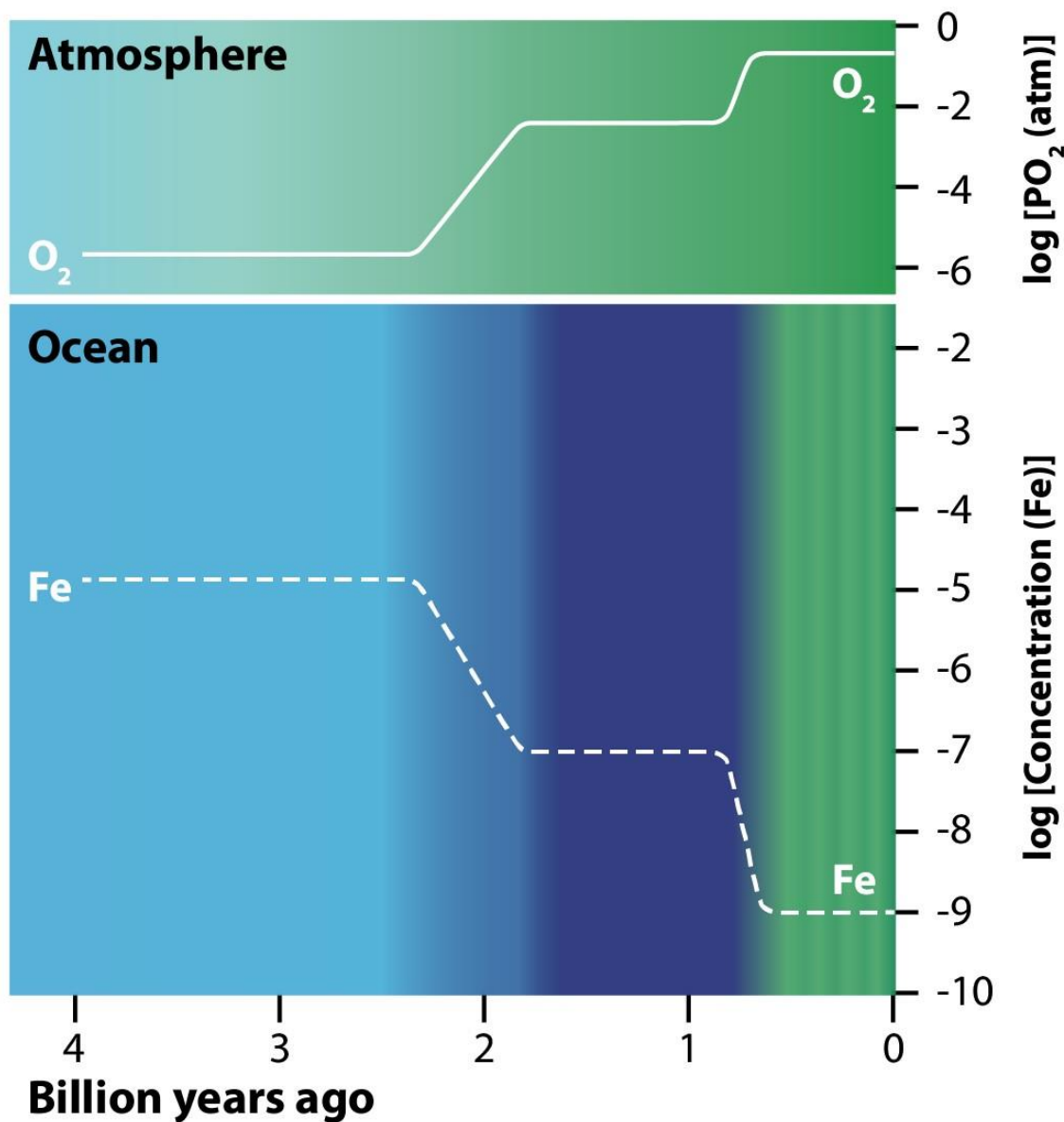


**Figure 4.** Great Unconformity – the erosional surface (mid-line across width of image) between overlying, nearly horizontal, sedimentary Paleozoic Cambrian rocks and with underlying dipping Precambrian rocks in the Grand Canyon.

The name *Great Unconformity* is applied to either the unconformity observed by James Hutton in 1787 at Siccar Point in Scotland<sup>1</sup> or that observed by John Wesley Powell in the Grand Canyon in 1860.<sup>2</sup> In the Grand Canyon, there is no evidence that its extensive erosion provided the sediment deposited in the overlying Cambrian Tapeats Sandstone.<sup>3</sup> Everywhere this is a significant stratigraphic and time break between the known pre-Cambrian rocks and Cambrian sediments of North America.<sup>4</sup>

Some scientists have suggested that the Great Unconformity was formed following a great amount of erosion during plate tectonics. This reporting of erosion also includes creation of extensive unconformities in other parts of the Earth than just in the Grand Canyon and Scotland.<sup>5</sup> Others have suggested that the unconformities resulted from extensive snowball glaciation of the Earth.<sup>6,7</sup> But there is no evidence of glacial striations of the rocks at the top of this unconformity in the Grand Canyon, and for what really caused its great amount of erosion. Investigators of the origin of the Great Unconformity did not realize that the relatively great abundance of methane in the atmosphere in Precambrian time, which was generated by methane-producing bacteria (*Methanogens*) in the ocean, resulted in great numbers of big hurricanes because methane is a “greenhouse” gas that produces big hurricanes and caused the extensive 3-to-5 km of unroofing-erosion to create the Great Unconformity (**Figure 4**). That great amount of erosion in the Grand Canyon lasted until oxygen increased in

abundance in the atmosphere at the beginning of the Paleozoic Era, 541 million years ago (**Figure 5**).



**Figure 5.** Diagram showing atmospheric  $P_{O_2}$  (top curve) through time beginning less than 4 billion years ago and change in Fe content in the ocean. Source of image – Anbar (2008)<sup>9</sup>

This oxygen was generated when a mutation occurred in a species of a *Methanogen* bacteria to produce a new species of



life (cyanobacteria) that used sunlight energy in photosynthesis to produce a waste product of oxygen. This oxygen then killed most of the methanogen bacteria except for those deep in the oceans and then began to move into the Earth's atmosphere, displacing methane destroyed by lightning following the Archean Eon in the beginning of the Proterozoic Eon 2,500 million years ago.<sup>8</sup> But not all this oxygen reached the atmosphere because the early oceans had much dissolved ferrous iron in it, and the oxygen reacted with this iron to produce layers of red-banded hematite deposits (**Figure 6**).

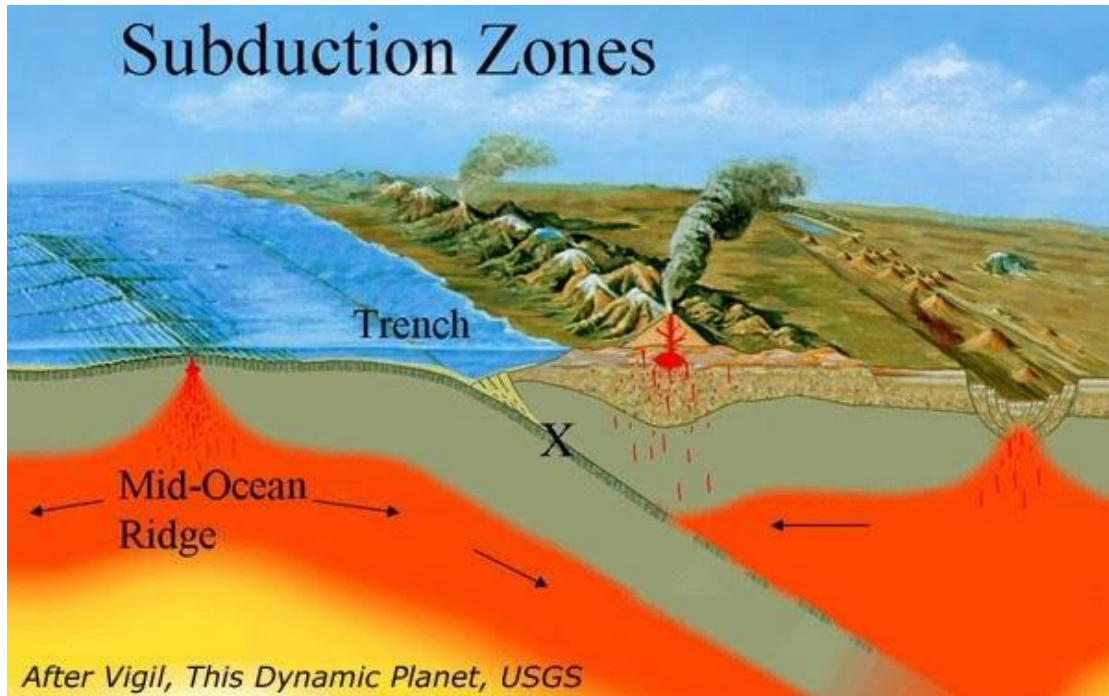


**Figure 6.** Banded iron formation; red hematite alternating with white jasper.

Eventually, most of the iron was removed from the ocean waters, and then the oxygen increased in the atmosphere at the end of the Proterozoic Eon and the beginning of the Paleozoic Era about 541 million years ago (See **Figure 2**) when marine life began to evolve that used the oxygen for energy and released carbon dioxide as a waste product (**Figure 5**).

Although hurricanes likely appeared when methane first began to become abundant in the Earth's atmosphere about 3,000-3,500 million years ago, they likely gradually increased in abundance and power until they were particularly big, frequent, and powerful (like the category 5 Katrina hurricane, **Figure 1**, but bigger, more often, and more powerful) about 1,600 million years ago before the Cambrian Tapeats Sandstone began to be deposited about 541 million years ago (**Figure 2**). That great power was because the ocean waters were very warm which caused great amounts of water evaporation, and these waters were warmer than the waters in today's oceans that created the Katrina and Helene hurricanes

Of course, hurricane storms also produce a huge amount of rainfall on continental land surfaces. Therefore, much of the erosion of the land in the broad extent of the Great Unconformity would also have been produced by rushing streams when the hurricane or tropical storms moved inland on the continents. Also, less frequent tsunamis than hurricanes, moving through the ocean waters, would have created large amounts of erosion because of giant waves produced by periodic jumps of subducting oceanic slabs in trenches (**Figure 7**).



**Figure 7.** Subduction zones in plate tectonics. Basalt lava emerges in mid-ocean spreading centers and in island arc volcanoes above a subducting slab. Tsunamis are generated from the trench.

The tsunamis happen when there is a sudden drop of 10 to 20 feet of the ocean surface when a slab moves quickly downward under the ocean water. Immediately, after the sudden drop of the water, the ocean starts to level itself and sends tsunami waves racing at 450 mph across the ocean with a huge circular motion that could increase in its amplitude to 50 to 100 feet high when crashing on a distant shore and do tremendous amounts of erosion of the shore rocks.

**The Call to Christians in Their Needed Stewardship**

On the basis of the above evolution of the Earth, hurricanes Katrina, Helene, and Milton are wake-up calls to Christians. Climate warming is eventually going to melt the glacial ice cover on Greenland, Antarctica, and other continental mountain surfaces, and the melt water from this glacial ice will flow to the oceans and raise ocean levels. Changes in ocean circulation patterns will then cause atmospheric weather changes in many places on Earth so that locally many places will have unbearable high temperatures (say as high as 115 degrees F or much higher). On the basis of sea level rise and the new high temperature conditions, many human populations will be displaced so that large numbers of humans will have to move to regions of higher elevations and to where bearable temperature conditions exist in order to survive. Many of the world's cities with large human populations (e.g., Tokyo, Delhi, Rio De Janeiro, Los Angeles, New York, Shanghai) are only 10 feet above sea level. Therefore, Christians around the world will need to accept migrants, the poor, the foreigners, the needy, marginal people that Jesus commands Christians to care for.

### **Interpreting the Bible Correctly**

To really understand this call to Christians, there is a need to interpret the verses in Scripture describing the destruction of Sodom and Gomorrah (Genesis 18 and 19) in the context of what Josh Scott describes in his book "Context".<sup>10</sup> In his interpretation, the Bible verses are not meant to exclude, shame, and demonize members of the LGBTQ+ community which is



commonly done by pastors in many conservative Christian churches. These pastors seem to think that this eradication of Sodom and Gomorrah was done by God to eliminate the inhabitants of these cities because of their sexual orientation, but that is not true. As Josh Scott points out, people reading the Sodom and Gomorrah story must understand the context and meaning of the Sodom story. That is, among the Hebrews, Sodom was considered to be a city with a bad reputation.

In this Sodom story, Abraham and his nephew Lot decided to separate from living together because their joint possessions were too large and causing conflict, and they decided to move in opposite directions. Abraham decided to go west and Lot decided to go east. But in biblical times going east meant going into exile. When God exiled Adam and Eve from the Garden of Eden, they were sent to the east, and when Cain killed his brother Abel, he was sent east of Eden to the land of Nod. Thus, moving into exile meant going into a land of trouble. In Lot's case, it took him to Sodom where the Hebrews believed that the people in Sodom were great sinners against the Lord.

According to Josh Scott, what must be understood in ancient time was the concept of "*xenia*" or "guest friendship." In biblical times during which there were no hotels, travelers (strangers) were dependent on the kindness and hospitality of others when they came to stay in a city while they were travelling. People who were the normal inhabitants of a city were supposed to provide kindness, hospitality, a safe place to stay, food, and drink. "Guest friendship" was not only a good

idea but also a moral imperative. The stranger coming to a city could be a human but could also be an angel or God in disguise, and the city people would not want to mistreat an angel or God.

In Hebrews 13:2, readers are prompted: “Do not neglect to show hospitality to strangers, for by doing that some have entertained angels without knowing it.” This Hebrew prompting is similar to the Sodom story in which its citizens are hostile to strangers looking for shelter, and because of their hostility to strangers, God is said to plan to destroy the city of Sodom and the inhospitable men in it.

Early in this Sodom story, Abraham and Sarah welcome three strangers (angels) sent by God, and Abraham and Sarah welcome them with food and gracious treatment, and the angels rewarded them by telling Sarah that when they returned to see them again in a year, she would bear a son. When she heard this, she laughed because she knew that she was no longer menstruating. Then, later in the story, God sent two angels to save Lot and his family who were living just outside the gate to Sodom. These angels came to save Lot and his family because they told him that God planned to destroy Sodom and the people in it. Lot was being attacked by the men in Sodom who wanted to have sex with the visiting strangers (angels in disguise). That is, they wanted to rape them for being unwelcome visitors to their city.

The sin of Sodom was not that the people in Sodom were LGBTQ+. Remember Lot is not from Sodom originally. He is a new transplant to the city, an immigrant. He welcomed the

strangers, but the men of Sodom were not demanding that Lot release them for consensual sexual relationships but to rape them, and Lot refused. On that basis, the sin issue in the Sodom story is not about LGBTQ+ relationships, but about the men from Sodom who failed to practice hospitality. When Lot was convinced that this destruction would happen, he and his family escaped to a hill outside Sodom and survived its destruction.

## **How Jesus is Related to the Sodom Story**

When Jesus sent out his disciple two-by-two to preach the good news that the Kingdom of Heaven had come near, He commanded them take no money or pack for their travels. When they entered villages where they would preach, they were supposed to depend on the hospitality of the people in these communities to meet their needs. If they found themselves in a situation in which the community would not provide hospitality for them, they were to “shake off the dust from their feet” as they left, and Jesus said additionally: “Truly I tell you, it will be more bearable on the day of judgment in the land of Sodom and Gomorrah than for that town.” (Matthew 10:15) That is, such communities failed to practice hospitality which was a serious sin in biblical times.

## **The Sin of Sodom Today**

In today’s culture in the United States, people are now beginning to promote hostility, inhospitality, and hate toward strangers (the immigrants) who are becoming abused and

traumatized and not welcomed as Jesus would expect Christians to do.

## **What Really Happened that Caused the Destruction of Sodom**

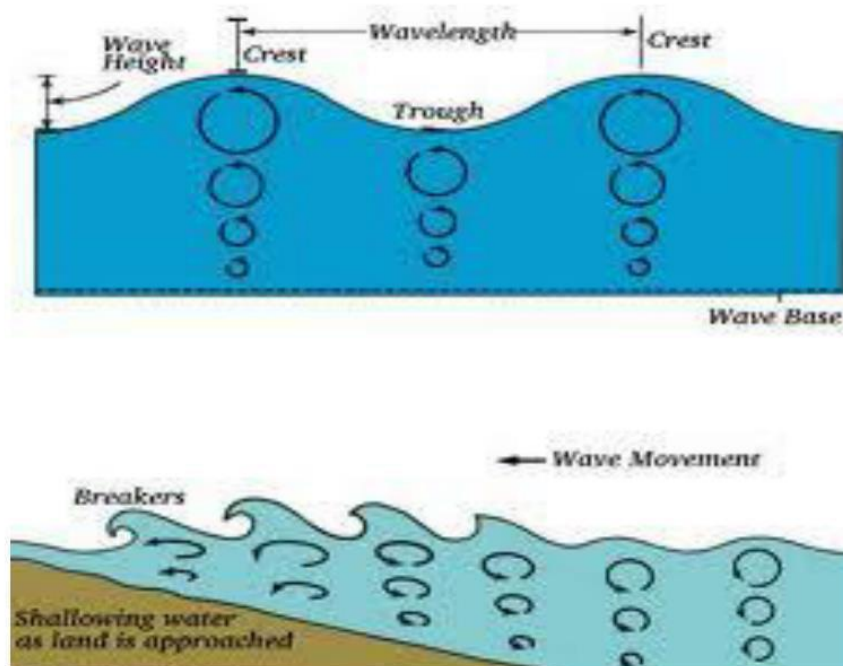
What is not realized by the biblical author who described the destruction of Sodom and Gomorrah is that their destruction was the result of a natural event of a violent air-burst-explosion of an incoming meteorite,<sup>10</sup> and the people in these cities happened to be in the wrong place at the wrong time. All biblical cities had people who were sinful (like some people who are sinful in today's cities), but these cities also had innocent women and children who were not sinful. But the feeling and attitude in ancient biblical time was that when bad things happened, God was punishing someone for being sinful. For example, remember when Jesus was asked by the Pharisees: "Who sinned? The blind man or his parents." He said: "Neither." And when 18 men constructing the Tower of Siloam were killed when it collapsed (Luke 13:4), Jesus was asked whether they had died because of their sins, and He said "No." On that basis, when Moses wrote the story of Noah's flood in which the only people who survived were Noah and his family and everyone else was drowned --- supposedly in the ancient biblical view, the death of so many people outside the ark was because they were terribly sinful. But, again, there likely were a lot of innocent women and children who were not sinful who

also drowned in Noah’s flood waters, and they just happened to be in the wrong place at the wrong time.

This flood was a natural, very large, ancient hurricane “tropical storm” that dumped a lot of water in southeastern Mesopotamia, and it was not a global flood.<sup>12,13</sup> In other words, when Moses reported that God promised that God would not do such a large storm again, Moses was giving a much-needed theological message to the Hebrews, and he was not giving a science lesson of the extent and cause of the flood.

It is quite clear that a global flood never happened because of what is shown in **Figure 8**.

## Waves –circular motion



**Figure 8.** Circular motion of water molecules in ocean waves.

The young-Earth creationists claim that the sedimentary layers in the Grand Canyon and around the world were deposited by waves created by a giant hurricane storm in biblical times. But the motion of water molecules in any size of oceanic wave is circular and the tiny circles at the bottom of the circular motion are incapable of eroding the bedrock on the ocean floor to produce detrital particles, then suspend them and transport them long distances laterally (say thousands of miles to the Grand Canyon). On that basis, Noah's flood can only have been local in extent.

### **Significant Points of This Article**

One point of this article is, first, that it is because of human greed, lack of proper stewardship, and climate warming that humans are facing dire life times because the present human-created conditions exist to produce enormous hurricanes and dangerous tropical storms. Second, the Great Unconformity in the Grand Canyon was created by erosion resulting from abundant more-powerful hurricanes than are created now and which caused extensive erosion of a broad nearly-flat surface on the continental rocks around the world during more than 2,500 million years of erosion. Third, Christians are expected to take care of immigrants and strangers that will be forced to move from where they are living now because of these hurricanes and tropical storms. Fourth, the erosive power and devastation because of the hurricanes Katrina, Helene, and Milton and the many deaths that they caused show that if people living in their

areas of damage did not have modern satellites with weather forecasts to tell them to move to higher ground and automotive vehicles to transport them there for safety, many, many thousands would have died and that those who died did not die because of their sins (as thought in biblical times) but because they were in the wrong place at the wrong time. Fifth, we cannot be building fences when we should be building bridges.

## **Acknowledgment**

I wish to thank Ken Wolgemuth, Rudolph Pohl, and Gerhold Lemke for reviewing the article and making many good suggestions for its improvement.

## **Notes**

<sup>1</sup> Rance. H., (1999) *Historical Geology: The Present is the Key to the Past*. Archived 3 December 2008 at the Wayback Machine QCC Press, New York.

<sup>2</sup> Merten, G.. (2005) *Geology in the American Southwest, New Processes, New Theories* in Anderson, M. F., ed., *A Gathering of Grand Canyon Historians. Proceedings of the Inaugural Grand Canyon History Symposium*, January 2002, Grand Canyon Association, Grand Canyon, Arizona.

<sup>3</sup> See this article; “Critical Analysis of Snelling’s Model for the Folding and Origin of the Tapeats Sandstone, Grand Canyon, Arizona, and Postscript” and its electronic link at:

[Nr80Tapeats.pdf \(csun.edu\)](#)



<sup>4</sup> Charles D Walcott, "Abrupt Appearance of the Cambrian Fauna on the North American Continent", *Cambrian Geology and Paleontology* (1910).

<sup>5</sup> Sobelev, S. V. and Brown, M., (2019) Surface erosion events controlled the evolution of plate tectonics, *Nature*, v. 570, pp. 52-56.

<sup>6</sup> White. W. A., (1973) Deep Erosion by Infracambrian Ice Sheets. *Geological Society of America Bulletin*, v. 84. pp. 1841-1844.

<sup>7</sup> Keller, C. B., Husson, J. M., Mitchell, R.N., Bottke, W. F., Gernon, T. M., Boehnke, P., Bell, E. A., Swanson-Hysell, N. L., Peters, S. E.. (2019-01-22), Neoproterozoic glacial origin of the Great Unconformity, *Proceedings of the National Academy of Sciences*, v. 116, n. 4, pp. 1136-1145.

<sup>8</sup> See this article for proof of the appearance of oxygen: Global tillites, geologic history, and biblical scientific accuracy  
[Nr40tillites.pdf \(csun.edu\)](#)

<sup>9</sup> Anbar, A. D., 2008, Elements and Evolution, *Science*, v. 322, p. 1481-1483.

<sup>10</sup> Scott, J., 2024. *Context: Putting Scripture in its Place*, 2024, Abingdon Press).

<sup>11</sup> See this article: "Alternative Explanation for the Location and Destruction of Sodom" and this electronic link:

[Nr79Sodom2.pdf \(csun.edu\)](#)

<sup>12</sup> See this article: "Yes, Noah's Flood May Have Happened But Not Over the Whole Earth" and this electronic link:

[RNCSE25.5-6cdt \(csun.edu\)](#)

<sup>13</sup> See this article: “Fountains of the Great Deep and Noah’s Flood: and this electronic link: [Nr64Fountains.pdf \(csun.edu\)](#)

## **Post Script**

Readers need to aware that there are other articles that present views in opposition to the false science presented by young-Earth creationists that can be found in an article with the title “Resource” at this link. Thirty-five topics are listed plus links to articles in each topic.

<https://www.csun.edu/~vcgeo005/Nr122Resources5.pdf>