

## What Is the State of the Water Vapor Canopy Model?

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*Exploring the history of the water vapor canopy model, biblical interpretation surrounding the model, and how we should approach theories in biblical creation.*

If there is one thing you need to know about biblical creationists, it's that they can be divided on a subject. This isn't necessarily a bad thing. Though we all have the same heart to follow Christ and do the best we can for the sake of biblical authority and the cause of Christ, we can have differences when it comes to details of models used to explain various aspects of God's creation.

When divisions occur over scientific models, they help us dive into an issue in more detail and discover if that model is good, bad, needs revision, and so on. But note over what we are divided: it is not the Word of God or even theology; it is a division over a *scientific model*.

This is where Christians can rightly be divided on a subject and still do so with Christian love, and I hope it is in love that Christians conduct themselves — in “iron-sharpening-iron” dealings on a model while still promoting a heart for the gospel (Proverbs 27:17).

The debate over a water vapor canopy model is no different — we are all brothers and sisters in Christ trying to understand *what the Bible says and what it doesn't say* on this

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subject (2 Timothy 2:15). It is the Bible that reigns supreme on the issue, and our scientific analysis on the subject will always be subservient to the Bible's text.

## What Is the Water Vapor Canopy Model(s)?

There are several canopy models, but they all have one thing in common.<sup>1</sup> They all interpret the “waters above” the expanse (firmament) in Genesis 1:7 as some form of water-based canopy surrounding the earth that endured from creation until the Flood.

*Then God said, “Let there be a firmament [expanse] in the midst of the waters, and let it divide the waters from the waters.” Thus God made the firmament [expanse], and divided the waters which were under the firmament [expanse] from the waters which were above the firmament [expanse]; and it was so (Genesis 1:6–7).*

Essentially, the waters above are believed to have formed either a vapor, water (liquid), or ice canopy around the earth. It is the vapor canopy that seemed to dominate all of the proposed models.<sup>2</sup> It is suggested that this canopy was responsible for several things such as keeping harmful radiation from penetrating the earth, increasing the surface atmospheric pressure of oxygen, keeping the globe at a consistent temperature for a more uniform climate around the globe, and providing one of the sources of water for the Flood.

## A Brief History of Water Vapor Canopy Models

Modern canopy models can be traced back to Dr. Henry Morris and Dr. John Whitcomb in their groundbreaking book *The Genesis Flood* in 1961.<sup>3</sup> This book triggered a return to biblical authority in our age. It is a highly commendable book, and we owe much to their efforts. In this volume, Whitcomb and Morris introduce the possibility of a vapor canopy as the waters above.

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<sup>1</sup> This is not to be confused with canopy ideas that have the edge of water at or near the end of the universe (e.g., white hole cosmology), but instead the models that have a water canopy in the atmosphere, e.g., like those mentioned in J.C. Whitcomb and H.M. Morris, *The Genesis Flood* (Phillipsburg, NJ: Presbyterian and Reformed Publishing, 1961); J.C. Dillow, *The Waters Above: Earth's Pre-Flood Vapor Canopy*, Revised Edition (Chicago, IL: Moody Press, 1981); or John C. Whitcomb, *The World that Perished* (Winona Lake, IN: BMH Books, 2009).

<sup>2</sup> This is in large part due to the influence of Joseph Dillow, whose scientific treatise left only the vapor models with any potential. He writes on page 422 of his treatise: “We showed that only a vapor canopy model can satisfactorily meet the requirements of a the necessary support mechanism.” Dillow, *The Waters Above: Earth's Pre-Flood Vapor Canopy*.

<sup>3</sup> Whitcomb and Morris, *The Genesis Flood*.

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The canopy models gained popularity thanks to the work of Dr. Joseph Dillow,<sup>4</sup> and many creationists have since researched various aspects of these scientific models, such as Dr. Larry Vardiman with the Institute for Creation Research.

Researchers have studied the possibility of solid canopies, water canopies, vapor canopies, thick canopies, thin canopies, and so on. Each model has the canopy collapsing into history at the time of the Flood. Researchers thought it could have provided at least some of the water for the Flood and was associated with the 40 days of rain coming from the “windows of heaven” mentioned along with the fountains of the great deep at the onset of the Flood (Genesis 7:11).

However, the current state of the canopy models have faded to such an extent that most researchers and apologists have abandoned the various models. Let’s take a look at the biblical and scientific reasons behind the abandonment.

## Biblical Issues

Though both will be discussed, any biblical difficulties that bear on the discussion of the canopy must *trump* scientific considerations, as it is the authority of the Bible that is supreme in all that it teaches.

### Interpretations of Scripture Are Not Scripture

The necessity for a water-based canopy about the earth is not directly stated in the text. It is an *interpretation* of the text. Keep in mind that it is the text that is inspired, not our interpretations of it.

Others have interpreted the waters above as something entirely different from a water-based canopy about the earth. Most commentators appeal to the waters above as simply being the clouds, which are water droplets (not vapor) in the atmosphere. For they are simply “waters” that are above.

But most do not limit this interpretation as simply being the clouds, but perhaps something that reaches deep into space and extends as far as the *Third Heaven* or *Heaven of Heavens*. For example, expositor Dr. John Gill in the 1700s said:

The lower part of it, the atmosphere above, which are the clouds full of water, from whence rain descends upon the earth; and which divided between them and those that were left on the earth, and so under it, not yet gathered into one place; as it now does between the clouds of heaven and the waters of the sea. Though Mr.

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<sup>4</sup> Dillow, *The Waters Above: Earth’s Pre-Flood Vapor Canopy*.

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Gregory is of the opinion, that an abyss of waters above the most supreme orb is here meant; or a great deep between the heavens and the heaven of heavens. . . .<sup>5</sup>

Gill agrees that clouds were inclusive of these waters above but that the waters also extend to the heaven of heavens, at the outer edge of the universe. Matthew Poole denotes this possibility as well in his commentary in the 1600s:

. . . the expansion, or extension, because it is extended far and wide, even from the earth to the third heaven; called also the firmament, because it is fixed in its proper place, from whence it cannot be moved, unless by force.<sup>6</sup>

Matthew Henry also concurs that this expanse extends to the heaven of heavens (third heaven):

The command of God concerning it: Let there be a firmament, an expansion, so the Hebrew word signifies, like a sheet spread, or a curtain drawn out. This includes all that is visible above the earth, between it and the third heavens: the air, its higher, middle, and lower, regions — the celestial globe, and all the spheres and orbs of light above: it reaches as high as the place where the stars are fixed, for that is called here the firmament of heaven Ge 1:14,15, and as low as the place where the birds fly, for that also is called the firmament of heaven, Ge 1:20.<sup>7</sup>

The point is that a canopy model about the earth is simply that . . . an interpretation. It should be evaluated as such, not taken as Scripture itself. Many respected Bible interpreters do not share in the interpretation of the “waters above” being a water canopy in the upper atmosphere of earth.

## Stars for Seasons and Light and other Implications

Another biblical issue crops up when we read in Genesis 1:14–15:

*Then God said, “Let there be lights in the firmament [expanse] of the heavens to divide the day from the night; and let them be for signs and seasons, and for days and years; and let them be for lights in the firmament [expanse] of the heavens to give light on the earth”; and it was so.<sup>8</sup>*

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<sup>5</sup> John Gill, *Exposition of the Bible*, Genesis 1:7.

<sup>6</sup> Matthew Poole, *A Commentary on the Holy Bible*, Genesis 1:7.

<sup>7</sup> Matthew Henry, *A Commentary on the Whole Bible*, Genesis 1:7.

<sup>8</sup> See also Genesis 1:17.

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The stars are intended by God to be used to map seasons. And they were also to “give light on the earth.” Though this is not much light, it does help significantly during new moon conditions — that is, if you live in an area not affected by light pollution.

## Water

If the canopy were liquid water, then in its various forms like mist or haze, it would inhibit seeing these stars. How could one see the stars to map the seasons? It would be like a perpetually cloudy day. The light would be absorbed or reflected back to space much the way fog does the headlights of a car. What little light is transmitted through would not be sufficiently discernable to make out stars and star patterns to map seasons. Unlike a vapor canopy, clouds are moving and in motion; one can still see the stars to map seasons when they move through. Furthermore, if it was water, why didn't it fall?<sup>9</sup>

## Ice

If it were ice, then it *is* possible to see the stars. They would not appear in the positions one normally sees them, but they would still be sufficient to map seasons. When kept cool, ice tends to coat at the surface where other water molecules freezes to it (think of the coating you see on an ice cube left in the freezer). This could inhibit visibility, as evaporated water from the ocean surface would surely make contact — especially in a [sin](#)-cursed and broken world.

## Vapor

An invisible vapor canopy in our upper atmosphere makes the most sense, but there could still be a problem. As cooler vapor nears space, water condenses and begins to haze, though as long as the vapor in the upper atmosphere is kept warm and above the dew point, it could remain invisible. But there are a lot of “ifs.” In short, the stars may not serve their purpose to give light on the earth with some possibilities within these models.

But consider, if there were a water *vapor* canopy, what would stop it from interacting with the rest of the atmosphere *that is vapor*? Gases mix to equilibrium, and that is the way God upholds the universe.<sup>10</sup> If it was a vapor, then why it is distinguished from the atmosphere, which is vapor?

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<sup>9</sup> Would one appeal to the supernatural? If so, it defeats the purpose of this scientific model that seeks to explain things in a naturalistic fashion.

<sup>10</sup> Again, would one appeal to the supernatural? If so, it defeats the purpose of this scientific model that seeks to explain things in a naturalistic fashion.

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The Bible uses the terms *waters* above, which implies that the temperature is between 32°F and 212°F (0°C and 100°C). If it was meant to be vapor, then why say “waters” above? Why not say vapor (*hebel*), which was used in the Old Testament?

## Where Were the Stars Made?

If the canopy really was part of earth’s atmosphere, then all the stars, sun, and moon would have been created within the earth’s atmosphere. Why is this? A closer look at Genesis 1:14 reveals that the “waters above” may very well be much farther out — if they still exist today.

The entirety of the stars, including our own sun (the greater light) and moon (lesser light) were made “*in* the expanse.” Further, they are obviously not in our atmosphere. Recall that the waters of verse 7 are above the expanse. If the canopy were just outside the atmosphere of the young earth, then the sun, moon, and stars would have to be in the atmosphere according to verse 14.

Further, the winged creatures were flying *in the face of* the expanse (Genesis 1:20; the NKJV accurately translates the Hebrew), and this helps reveal the extent of the expanse. It would likely include aspects of the atmosphere as well as space. The Bible calls the firmament “heaven” in Genesis 1:8, which would include both. Perhaps our understanding of “sky” is similar or perhaps the best translation of this as well.

Regardless, this understanding of the text allows for the stars to be in the expanse, and this means that any waters above, which is beyond the stars, is not limited to being in the atmosphere. Also, 2 Corinthians 12:2 discusses three heavens, which are likely the atmosphere (airy heavens), space (starry heavens), and the heaven of heavens (Nehemiah 9:6).

Some have argued that the prepositions *in*, *under*, *above*, etc., are not in the Hebrew text but are determined from the context, so the meaning in verses 14 and 17 is vague. It is true that the prepositions are determined by the context, so we must rely on a proper translation of Genesis 1:14. Virtually all translations have the sun, moon, and stars being created *in* the expanse, not *above* as any canopy model would require.

In Genesis 1, some have attempted to make a distinction between the expanse in which the birds fly (Genesis 1:20) and the expanse in which the sun, moon, and stars were placed (Genesis 1:7); this was in an effort to have the sun, moon, and stars made in the second expanse. This is not a distinction that is necessary from the text and is only necessary if a canopy is assumed.

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From the Hebrew, the birds are said to fly “across the face of the firmament of the heavens.” If you look up at a bird flying across the sky, you would see it against the face of both the atmosphere and the space beyond the atmosphere — the “heavens.” The proponents of the canopy model must make a distinction between these two expanses to support the position, but this is an arbitrary assertion that is only necessary to support the view and is not described elsewhere in Scripture.

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## Expanse (Firmament) Still Existed Post-Flood

Another issue that is raised from the Bible is that the waters *above* the heavens were mentioned after the Flood, when it was supposedly gone.

*Praise Him, you heavens of heavens, and you waters above the heavens! (Psalm 148:4).*

*So an officer on whose hand the king leaned answered the man of God and said, “Look, if the Lord would make windows in heaven, could this thing be?” And he said, “In fact, you shall see it with your eyes, but you shall not eat of it” (2 Kings 7:2; see also 2 Kings 7:19).*

*“Bring all the tithes into the storehouse, that there may be food in My house, and try Me now in this,” says the Lord of hosts, “If I will not open for you the windows of heaven and pour out for you such blessing that there will not be room enough to receive it” (Malachi 3:10).*

The biblical authors wrote these in a post-Flood world in the context of other post-Flood aspects. So, it appears that the “waters above” and “windows of heaven” are in reference to something that still existed after the Flood. So “the waters above” can’t be referring to a long-gone canopy that dissipated at the Flood and still be present after the Flood. This fact is complemented by the following verse:

*The fountains of the deep and the windows of heaven were also stopped, and the rain from heaven was restrained (Genesis 8:2).*

Genesis 8:2 merely points out that the two sources were stopped and restrained, not necessarily *done away* with. The verses above suggest that the windows of heaven remained after the Flood. Even the “springs of the great deep” were stopped but did not entirely disappear. However, there may have been residual waters trapped that have slowly oozed out since that time, though clearly not in any gushing, spring-like fashion.<sup>11</sup>

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<sup>11</sup> I would leave open the option that this affected the ocean sea level to a small degree but the main reasons for changing sea level was via the Ice Age.

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## Is a Water Canopy Necessary Biblically?

Finally, is a canopy necessary from the text? At this stage, perhaps not. It was promoted as a scientific model based on a possible interpretation of Genesis 1 to deal with several aspects of the overall biblical creation model developed in the mid-1900s. I don't say this lightly for my brothers and sisters in the Lord who may still find it appealing. Last century, I was introduced to the canopy model and found it fascinating. For years, I had espoused it, but after further study, I began leaning against it, as did many other creationists.

Old biblical commentators were not distraught at the windows of heaven or the waters not being a canopy encircling the earth. Such an interpretation was not deemed necessary in their sight. In fact, this idea is a recent addition to scriptural interpretation that is less than 100 years old. The canopy model was a scientific interpretation developed in an effort to help explain certain aspects of the text to those who were skeptical of the Bible's accounts of earth history, but when it comes down to it, it is not necessary and even has some serious biblical issues associated with it.

### Scientific Issues

Clearly, there are some biblical issues that are difficult to overcome. Researchers have often pointed out the scientific issues of the canopy model as well. A couple will be denoted below.

This is no discredit to the *researchers* by any means. The research was valuable and necessary to see how the model may or may not work with variations and types. The development and testing of models is an important part of scientific inquiry, and we should continue to do so with many models to help us understand the world God has given us. So I appreciate and applaud all the work that has been done, and I further wish to encourage researchers to study other aspects to see if anything was missed.

### Temperatures

To answer the question about how the earth regulates its temperature without a canopy, consider that it may not have been that much different than the way it regulates it today — by the atmosphere and oceans. Although there may have been much water underground prior to the Flood, there was obviously enough at or near the surface to sustain immense amounts of sea life. We know this because of the well-known figure that nearly 95 percent of the fossil record consists of shallow-water marine organisms. Was the earth's surface around 70 percent water before the Flood? That is a question creationist researchers still debate.



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An infinitely knowledgeable God would have no problem designing the earth in a perfect world to have an ideal climate (even with variations like the cool of the day Genesis 3:8) where people could have filled the earth without wearing clothes (Genesis 2:25, 1:28). In a cursed world not yet rearranged by the Flood, the earth would surely have been better equipped to deal with regulated temperatures and climate.

A vapor canopy, on the other hand, would cause major problems for the regulation of earth's temperature. A vapor canopy would absorb both solar and infrared radiation and become hot, which would heat the surface by conduction downward. The various canopy models have therefore been plagued with heat problems from the greenhouse effect. For example, solar radiation would have to decrease by around 25 percent to make the most plausible model work.<sup>12</sup> The heat problem actually makes this model very problematic and adds a problem rather than helping to explain the environment before the Flood.<sup>13</sup>

## The Source of Water

The primary source of water for the Flood was the springs of the great deep bursting forth (Genesis 7:11). This water in turn likely provided some of the water in the "windows of heaven" in an indirect fashion. There is no need for an ocean of vapor above the atmosphere to provide for extreme amounts of water for the rain that fell during the Flood.

For example, if Dillow's vapor canopy existed (40 feet of precipitable water) and collapsed at the time of the Flood to supply, in large part, the rainfall, the latent heat of condensation would have boiled the atmosphere! And a viable canopy would not have had enough water vapor in it to sustain 40 days and nights of torrential global rain as in Vardiman's model (2–6 feet of precipitable water). Thus, the vapor canopy doesn't adequately explain the rain at the Flood.

## Longevity

Some have appealed to a canopy to increase surface atmospheric pressures prior to the Flood. The reasoning is to allow for better healing as well as living longer and bigger as a result. However, increased oxygen (and likewise oxidation that produces dangerous

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<sup>12</sup> For more on this see "Temperature Profiles for an Optimized Water Vapor Canopy" by Dr. Larry Vardiman, a researcher on this subject for over 25 years at the time of writing that paper; <https://icr.org/i/pdf/technical/Temperature-Profiles-for-an-Optimized-Water-Vapor-Canopy.pdf>.

<sup>13</sup> Another issue is the amount of water vapor in the canopy. Dillow's 40 feet of precipitable water, the amount collected after all the water condenses, has major heat problems. But Vardiman's view has modeled canopies with 2 to 6 feet of precipitable water with better temperature results and we look forward to seeing future research.

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free radicals), though beneficial in a few respects, is mostly a detriment to biological systems. Hence, antioxidants (including things like catalase and vitamins E, A, and C) are very important to reduce these free radicals within organisms.

Longevity (and the large size of many creatures) before and after the Flood is better explained by genetics through the bottlenecks of the Flood and the Tower of Babel as opposed to pre-Flood oxygen levels due to a canopy. Not to belabor these points, this idea has already been discussed elsewhere.<sup>14</sup>

## Pre-Flood Climate

Regardless of canopy models, creationists generally agree that climate before the Fall was perfect. This doesn't mean the air was stagnant and 70°F every day, but instead had variations within the days and nights (Genesis 3:8). These variations were not extreme but very reasonable.

Consider that [Adam and Eve](#) were told to be fruitful and multiply and fill the earth (Genesis 1:27). In a perfect world where there was no need for clothes to cover sin (this came after the Fall), we can deduce that man should have been able to fill the earth without wearing clothes, hence the extremes were not as they are today or the couple would have been miserable as the temperatures fluctuated.

Even after the Fall, it makes sense that these weather variations were minimally different. But with the global Flood that destroyed the earth and rearranged continents and so on, the extremes become pronounced — we now have ice caps and extremely high mountains that were pushed up from the Flood (Psalm 104:8). We now have deserts that have extreme heat and cold and little water.

## Biblical Models and Encouragement

Answers in Genesis continues to encourage research and the development of scientific and theological models. However, a good grasp of all biblical passages that are relevant to the topic must precede the scientific research and models, and the Bible must be the ultimate judge over all of our conclusions.

The canopy model may have a glimmer of hope still remaining, and that will be left to the proponents to more carefully explain, but both the biblical and scientific difficulties

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<sup>14</sup> Ken Ham, ed., *New Answers Book 2* (Green Forest, AR: Master Books, 2008), p. 159–168; Bodie Hodge, *Tower of Babel* (Green Forest, AR: Master Books, 2013), p. 205–212.

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need to be addressed thoroughly and convincingly for the model to be embraced. So we do look forward to future research.

In all of this, we must remember that scientific models are not Scripture, and it is the Scripture that we should defend as the authority. While we must surely affirm that the waters above were divided from the waters below, the canopy model should be held loosely lest we misinterpret Scripture with limited scientific understanding.

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