

Flat Earth

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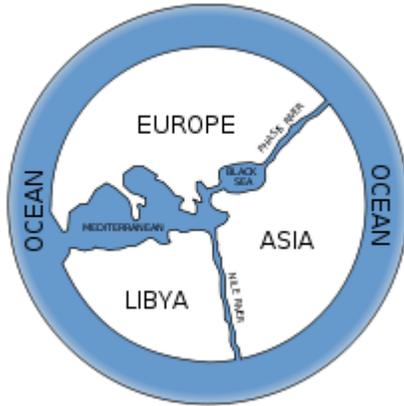


The [Flammarion engraving](#) (1888) depicts a traveler who arrives at the edge of a flat Earth and sticks his head through the [firmament](#).

The **Flat Earth** model is an archaic belief that the [Earth](#)'s shape is a [plane](#) or [disk](#). Many ancient cultures have had conceptions of a flat Earth, including [Greece](#) until the [classical period](#), the [Bronze Age](#) and [Iron Age](#) civilizations of the [Near East](#) until the [Hellenistic period](#), [India](#) until the [Gupta period](#) (early centuries AD) and [China](#) until the 17th century. It was also typically held in the aboriginal cultures of the [Americas](#), and a flat Earth domed by the [firmament](#) in the shape of an inverted bowl is common in pre-scientific societies.^[1] The Jewish conception of a flat earth is found in biblical and post-biblical times.^{[2][3][4]}

The paradigm of a [spherical Earth](#) was developed in [Greek astronomy](#), beginning with [Pythagoras](#) (6th century BC), although most [Pre-Socratics](#) retained the flat Earth model. [Aristotle](#) accepted the spherical shape of the Earth on empirical grounds around 330 BC, and knowledge of the spherical Earth gradually began to spread beyond the [Hellenistic world](#) from then on.^{[5][6][7][8]} The misconception that educated Europeans at the time of [Columbus](#) believed in a flat Earth, and that his voyages refuted that belief, has been referred to as the *Myth of the Flat Earth*.^[9] In 1945, it was listed by the [Historical Association](#) (of [Britain](#)) as the second of 20 in a pamphlet on common errors in history.^[10]

Philosophers[\[edit\]](#)



Possible rendering of Anaximander's world map^[26]

Several [pre-Socratic philosophers](#) believed that the world was flat: [Thales](#) (c. 550 BC) according to several sources,^[27] and [Leucippus](#) (c. 440 BC) and [Democritus](#) (c. 460 – 370 BC) according to Aristotle.^{[28][29][30]}

Thales thought the flat earth floated in water like a log.^[31] [Anaximander](#) (c. 550 BC) believed the Earth was a short cylinder with a flat, circular top that remained stable because it was the same distance from all things.^{[32][33]} [Anaximenes of Miletus](#) believed that "the earth is flat and rides on air; in the same way the sun and the moon and the other heavenly bodies, which are all fiery, ride the air because of their flatness."^[34] [Xenophanes of Colophon](#) (c. 500 BC) thought that the Earth was flat, with its upper side touching the air, and the lower side extending without limit.^[35]

Belief in a flat Earth continued into the 5th century BC. [Anaxagoras](#) (c. 450 BC) agreed that the Earth was flat,^[36] and his pupil [Archelaus](#) believed that the flat Earth was depressed in the middle like a saucer, to allow for the fact that the Sun does not rise and set at the same time for everyone.^[37]

Historians[\[edit\]](#)

[Hecataeus of Miletus](#) believed the earth was flat and surrounded by water.^[38] [Herodotus](#) in his *Histories* ridiculed the belief that water encircled the world,^[39] yet most classicists agree he still believed the earth was flat because of his descriptions of literal "ends" or "edges" of the earth.^[40]

Ancient India[\[edit\]](#)

Further information: [Indian astronomy](#)

In antiquity, a cosmological view prevailed in [India](#) that held the Earth is a disc that consists of four continents grouped around the central mountain [Meru](#) like the petals of a flower. An outer ocean surrounds these continents.^[41] This view was elaborated in

traditional [Jain cosmology](#) and [Buddhist cosmology](#), which depicts the [cosmos](#) as a vast, flat oceanic disk (of the magnitude of a small planetary system), bounded by mountains, in which the continents are set as small islands.^[41]

Norse and Germanic[\[edit\]](#)

The ancient Norse and Germanic peoples believed in a flat earth cosmography of the earth surrounded by an ocean, with the [axis mundi](#) (a world-tree: [Yggdrasil](#), or pillar: [Irminsul](#)) in the centre.^{[42][43]} The Norse believed that in the world-encircling ocean sat a snake called [Jormungandr](#).^[44] In the Norse creation account preserved in [Gylfaginning](#) (VIII) it is stated that during the creation of the earth, an impassable sea was placed around the earth like a ring:

...And Jafnhárr said: "Of the blood, which ran and welled forth freely out of his wounds, they made the sea, when they had formed and made firm the earth together, and laid the sea in a ring round. about her; and it may well seem a hard thing to most men to cross over it."^[45]

Ancient Japan[\[edit\]](#)

The first chapter of the [Nihongi](#) ("Chronicles of Japan") describes the ancient Japanese belief that the world was flat and that dry land floated "like oil" on water:

Hence it is said that when the world began to be created, the soil of which lands were composed floated about in a manner which might be compared to the floating of a fish sporting on the surface of the water... ...Of old, when the land was Young and the earth young, it floated about, as it were floating oil. At this time a thing was produced within the land, in shape like a reed-shoot when it sprouts forth.^[46]

The [Kojiki](#)^[47] and [Ainu](#) folklore also describes a flat earth cosmography where the earth is "floating" on water.^[48]

Ancient China[\[edit\]](#)

Further information: [Chinese astronomy](#)

In [ancient China](#), the prevailing belief was that the Earth was flat and square, while the heavens were round,^[49] an assumption virtually unquestioned until the introduction of European astronomy in the 17th century.^{[50][51][52]} The English sinologist Cullen emphasizes the point that there was no concept of a round Earth in ancient Chinese astronomy:

Chinese thought on the form of the earth remained almost unchanged from early times until the first contacts with modern science through the medium of [Jesuit](#) missionaries in the seventeenth century. While the heavens were variously described as being like an umbrella covering the earth (the Kai Tian theory), or like a sphere surrounding it (the

Hun Tian theory), or as being without substance while the heavenly bodies float freely (the Hsüan yeh theory), the earth was at all times flat, although perhaps bulging up slightly.^[53]

The model of an [egg](#) was often used by Chinese astronomers like [Zhang Heng](#) (78-139 AD) to describe the heavens as spherical:

The heavens are like a hen's egg and as round as a crossbow bullet; the earth is like the yolk of the egg, and lies in the centre.^[54]

This analogy with a curved egg led some modern historians, notably [Joseph Needham](#), to conjecture that Chinese astronomers were, after all, aware of the Earth's sphericity. The egg reference, however, was rather meant to clarify the relative position of the flat earth to the heavens:

In a passage of Zhang Heng's cosmogony not translated by Needham, Zhang himself says: "Heaven takes its body from the Yang, so it is round and in motion. Earth takes its body from the Yin, so it is flat and quiescent". The point of the egg analogy is simply to stress that the earth is completely enclosed by heaven, rather than merely covered from above as the Kai Tian describes. Chinese astronomers, many of them brilliant men by any standards, continued to think in flat-earth terms until the seventeenth century; this surprising fact might be the starting-point for a re-examination of the apparent facility with which the idea of a spherical earth found acceptance in fifth-century BC Greece.^[55]

Further examples cited by Needham supposed to demonstrate dissenting voices from the ancient Chinese consensus actually refer without exception to the Earth's being square, not to its being flat.^[56] Accordingly, the 13th-century scholar [Li Ye](#), who argued that the movements of the round heaven would be hindered by a square Earth,^[49] did not advocate a spherical Earth, but rather that its edge should be rounded off so as to be circular.^[57]

As noted in the book [Huai Nan Zu](#),^[58] in the 2nd century BC Chinese astronomers effectively inverted Eratosthenes' calculation of the curvature of the Earth to calculate the height of the sun above the earth. By assuming the earth was flat, they arrived at a distance of 100,000 *li*, a value short by three [orders of magnitude](#).

Decline of the Flat Earth model[\[edit\]](#)



This section **may [stray from the topic of the article](#)**. Please help [improve this section](#) or discuss this issue on the [talk page](#). *(August 2010)*

Further information: [Spherical Earth](#) and [History of geodesy](#)

Classical world[\[edit\]](#)



When a ship is at the horizon, its lower part is obscured due to the curvature of the Earth.

It has been suggested that seafarers probably provided the first observational evidence that the Earth was not flat.^[59] Greek [thalassocracy](#) was receptive to the idea, unlike the Chinese, whose cosmology was firmly land-based.

Some ancient authorities in the [doxographic tradition](#) credited the Greek philosophers [Pythagoras](#), in the 6th century BC, and [Parmenides](#), in the 5th, with recognizing that the [Earth is spherical](#).^[60]

Around 330 BC, [Aristotle](#) maintained on the basis of physical theory and observational evidence that the Earth was spherical.^[61]



Semi-circular shadow of Earth on the [Moon](#) during the phases of a [lunar eclipse](#)

The Earth's [circumference](#) was first determined around 240 BC by [Eratosthenes](#). Eratosthenes knew that in [Syene](#), in [Egypt](#), the Sun was directly overhead at the summer [solstice](#), while he estimated that the angle formed by a shadow cast by the Sun at Alexandria was 1/50th of a circle. He estimated the distance from Syene to Alexandria as 5,000 [stadia](#), and estimated the Earth's circumference was 250,000 stades.^[62] Subsequently, ignorance of the size of a stade caused problems both to the Arabs and to Christopher Columbus.



The Terrestrial Sphere of [Crates of Mallus](#) (c. 150 BC).

In the 2nd century BC, [Crates of Mallus](#) devised a terrestrial sphere that divided the Earth into four continents, separated by great rivers or oceans, with people presumed living in each of the four regions.^[63] Opposite the [oikumene](#), the inhabited world, were the [antipodes](#), considered unreachable both because of an intervening [torrid zone](#) (equator) and the ocean. This took a strong hold on the medieval mind.

[Lucretius](#) (1st. c. BC) opposed the concept of a spherical Earth, because he considered that an infinite universe had no center towards which heavy bodies would tend. Thus, he thought the idea of animals walking around topsy-turvy under the Earth was absurd.^{[64][65]} But by the 1st century AD, [Pliny the Elder](#) was in a position to claim that everyone agrees on the spherical shape of Earth,^[66] though disputes continued regarding the nature of the antipodes, and how it is possible to keep the [ocean](#) in a curved shape. Pliny also considered the possibility of an imperfect sphere, "...shaped like a [pinecone](#)."^[66]

[Ptolemy](#) derived [his maps](#) from a curved globe and developed the system of [latitude](#), [longitude](#), and [climes](#). His [Almagest](#) was written in Greek and only translated into Latin in the 11th century from Arabic translations. But once it was known, it remained the basis of European [astronomy](#) throughout the [Middle Ages](#).

In late antiquity such widely read encyclopedists as [Macrobius](#) (5th century) and [Martianus Capella](#) (5th century) discussed the circumference of the sphere of the Earth, its central position in the universe, the difference of the [seasons](#) in [northern](#) and [southern hemispheres](#), and many other geographical details.^[67] In his commentary on [Cicero's Dream of Scipio](#), Macrobius described the Earth as a globe of insignificant size in comparison to the remainder of the cosmos.^[67]

Early Christian Church[[edit](#)]

From [Late Antiquity](#), and from the beginnings of [Christian theology](#), knowledge of the sphericity of the Earth had become widespread.^[68] There was considerable

misunderstanding illustrated by the debate concerning the possibility of the inhabitants of the [antipodes](#).

In Book III of *The Divine Institutes*^[69] [Lactantius](#) ridicules the notion that there could be inhabitants of the antipodes "whose footsteps are higher than their heads." After presenting some arguments he attributes to advocates for a spherical heaven and Earth, he writes:

"But if you inquire from those who defend these marvellous fictions, why all things do not fall into that lower part of the heaven, they reply that such is the nature of things, that heavy bodies are borne to the middle, and that they are all joined together towards the middle, as we see spokes in a wheel; but that the bodies that are light, as mist, smoke, and fire, are borne away from the middle, so as to seek the heaven. I am at a loss what to say respecting those who, when they have once erred, consistently persevere in their folly, and defend one vain thing by another."

[Saint Augustine](#) (354–430) took a more cautious approach in arguing against assuming that people inhabited the antipodes:

"But as to the fable that there are Antipodes, that is to say, men on the opposite side of the earth, where the sun rises when it sets to us, men who walk with their feet opposite ours that is on no ground credible. And, indeed, it is not affirmed that this has been learned by historical knowledge, but by scientific conjecture, on the ground that the earth is suspended within the concavity of the sky, and that it has as much room on the one side of it as on the other: hence they say that the part that is beneath must also be inhabited. But they do not remark that, although it be supposed or scientifically demonstrated that the world is of a round and spherical form, yet it does not follow that the other side of the earth is bare of water; nor even, though it be bare, does it immediately follow that it is peopled."^[70]

The Flat-Earth Bible

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When I first became interested in the flat-earthers in the early 1970s, I was surprised to learn that flat-earthism in the English-speaking world is and always has been entirely based upon the Bible. I have since assembled and read an extensive collection of flat-earth literature. The Biblical arguments for flat-earthism that follow come mainly from my reading of flat-earth literature, augmented by my own reading of the Bible.

Except among Biblical inerrantists, it is generally agreed that the Bible describes an immovable earth. At the 1984 National Bible-Science Conference in Cleveland,

geocentrist James N. Hanson told me there are hundreds of scriptures that suggest the earth is immovable. I suspect some must be a bit vague, but here are a few obvious texts:

1 Chronicles 16:30: "He has fixed the earth firm, immovable."

Psalm 93:1: "Thou hast fixed the earth immovable and firm ..."

Psalm 96:10: "He has fixed the earth firm, immovable ..."

Psalm 104:5: "Thou didst fix the earth on its foundation so that it never can be shaken."

Isaiah 45:18: "...who made the earth and fashioned it, and himself fixed it fast..."

Suffice to say that the earth envisioned by flat-earthers is as immovable as any geocentrist could desire. Most (perhaps all) scriptures commonly cited by geocentrists have also been cited by flat-earthers. The flat-earth view is geocentricity with further restrictions.

Like geocentrists, flat-earth advocates often give long lists of texts. Samuel Birley Rowbotham, founder of the modern flat-earth movement, cited 76 scriptures in the last chapter of his monumental second edition of *Earth not a Globe*. Apostle Anton Darms, assistant to the Reverend Wilbur Glenn Voliva, America's best known flat-earthier, compiled 50 questions about the creation and the shape of the earth, bolstering his answers with up to 20 scriptures each. Rather than presenting an exhaustive compendium of flat-earth scriptures, I focus on those which seem to me the strongest. I also comment on some attempts to find the earth's sphericity in the Bible.

Scriptural quotes, unless otherwise noted, are from the *New English Bible*. Hebrew and Greek translations are from *Strong's Exhaustive Concordance of the Bible*. The Biblical cosmology is never explicitly stated, so it must be pieced together from scattered passages. The Bible is a composite work, so there is no *a priori* reason why the cosmology assumed by its various writers should be relatively consistent, but it is. The Bible is, from Genesis to Revelation, a flat-earth book.

This is hardly surprising. As neighbors, the ancient Hebrews had the Egyptians to the southwest and the Babylonians to the northeast. Both civilizations had flat-earth cosmologies. The Biblical cosmology closely parallels the Sumero-Babylonian cosmology, and it may also draw upon Egyptian cosmology.

The Babylonian universe was shaped like a modern domed stadium. The Babylonians considered the earth essentially flat, with a continental mass surrounded by ocean. The vault of the sky was a physical object resting upon the ocean's waters (and perhaps also upon pillars). Sweet (salt-free) waters below the Earth sometimes manifest themselves as springs. The Egyptian universe was also enclosed, but it was rectangular instead of round. Indeed, it was shaped much like an old-fashioned steamer trunk. (The Egyptians pictured the goddess Nut stretched across the sky as the enclosing dome.) What was the Hebrew view of the universe?

The Order of Creation

The Genesis creation story provides the first key to the Hebrew cosmology. The *order* of creation makes no sense from a conventional perspective but is perfectly logical from a flat-earth viewpoint. The earth was created on the first day, and it was “without form and void (Genesis 1:2).” On the second day, a vault the “firmament” of the King James version was created to divide the waters, some being above and some below the vault. Only on the fourth day were the sun, moon, and stars created, and they were placed “in” (not “above”) the vault.

The Vault of Heaven

The vault of heaven is a crucial concept. The word “firmament” appears in the King James version of the Old Testament 17 times, and in each case it is translated from the Hebrew word *raqiya*, which meant the visible vault of the sky. The word *raqiya* comes from *riqqua*, meaning “beaten out.” In ancient times, brass objects were either cast in the form required or beaten into shape on an anvil. A good craftsman could beat a lump of cast brass into a thin bowl. Thus, Elihu asks Job, “Can you beat out [*raqa*] the vault of the skies, as he does, hard as a mirror of cast metal (Job 37:18)?”

Elihu's question shows that the Hebrews considered the vault of heaven a solid, physical object. Such a large dome would be a tremendous feat of engineering. The Hebrews (and supposedly Yahweh Himself) considered it exactly that, and this point is hammered home by five scriptures:

Job 9:8, “...who by himself spread out the heavens [*shamayim*]...”

Psalms 19:1, “The heavens [*shamayim*] tell out the glory of God, the vault of heaven [*raqiya*] reveals his handiwork.”

Psalms 102:25, “...the heavens [*shamayim*] were thy handiwork.”

Isaiah 45:12, “I, with my own hands, stretched out the heavens [*shamayim*] and caused all their host to shine...”

Isaiah 48:13, “...with my right hand I formed the expanse of the sky [*shamayim*]...”

If these verses are about a mere *illusion* of a vault, they are surely much ado about nothing. *Shamayim* comes from *shameh*, a root meaning to be lofty. It literally means the sky. Other passages complete the picture of the sky as a lofty, physical dome. God “sits throned on the vaulted roof of earth [*chuwg*], whose inhabitants are like grasshoppers. He stretches out the skies [*shamayim*] like a curtain, he spreads them out like a tent to live in...[Isaiah 40:22].” *Chuwg* literally means “circle” or “encompassed.” By extension, it can mean roundness, as in a rounded dome or vault. Job 22:14 says God “walks to and fro on the vault of heaven [*chuwg*].” In both verses, the use of *chuwg* implies a physical object, on which one can sit and walk. Likewise, the context in both cases requires elevation. In Isaiah, the elevation causes the people below to look small as grasshoppers. In Job, God's eyes must penetrate the clouds to view the doings of humans below. Elevation is also implied by Job 22:12: “Surely God is at the zenith of the heavens [*shamayim*] and looks down on all the stars, high as they are.”

This picture of the cosmos is reinforced by Ezekiel's vision. The Hebrew word *raqiya* appears five times in Ezekiel, four times in Ezekiel 1:22-26 and once in Ezekiel 10:1. In each case the context requires a literal vault or dome. The vault appears above the "living creatures" and glitters "like a sheet of ice." Above the vault is a throne of sapphire (or lapis lazuli). Seated on the throne is "a form in human likeness," which is radiant and "like the appearance of the glory of the Lord." In short, Ezekiel saw a vision of God sitting throned on the vault of heaven, as described in Isaiah 40:22.

The Shape of the Earth

Disregarding the dome, the essential flatness of the earth's surface is required by verses like Daniel 4:10-11. In Daniel, the king "saw a tree of great height at the centre of the earth...reaching with its top to the sky and visible to the earth's farthest bounds." If the earth were flat, a sufficiently tall tree *would* be visible to "the earth's farthest bounds," but this is impossible on a spherical earth. Likewise, in describing the temptation of Jesus by Satan, Matthew 4:8 says, "Once again, the devil took him to a very high mountain, and showed him all the kingdoms of the world [*cosmos*] in their glory." Obviously, this would be possible only if the earth were flat. The same is true of Revelation 1:7: "Behold, he is coming with the clouds! Every eye shall see him..."

The Celestial Bodies

The Hebrews considered the celestial bodies relatively small. The Genesis creation story indicates the size and importance of the earth relative to the celestial bodies in two ways, first by their order of creation, and second by their positional relationships. They had to be small to fit inside the vault of heaven. Small size is also implied by Joshua 10:12, which says that the sun stood still "in Gibeon" and the moon "in the Vale of Aijalon."

Further, the Bible frequently presents celestial bodies as exotic living beings. For example, "In them [the heavens], a tent is fixed for the sun, who comes out like a bridegroom from his wedding canopy, rejoicing like a strong man to run his race. His rising is at one end of the heavens, his circuit touches their farthest ends; and nothing is hidden from his heat (Psalm 19:4-6)." The stars are anthropomorphic demigods. When the earth's cornerstone was laid "the morning stars sang together and all the sons of God shouted aloud (Job 38:7)." The morning star is censured for trying to set his throne above that of other stars:

You thought in your own mind, I will scale the heavens; I will set my throne high above the stars of God, I will sit on the mountain where the gods meet in the far recesses of the north. I will rise high above the cloud-banks and make myself like the most high (Isaiah 14:13-14).

Deuteronomy 4:15-19 recognizes the god-like status of stars, noting that they were created for other peoples to worship.

Stars can fall from the skies according to Daniel 8:10 and Matthew 24:29. The same idea is found in the following extracts from Revelation 6:13-16:

...the stars in the sky fell to the earth, like figs shaken down by a gale; the sky vanished, as a scroll is rolled up...they called out to the mountains and the crags, "Fall on us and hide us from the face of the One who sits on the throne..."

This is consistent with the Hebrew cosmology previously described, but it is ludicrous in the light of modern astronomy. If *one* star let alone all the stars in the sky "fell" on the earth, no one would be hollering from any mountain or crag. The writer considered the stars small objects, all of which could fall to the earth without eradicating human life. He also viewed the sky as a physical object. The stars are *inside* the sky, and they fall *before* the sky opens. When it is whisked away, it reveals the One throned above (see Isaiah 40:22).

Weaker Arguments

Flat-earthers also offer some scriptural arguments that are (in my view) weak, ambiguous, erroneous, or irrelevant. (Ironically, it is these that apologists for sphericity usually choose to deal with in their rebuttals to the flat-earthers!) The weak and ambiguous arguments can help support a cumulative picture but are insufficient on their own.

One of the weaker scriptural arguments is that the sky literally has openings (windows) which God can open to let the waters above fall to the surface as rain (see Genesis 7:11, Genesis 8:2, Isaiah 24:18-19, Jeremiah 51:15-16, and Malachi 3:10). While the idea and scriptures are certainly consistent with the flat-earth cosmology, they could (for instance) refer to openings in a spherical shell surrounding a spherical earth. The same applies to the Tower of Babel story in Genesis 11:4, often cited as an attempt to literally reach the heavens.

Likewise, flat-earthers frequently cite the numerous Old Testament verses referring to the earth's foundations (see 2 Samuel 22:16, Job 38:4, Psalm 18:15, Proverbs 8:29, Isaiah 24:18, and numerous others). Foundations are, however, fairly well-covered by geocentricity. No one would argue for a flat-earth solely on the basis of "foundations" quotes.

Another less-than-conclusive argument that the Bible is a flat-earth book is its references to the earth's "corners." For example, "After this, I saw four angels stationed at the four corners [*gonia*] of the earth holding back the four winds...(Revelation 7:1)." Spherical apologists are quick to point out that the Greek *gonia* can refer to regions rather than points. Most translations of the Bible opt for points (the King James version says "on the corners of the earth"), implying that the writer viewed the habitable earth as a four-cornered area. (This was indeed the way many early churchmen interpreted it [Cosmas, 548]. The modern flat-earth model doesn't have literal corners.) The corners could, however, be those regions at the ends of the earth referred to by Jeremiah: "[H]e brings

up the mist from the ends of the earth, he opens rifts for the rain and brings the wind out of his storehouses (Jeremiah 51:16).” We shall return to the ends of the earth.

The Biblical view of the universe is relatively clear and consistent. Biblical statements bearing on cosmology are (with one possible exception yet to be discussed) consistent with the well-known flat-earth cosmologies of the ancient Near East, but they are often flatly contradicted by modern science. How do spherical apologists reply?

Spherical Apologetics

Those who claim Biblical support for a spherical earth typically ignore this forest of consistency and focus on one or two aberrant trees. Some take refuge in audacity. Henry Morris, president of the Institute for Creation Research, cites one of the more explicitly flat-earth verses in the Old Testament Isaiah 40:22, the “grasshopper” verse quoted earlier as evidence for the sphericity of the earth. Quoting the King James version “he sitteth upon the circle of the earth” Morris ignores the context and the grasshoppers and claims “circle” should read “sphericity” or “roundness” [1956, 8]. This divide and conquer strategy is poor scholarship and worse logic.

Heroic efforts have been made by apologists to explain away the firmament, which encloses the celestial bodies, has waters above it, and is a masterpiece proving the Creator's craftsmanship. The late Harold W. Armstrong argued that it is empty Newtonian space, and that the “waters above” still surround the edges of the universe, though perhaps not in liquid form [1979, 26]. This simply ignores difficulties and invents evidence. Gerardus Bouw tried to identify the firmament as a mathematical plenum [1987]. In my view, it is a grave error to reinterpret ancient documents to force their authors to speak with modern voices. Gary Zukov [1979] and Fritjof Capra [1976], for instance, read modern physics into the teachings of eastern mysticism. I consider all such attempts equally suspect.

Perhaps the scripture most frequently offered as evidence of the earth's sphericity is the King James version of Job 26:7, “He stretcheth out the north [*tsaphon*] over the empty place, *and* hangeth the earth upon nothing [*beliyamah*].” (The New English Bible translates it, “God spreads the canopy of the sky over chaos and suspends earth in the void.”) It is not clear what this means. The Hebrew *tsaphon* literally meant hidden or dark, and it was used in reference to the northern regions. *Beliymah* literally means “nothing.” That would contradict all of the scriptures which say the earth rests on foundations, but that interpretation is not necessary. We will return to Job 26:7 later.

Speaking of foundations, Gerardus Bouw, in an undated paper entitled “The Form of the Earth,” cites a barrage of scriptures about the foundations of the earth or world as evidence for sphericity. All (or nearly all) of these verses have traditionally been used by flat-earthers to prove the earth flat. If one views the earth as an architectural structure with floor, curtain walls, and a roof, it is natural to assume it has foundations (and, I might add, a cornerstone). Why a sphere would have foundations escapes me. Bouw's argument that these scriptures refer to the earth's core seems strained at best. Also

strained is Bouw's interpretation of "the ends of the earth" as the points most distant from Jerusalem, and his identification of the Chukchi Peninsula of the Soviet Union, Alaska, Cape Horn, and the southeastern tip of Australia as the "four corners" of the earth.

Bouw's most interesting argument for sphericity is based on the gospel of Luke. He compares the King James version of Luke 17:31 and 17:34. The former says "In that *day*, he which shall be upon the house top..." and the latter "in that *night* there shall be two men in one bed..." (italics added). Bouw then cites 1 Corinthians 15:52 to argue that the events are simultaneous, claiming simultaneity is possible only on a spherical earth. First of all, the latter claim is wrong. The modern (though not the ancient) flat-earth model has day and night occurring simultaneously at different points on earth. Second, the Greek *hemera* was used much like the English "day." It could mean the daylight hours, a 24-hour day, or (figuratively) an epoch of unspecified length. Third, Luke appears to have been writing figuratively, and citing Paul to prove otherwise begs the question.

One more spherical argument deserves notice. The 1985 National Creation Conference in Cleveland ended with a formal debate on the relative merits of heliocentricity and geocentricity. Richard Niessen of Christian Heritage College, defending the Copernican view, remarked that the Bible teaches a spherical earth because it treats north and south as absolutes, but east and west as relative. As evidence of the latter, he cited Psalm 103:12 which says, "As far as the east is from the west, so far has he put our offences from us." Again, the modern flat-earth model holds that north and south are absolutes, but east and west are relative. In the ancient flat-earth model, however, east and west were about as far apart as you could get, which seems to be the image Psalm 103:12 was intended to invoke.

In my view, all arguments to prove the Bible teaches a spherical earth are weak if not wrong-headed. On the other hand, the flat-earth cosmology previously described is historically consistent and requires none of the special pleading apparently necessary to harmonize the Bible with sphericity.

The Book of Enoch

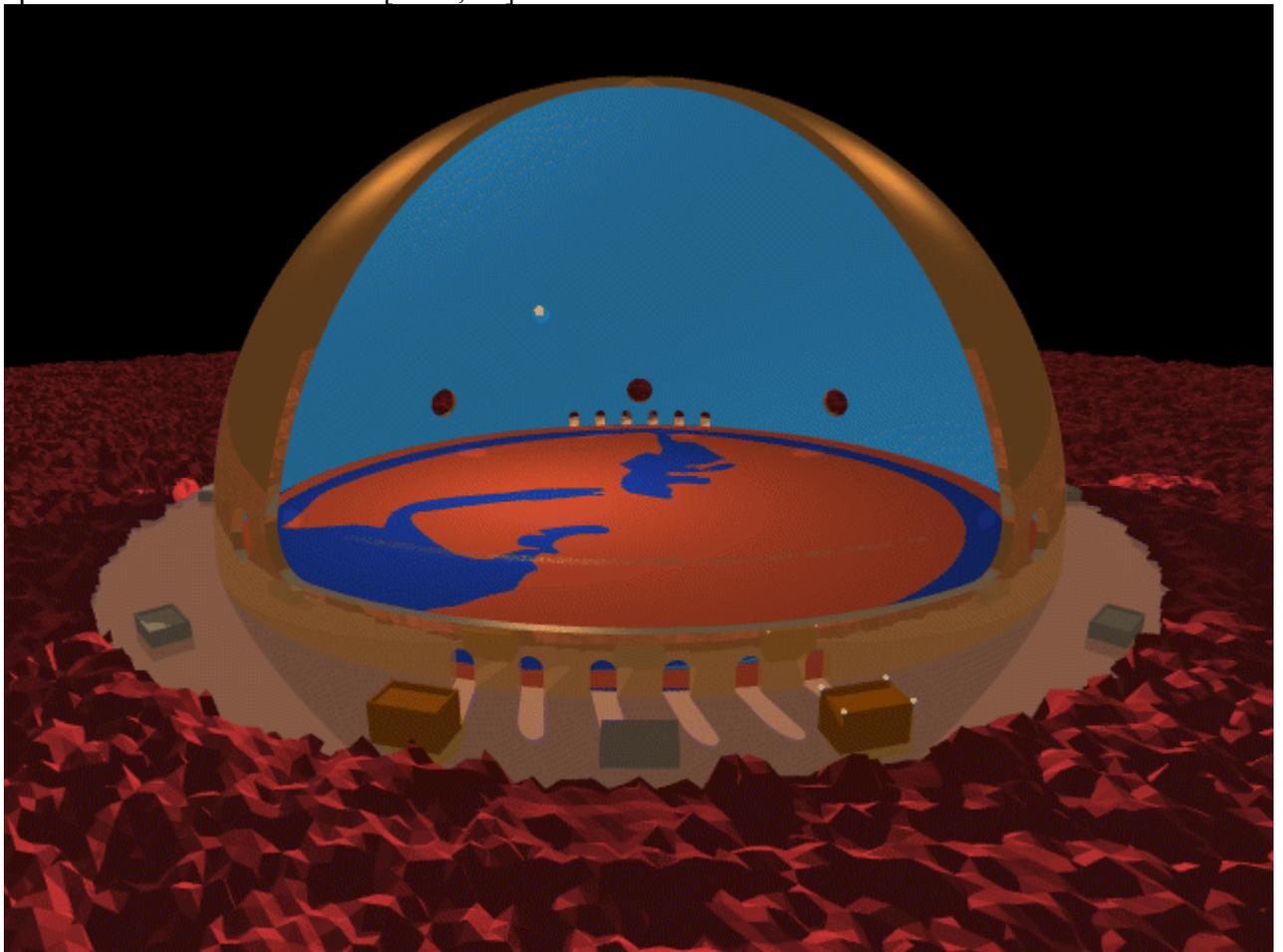
The cosmology previously described is derived from the Bible itself, following the 19th century flat-earthers. Some of the evidence is more ambiguous than we would like. Ambiguities in ancient documents can often be elucidated by consulting contemporary documents. The most important ancient document describing Hebrew cosmology is 1 Enoch (sometimes called the Ethiopic Book of Enoch), one of those long, disjointed, scissors and paste jobs beloved by ancient scribes. For a dozen or so centuries, European scholars knew 1 Enoch only from numerous passages preserved in the patristic literature. In 1773, the Scottish adventurer James Bruce found complete copies in Ethiopia.

Numerous manuscripts of 1 Enoch have since been found in Ethiopian monasteries. Turn of the century scholars concluded that parts of the book are pre-Maccabean, and most (perhaps all) of it was composed by 100 B.C. [Charles, 1913]. These conclusions were largely vindicated when numerous fragments of 1 Enoch were found among the so-called

Dead Sea Scrolls at Qumran. There have been two major English translations of 1 Enoch, the 1913 translation of R. H. Charles and the 1983 translation by E. Isaac. All of the quotations that follow come from the newer translation.

The importance of 1 Enoch is poorly appreciated outside the scholarly community. Comparison of its text with New Testament books reveals that many Enochian doctrines were taken over by early Christians. E. Isaac writes:

There is little doubt that 1 Enoch was influential in molding New Testament doctrines concerning the nature of the Messiah, the Son of Man, the messianic kingdom, demonology, the future, resurrection, final judgment, the whole eschatological theater, and symbolism. No wonder, therefore, that the book was highly regarded by many of the apostolic and Church Fathers [1986, 10].



The cosmos as described in the book of Enoch.

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First Enoch influenced Matthew, Luke, John, Acts, Romans, and several other New Testament books. The punishment of the fallen angels described in 2 Peter seems to come directly from 1 Enoch, as does much of the imagery (or even wording) in Revelation. The

Epistle of Jude contains the most dramatic evidence of its influence when it castigates “enemies of religion” as follows:

It was to them that Enoch, the seventh in descent from Adam, directed his prophecy when he said: “I saw the Lord come with his myriads of angels, to bring all men to judgment and to convict all the godless of all the godless deeds they had committed, and of all the defiant words which godless sinners had spoken against him (Jude 14- 15).”

The inner quote, 1 Enoch 1:9, is found in the original Hebrew on a recently-published Qumran fragment [Shanks, 1987, 18]. By attributing prophecy to Enoch, Jude confers inspired status upon the book.

First Enoch is important for another reason. Unlike the canonical books of the Bible, which (in my view) were never meant to teach science, sections of 1 Enoch were intended to describe the natural world. The narrator sometimes sounds like a 2nd century B.C. Carl Sagan explaining the heavens and earth to the admiring masses. The Enochian cosmology is precisely the flat-earth cosmology previously derived from the canonical books.

The Ends of the Earth

The angel Uriel guided Enoch in most of his travels. They made several trips to the ends of the earth, where the dome of heaven came down to the surface. For instance, Enoch says:

I went to the extreme ends of the earth and saw there huge beasts, each different from the other and different birds (also) differing from one another in appearance, beauty, and voice. And to the east of those beasts, I saw the ultimate ends of the earth which rests on the heaven. And the gates of heaven were open, and I saw how the stars of heaven come out...(1 Enoch 33:1-2).

(The sharp-eyed reader will note what I suspect is an editing error in the Isaac translation. The earth resting on the heaven makes no sense. R. H. Charles has “whereon the heaven rests.”)

Again, Enoch says, “I went in the direction of the north, to the extreme ends of the earth, and there at the extreme end of the whole world I saw a great and glorious seat. There (also) I saw three open gates of heaven; when it blows cold, hail, frost, snow, dew, and rain, through each one of the (gates) the winds proceed in the northwesterly direction (1 Enoch 34:1-2).” This accords well with Jeremiah 51:16 which says, “he brings up the mist from the ends of the earth, he opens rifts for the rain and brings the wind out of his storehouses.” In subsequent chapters, Enoch journeys “to the extreme ends of the earth” in the west, south, and east. In each place he saw three more “open gates of heaven.”

There were other things to be seen at the ends of the earth. Earlier, we deferred discussion of the King James version of Job 26:7, “He stretcheth out the north over the empty place,

and hangeth the earth upon nothing.” On several occasions when Enoch and the angel are out beyond the dome of heaven, Enoch comments that there is nothing above or below. For instance, “And I came to an empty place. And I saw (there) neither a heaven above nor an earth below, but a chaotic and terrible place (1 Enoch 21:1-2).” Could this be the kind of nothingness referred to in Job?

An angel also showed Enoch the storerooms of the winds (18:1) and the cornerstone of the earth (18:2).

The Sun and Moon

And what of the sun and moon? Psalm 19:4-6 (quoted earlier) suggest that the sun holes up at the ends of the earth until it is time to rise. Enoch expands upon this idea. In 1 Enoch 41:5, he “saw the storerooms of the sun and the moon, from what place they go out and to which place they return...” Further, “they keep faith one with another: in accordance with an oath they set and they rise.”

Enoch discusses the solar and lunar motions at length, explaining why the apparent azimuths of their rising and setting varies with the season. The explanation, found in the section called “The Book of the Heavenly Luminaries,” begins thus:

This is the first commandment of the luminaries: The sun is a luminary whose egress is an opening of heaven, which is (located) in the direction of the east, and whose ingress is (another) opening of heaven, (located) in the west. I saw six openings through which the sun rises and six openings through which it sets. The moon also rises and sets through the same openings, and they are guided by the stars; together with those whom they lead, they are six in the east and six in the west heaven. All of them (are arranged) one after another in a constant order. There are many windows (both) to the right and the left of these openings. First there goes out the great light whose name is the sun; its roundness is like the roundness of the sky; and it is totally filled with light and heat. The chariot in which it ascends is (driven by) the blowing wind. The sun sets in the sky (in the west) and returns by the northeast in order to go to the east; it is guided so that it shall reach the eastern gate and shine in the face of the sky (1 Enoch 72:2-5).

The openings in the vault of heaven in the east and west are matched to the seasons. On the longest day of the year, the sun rises and sets through the northernmost pair. On the shortest day, it rises and sets through the southernmost pair. The return routes of the sun and moon are *outside* the dome. Perhaps they rest in their “storerooms” during their time off.

The Stars

Like the Bible, 1 Enoch typically depicts stars as living, anthropomorphic beings. The Sons of the Gods are also dealt with in 1 Enoch, and they are associated with stars. This is consistent with Job 38:7, which says that when the earth's cornerstone was laid “the morning stars sang together and all the sons of God shouted aloud.”

As mentioned earlier, Matthew 24:29 and Revelation 6:13 deal with stars that fall to earth. The image comes from Enoch, but Matthew and John omit some details. In 1 Enoch 88:1, a star that fell from the sky is seized, bound hand and foot, and thrown into an abyss. A few verses later, other stars “whose sexual organs were like the organs of horses” are likewise bound hand and foot and cast “into the pits of the earth (1 Enoch 88:3).”

Most stars just go through their motions night after night. Some stars never set, and Enoch was shown their chariots (1 Enoch 75:8). Stars that do rise and set do so through openings in dome, just like the sun and moon. God, according to 1 Enoch, runs a tight universe, and stars that do not rise on time are thrown into the celestial slammer. Showing Enoch a hellish scene, the angel Uriel explains:

This place is the (ultimate) end of heaven and earth: it is the prison house for the stars and the powers of heaven. And the stars which roll over upon the fire, they are the ones which have transgressed the commandments of God from the beginning of their rising because they did not arrive punctually (1 Enoch 18:14-15).

Enoch was not told the sentence for tardy rising, but Uriel later shows him other stars “which have transgressed the commandments of the Lord,” for which they were doing ten million years of hard time (1 Enoch 21:6). Enoch also was shown an even more terrible place, a fiery prison house where fallen angels were detained forever (1 Enoch 21:10).

1 Enoch deserves study for its cosmology, but there is much more of interest. It profoundly influenced Christian eschatology, and it is necessary reading for anyone trying to understand Hebrew religious thought at the dawn of the Christian era.

Conclusion

From their geographical and historical context, one would expect the ancient Hebrews to have a flat-earth cosmology. Indeed, from the very beginning, ultra-orthodox Christians have been flat-earthers, arguing that to believe otherwise is to deny the literal truth of the Bible. The flat-earth implications of the Bible were rediscovered and popularized by English-speaking Christians in the mid-19th century. Liberal scriptural scholars later derived the same view. Thus, students with remarkably disparate points of view independently concluded that the ancient Hebrews had a flat-earth cosmology, often deriving this view from scripture alone. Their conclusions were dramatically confirmed by the rediscovery of 1 Enoch.

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More about the author, [Bob Schadewald](#) and several other documents by him.
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Samuel Birley Rowbotham, under the pseudonym 'Parallax', lectured for two decades up and down Britain promoting his unique flat earth theory. This book, in which he lays out his world system, went through three editions, starting with a 16 page pamphlet published in 1849 and a second edition of 221 pages published in 1865. The third edition of 1881 (which had inflated to 430 pages) was used as the basis of this text.

Rowbotham was an accomplished debater who reputedly steamrolled all opponents, and his followers, who included many well-educated people, were equally tenacious. One of them, John Hampden, got involved in a bet with the famous naturalist Alfred Russel Wallace about the flat earth. An experiment which Hampden proposed didn't resolve the issue, and the two ended up in court in 1876. The judge ruled against Hampton, who started a long campaign of legal harassment of Wallace. Rowbotham hints at the incident in this book.

Rowbotham believed that the earth is flat. The continents float on an infinite ocean which somehow has a layer of fire underneath it. The lands we know are surrounded by an infinite wilderness of ice and snow, beyond the Antarctic ocean, bordered by an immense circular ice-cliff. What we call the North Pole is in the center of the earth.

The polar projection of the flat earth creates obvious discrepancies with known geography, particularly the farther south you go. [Figure 54](#) inadvertently illustrates this problem. The Zetetic map has a severely squashed South America and Africa, and Australia and New Zealand in the middle of the Pacific. I think that by the 19th century people would have noticed if Australia and Africa were thousands of miles further apart than expected, let alone if Africa was wider than it was long!

The Zetetic Sun, moon, planets and stars are all only a few hundred miles above the surface of the earth. The sun orbits the north pole once a day at a constant altitude. The moon is both self-illuminated and semi-transparent. Eclipses can be explained by some unknown object occulting the sun or moon. Zetetic cosmology is 'faith-based', based, that is, on a literal interpretation of *selected* Biblical quotes. Hell is exactly as advertised, directly below us. Heaven is not a state of mind, it is a real place, somewhere above us. He uses Ussherian Biblical chronology to mock the concept that stars could be millions of light years away. He attacks the concept of a plurality of worlds because no other world than this one is mentioned in the Bible.

Rowbotham never adequately explains his alternative astronomy. If the Copernican theory so adequately explains planetary motions, why discard it, and what would he use in its place? What is the sun orbiting around once a day and how does it work like a spotlight, not a 'point source'? If the moon is self-luminous, what creates its phases? If gravity appears to work here on earth, why doesn't it apply to the celestial objects just a few hundred miles up?

To make his system work he had to throw out a great deal of science, including the scientific method itself, using instead what he calls a 'Zetetic' method. As far as I can see

this is simply a license to employ circular reasoning (*e.g.*, the earth is flat, hence we can see distant lighthouses, hence the earth is flat).

Zetetic Astronomy is a key work of flat-earth thought, just as Donnelly's [Atlantis, the Antediluvian World](#) is still considered required reading on the subject of Atlantis. If you ever have to debate the flat earth *pro* or *con*, this book is a complete agenda of each point that you'll have to argue.

--John Bruno Hare, June 16th, 2005.

Samuel Rowbotham

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Samuel Birley Rowbotham (1816–1884) was an English inventor and writer who wrote *Zetetic Astronomy: Earth Not a Globe* under the [pseudonym](#) "Parallax". His work was based on his decade-long studies of the earth and was originally published as a 16-page pamphlet (1849), which he later expanded into a 430 page book (1881). According to Rowbotham's method, which he called [Zetetic Astronomy](#), the earth is a flat disk centered at the [North Pole](#) and bounded along its southern edge by a wall of ice, with the sun, moon, planets, and stars only a few hundred miles above the surface of the earth.

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Life[\[edit\]](#)

Rowbotham started out as an organiser of an [Owenite commune](#) in the [Fens](#), where he first observed the strange phenomenon on the Bedford level that led to his theories about the earth. Following allegations of sexual misconduct he reinvented himself as a itinerant lecturer under the name *Parallax*. He took a little time to learn his trade, running away from a lecture in [Blackburn](#) when he couldn't explain why the hulls of ships disappeared before their masts when sailing out to sea.^[1] However, as he persisted in filling halls by

charging sixpence a lecture his quick-wittedness and debating skills were honed so much that he could "counter every argument with ingenuity, wit and consummate skill".^[2]

When finally pinned down to a challenge in [Plymouth](#) in 1864 by allegations that he wouldn't agree to a test, Parallax appeared on [Plymouth Hoe](#) at the appointed time, witnessed by [Richard Proctor](#), a writer on astronomy, and proceeded to the beach where a telescope had been set up. His opponents had claimed that only the lantern of the [Eddystone lighthouse](#), some 14 miles out to sea, would be visible. In fact, only half the lantern was visible, yet Rowbotham claimed his opponents were wrong and that it proved the earth was indeed flat so that many Plymouth folk left the Hoe agreeing that "some of the most important conclusions of modern astronomy had been seriously invalidated".^[3]

In 1861 Rowbotham was married for a second time to the 16-year old daughter of his laundress and settled in London, producing 14 children, of whom 4 survived. He was also alleged to be using the name "Dr. Samuel Birley", selling the secrets for prolonging human life and curing every disease imaginable^[4] and [de Morgan](#) refers to him as S. Goulden.^[1] He patented a number of inventions including a 'life-preserving cylindrical railway carriage'.

His book *Zetetic Astronomy - The Earth not a Globe* appeared in 1864. His lectures continued and concerned citizens addressed letters to the [Astronomer Royal](#) seeking rebuttals for his claims. A correspondent to the Leeds Times observed that "One thing he did demonstrate was that scientific dabblers unused to platform advocacy are unable to cope with a man, a charlatan if you will (but clever and thoroughly up in his theory), thoroughly alive to the weakness of his opponents".^[5]

Influence[[edit](#)]

One of Rowbotham's followers, John Hampden, a Christian polemicist, gained notoriety by engaging in raucous public debates with leading scientists of the day. A bet involving the prominent naturalist [Alfred Russel Wallace](#) in the famous [Bedford Level experiment](#) led to several lawsuits for fraud and libel and Hampden's imprisonment.

After Rowbotham's death, Lady Elizabeth Blount founded the *Universal Zetetic Society* which attracted thousands of followers, published a magazine entitled *The Earth Not a Globe Review* and remained active well into the early part of the 20th century. After World War I, the movement underwent a slow decline, but it was revived in 1956 as [The Flat Earth Society](#).

The [planists](#), however, were not yet defeated: On 11 May 1904 Lady Elizabeth Anne Blount hired a commercial photographer to use a telephoto lens camera to take a picture from Welney of a large white sheet she had placed, touching the surface of the river, at Rowbotham's original position six miles away. The photographer, Edgar Clifton from [Dallmeyer's studio](#), mounted his camera two feet above the water at Welney and was surprised to be able to obtain a picture of the target, which should have been invisible to him given the low mounting point of the camera. Lady Blount published the pictures far

and wide and for those who do not accept the explanation of [Superior Mirage](#) due to [refraction](#), these have not been explained.^[12]

In the United States, Rowbotham's ideas were taken up by the [Christian Catholic Apostolic Church](#) and promoted widely on their radio station. His work in the United States was continued by [William Carpenter](#). Carpenter, a printer originally from [Greenwich, England](#), a supporter of Rowbotham and published *Theoretical Astronomy Examined and Exposed - Proving the Earth not a Globe* in eight parts from 1864 under the name *Common Sense*. He later emigrated to [Baltimore](#) where he published *A hundred proofs the Earth is not a Globe* in 1885.^[6] He argues that:

- "There are rivers that flow for hundreds of miles towards the level of the sea without falling more than a few feet — notably, the Nile, which, in a thousand miles, falls but a foot. A level expanse of this extent is quite incompatible with the idea of the Earth's convexity. It is, therefore, a reasonable proof that Earth is not a globe."
- "If the Earth were a globe, a small model globe would be the very best - because the truest - thing for the navigator to take to sea with him. But such a thing as that is not known: with such a toy as a guide, the mariner would wreck his ship, of a certainty!, This is a proof that Earth is not a globe."