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Did the New Testament Authors Believe the Earth Is Flat?

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Certain scholars find evidence that the authors of the New Testament held to the cosmology of the ancient Near East, in which the sky is regarded as a solid dome over a flat earth. However, it was uncontroversial among Greco-Roman astronomers that the earth was spherical and was surrounded by a celestial sphere of stars. This article explores knowledge of the “two spheres” model of the cosmos in the first century CE, as this would have been become known to inhabitants of the Mediterranean world through education, word of mouth, popular astrology, and representations of the terrestrial and celestial spheres on sundials, coins, and public art. Based on these factors and the sophistication of their compositions, a number of contributors to the New Testament likely understood the earth to be spherical; their knowledge has exegetical and hermeneutical implications for discussions about scripture vis-à-vis modern science.

Keywords: New Testament, cosmology, flat earth, geocentrism, globe, astronomy, education, Schneider

Science-faith discussion commonly includes consideration of the biblical authors’ worldviews, and how our understanding of their ancient worldviews might bear on our modern interpretation of biblical passages. For example, the account of creation in Genesis, along with various other Old Testament passages, is often understood to express a typical ancient Near Eastern cosmological model in which the shape of creation could be likened to a snow globe, with a hemispherical domed sky atop a flat earth.¹ Scholars who identify this “snow globe” model in Old Testament writings typically distinguish between the timeless theological significance of the biblical texts and the time-conditioned worldview content that the biblical authors accepted by default. So, although passages such as the first chapter of Genesis presume a standard ancient Near

Eastern cosmological model, these passages are particular in affirming that the one God of Israel is the sovereign creator of the whole world. This theological truth can be sustained even though the “snow globe” structure of the world must be abandoned.²

Some scholars have drawn hermeneutical implications from the notion that a number of New Testament writings likewise express something like an ancient Near Eastern “snow globe” world-structure. Two key voices in evolutionary creationist literature, Denis O. Lamoureux and Peter Enns, identify this model in Paul’s comment that “in the name of Jesus every knee should bow, in heaven and on earth and under the earth” (Phil. 2:10). They use this text as a key example of the principle that the authors of the New Testament express the gospel of Jesus Christ using inaccurate and now defunct science that reflects the worldview assumptions of their day.³ Both authors thus make a distinction between the erroneous, outdated claims of the New Testament writings

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that must be discarded (for example, death entered the world through Adam) and the timeless revelatory truths that Christians should maintain (for example, eternal life is available in Christ).⁴

Although Lamoureux and Enns cite Philippians 2:10 in particular, biblical scholars have identified other passages in which New Testament authors may evoke an ancient Near Eastern-style double- or triple-decker cosmos (with heaven above the earth and hades or hell below).

- In an article on the cosmology of Hebrews, Edward Adams argues that the author references a two-story conception of creation, with heaven located physically atop the earth, so that Jesus can be said to have passed into heaven, much as a high priest enters the holiest part of the temple.⁵
- Michael F. Bird analyzes Mark's conception of the cosmos on the basis of references at various points in this text to "heaven," "earth," and "hell," which potentially suggest the ancient, triple-decker model.⁶
- Steve Walton notes that similar language appears in Luke/Acts, and he identifies a number of additional elements of the Gospel of Luke that could potentially be heard to evoke triple-decker cosmological ideas, including Capernaum's descent to Hades (Luke 10:15), Satan's fall from heaven (Luke 10:18), and Jesus's ascent after his resurrection (Luke 24:51; Acts 1:9–11).⁷
- Joel White, like Lamoureux and Enns, suggests that Paul references a three-level model in passages such as Philippians 2:10 and 1 Corinthians 15:40, where Paul contrasts believers' (present) earthly bodies with their (future) heavenly ones.⁸

All of these scholars rightly emphasize that the New Testament authors' primary interests and aims lie in the theological significance of their language about the cosmos, not in discussing the structure of creation per se. Nonetheless, the highlighted scriptural elements are relevant to the question of whether the New Testament can be said to express an understanding of the cosmos that is hopelessly obsolete in modern times.

The notion that certain New Testament passages imagine the earth to be flat is curious since a strong consensus existed among Greco-Roman astronomers and geographers that the earth is spherical.

Indeed, Kyle Greenwood takes for granted that the New Testament authors understood the earth to be a sphere. He identifies a number of biblical phrases that have been understood by others as evidence of a flat earth perspective, and shows how they can instead be interpreted in light of a spherical world-structure.⁹ For example, the phrase "four corners of the earth" (Rev. 7:1; 20:8) can be understood in light of the limits of the habitable portion of the spherical earth known to first-century Greco-Roman thinkers.¹⁰ The prospect that the New Testament authors did understand the earth to be spherical is intriguing, but Greenwood does not construct a detailed argument in favor of his view, and it turns out that knowledge of a spherical earth cannot be assumed *a priori* for everyone within the first-century Mediterranean world. A study is thus in order to determine whether and to what extent we can conclude that the authors of the New Testament understood the earth to be spherical rather than flat, and the extent to which it is fair to predicate hermeneutical arguments on the premise that the New Testament authors articulate the gospel of Jesus using definitively obsolete cosmological claims.

In this article, I will explore how people of the first-century Mediterranean world would have come to know about the spherical earth, and what social factors would affect the probability that a given person would have known about it. I will begin with a brief account of the development of notions of a spherical cosmos and spherical earth in Greek thought. I will then analyze certain limited writings which suggest that the notion of a spherical earth was controversial in the first-century Mediterranean world and that a person's view on this issue was largely determined by their level of education. This will be followed by overviews of formal Greco-Roman education in general, and then education related to the sphericity of the earth in particular. I will supplement this discussion with an account of some additional ways in which a person of the first-century Greco-Roman world might become familiar with spherical cosmology outside of formal education. Finally, I will discuss the likelihood that particular contributors to the New Testament did know and potentially accept that the earth is a sphere. Although the matter is not definitively clear in every case, my argument weakens the common claim that the authors of the New Testament express a defunct flat-earth cosmology that necessitates a hermeneutical bifurcation

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between timeless, authoritative truths and naïve, obsolete ancient assumptions.

The Spherical Earth in Greek Thought

In earliest Greek thought, as in the ancient Near East, the world was understood to be flat, with a domed sky and underworld.¹¹ However, the standard model among Greek intellectuals changed in favor of a spherical, geocentric conception several centuries prior to the advent of Christ. The earliest known mentions of a spherical cosmos occur in the sixth through fifth centuries BCE among such philosophers as Pythagoras, Anaximander, Parmenides, and Empedocles. Philolaus (fifth century BCE) understood both the cosmos and the earth to be spherical, and further imagined that the earth orbited around an unseen “hearth” of the cosmos, along with the sun and planets.

In the fourth century, Plato and Aristotle make reference in various writings to a spherical earth around which the sun, moon, and planets revolve in concentric orbits. Eudoxus of Knidos, a student of Plato, wrote multiple now-lost astronomical works that apparently mapped out the position of the various constellations on the celestial sphere, which he understood as a massive, rotating, solid shell that encompasses the other heavenly bodies, and on which the stars are fixed. A third lost work of Eudoxus’s sought to describe the motion of the planets. To a significant extent, much of subsequent Greek and Roman astronomy is basically a development on and refinement of Eudoxus’s model of the cosmos.¹²

One additional noteworthy contribution from the field of geography is that of Eratosthenes of Cyrene (third century BCE), who calculated the circumference of the earth by comparing the differing lengths of shadows in the cities of Alexandria and Syene at noon on the summer solstice. Based on the assumption of a spherical earth, the distance between the two cities, and the difference in angles of each city relative to the sun’s rays, Eratosthenes was able to determine a figure for the size of the earth that is approximately accurate by modern calculations.¹³

The point is that a model involving concentric spheres replaced the older flat-earth model of the cosmos in Greek (and eventually Roman) philosophical, astronomical, and geographical thought well

before the time of the New Testament. Although this geocentric model differs from a modern understanding in many crucial ways, it represents a significant development toward a modern view.¹⁴

Controversy about the Spherical Earth in the Greco-Roman World

By the time the New Testament was authored, it was basically uncontroversial among Greco-Roman astronomers and geographers that the earth was a sphere situated inside a larger celestial sphere. Indeed, it appears that this “two spheres” cosmology was widely accepted among people of high education. However, the spherical earth was not necessarily accepted by all of society, as a comment from Pliny the Elder (first century CE) suggests:

Here there is a mighty battle between learning on one side and the common herd on the other: the theory being that human beings are distributed all round the earth and stand with their feet pointing towards each other, and that the top of the sky is alike for them all and the earth trodden under foot at the centre in the same way from any direction, while ordinary people enquire why the persons on the opposite side don’t fall off – just as if it were not reasonable that the people on the other side wonder that we do not fall off.¹⁵

Pliny gives the impression that everyday people tended to question the notion of a spherical earth, despite its wide acceptance among those of a particular level of education, even to the point that he can say that the earth’s shape is “the first fact about which men’s judgement agrees.”¹⁶

Pliny’s remarks are not specific enough to clarify the level of education that would distinguish the learned few who accepted the spherical earth from the masses who did not. For that matter, Pliny is perhaps the only author who provides a clear witness to this controversy about the earth’s shape in surviving writings from around the first century,¹⁷ so the task of filling out the details behind his comments is not straightforward. Furthermore, Pliny’s description of the controversy presumably reflects his particular social context, and cannot safely be generalized to the entirety of the Mediterranean world. One must also be careful not to assume that he provides an unbiased account of the views of people of lower education, since ancient authors commonly portray uneducated people as categorically inferior to the

educated, with faults ranging from poor taste in music to inadequate opinions about the divine.¹⁸ In other words, it should not surprise us if Pliny offers a caricature of uneducated people rather than a careful historical account.

In his dissertation, Sean Michael Ryan suggests a connection between an ancient person's education and the assumptions they would make about the structure of the world. A person of lower education would be more inclined to conceptualize the world according to the older, flat-earth model, whereas a person of higher education (and thus a familiarity with a larger set of writings) would more likely conceptualize the world according to the spherical model.¹⁹ Much of the information Ryan discusses is relevant here, but his study focuses on three test cases of interpreters of the book of Revelation from the third through sixth centuries CE, so his analysis cannot easily be generalized to the era of the authorship of the New Testament.²⁰

In a recent monograph about spherical imagery on ancient Greek and Roman coins (see further below), Raymond V. Sidrys posits that many Romans of our era of interest likely accepted the concept of the celestial sphere, but were more reluctant to accept a spherical earth, imagining instead a flat earth at the center of a rotating, spherical sky.²¹ Sidrys certainly presents a compelling correction to earlier numismatic scholarship that exaggerated the presence of terrestrial sphere imagery on Greek and Roman coins. He demonstrates that many coins previously thought to portray a terrestrial globe more likely depict a celestial sphere or some other circular or spherical object (for example, sun or moon, pomegranates, athletic balls or disks), but he does not proffer any clear examples of people in ancient times who imagined a flat earth within a rotating celestial sphere, and his direct evidence for disbelief in the spherical earth is mostly limited to the passage from Pliny quoted above.

That relatively few terrestrial sphere images appear on Roman coins from around the first century CE does not prove that the bulk of the populace thought the earth was flat. Further, in Greek and Roman astronomical understanding, the notions of the terrestrial and celestial spheres were normally tightly linked conceptually.²² It is difficult to imagine that a significant number of people who had trouble accept-

ing the notion of a spherical earth were satisfied with the image of a flat earth inexplicably hovering inside a rotating spherical shell.²³ At the least, Pliny's remark gives us reason not to assume that everyone in the first-century Mediterranean world accepted the "two spheres" model of the cosmos. In all likelihood, education was a significant factor in whether a person was acquainted with and accepted the notion of the earth's sphericity.

In the sections that follow, I will examine educational and other factors relevant to how people in this world might have come to know about the spherical, geocentric astronomical model. This, in turn, will lay the foundation for some initial comments about what we can and cannot reasonably assume about the New Testament authors' familiarity with and acceptance of the same cosmological model.

Education in the Greco-Roman World

Certain members of Greco-Roman society would have learned about the spherical earth and celestial sphere through formal schooling. Education in the first century differed significantly from modern systems, so it is necessary to explore the Greco-Roman education system in a fair amount of detail in order to understand the extent to which different kinds of people may or may not have learned about the terrestrial globe through schooling.

The ancient Mediterranean world is distinguished from most modern contexts by the fact that the vast majority of people were nearly if not completely illiterate. In the most populous cities, the rate of literacy was likely no higher than 15% of the population, and the rate in other areas was probably no more than 5–10%.²⁴ Many in the ancient world required a proxy even to sign their own name, and most of those who did possess rudimentary literacy would have had a difficult time doing something as sophisticated as composing a personal letter.²⁵ Formal education, even at elementary levels, was primarily for the wealthy.

For those who were fortunate enough to participate in literate education, their learning could be conceptualized in terms of three stages.²⁶ Primary education was normally undertaken by small children, and it focused on basic literacy and counting. Secondary education, generally undertaken by adolescents, focused primarily on working with grammar.

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Tertiary education, which a student typically began at about fifteen years of age, most commonly focused on mastery of rhetorical techniques, though some students instead specialized in other areas, such as philosophy or one of the sciences (that is, natural philosophy). At every stage, instruction relied heavily on exemplary passages from classic literary works, most especially Homer's *Iliad* and *Odyssey*.²⁷ The further a student progressed, the more texts he or she would be exposed to.²⁸ The majority of students who began a given stage of education would not complete it, and only a modest portion of those who completed a given stage would move on to the next. So, only a tiny percentage of people who participated in formal education reached the tertiary level.

Although the three-stage model works as a general description, ancient education was characterized by a great deal of variation. Some children were given a primary education at home, either by a parent, a household slave, or a paid tutor, whereas others were educated outside the home with a group of students studying under a paid instructor.²⁹ Some students—typically from less elite families—were trained in a manner that focused on practical career skills. For example, a student aspiring to be a clerk might focus exclusively on the skills needed to perform that job. By contrast, a minority of students—normally the children of comparatively wealthier families—would undergo an *encyclical education*, which emphasized a breadth of important subjects. This well-rounded version of education would typically include discussions of art, mathematics, medicine, music, astronomy, geography, rhetoric, metaphysics, and ethics, in addition to the core elements of literacy.³⁰ Students from privileged families in major urban centers would often be educated in *gymnasia*, which emphasized physical education in addition to other elements of the *encyclical* model,³¹ though some would have learned from instructors in other contexts. In certain instances, primary and secondary students learned in the same room with multiple different instructors.³² There was no widespread regulation of education, so it is not surprising that a great deal of variety can be found throughout the Roman Empire.

In addition to wealth, several other factors affected a person's access to formal education in the Greco-Roman world. Geography was one significant factor. Literacy was significantly lower in rural areas than in urban ones, both because the demand for reading

and writing skills was lower in less populous regions, and because educational options were sparser.³³ Gymnasia would have been found only near significant population centers, and the most qualified teachers would likewise normally have lived in cities or larger towns rather than in smaller settlements or villages. In many cases, teenagers pursuing a tertiary education would have been sent away from home to a particular city where such training was available.³⁴

In contrast to what many modern people might assume, the average literacy rate among slaves may well have been higher than among the general population. Many slave owners could afford to pay for a slave's education, and literacy made a slave more valuable, especially in an urban context. Most slaves were not educated, but some of those living in more populous areas certainly were. It is fair to say that in the world of the New Testament, an urban slave was more likely to possess basic literacy than a rural free person.³⁵

Although some girls from wealthy families did participate in formal education, boys were educated at much higher rates, and girls seldom progressed past the rudimentary stages of learning. Nonetheless, some women obtained enough education that they were able to become teachers themselves, and a number of letters authored by women survive.³⁶

First-century Judaism also involves an interesting set of educational particularities. Jewish people of the early centuries CE commonly found standard Greco-Roman school texts problematic because they introduced children to a different history, a foreign cultural identity, and a set of values that were seen as inconsistent or at least in tension with Jewish norms.³⁷ This is especially true in that Greek gods and goddesses factor so prominently in Homer's poems. Thus, alongside the Hellenistic system of education in Israel, there existed a distinctively Jewish system of education that centered on the Torah in place of classical Greek texts such as Homer's works.³⁸ This form of teaching was normally carried out by individual rabbis, and focused primarily on the skills necessary to read the Torah aloud, with little attention to writing.³⁹ One important factor to keep in mind here is that in the time of the New Testament, most Jewish people lived outside the land of Israel, that is, in the *diaspora*, and thus lived as ethnic minorities.

Although some options for Torah-based learning would have been available through diaspora synagogues, the richest and most advanced educational options for wealthy Jewish families would have involved standard Greco-Roman schooling, and despite the inherent cultural tensions, some families did choose to educate their children in this manner.⁴⁰ Even within Israel proper, some options for Greco-Roman education were available.⁴¹ Like their diaspora counterparts, some upper-class Palestinian Jewish families educated their children in this system. Students of the Palestinian gymnasia would have been educated alongside the children of Roman imperial officials, soldiers, and any other prominent non-Jewish families living in the region.

Greco-Roman and Jewish forms of education need not represent a strict dichotomy, as some known Jewish figures from the first century were clearly informed by both types of intellectual training. Philo of Alexandria—who is one of the wealthiest, most educated, and most socially prominent first-century Jews known to us today—clearly had a robust encyclical education, but he also spoke of the synagogue like a kind of school,⁴² and considered it unacceptable to attend encyclical schools on the Sabbath, a day on which Torah-based education is appropriate.⁴³ It is possible, though not certain, that the Apostle Paul underwent standard Hellenistic primary and secondary education in Tarsus before moving to Jerusalem to undergo something of a tertiary education under the rabbi Gamaliel.⁴⁴ So then, Roman and Jewish education, while different, are not mutually exclusive.

Finally, it is worth noting that the rate of literacy in Israel proper was probably significantly lower than the average rate of perhaps 10–15% across the Roman Empire in general. Scholars commonly place the rate in the land of Israel closer to 3% or less, if “literacy” signifies anything more sophisticated than reading very basic words and sentences and writing one’s name.⁴⁵ This particularly low rate of education is probably largely due to the relative scarcity of major population centers in the region, which resulted in both less access to educational opportunities and less need for reading and writing skills.

In sum, formal education of any kind was not a given in the context of the first-century Mediterranean world, education took on many different forms,

and only a tiny number of people completed all three major stages of learning. A person was more likely to be educated, and more likely to receive a well-rounded education, the wealthier they were. Education mostly occurred in more highly populated cities and towns, whereas even basic reading and writing skills were scarce in rural settings. Women were educated much less often than men, though somewhat surprisingly, slaves were probably educated at slightly higher rates than the general population. Jewish education was also distinctive due to many Jewish people’s discomfort with aspects of the dominant, Greco-Roman culture of this age. All of these considerations must be borne in mind when examining who would have known what about the natural world in the first century CE.

Education and the Spherical Earth

Some forms of ancient education touched on knowledge of the natural world. Primary education did not normally include any formal discussion of natural philosophy, though of course a given teacher might have made reference to some basic concepts in passing.⁴⁶ Expert knowledge of natural philosophy would normally be attained only in specialized tertiary schooling or in some form of more-advanced mentorship, and only a minuscule portion of the population partook in this level of instruction.⁴⁷

However, rudimentary information about the study of the natural world was commonly imparted to students during secondary education, especially to students undertaking an encyclical education. Some discussion of natural philosophy was necessary to help students analyze the sorts of poetic texts studied during secondary education, as such texts commonly make reference to subject matter pertinent to astronomy, anatomy, botany, mineralogy, and zoology. The first-century Roman author Quintilian explains that secondary education teachers ought not to be ignorant of astronomy, since the poets studied make frequent reference to astronomical phenomena.⁴⁸ For that matter, astronomy was apparently the most popular branch of natural philosophy in the Greco-Roman world, in part because of the connection of this field to astrology. Therefore, one can imagine that basic astronomical concepts were of especial interest in secondary schooling.⁴⁹

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Richard Carrier explains that instruction in natural philosophy at this level of education would not generally have been very sophisticated, and potentially might include some amount of misinformation,⁵⁰ but the basic facts of the spherical earth, together with the notion of the celestial sphere, were the most elementary astronomical convictions in the Roman era. Therefore, it seems reasonable to assume that even the most rudimentary exposure to astronomy would make students aware of these concepts.

One particular astronomical poem, the *Phaenomena* by third-century BCE author Aratus of Soli, was widely popular among educated people of the Greco-Roman era, and appears to have been used regularly as a school text for secondary students studying in either Greek or Latin.⁵¹ Although the text did not represent the cutting edge of astronomical knowledge in the first century CE, Aratus does discuss the location of the major constellations relative to some standard reference circles on the celestial sphere,⁵² and therefore even a cursory investigation of the text would be expected to make the basic “two spheres” conception of the cosmos apparent to students. Further, some evidence indicates that it was common for teachers to employ a small model of the celestial sphere with images of the constellations in their positions as a visual aid to help students follow along with Aratus’s descriptions. A few examples of this sort of portable celestial model survive, and ancient literary references confirm the use of such models in educational contexts.

Due to the difficulty of constructing a solid spherical object using the technology of the first century, some astronomical instruction was instead carried out using an *armillary sphere*—a set of interconnected metal rings representing the important circles on the celestial sphere (ecliptic, equator, tropics, arctic, antarctic). This also provided a visual aid for understanding astronomical writings such as Aratus’s *Phaenomena*, but was much easier to construct than a solid sphere.⁵³

As noted earlier, ancient education included a great deal of variation. It would be unreasonable to assume that everyone who undertook a secondary education studied Aratus’s *Phaenomena* or interacted with a celestial sphere model or an armillary sphere, but it does appear that these elements commonly augmented whatever discussion of astronomical

rudiments was normally deemed necessary at this stage in a student’s learning.

Geography, alongside astronomy, was a typical ingredient of an encyclical education. As with astronomy, the spherical earth was fundamental to Greco-Roman geography, so it is reasonable to assume that geographical discussions at the secondary level also made students aware that the earth is not flat. However, terrestrial globes were probably not commonly used as visual aids, since only a modest percentage of the earth had been mapped by Romans in the first century CE, and most of a globe would have to be blank or purely speculative.

Although a secondary education was a privilege available to a small percentage of the population, we cannot assume that such educational experience was uniform from place to place and from family to family. Nonetheless, it is fair to say that those who did participate in ancient secondary education were *typically* aware of the basic “two sphere” model of the cosmos.

Enrollment in secondary educational studies would have been one of the main ways people of the Greco-Roman world learned about the “two spheres” cosmology; however, the system of ancient education potentially brought knowledge of the natural world to additional individuals in less official ways. One way this might have happened is through school lessons in public places. Sources suggest that school instruction commonly took place under shady trees or in colonnades, courtrooms, and other public venues where passers-by would potentially listen in or perhaps even chime in with questions.⁵⁴ A painting on the wall of the forum of Pompeii depicts such a scene, where students sit with their teacher while members of the public look on with interest.⁵⁵ Galen (second century CE) describes his father going with him to listen to lectures by different teachers in order to determine which teachers would be most suitable; this account further confirms that ancient school instruction was not necessarily closed off to the public.⁵⁶

Given the especial interest in astronomy in the Greco-Roman world and given the use of visual aids such as celestial sphere models and armillary spheres, it is not difficult to imagine people in public places taking time to listen with interest as a secondary school teacher discussed astronomical writings such as

Aratus's *Phaenomena* with students. We cannot know exactly how many people would have learned of the "two spheres" model of the cosmos in this way. Such exposure would certainly have taken place primarily in more populous contexts in particular; nonetheless, it is reasonable to imagine that some number of city-dwellers of the first century would have encountered the concept of a spherical earth and sky in this manner.

In addition to random passers-by, certain slaves of wealthy households were designated to accompany children to their school lessons, and thus were exposed to the same content that the children learned. These slaves, or *pedagogues*, likely picked up a significant amount of the knowledge conveyed to the children, and in some cases, played a role in facilitating a student's learning, especially at the elementary level.⁵⁷ It is likely that some pedagogues learned of the "two spheres" cosmology by accompanying students to their classes.

Outside of school instruction proper, public speeches and lectures were common in ancient Roman cities, and although they were primarily attended by people who were formally educated, or students in the process of undergoing education, members of the general public were known to attend occasionally as well. For example, Galen refers to some illiterate and poorly educated people attending his lectures.⁵⁸ Literature and history were apparently more common subjects for these lectures than natural philosophy, but natural philosophical subjects, including astronomy, were discussed from time to time.⁵⁹ The pool of people familiar with the "two spheres" understanding of the world would have been expanded significantly in many urban centers due to public lectures addressing astronomy and/or geography.

In addition to the aforementioned ways in which one might learn about the spherical cosmos, it figures that this information also traveled by word of mouth.⁶⁰ Presumably, students who learned about astronomy and geography as part of their formal education, pedagogues who accompanied children to lessons, members of the public who eavesdropped on school meetings in public places, and attendees of public lectures sometimes discussed elements of what they had learned with friends or acquaintances. This is all the more true in reference to the basic facts of the

celestial and terrestrial spheres, since astronomy and cosmology were popular topics in the Greco-Roman world.⁶¹ Thus, even though secondary education was a privilege reserved for a relatively small percentage of the population, and discussions of astronomy and geography would generally be confined to this and higher levels of education, we can reasonably assume that the basic facts of the "two spheres" cosmology were known to a wider group of people beyond this privileged circle.

Additional Ways One Might Learn of the Spherical Earth

Outside the realm of education, inhabitants of the Greco-Roman world—especially those who spent time in urban settings—might have encountered portrayals of the "two spheres" cosmology in a number of ways. One major example would be sundials, that is, devices used to trace the passage of time by casting a shadow onto a surface. Public sundials were pervasive in ancient Roman cities, as they facilitated appointment keeping. Private sundials in urban homes, and even portable, pocket-sized sundials, were also common.⁶²

Sundials came in a variety of shapes, but all types of Roman-era sundials presumed the "two spheres" cosmology of the time, and basically served to project the sun onto the spherical earth.⁶³ The correspondence between the spherical cosmos and a planar sundial—that is, one that projects a shadow onto a flat surface—would not be terribly obvious to a casual observer, but the connection would be more obvious in the common case of a spherical sundial, which traces a shadow's movement over a section of a concave sphere. Alexander Jones describes this type of sundial as "a vivid didactic image of the foundations of Greek geometrical astronomy."⁶⁴ It is not a given that everyone who saw a public, spherical sundial would necessarily understand it as relating to a spherical earth and sky,⁶⁵ but presumably many did understand these sundials in this way.

Armillary spheres and celestial and terrestrial globes were employed in secondary education (see above), but these types of objects were apparently also used for public display.⁶⁶ For example, Crates of Mallus (second century BCE) constructed a massive terrestrial globe about three meters in diameter that he exhibited in the Royal Palace of Pergamum.⁶⁷ The

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Roman geographer Strabo (first century BCE) provides guidelines for the construction of terrestrial globes, and recommends that such a globe should be at least three meters in diameter, which seems to imply that it would be put on display in a public place.⁶⁸ One of the few surviving celestial sphere models is part of a human-sized statue of Atlas, the Titan of Greek mythology, who is portrayed bearing on his shoulders a celestial sphere with a map of constellations.⁶⁹ This statue would be impractical for instrumental or educational purposes, and was instead clearly ornamental.

Indeed, all surviving examples of celestial sphere models were apparently intended for ornamental purposes.⁷⁰ A statue of the Roman general Pompey (first century BCE) holding a terrestrial globe in his hand was displayed prominently at the entrance to the theatre of Pompey in Rome. This image evidently evoked the idea of the general's domination of the known world.⁷¹ According to Cicero (first century BCE), the Roman general M. Claudius Marcellus sacked the Sicilian city of Syracuse in 212 BCE and brought back to Rome as trophies two celestial sphere models made by Archimedes (third century BCE). Marcellus took one model to his home, but placed the other in the Temple of Vesta, where some members of the public would have seen it.⁷²

In addition to actual three-dimensional models, a few examples survive of images of cosmological spheres in Greco-Roman artwork.

- A floor mosaic found in Solunto, Sicily (second or first century BCE), depicts an armillary sphere with a spherical earth at the center.⁷³
- A fresco found near Pompeii (first century CE) appears to depict a globe with parallel and meridian lines.⁷⁴
- Two mosaics found near Pompeii and San Marino (first century CE) depict philosophers gathered around models of terrestrial or celestial spheres.⁷⁵

We cannot be sure from the limited evidence exactly how common it was to find models or artistic depictions of the spherical earth or sky on public display in the world of the first century, but examples like those just mentioned suggest that it was by no means unusual. At least some people who lacked exposure to astronomy through formal education probably encountered ornamental images of the spherical cosmos in private homes or in public spaces.⁷⁶

Images of celestial and terrestrial spheres also appear on a number of Roman coins from around the time of the New Testament. Sidrys's recent monograph analyzes this material extensively.⁷⁷ Sidrys argues that previous numismatic scholarship overestimated the number of cases in which coins of this era portrayed celestial and especially terrestrial spheres, but the fact remains that many coins were minted with images reflecting the spherical cosmology of the era, and these images were intended to convey symbolic significance to everyday people. Of course, it is not a given that everyone who handled such coins would have given serious thought to the imagery, but the inclusion of these images suggests that those who commissioned the coins expected a certain portion of the population to find their symbolism intelligible. It is also likely that coins featuring cosmological spheres would have prompted at least a few people to discuss aspects of world-structure with one another as they tried to make sense of the coins.

Astrology is another context in which people of various classes would encounter the notions of a spherical earth and/or celestial sphere. Not only were Greco-Roman horoscopes predicated on a spherical understanding of the earth and rotating sky, but astrologers also commonly employed various kinds of instruments, including globes, as visual aids.⁷⁸ Whereas formal secondary education was mostly limited to people of relatively high social privilege, and included very few women, astrologers were consulted by people of all classes, including many women.⁷⁹ Thus, astrology likely did a great deal to expand the circle of people who were familiar with the "two spheres" cosmology of the Roman age. Although early Christians might not have been inclined to consult astrologers, a certain number of Christians from the early generations certainly would have done so prior to their own conversion, or they would have associated with people who had.

In sum, formal education was a key avenue through which privileged people of the Greco-Roman world came to understand the sphericity of the cosmos, yet we should not imagine that knowledge of the "two spheres" was a function of education alone. Sundials, celestial and terrestrial sphere models, images of spheres in art and on coins, and popular astrology all bore witness to the spherical, geocentric conception of the world, and thus expanded the pool of people who shared this understanding.

It is significant that most of the aforementioned ways one might have learned of the “two spheres” model pertain especially to urban settings. In addition to the fact that higher levels of education were primarily available in more-populous areas, members of the public would be much more likely to encounter a public-school lesson in which the celestial or terrestrial spheres were being discussed or modeled in a large city rather than in a small village. Public lectures by astronomers and geographers would likewise happen exclusively in major urban centers. Public sundials, globes, and art would also be concentrated in urban spaces.⁸⁰ Insofar as an urban center contained a greater concentration of people acquainted with the “two spheres” cosmology, it would be correspondingly more likely that a person would hear about the sphericity of the earth by word of mouth in such a context. The upshot of all this is that in addition to educational considerations, a person’s inhabiting an urban environment is another factor that significantly increases the likelihood that he or she was familiar with the spherical conception of the cosmos.

Awareness of the Spherical Earth among New Testament Authors

Based on the historical information discussed above, should we imagine that the authors of the New Testament understood the earth to be spherical? A comprehensive and critical discussion of each biblical author here would be cumbersome, but some basic remarks are in order.

First of all, it is important to understand that identifying the “author” of a New Testament text is less than straightforward. The production of texts in the ancient world commonly involved multiple people. For instance, ancient letters and certain other kinds of texts were commonly composed with the help of a secretary who actually wrote on the page. Tertius, the secretary for Paul’s letter to the Romans, identifies himself near the end (Rom. 16:22). Likewise, the author of 1 Peter states that the letter was written “through Silvanus” (1 Pet. 5:12), who likely served as the secretary.⁸¹

Even in cases where a secretary is not named explicitly, ancient conventions should prompt us to assume that a secretary was used unless we have strong reason to think otherwise. The level of a secretary’s

involvement varied case-by-case. On one end of the spectrum, a secretary merely transcribed dictation from the author. On the other end of the spectrum, a secretary would be given general guidelines and would make virtually all of the actual compositional decisions on behalf of the person who hired them. More commonly, a secretary would take detailed notes while an author spoke slowly and would then form those notes into a draft that would be presented to the author for feedback. A series of revised drafts might be produced over a period of weeks or months before the final draft was completed.⁸²

In addition to the secretary, it was not uncommon for others to give input in the process of producing a text, and several of Paul’s letters explicitly identify additional senders, for example, “Paul, Silvanus, and Timothy” (1 Thess. 1:1).⁸³ It is difficult to determine with certainty the extent to which a given secretary or co-sender contributed to the content of one of these texts, though the notion that several people had significant creative influence would go a long way toward explaining idiomatic differences that scholars have identified between biblical writings traditionally attributed to the same author (for example, between the “undisputed” and “disputed” Pauline letters).⁸⁴

Given the complexity of ancient authorship, we cannot link a feature of a given text directly with that text’s author. For example, if the Epistle of James exemplifies strong Greek composition, does this bespeak the author’s education, or the education of a secretary? However, the traits of a given text can tell us something about *someone* involved in the composition of that text. So, it is fair to say that someone involved in the composition of the Epistle of James had a high level of Greek education. Furthermore, some features of a given text might suggest general truths about those involved in the text’s composition. For example, Paul’s ministry focused on urban contexts, and any given secretaries or coauthors with whom he worked were likely also primarily familiar with an urban context.

Based on the above discussion of education in the Greco-Roman world, it is reasonable to assume that at least one person involved in the composition of each New Testament text had at least a significant secondary education, as primary education typically covered the rudiments of reading and

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writing, whereas the necessary grammatical and compositional skills would normally be learned in the secondary stage. As already discussed, the best forms of secondary education would have included an introduction to the basic facts of astronomy and geography (including the sphericity of the earth), though this would not necessarily be the case for more vocationally oriented forms of secondary education.

In the absence of explicit references to the sphericity of the earth in New Testament writings, we cannot determine with certainty whether a given text's author(s) understood the earth to be spherical. However, we can assess the likelihood based on several factors that emerge from the discussion above. First, all other things being equal, the author(s) of a text are more likely to have understood the earth to be spherical the more sophisticated the Greek composition is, as this bespeaks a higher level of education.

The compositions in the New Testament are not uniform in linguistic sophistication. Hebrews is widely recognized to exemplify the most sophisticated and elegant Greek.⁸⁵ The epistles of James, Peter, and Jude, though not as impressive as Hebrews, are likewise written with strong Greek style that betrays the presence of at least one author or secretary of substantial education.⁸⁶ Luke and Acts are perhaps a notch less sophisticated than these epistles, but they exemplify an extensive Greek vocabulary.⁸⁷ On the opposite end of the spectrum, the book of Revelation employs peculiar and unimpressive Greek,⁸⁸ and Mark's gospel employs rough and clumsy language that Matthew and Luke frequently smooth out in their parallel accounts of many of the same stories.⁸⁹ The Johannine books, while perhaps not as clumsy, employ language that is plain and straightforward, in contrast to the more artful writings such as Hebrews.⁹⁰ Matthew and the Pauline letters lie somewhere in the middle between the more- and less-sophisticated ends of the New Testament linguistic spectrum.⁹¹

Other elements of a New Testament text may betray that one or more contributors likely had a high level of education. For example, the use of athletic imagery as a metaphor for the moral life in Hebrews (5:14; 12:1-3, 12) suggests familiarity with the gymnasium and thus probably with other aspects of cultured

Roman life.⁹² Paul's claims to Roman citizenship (Acts 21:39; 22:28; cf. 23:1), his familiarity with athletic imagery that would be associated with the gymnasium (especially 1 Cor. 9:24-27; cf. Gal. 2:2; Phil. 2:16; 3:14), and his view of his own manual labor as a severe burden (1 Cor. 4:12; 9:19; 2 Cor. 6:5; 1 Thess. 2:9; 2 Thess. 3:8) all suggest that he had an aristocratic background, which would be consistent with a robust, encyclical education—though the question of whether Paul specifically had a rhetorical education is surrounded by significant academic debate.⁹³ Discussions of Luke/Acts often find evidence for a rhetorical education on similar grounds, although some scholars recently have argued that these texts require only a sophisticated secondary education.⁹⁴ If a contributor to a text does possess some amount of rhetorical education, we can reasonably assume that they were familiar with the basic evidence in favor of the sphericity of the earth and the cosmos.⁹⁵

If the biblical author inhabited an urban context, he is more likely to have been familiar with the spherical conception of the cosmos, since city dwellers had many more occasions to be confronted with this idea. Some New Testament writings certainly emerge from urban contexts, while the matter is more obscure in other cases. For example, Paul is known for his urban ministry, and the churches he founded and wrote to were generally located in major urban centers such as Rome, Ephesus, and Corinth.⁹⁶ Furthermore, social-scientific studies of the Pauline churches suggest that their membership was basically a cross-section of the social makeup of the cities.⁹⁷ Pauline churches were not merely made up of the poorest of the poor, but rather included people of various social levels, including some people with significant formal education. Indeed, Christ-focused communities like these would have been one of the few places in the ancient world where people of differing social classes and differing levels of education could have associated as peers.⁹⁸ It is not a given that members of Pauline churches regularly discussed astronomy or geography when they met together, but one can imagine that the subject likely did come up from time to time, especially since the Old Testament scriptures, which were regularly read and taught, commonly make reference to "the heavens and the earth," and sometimes seem to express a cosmology different from the "two spheres" model that would have been familiar to those with substantial formal education.

In addition to the Pauline letters, a number of other New Testament writings are widely recognized to emerge from urban contexts. The provenance of Luke/Acts is virtually always identified with one or another major city, as these works show particular interest in urban matters.⁹⁹ First Peter is commonly located in Rome,¹⁰⁰ and 2 Peter is likewise located in a major city, whether Rome, Alexandria, or another.¹⁰¹ If James the brother of Jesus is the authentic author of the epistle of James, then this text would appropriately be located in Jerusalem,¹⁰² and the discussion of how to treat a well-dressed person at a church gathering (James 2:1-7) seems to imagine a scenario that would most likely occur in some sort of population center. The sophisticated Greek composition of Luke/Acts, Hebrews, James, 1-2 Peter, and Jude likewise implies that someone involved in the production of these texts would have spent time living in a major city, as the level of education necessary to compose texts like these would not ordinarily be attainable in a rural town or village. The provenance is less clear for Matthew, Mark, Revelation, and the Gospel and Epistles of John, though some of these texts are also placed in major cities by certain scholars, and the resources necessary for the production and distribution of lengthy texts would certainly be available primarily in more-populous areas.

A great deal of ink could be spilled discussing the considerations pertinent to each specific New Testament text, but based on general scholarly consensus about the sophistication and provenance of these compositions, we can say tentatively that some or all of the contributors involved in the composition of Hebrews, 1-2 Peter, James, Jude, Luke/Acts, and the Pauline letters quite probably would have been familiar with the basic idea that the earth is a sphere within a larger celestial sphere. When these texts employ language like “heaven and earth,” or otherwise say things that could be understood in reference to a double- or triple-decker flat-earth cosmology, we should not imagine that they do so naively. For example, the epistle to the Hebrews is among the New Testament texts that could potentially be read in light of an ancient Near Eastern two-story, stacked world-structure (see above), yet this text evidences a level of linguistic and rhetorical sophistication, as well as a familiarity with elite urban life, that would almost certainly imply a knowledge of (and likely acceptance of) the basics of Greco-Roman, sphere-based astronomy and geography. Furthermore,

nothing indicates that this or any other text of the New Testament is launching a deliberate polemic against the “two spheres” cosmology of the day. No one is going out of their way to argue in favor of a flat earth. This suggests that when these authors use language like “heaven, earth, and under the earth,” these comments would be better understood as evocations of common Old Testament idiom—presumably for symbolic purposes—rather than expressions of a two- or three-level cosmology *per se*. Early Christian thought and writing is thoroughly informed by the Jewish scriptures, and it is reasonable to imagine that the New Testament authors would express God’s sovereignty over the totality of creation using language from those earlier scriptures without accepting uncritically the “snow globe” cosmology of the ancient Near East.¹⁰³

The matter is initially less clear as to whether the spherical earth would have been familiar to the authors of Matthew, Mark, the Johannine literature, and Revelation, though it is certainly perfectly plausible that they too knew and accepted this idea, since concrete evidence for disbelief in the “two spheres” model in the first-century Mediterranean world is minimal.

Conclusions

It follows from my discussion that some scholars engaged in science-faith dialogue have assumed too quickly that the New Testament authors imagined the earth to be flat. For a substantial majority of New Testament writings, it is highly likely that at least one contributor was aware of the spherical model.¹⁰⁴ It is possible that some New Testament authors did imagine the world according to an ancient Near Eastern model, but the matter is unclear based on the presently available evidence. The likelihood that a given passage betrays one or the other cosmological model must be established through careful analysis.

Of course, the Greco-Roman “two spheres” cosmology, though closer to a modern understanding than the earlier “snow globe” model, is still thoroughly out-of-date in comparison to a twenty-first century scientific understanding. The point here is not that the New Testament authors understood the structure and scale of our universe properly, but rather that it is not actually clear that the New Testament texts *express* an incorrect understanding of world-structure. For example, if, as is likely, Paul understood the

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earth to be spherical, then his reference to “in heaven and on earth and under the earth” (Phil. 2:10) does not express a three-tiered “snow globe” model of the world; rather, it should be interpreted in a manner consistent with his worldview.¹⁰⁵

The proposition that the New Testament writings express a flat-earth cosmology is not the only basis on which one could argue that the Bible contains inaccurate information about the natural world. Most obviously, I have not made any argument here about the prospect of explicit flat-earth cosmology in the Old Testament. The discussion of whether the Bible articulates false science is a larger and more complex one. However, insofar as some authors have appealed to ancient Near Eastern cosmology in New Testament passages as a key premise to establish the need for a distinction between timeless revelatory truths and outdated elements to be discarded (for example, a historical Adam and Eve, a historical Fall), the information I have presented here weakens their arguments. At the least, it should now be clear that more-thorough argumentation would be necessary to establish the position that the New Testament authors express a flat-earth cosmology.

In addition to nuancing treatments of cosmological content in the New Testament, this study should underscore the importance of treating the two Testaments of the Bible in their own right. The New Testament texts were authored in a very different era from those of the Old Testament with respect to culture, education, the state of knowledge of the natural world, and numerous other factors. So, a hermeneutical argument constructed in relation to the Old Testament cannot be applied to the New Testament without thorough justification, and vice versa.

Notes

¹See, e.g., J. Edward Wright, *The Early History of Heaven* (New York: Oxford University Press, 2000), chap. 3; Denis O. Lamoureux, *Evolutionary Creation: A Christian Approach to Evolution* (Eugene, OR: Wipf & Stock, 2008), 106–35; John H. Walton, *Genesis 1 as Ancient Cosmology* (Winona Lake, IN: Eisenbrauns, 2011); Robert J. Schneider, “Does the Bible Teach a Spherical Earth?,” *Perspectives on Science and Christian Faith* 53, no. 3 (2001): 159–69, <https://www.asa3.org/ASA/PSCF/2001/PSCF9-01Schneider.pdf>; Sean Michael Ryan, *Hearing at the Boundaries of Vision: Education Informing Cosmology in Revelation 9* (London: T&T Clark, 2012), 39–42; Kyle Greenwood, *Scripture and Cosmology: Reading the Bible between the Ancient World and Modern Science* (Downers Grove, IL: IVP Academic, 2015),

71–102; Olli-Pekka Vainio, *Cosmology in Theological Perspective: Understanding Our Place in the Universe* (Grand Rapids, MI: Baker Academic, 2018), 14–19; and Carol Hill, *A Worldview Approach to Science and Scripture* (Grand Rapids, MI: Kregel Academic, 2019), 9–12. Lamoureux’s discussion cites extensive references from the Old Testament that potentially presuppose the ancient Near Eastern model.

²My goal here is not to confirm or deny the validity of these claims in reference to the Old Testament, and my argument does not depend on a given position. Some authors argue that the standard ancient Near Eastern cosmology is not as obvious in the Old Testament as is commonly supposed. See recently William Lane Craig, *In Quest of the Historical Adam: A Biblical and Scientific Exploration* (Grand Rapids, MI: Eerdmans, 2021), 175–77.

³Lamoureux, *Evolutionary Creation*, 106–11; and Peter Enns, *The Evolution of Adam: What the Bible Does and Doesn’t Say about Human Origins*, 2nd edition (Grand Rapids, MI: Brazos, 2021), 131–33. The standard ancient Near Eastern cosmological model commonly includes an underworld, which can potentially be identified with Paul’s reference to “under the earth.”

⁴Hill’s worldview approach makes a similar distinction between obsolete science and divine revelation, but she resists asserting that the biblical texts make untrue claims. Rather, the biblical writers gave true accounts from their ancient perspectives. So, e.g., Hill posits that Adam and Eve were real people, whereas Lamoureux does not (see esp. Hill, *Worldview Approach*, 6–7). A similar hermeneutical argument to that of Lamoureux and Enns can be found in a recent correspondence in *Science and Christian Belief* (Tom Ambrose, “Death through Adam—William Horst,” *Science and Christian Belief* 33 [2021]: 132–36; and cf. William Horst, “Reply to Tom Ambrose,” *Science and Christian Belief* 33 [2021]: 137–40).

The hermeneutical distinction between obsolete culturally conditioned elements and timeless scriptural truths has deep roots in modern biblical scholarship, and I do not have space to engage this body of literature in detail here. It is nonetheless worth noting that the approach of scholars such as Enns and Lamoureux is paralleled by some biblical scholars who likewise assume that the New Testament authors betray their culturally conditioned assumption of a “snow globe” cosmology, and conclude that biblical passages along these lines must be “demythologized” in order to have relevance for modern readers. See esp. Rudolf Bultmann, “New Testament and Mythology,” in *Kerygma and Myth: A Theological Debate*, ed. Hans-Werner Bartsch (London, UK: SPCK, 1957), 1–44; cf. James D. G. Dunn, “The Ascension of Jesus: A Test Case for Hermeneutics,” in *Auferstehung – Resurrection: The Fourth Durham-Tübingen Research Symposium: Resurrection, Transfiguration, and Exaltation in Old Testament, Ancient Judaism, and Early Christianity* (Tübingen, September 1999), ed. Friedrich Avenmarie and Hermann Lichtenberger (Tübingen, Germany: Mohr Siebeck, 2001), 301–22.

⁵Edward Adams, “The Cosmology of Hebrews,” in *The Epistle to the Hebrews and Christian Theology*, ed. Richard Bauckham et al. (Grand Rapids, MI: Eerdmans, 2009), 130–31. See Hebrews 4:14; 7:26; 9:24; cf. 12:25–26.

⁶Michael F. Bird, “Tearing the Heavens and Shaking the Heavens: Mark’s Cosmology in Its Apocalyptic Context,” in *Cosmology and New Testament Theology*, ed. Jonathan T. Pennington and Sean M. McDonough

(London, UK: T&T Clark, 2008), 47–49. Bird is careful to specify that the triple-decker cosmological language in Mark serves Mark's cosmological narrative, and does not necessarily constitute an affirmation about the structure of creation per se. This nuance lends itself to my suggestion (near the end of this article) that certain passages that could sound like expressions of "snow globe" cosmology might be better understood as evocations of common Old Testament idiom for symbolic purposes.

⁷Steve Walton, "'The Heavens Opened': Cosmological and Theological Transformation in Luke and Acts," in *Cosmology and New Testament Theology*, ed. Jonathan T. Pennington and Sean M. McDonough (London, UK: T&T Clark, 2008), 60–73, esp. 62. Walton, like Bird, emphasizes the symbolic significance of this language, not the author's convictions about world-structure per se. In a later essay, Walton discusses the theological significance of Jesus's ascension in detail, and also challenges the notion that this account must be understood in light of an ancient flat-earth cosmology (Walton, "Identity and Christology: The Ascended Jesus in the Book of Acts," in *The Earliest Perceptions of Jesus in Context: Essays in Honour of John Nolland*, ed. Aaron W. White, David Wenham, and Craig A. Evans [London, UK: Bloomsbury T&T Clark, 2018], 129–47).

⁸Joel White, "Paul's Cosmology: The Witness of Romans, 1 and 2 Corinthians, and Galatians," in *Cosmology and New Testament Theology*, ed. Pennington and McDonough, 93–94.

⁹Greenwood, *Scripture and Cosmology*, 131–54, esp. 137.

¹⁰Greenwood, *Scripture and Cosmology*, 136.

¹¹Ryan (*Hearing at the Boundaries of Vision*, 40–41) notes that this basic understanding is evident in all-important Greek writings such as Homer's *Iliad* and *Odyssey* (ca. eighth century BCE), and Hesiod's *Theogony* (eighth–seventh century BCE), as well as in ancient Near Eastern writings such as the *Epic of Gilgamesh* (ca. 2100–1200 BCE), the *Atrahasis* epic (ca. 1700 BCE), the *Enuma Elish* (ca. 1100 BCE), and the Babylonian *Mappa Mundi* (ca. eighth–seventh century BCE).

¹²My summary in this section has been necessarily cursory, but detailed discussion of the development of Greek astronomical thought can be found in Georgia L. Irby-Massie and Paul T. Keyser, *Greek Science of the Hellenistic Era: A Sourcebook* (New York: Routledge, 2002), 47–81. See also James Evans, *The History and Practice of Ancient Astronomy* (New York: Oxford University Press, 1998).

¹³Evans, *The History and Practice of Ancient Astronomy*, 63–65. It is impossible to convert Eratosthenes's figure of 250,000 stadia to modern units with precision, since several variations of this unit were in use in his time, but it is fair to say that, given his antiquity, he was remarkably close to the modern measurement of just over 40,000 kilometers.

¹⁴Although the Copernican revolution took place many centuries later, it is worth noting that another Greek astronomer, Aristarchos (ca. 250 BCE), proposed an initial heliocentric theory of the cosmos. His idea was widely and vehemently rejected (Raymond V. Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins* [Oxford, UK: Archaeopress, 2020], 13).

¹⁵Pliny, *Natural History, Volume I: Books 1–2*, trans. H. Rackham (Cambridge, MA: Harvard University Press, 1938), 2.161. The controversy Pliny mentions seems not to be limited to the question of whether humans inhabit what would now be called the Southern Hemisphere, as he goes on to assert that the masses particularly dispute whether it

is reasonable to believe that the oceans would conform to a sphere-shaped earth, and spends several pages proffering arguments that they would in fact do so (Pliny, *Natural History, Volume I*, 2.163–66 of Rackham's translation). On Greco-Roman speculation about humans living on the Southern Hemisphere, see Avan Judd Stallard, "Origins of the Idea of Antipodes: Errors, Assumptions, and a Bare Few Facts," *Terrae Incognitae* 42, no. 1 (2010): 34–51, <https://doi.org/10.1179/008228810X12755564743525>.

¹⁶Quoted from Pliny, *Natural History, Volume I*, 2.295 of Rackham's translation.

¹⁷The scarcity of references is noted by Donald John Campbell, a commentary on *C. Plini Secundi Naturalis Historiae, liber secundus* (Aberdeen, UK: The University Press, 1936), 74; and Hugo Berger, *Die geographischen Fragmente des Eratosthenes* (Leipzig, Germany: B. G. Teubner, 1880), 86. A fragment attributed to Achilles Tatius does make reference to the controversy, but it would be dated to the second or third century CE. Certain later Christian authors do discuss controversies about the size and shape of the earth (see chap. 4 of Richard Carrier, *The Scientist in the Early Roman Empire* [Durham, NC: Pitchstone, 2017]), but this is not necessarily relevant to understanding the attitudes of first-century Christians, many of whom would have been converted from non-Christian backgrounds, and who would have been educated (to whatever extent they were educated) in non-Christian contexts.

¹⁸Allen R. Hilton, *Illiterate Apostles: Uneducated Early Christians and the Literates Who Loved Them* (London, UK: T&T Clark, 2018), 26–29.

¹⁹Ryan, *Hearing at the Boundaries of Vision*. Ryan also discusses a possible hybrid model that includes a flat earth and a series of concentric, hemispherical domes. He places Paul's account of being caught up into "the third heaven" (2 Cor. 12:2–4) in this category, though Paul's comments here are quite cryptic, and nothing in his writings clarifies whether he understands this "third heaven" as spherical or dome-shaped.

²⁰For that matter, Ryan's test cases do not conform perfectly to the expectations he lays out in his earlier chapters, as he acknowledges (Ryan, *Hearing at the Boundaries of Vision*, 210). Cf. Eric J. Gilchrest, "Review of *Hearing at the Boundaries of Vision: Education Informing Cosmology in Revelation 9*," *Religious Studies Review* 40, no. 3 (2014): 157, https://doi.org/10.1111/rsr.12153_13.

²¹Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, esp. 45.

²²Claude Nicolet, *Space, Geography, and Politics in the Early Roman Empire* (Ann Arbor, MI: University of Michigan Press, 1991), 35.

²³Cf. Pliny, *Natural History, Volume I*, 2.162.

²⁴See esp. Richard Carrier, *Science Education in the Early Roman Empire* (Durham, NC: Pitchstone, 2016), 24; and Catherine Hezser, "The Torah versus Homer: Jewish and Greco-Roman Education in Late Roman Palestine," in *Ancient Education and Early Christianity*, ed. Matthew Ryan Hauge and Andrew W. Pitts (London, UK: T&T Clark, 2016), 5–24.

²⁵Chris Keith, *The Pericope Adulterae, the Gospel of John, and the Literacy of Jesus* (Leiden, Netherlands: Brill, 2009), 58, 70.

²⁶This three-stage model was initially articulated by Henri Irénée Marrou, *A History of Education in Antiquity* (London, UK: Sheed and Ward, 1959). Subsequent scholarship

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on Greco-Roman education, including the various works cited below, basically engages and nuances his model.

²⁷Teresa Morgan refers to a model of “core” and “periphery,” in which “core” texts (most especially certain portions of Homer and some gnomic sayings) were visited more frequently in the educational process, and texts further from the core occurred less frequently. See Morgan, *Literate Education in the Hellenistic and Roman Worlds* (Cambridge: Cambridge University Press, 1998), 67–73. Greco-Roman schooling did not follow a uniform curriculum, but it did focus on a fairly consistent core.

²⁸The expanding range of texts with which a student would be familiar is a particular focus of Ryan, *Hearing at the Boundaries of Vision*.

²⁹Alan D. Booth, “Elementary and Secondary Education in the Roman Empire,” *Florilegium* 1 (1979): 1–14, <https://www.utpjournals.press/doi/pdf/10.3138/flor.1.002>; Robert A. Kaster, “Notes on ‘Primary’ and ‘Secondary’ Schools in Late Antiquity,” *Transactions of the American Philological Association* 113 (1983): 323–46, <https://doi.org/10.2307/284019>; Karl Olav Sandnes, *The Challenge of Homer: School, Pagan Poets and Early Christianity* (London, UK: T&T Clark, 2009), 27; and Keith, *The Pericope Adulterae*, 62–64.

³⁰See, e.g., Kaster, “Notes on ‘Primary’ and ‘Secondary’ Schools in Late Antiquity,” 324; and Royce M. Victor, *Colonial Education and Class Formation in Early Judaism* (London, UK: T&T Clark, 2019), 138, though numerous other sources on ancient education cover this subject.

³¹On Hellenistic gymnasia, see esp. Robert S. Dutch, *The Educated Elite in 1 Corinthians: Education and Community Conflict in Graeco-Roman Context* (London, UK: T&T Clark, 2005), 95–167.

³²Raffaella Cribiore, *Gymnastics of the Mind: Greek Education in Hellenistic and Roman Egypt* (Princeton, NJ: Princeton University Press, 2005), 15–17.

³³See, e.g., Carrier, *Science Education in the Early Roman Empire*, 24.

³⁴For instance, Abraham J. Malherbe suggests that the apostle Paul may have moved from Tarsus to Jerusalem to study under Gamaliel in what would essentially be a Jewish form of a tertiary education. See Malherbe, *Social Aspects of Early Christianity*, 2nd ed. (Minneapolis, MN: Fortress, 1983), 34–35. Cf. Stanley E. Porter and Andrew W. Pitts, “Paul’s Bible, His Education and His Access to the Scriptures of Israel,” *Journal of Greco-Roman Christianity and Judaism* 5 (2008): 9–40; and Andrew W. Pitts, “Paul in Tarsus: Historical Factors in Assessing Paul’s Early Education,” in *Paul and Ancient Rhetoric: Theory and Practice in the Hellenistic Context*, ed. Stanley E. Porter and Bryan R. Dyer (Cambridge, UK: Cambridge University Press, 2015), 43–67. See also Acts 22:3.

³⁵Carrier, *Science Education in the Early Roman Empire*, 12.

³⁶For a thorough discussion of women in ancient Greco-Roman education, see Cribiore, *Gymnastics of the Mind*, 74–101.

³⁷Sandnes, *The Challenge of Homer*, 43. Another significant point of cultural tension was the performance of athletic activity in the nude in the gymnasium (Victor, *Colonial Education and Class Formation in Early Judaism*, 140).

³⁸Tyler A. Stewart, “Jewish Paideia: Greek Education in the Letter of Aristeas and 2 Maccabees,” *Journal for the Study of Judaism* 48 (2017): 187–202. Stewart shows that a difference of opinion regarding Hellenistic education can be found in Jewish literature well before the first century CE.

In Stewart’s analysis, the letter of Aristeas, a Jewish text written in the second or third century BCE, reflects a view in which Hellenistic and Jewish cultural elements have a basic harmony, whereas 2 Maccabees, a Jewish text from the mid-second century BCE, reflects more of a sense that Hellenistic teaching was a “dangerous infringement” on Torah-centric Jewish education (p. 202).

³⁹Keith, *The Pericope Adulterae*, 74. Hezser (“The Torah versus Homer,” 19) notes that rabbinic education began in Palestine in the first century CE and spread to Persian Babylonia in the third century CE, but it was always confined to the Middle East. Although this form of education was in some ways a reaction against Hellenistic education, scholars point out a number of ways in which the influence of the gymnasium system can be found in distinctively Jewish education as well. See, e.g., Victor, *Colonial Education and Class Formation in Early Judaism*, 118–32; and David McLain Carr, *Writing on the Table of the Heart: Origins of Scripture and Literature* (Oxford, UK: Oxford University Press, 2005), 212.

⁴⁰See, e.g., Hezser, “The Torah versus Homer,” 22.

⁴¹Victor, *Colonial Education and Class Formation in Early Judaism*, 131–32. Andrew W. Pitts, “Hellenistic Schools in Jerusalem and Paul’s Rhetorical Education,” in *Paul’s World*, ed. Stanley E. Porter (Leiden, Netherlands: Brill, 2008), 19–50, argues that elementary Greek education was available in Jerusalem, and secondary Greek education may likewise have been present, but rhetorical education most likely was not.

⁴²Philo, *On the Embassy to Gaius*, 311–12; Philo, *On the Special Laws*, 2.62; and Philo, *On the Life of Moses*, 2.216.

⁴³Sandnes, *The Challenge of Homer*, 77. Josephus’s writings likewise make clear that he is informed by extensive Jewish and Greek education. See Catherine Hezser, *Jewish Literacy in Roman Palestine* (Tübingen, Germany: Mohr Siebeck, 2001), 189; and Victor, *Colonial Education and Class Formation in Early Judaism*, 126.

⁴⁴See Malherbe, *Social Aspects of Early Christianity*, 34–35; and Porter and Pitts, “Paul’s Bible, His Education and His Access to the Scriptures of Israel,” 9–40.

⁴⁵Hezser, *Jewish Literacy in Roman Palestine*, 496; and Chris Keith, “Urbanization and Literate Status in Early Christian Rome: Hermas and Justin Martyr as Examples,” in *The Urban World and the First Christians*, ed. Steve Walton, Paul R. Trebilco, and David W. J. Gill (Grand Rapids, MI: Eerdmans, 2017), 188–95.

⁴⁶Carrier, *Science Education in the Early Roman Empire*, 44.

⁴⁷*Ibid.*, 87.

⁴⁸Quintilian, *Education in Oratory*, 1.4.4.

⁴⁹Marrou, *A History of Education in Antiquity*, 182; and Stamatina Mastorakou, “Aratus and the Popularization of Hellenistic Astronomy,” in *Hellenistic Astronomy: The Science in Its Contexts*, ed. Alan C. Bowen and Francesca Rochberg (Leiden, Netherlands: Brill, 2020), 396.

⁵⁰See Carrier, *Science Education in the Early Roman Empire*, 44–47.

⁵¹On the popularity of Aratus, see Emma Gee, *Aratus and the Astronomical Tradition* (New York: Oxford University Press, 2013), 5–7; and Mastorakou, “Aratus and the Popularization of Hellenistic Astronomy,” 383–97. On the use of the *Phaenomena* as a school text, see Marrou, *A History of Education in Antiquity*, 185; Ryan, *Hearing at the Boundaries of Vision*, 17–20; and Carrier, *Science Education in the Early Roman Empire*, 49.

One of the only explicit quotations of an extra-biblical text in the New Testament is Paul's quotation of one of the opening lines of Aratus's *Phaenomena*, which says, "For we too are his offspring" (Acts 17:28). Some scholars caution that this simple quotation could have come from word of mouth, or could perhaps be dependent on a quotation of the same passage by Aristobulus, a Jewish author of the second century BCE. See Carrier, *Science Education in the Early Roman Empire*, 49; and Mark J. Edwards, "Quoting Aratus: Acts 17,28," in *Christians, Gnostics and Philosophers in Late Antiquity* (Burlington, VT: Ashgate Variorum, 2012), 266–69. At the least, the quotation does something to confirm the particular popularity of the *Phaenomena* in the world of the New Testament.

⁵²See James Evans and J. Lennart Berggren, *Geminus's Introduction to the Phenomena: A Translation and Study of a Hellenistic Survey of Astronomy* (Princeton, NJ: Princeton University Press, 2006), 5.

⁵³For discussion, see Evans and Berggren, *Geminus's Introduction to the Phenomena*, 27–43; James Evans, "Mechanics and Imagination in Ancient Greek Astronomy: *Sphaeropoïia* as Image and Tool," in *The Alexandrian Tradition: Interactions between Science, Religion, and Literature*, ed. Luis Arturo Guichard, Juan Luis García Alonso, and María Paz de Evans Hoz (Bern, Switzerland: Peter Lang, 2014), 35–72; and Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, 13–20. On celestial and terrestrial globes in education, see also Edward Luther Stevenson, *Terrestrial and Celestial Globes: Their History and Construction, Including a Consideration of their Value as Aids in the Study of Geography and Astronomy* (New Haven, CT: Yale University Press, 1921).

⁵⁴Criboire, *Gymnastics of the Mind*, 25–38; and Sandnes, *The Challenge of Homer*, 17, 32–34. On various kinds of school accommodations more broadly, see Criboire, *Gymnastics of the Mind*, 21–36.

⁵⁵Sandnes, *The Challenge of Homer*, 34.

⁵⁶Galen, *On the Passions and Errors of the Soul* 1.8.

⁵⁷Beryl Rawson, *Children and Childhood in Roman Italy* (Oxford, UK: Oxford University Press, 2003), 165–67; and Sandnes, *The Challenge of Homer*, 8. Booth notes that in some cases, a child's primary education may have been handled entirely at home by a pedagogue (Booth, "Elementary and Secondary Education in the Roman Empire," 10).

⁵⁸Galen, *On the Passions and Errors of the Soul* 2.2.

⁵⁹Carrier, *Science Education in the Early Roman Empire*, 52–56. Cf. Dio Chrysostom, *Discourses* 33.4.

⁶⁰See, e.g., Mastorakou, "Aratus and the Popularization of Hellenistic Astronomy," 396. Carrier in *Science Education in the Early Roman Empire*, page 23, cautions that natural philosophical information that traveled from person to person orally would be prone to distortions and errors; this is a reasonable point.

⁶¹Carrier points out that the apparent popularity of astronomy may be exaggerated to some degree by bias in favor of astronomy in medieval times. In other words, those texts which were of particular interest in later centuries would more likely be preserved as valuable. Nonetheless, he acknowledges that the particular prominence of astronomy is supported by significant historical evidence (Carrier, *The Scientist in the Early Roman Empire*, 368–72).

⁶²The definitive resource on Greco-Roman sundials is Sharon L. Gibbs, *Greek and Roman Sundials* (New Haven, CT: Yale University Press, 1976). See also Sara Schechner,

"The Material Culture of Astronomy in Daily Life: Sundials, Science, and Social Change," *Journal for the History of Astronomy* 32 (2001): 189–222; and Jérôme Bonnin, "Symbolic Meanings of Sundials in Antiquity: Introduced by an Explanation of Ancient Timekeepers," *British Sundial Society Bulletin* 23 (2011): 6–10.

⁶³Robert Hannah, "The Sundial and the Calendar," in *Hellenistic Astronomy: The Science in Its Contexts*, ed. Alan C. Bowen and Francesca Rochberg (Leiden, Netherlands: Brill, 2020), 323–39.

⁶⁴Alexander Jones, "Introduction," in *Time and Cosmos in Greco-Roman Antiquity*, ed. Alexander Jones (Princeton, NJ: Princeton University Press, 2016), 25. Jones also describes here another, rarer type of sundial that traced a shadow-boundary on the face of two convex half-spheres representing the earth.

⁶⁵Indeed, a form of concave spherical sundial dates back to earlier Babylonian astronomy, which understood the sky to be a dome rather than a sphere. See Peter I. Drinkwater, "The Spherical Sundial," *British Sundial Society Bulletin* 90 (1990): 12–13, <https://sundialsoc.org.uk/wp-content/uploads/bulletins/B1990/Bull090-3.pdf>.

⁶⁶On this general point, see Stevenson, *Terrestrial and Celestial Globes*, 14; and Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, 13–20.

⁶⁷Stevenson, *Terrestrial and Celestial Globes*, 7–8; and Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, 20.

⁶⁸Strabo, *Geography* 2.5.10.

⁶⁹James Evans, "The Material Culture of Greek Astronomy," *Journal for the History of Astronomy* 30, no. 3 (1999): 239, <https://doi.org/10.1177/002182869903000305>; and Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, 13. This statue, the Farnese Atlas, dates to the first or second century CE, but is likely a Roman copy of a second-century BCE Greek original. Sidrys discusses additional examples of statues that include celestial spheres on pages 33–35.

⁷⁰Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, 15.

⁷¹*Ibid.*, 84.

⁷²Cicero, *On the Republic* 1.21–22; cf. Cicero, *Tusculan Disputations* 1.63; and Ovid, *Fasti* 6.277–80.

⁷³Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, 16.

⁷⁴Stevenson, *Terrestrial and Celestial Globes*, 21.

⁷⁵See Otto J. Brendel, *Symbolism of the Sphere: A Contribution to the History of Earlier Greek Philosophy* (Leiden, Netherlands: Brill, 1977), 1–18; and Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, 35–36. Both mosaics are understood to be copies of an earlier Greek painting. The sphere in one of the mosaics includes a grid of intersecting lines that Brendel interprets as a series of reference lines on a celestial sphere model (Brendel, *Symbolism of the Sphere*, 14), though they may better resemble parallel and meridian lines on a globe.

⁷⁶Evans and Berggren, *Geminus's Introduction to the Phenomena*, 28. Sidrys rightly suggests that these sorts of depictions were generally located in places more accessible to upper class people than to those of lower classes (Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, 90), though slaves and freed persons of prominent members of society would potentially accompany their head of household to certain places not accessible to the general public. Richard L. Rohrbaugh describes how ancient cities

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had areas designated for social elites, often surrounded by protective walls. However, certain non-elites also had access to such areas in order that they might serve the needs of the elite (Rohrbaugh, "The Pre-industrial City in Luke-Acts: Urban Social Relations," in *The Social World of Luke-Acts: Models for Interpretation*, ed. Jerome H. Neyrey [Peabody, MA: Hendrickson, 1991], 125-49, esp. 144). A modern analogy might be a country club that is accessible to both elite club members and non-elite staff.

⁷⁷Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*. Sidrys suggests that some spherical images may intentionally present an ambiguous image that could be interpreted as either a celestial or terrestrial sphere, perhaps due to a greater public familiarity with and acceptance of the former over the latter (pp. 91, 182). This is possible, but little clear evidence shows a public rejection of the spherical earth apart from the quotation of Pliny discussed above. So, an intentional ambiguity of this sort is far from clear.

⁷⁸Wolfgang Hübner, "The Professional Αστρολόγος," in *Hellenistic Astronomy: The Science in Its Contexts*, ed. Alan C. Bowen and Francesca Rochberg (Leiden, Netherlands: Brill, 2020), 315; and Sidrys, *The Mysterious Spheres on Greek and Roman Ancient Coins*, 52.

⁷⁹Hübner, "The Professional Αστρολόγος," 309. Cf. Juvenal, *Satire* 6.585-91.

⁸⁰It is probably reasonable to imagine that astrologers also primarily interacted with the public in urban environments, such as the Circus Maximus, a chariot-racing stadium in Rome near which astrologers were known to operate (Hübner, "The Professional Αστρολόγος," 310-11).

⁸¹However, Jongyoon Moon argues that Mark, rather than Silvanus, was the secretary of 1 Peter, and significantly influenced the content of the text. See Moon, *Mark as Contributive Amanuensis of 1 Peter?* (Berlin, Germany: Lit Verlag, 2009).

⁸²On the authorship of texts in the New Testament world, see Stanley Kent Stowers, *Letter Writing in Greco-Roman Antiquity* (Philadelphia, PA: Westminster, 1989); E. Randolph Richards, *The Secretary in the Letters of Paul* (Tübingen, Germany: Mohr Siebeck, 1991); and Steve Reece, *Paul's Large Letters: Paul's Autographic Subscriptions in the Light of Ancient Epistolary Conventions* (London, UK: Bloomsbury, 2017).

⁸³See also 1 Cor. 1:1; 2 Cor. 1:1; Phil. 1:1; Col. 1:1; 2 Thess. 1:1; and Philem. 1:1.

⁸⁴See, e.g., Scot McKnight, *The Letter to the Colossians* (Grand Rapids, MI: Eerdmans, 2018), 5-18. Among New Testament scholars, the "undisputed" Pauline letters include Romans, 1-2 Corinthians, Galatians, Philippians, 1 Thessalonians, and Philemon. The "disputed" Pauline letters include Ephesians, Colossians, 2 Thessalonians, 1-2 Timothy, Titus, and (sometimes) Hebrews, though some of these are more disputed than others. Authentic Pauline authorship is disputed because of perceived differences in vocabulary, grammatical idiom, and theological and practical content (e.g., how is the church assumed to be governed?). However, many of the arguments against the authenticity of the "disputed" Pauline letters could also be levied against passages of the "undisputed" letters, so a number of twenty-first-century scholars treat these categories loosely. The literature on this subject is voluminous, but the basics are discussed in virtually any critical commentary on a "disputed" Pauline letter.

⁸⁵See, e.g., Luke Timothy Johnson, *Hebrews: A Commentary* (Louisville, KY: Westminster John Knox, 2006), 8-9.

⁸⁶See, e.g., Douglas J. Moo, *The Letter of James*, 2nd ed. (Grand Rapids, MI: Eerdmans, 2021), 18; and Jerome H. Neyrey, *2 Peter, Jude: A New Translation with Introduction and Commentary* (New Haven, CT: Yale University Press, 2007). The language of 2 Peter has at times been seen as confusing and unnecessarily complicated, but a number of scholars recognize that this composition is written in the Asianic (as opposed to Attic or Koine) style of Greek, which is characterized by "a loaded, verbose, high-sounding manner of expression leaning toward the novel and bizarre, and careless about violating classic ideas of simplicity": see Bo Reicke, *The Epistles of James, Peter, and Jude* (Garden City, NY: Doubleday, 1964), 146-47; cf. Ben Witherington III, *A Socio-Rhetorical Commentary on 1-2 Peter*, vol. 2 of *Letters and Homilies for Hellenized Christians*, 2 vols. (Downers Grove, IL: IVP Academic, 2006), 273. First Peter likewise can be understood to employ this Asianic style, though perhaps to a less extreme degree (Witherington, *A Socio-Rhetorical Commentary*, 42).

⁸⁷See, e.g., Joseph A. Fitzmyer, *The Gospel According to Luke 1-IX* (Garden City, NY: Doubleday, 1981), 109-14.

⁸⁸See, e.g., Stanley E. Porter, "The Language of the Apocalypse in Recent Discussion," *New Testament Studies* 35 (1989): 582-603.

⁸⁹Ben Witherington III, *The Gospel of Mark: A Socio-Rhetorical Commentary* (Grand Rapids, MI: Eerdmans, 2001), 18-19. Ronald F. Hock posits that even Mark should be understood to have some amount of tertiary education, based on the sophistication involved in composing such a lengthy historical narrative (Hock, "Reading the Beginning of Mark from the Perspective of Greco-Roman Education," *Perspectives in Religious Studies* 44 [2017]: 292-93).

⁹⁰See, e.g., Craig S. Keener, *The Gospel of John: A Commentary*, 2 vols. (Peabody, MA: Hendrickson, 2003), 1:47-48.

⁹¹See, e.g., Ben Witherington III, *Matthew* (Macon, GA: Smyth & Helwys, 2006), 25-26; Paul Robertson, *Paul's Letters and Contemporary Greco-Roman Literature: Theorizing a New Taxonomy* (Leiden, Netherlands: Brill, 2016), 48-49.

⁹²Johnson, *Hebrews*, 16. David A. deSilva is not certain that the author had a proper rhetorical education, but acknowledges indicators that would bespeak a thorough, formal Greek secondary education at the least ("How Greek Was the Author of 'Hebrews'? A Study of the Author's Location in Regard to Greek Παιδεία," in *Christian Origins and Greco-Roman Culture: Social and Literary Contexts for the New Testament*, ed. Stanley E. Porter and Andrew W. Pitts [Leiden, Netherlands: Brill, 2013], 648-49).

⁹³See esp. Ronald F. Hock, "The Problem of Paul's Social Class: Further Reflections," in *Paul's World*, ed. Stanley E. Porter (Leiden, Netherlands: Brill, 2008), 7-18. Recent scholars who doubt that Paul had a rhetorical education include Ryan S. Schellenberg, *Rethinking Paul's Rhetorical Education: Comparative Rhetoric and 2 Corinthians 10-13* (Atlanta, GA: Society of Biblical Literature, 2013); and Robertson, *Paul's Letters and Contemporary Greco-Roman Literature*, 48-49. For scholarly argument in favor of Paul having a rhetorical education, see, e.g., Jerome H. Neyrey, "The Social Location of Paul: Education as the Key," in *Fabrics of Discourse: Essays in Honor of Vernon K. Robbins*, ed. David B. Gowler, L. Gregory Bloomquist, and Duane F. Watson (Harrisburg, PA: Trinity Press International, 2003), 126-64; and Ronald F. Hock, "Paul and Greco-Roman Education," in vol. 1 of *Paul in the Greco-Roman*

World: A Handbook, ed. J. Paul Sampley, 2 vols. (London, UK: Bloomsbury, 2016), 198–227. See also the various essays in Stanley E. Porter and Bryan R. Dyer, eds., *Paul and Ancient Rhetoric: Theory and Practice in the Hellenistic Context* (New York: Cambridge University Press, 2016).

⁹⁴In favor of Luke’s rhetorical education, see, e.g., Michael W. Martin, “Progymnastic Topic Lists: A Compositional Template for Luke and Other *Bioi*?,” *New Testament Studies* 54, no. 1 (2008): 18–41, <https://doi.org/10.1017/S0028688508000027>. Scholars who argue that Luke did not necessarily have a rhetorical education include esp. Garrett Best, “The Historical and Rhetorical Gamaliel: Reading Luke’s Composition with Quintillian,” *Restoration Quarterly* 60, no. 3 (2018): 147–61; Sean A. Adams, “Luke and *Progymnasmata*: Rhetorical Handbooks, Rhetorical Sophistication and Genre Selection,” in *Ancient Education and Early Christianity*, ed. Matthew Ryan Hauge and Andrew W. Pitts (London, UK: T&T Clark, 2016), 137–54; and Osvaldo Padilla, “Hellenistic παιδεία and Luke’s Education: A Critique of Recent Approaches,” *New Testament Studies* 55, no. 4 (2009): 416–37.

⁹⁵Scholars sometimes find evidence of rhetorical education behind 1 Peter: see Craig S. Keener, *1 Peter: A Commentary* (Grand Rapids, MI: Baker Academic, 2021), 10; cf. Karen H. Jobes, *1 Peter* (Grand Rapids, MI: Baker, 2005), 7. Some scholars also find evidence of it behind 2 Peter: see Neyrey, *2 Peter, Jude*, 113–18; and Duane F. Watson and Terrance Callan, *First and Second Peter* (Grand Rapids, MI: Baker Academic, 2012), 134. Some scholars find evidence of it behind Jude as well, though this position is far from unanimous. See Peter H. Davids, *The Letters of 2 Peter and Jude* (Grand Rapids, MI: Eerdmans, 2006), 13, 24–25.

⁹⁶On the urban context of Paul’s ministry, see, e.g., Wayne A. Meeks, *The First Urban Christians: The Social World of the Apostle Paul*, 2nd edition (New Haven, CT: Yale University Press, 2003); and Todd D. Still and David G. Horrell, eds., *After the First Urban Christians: The Social-Scientific Study of Pauline Christianity Twenty-Five Years Later* (New York: T&T Clark, 2009).

⁹⁷See Meeks, *The First Urban Christians*, 51–73; Steven J. Friesen, “Poverty in Pauline Studies: Beyond the So-called New Consensus,” *Journal for the Study of the New Testament* 26 (2004): 323–61, <https://doi.org/10.1177>

/0142064X0402600304; and Bruce W. Longenecker, “Socio-Economic Profiling of the First Urban Christians,” in *After the First Urban Christians: The Social-Scientific Study of Pauline Christianity Twenty-Five Years Later*, ed. Todd D. Still and David G. Horrell (New York: T&T Clark, 2009), 36–59. With a few possible exceptions, members of the most elite social levels are not clearly evidenced.

⁹⁸For example, Dutch argues that much of what Paul says in 1 Corinthians is addressed especially to the educated elite members of the Corinthian church, who presumably represented a small minority of the group, and whose presence generated conflict with lower-class church members. See Dutch, *The Educated Elite in 1 Corinthians*, 95–167. Cf. Rohrbaugh, “The Pre-industrial City in Luke-Acts,” 125–49.

⁹⁹In addition to commentaries on Luke and Acts, see Rohrbaugh, “The Pre-industrial City in Luke-Acts”; and Douglas E. Oakman, “The Countryside in Luke-Acts,” in *The Social World of Luke-Acts: Models for Interpretation*, ed. Jerome H. Neyrey (Peabody, MA: Hendrickson, 1991), 151–79.

¹⁰⁰On the consensus re: 1 Peter, see Keener, *1 Peter: A Commentary*, 31.

¹⁰¹See, e.g., Neyrey, *2 Peter, Jude*, 130–36; and Jörg Frey, *The Letter of Jude and the Second Letter of Peter: A Theological Commentary* (Waco, TX: Baylor University Press, 2018), 222.

¹⁰²Cf. Acts 12:17; 15:13; 21:18 and Gal. 1:19; 2:9.

¹⁰³Cf. Greenwood, *Scripture and Cosmology*, 131–54.

¹⁰⁴Namely, Luke, Acts, Romans, 1–2 Corinthians, Galatians, Ephesians, Philippians, Colossians, 1–2 Thessalonians, 1–2 Timothy, Titus, Philemon, Hebrews, 1–2 Peter, James, and Jude, which constitute twenty of the twenty-seven New Testament writings.

¹⁰⁵For example, Ralph P. Martin suggests that the phrase may be “a rhetorical pleonasm, expressed with the amplitude of poetic license, for the whole universe,” which is not intended to describe creational layers at all in Martin, *A Hymn of Christ: Philippians 2:5-11 in Recent Interpretation and in the Setting of Early Christian Worship* (Downers Grove, IL: InterVarsity Press, 1997), 258. See pages 257–64, for a survey of key interpretations of Paul’s threefold utterance.

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