

2021

Cynewulf, Copernicus, and Conjunctions: The Problems of Cytherean Motions in Tolkien's Cosmology

Kristine Larsen

Central Connecticut State University, larsen@ccsu.edu

Follow this and additional works at: <https://scholar.valpo.edu/journaloftolkienresearch>



Part of the [Modern Literature Commons](#)

Recommended Citation

Larsen, Kristine (2021) "Cynewulf, Copernicus, and Conjunctions: The Problems of Cytherean Motions in Tolkien's Cosmology," *Journal of Tolkien Research*: Vol. 13 : Iss. 1 , Article 2.

Available at: <https://scholar.valpo.edu/journaloftolkienresearch/vol13/iss1/2>

This Conference Paper is brought to you for free and open access by ValpoScholar. It has been accepted for inclusion in *Journal of Tolkien Research* by an authorized administrator of ValpoScholar. For more information, please contact a ValpoScholar staff member at scholar@valpo.edu.

An abridged version of this paper was presented at the 2019 International Congress on Medieval Studies, Western Michigan University. It is the first of three related conference papers focusing on cosmological themes in Tolkien's works.

In the Quenta version QII, Eärendel walks through a deserted Tûn and is welcomed by Fionwë with “Hail Eärendel. Star most radiant, messenger most fair! Hail thou bearer of light before the Sun and Moon, the looked for that comest unawares, the longed-for that comest beyond hope. Hail thou splendor of the children of the world, thou slayer of the dark! Star of the sunset hail! Hail herald of the morn!” (*SOME* 154). The foreshadowing and symbolism of this address is widely recognized, as Eärendel afterwards assumes the role of the Morning and Evening Star Venus in the mythology of Middle-earth. The source of Tolkien's inspiration is also well-known, thanks to a 1967 letter draft. As a young man Tolkien read the *Crist* of Cynewulf in the *Exeter Book*, and one couplet in particular resonated with him:

*Hail Éarendel brightest of angels,
over middle-earth sent unto men.*

Tolkien came to think of it as representing the planet Venus and was particularly struck by the beauty of the word *Eärendel* (*Letters* 385). The word and related image gave birth to a 1914 poem “The Voyage of Eärendel the Evening Star” and the rest, as they say, is history. To understand the celestial symbolism of Eärendel's voyages, including rather confusing details Tolkien later included in the expanded mythology, we need to further investigate Tolkien's invented cosmology.

From the earliest versions of the legendarium there existed a layered geocentric cosmology that is reminiscent of the medieval worldview, with the important exception that it was initially flat. The layers are explicitly described in a document called “The Ambarkanta,” the Shape of the World, a six-page handwritten manuscript published in *The Shaping of Middle-earth* along with accompanying diagrams and commentary by Christopher Tolkien (235-51). As in the case of the medieval cosmology, the layers of Tolkien's universe are divided by composition, although it is not exactly the classic fire/earth/air/water/aether structure. At the center we have the flat, later spherical, Earth, with its oceans and other bodies of water. Above it lies the ordinary air, or Vista, and further out still is found Ilmen, “air that is clear and pure being pervaded by light though it gives no light,” while beyond this is the Vaiya, the “Enfolding Ocean,” which is more water-like beneath the flat Earth and more air-like above the flat Earth (*SOME* 235-6). This gives way to one of the most interesting aspects of the cosmology, the “Walls of the World. They are as ice and glass and steel, being above all imagination of

the Children of Earth cold, transparent, and hard. They cannot be seen, nor can they be passed, save by the Door of Night” (*SOME* 235). Beyond this lies “Kúma, the Void, the Night without form or time” (*SOME* 237).

In our Primary World the standard geocentric medieval cosmology was based on a series of concentric spheres, with Earth at the center. The Moon orbits closest, then the Sun and planets, and finally the Primum Mobile. God resides in the Empyrean (true heaven) beyond the Primum Mobile, and His hand sets the Primum Mobile into motion. This, in turn, sets the inner spheres spinning. There were three views of the orbits of Mercury and Venus. Both planets could lie between the Earth and Sun (below the Sun), both could lie beyond (above) the Sun (the view of Plato), or one could orbit between the Earth and Sun and the other beyond the Sun. What was undisputed fact was that the Moon was closer to the Earth than either of these planets, and that Mars, Jupiter, Saturn, and the fixed stars lay beyond the Sun (in that order).



Figure 1: The geocentric universe. Public domain image courtesy of Wikimedia Commons.

Why are Mercury and Venus singled out here? These two so-called inferior planets (the name designating their location, not a value judgement) orbit closer to the Sun than we do, and as seen from Earth always appear relatively close to the Sun in the sky, constrained by their smaller orbits. Venus’ comparable size to Earth, relative proximity, and highly reflective sulfuric acid clouds make it the third

brightest object in the sky. However, it always appears within about 45 degrees east or west of the Sun and at its greatest elongation can set no more than about three hours after sunset or rise three hours before sunrise. With an orbit half its neighbor's size and a diameter only a third as large, Mercury is far harder to see, as it is dimmer and orbits closer to the Sun, and is therefore often lost in the din of twilight.

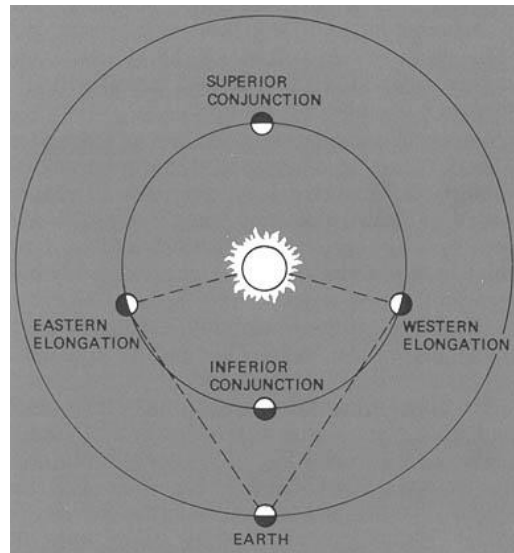


Figure 2: The orbit of a generic inferior planet (Mercury or Venus) demonstrating that its angular separation from the Sun (as viewed from Earth) is limited by the planet's relatively small orbit. Public domain image courtesy of Wikimedia Commons.

In his 12th century work *Anticlaudianus*, Alain de Lille's main character, Prudence, travels into the steep region of the heavenly realms and observes how "Lucifer, herald of the Sun and harbinger of day, shines forth: he ushers in the blessings of light for Earth, and his own rising sets the stage for the rising of the Sun and in his rising foretells the dawn" (Sheridan 132). Note the similarity with Fionwë's address to Eärendel that began this paper. Alain adds that Mercury "clings, an inseparable companion, to the sun's steps, accompanying his master on his journey like a personal slave" (Sheridan 132).

In Book IX of his *Almagest*, Ptolemy agrees with those who used "the sun as a natural dividing line between those planets which can be any angular distance from the sun and those which cannot but which always move near it" (Taliaferro 270). Ptolemy correctly explains that seeing Mercury or Venus pass in front of the Sun (what we today call transits) would be incontrovertible proof of these planets passing nearer to the Earth than the Sun, but wisely argues that the lack of

observation of such events (before the invention of the telescope) does not negate such positioning, because an alignment could be difficult to attain (as in the rarity of eclipses). He therefore places these two planets both below the Sun, closer to Earth. This particular model was popular, not the least reason being that it elegantly placed the Sun, the king of the heavens, in the center of his kingdom, “in order that the Sun should exercise its influence equally above and below” (Grant 311).¹

In his seminal work *On the Revolutions of the Heavenly Spheres*, Nicolaus Copernicus reviews these arguments and notes one difficulty of placing Mercury and/or Venus between the Earth and Sun – if planets are dark bodies that merely reflect sunlight, they should show phases like the Moon, or at the very least vary tremendously in brightness, like the crescent versus quarter phases. The non-observation of phases of Mercury or Venus was explained by some geocentrists who favored a “lower” position for these two planets by asserting that these planets are not opaque like the Moon, and instead they “shine either by their own proper light or because their entire bodies are impregnated with sunlight” (Wallis 521-2). Galileo’s discovery of the full range of phases of Venus was powerful evidence in support of the Copernican Doctrine, as it can only occur if Venus orbits the Sun and not the Earth.

With that background in place, let’s return to the heavenly voyages of Eärendel.² Fionwë pronounces him a “bearer of light before the Sun and Moon” (*SOME* 154), a phrase I have always found to be problematic. It can’t refer to the relative brightness of the three objects, nor simply the visibility of Venus in the morning rising before the Sun, as the Moon can rise before either the Sun or Venus, depending on its phase. Venus and the Moon can literally pass in front of the Sun, the latter a total solar eclipse, and the former a rare transit (if you missed the Venusian transits of 2004 and 2012 you have to wait until 2117 and 2125 to get another chance). But Venus can never pass in front of the Moon, as even medieval observers knew its orbit lay beyond the Moon. Eärendel also wasn’t born before the Sun and Moon were created from the Two Trees. The best explanation is that Fionwë was referring to the light of the Silmaril being captured from the Two Trees before the Sun and Moon were created, but grammatically it is curious – it would be far better to say “bearer of light from before there was a Sun or Moon”?

We have much better luck explaining the apparent motion of Eärendel in the September 1914 poem “The Voyage of Eärendel the Evening Star” (*BOLT II* 267-9). The lines “He threaded his path o-er the aftermath/ Of the splendor of the Sun,” and later “Tracking the Sun in his galleon,” can simply refer to Venus being visible in the evening twilight or more specifically to Venus following the apparent

¹ While readers of Tolkien’s legendarium are used to a feminine sex being assigned to the Sun, this was not the general case in Classical and Medieval Western cosmologies.

² The spelling of this character’s name changed over the decades. We will use the older spelling except where quotations determine otherwise.

path of the Sun relative to the stars, called the ecliptic or less precisely the zodiac (*BOLT II* 268-9). We also read of Eärendel being chased by the Ship of the Moon “Beyond the dark earth’s pale,/ Back under the rim of the Ocean dim,/ And behind the world set sail” (*BOLT II* 269). While this could simply denote the rising and setting of Venus along with the Sun, it could also refer to those times when Venus briefly disappears from view, being too close to the Sun to be seen when it transitions from the morning to evening sky and vice versa.³

The July 1915 poem “The Shores of Faëry” calls Eärendel the “one lone star/ That fled before the moon” (*BOLT II* 271). A prose preface explains of his voyages to the “Ocean of the Firmament” that “no man has told, save that hunted by the orbed Moon he fled back to Valinor, and mounting the towers of Kôr upon the rocks of Eglamar he gazed back upon the Oceans of the World. To Eglamar he comes ever at plenilune when the Moon sails a-harrying beyond Taniquetil and Valinor” (*BOLT II* 262). Tolkien’s reference here to the full Moon (plenilune) demonstrates a reasonable understanding of the lunar phases; since the full Moon appears opposite (180 degrees away from) the Sun in the sky, and because Venus is always within about 45 degrees of the Sun, Venus is never in danger of coming into contact with the full Moon.

In the outline to the incomplete “Tale of Eärendel” included in the *Book of Lost Tales Part II*, Eärendel’s brightness as a star has nothing to do with a Silmaril, but the diamond dust that powdered him as he walked through the empty streets of Kôr. It is this brightness that causes the “Moon mariner” to chase him and “he dives through the Door of Night” (*BOLT II* 255). In this way he comes to the starless voids, where he cannot be seen. In the next iteration, the “Earliest ‘Silmarillion’” Eärendel “is scorched by the Sun, and hunted from the sky by the Moon, and for a long while he wanders the sky as a fugitive star” (*SOME* 38). The scorching of Eärendel by the Sun could again refer to the times when Venus is lost in the glare of the Sun (as it shifts from predawn to post-sunset visibility). This general motion remains in the legendarium through all of its many revisions, as we read in the published *Silmarillion* (250) that Eärendil is able to journey “even into the starless voids,” and upon returning from “beyond the confines of the world” he is most

³ The specifics are as follows. A full Venusian apparition cycle is approximately 584 days long. Venus is physically closest to Earth at inferior conjunction, when it passes between the Earth and the Sun (see Figure 2). It disappears in the Sun’s glare for about 8 days before emerging into the predawn sky. It appears to move further to the West each day (to the right of the rising Sun) over the next few months, reaching a Greatest Western Elongation of about 45 degrees or less, before moving back towards the Sun (remaining a Morning Star for an average of 263 days). Now Venus is farthest from the Earth, passing behind the Sun on the other side of its orbit, and is swallowed by the Sun’s glare for about 7 weeks. It emerges from the Sun’s glare into the sunset sky to serve as the Evening Star for about 9 months, repeating its slow and steady motion away from the Sun (this time to the left or East), reaching a Greatest Eastern Elongation of about 45 degrees or less before reversing its motion and starting the cycle once more (Aveni 275).

often seen “at morning or at evening, glimmering in sunrise or sunset.” Again, his passing beyond the visible heavens into the void beyond explains why he is not seen in the middle of the night (more than 45 degrees away from the Sun) but only appears upon his return to the lower airs (which appear closer to the horizon). Note that the exact details of the void and the doors becomes complicated and convoluted during the evolution of the legendarium (as is the case with many details) and do not concern us here. What is interesting is that even in the latest versions we still see hints of the original poem where he finally “glimmering passed to the starless vast/ As an isled lamp at sea,/ And beyond the ken of mortal men” (*BOLT II* 269).

The Moon Mariner chasing Eärendel as Venus is generally in keeping with the two objects’ apparent motions along the ecliptic. When Venus is visible, the Moon will ominously appear to approach it for several days each month, as a waxing crescent in the case of the Evening Star or waning crescent for the Morning star. Close pairings of the two objects, called conjunctions, are quite striking. And while Venus can never appear in front of the Moon, the Moon can, up to six times a year, appear to pass directly in front of Venus, called an occultation. While such an event can even be seen during the day with a pair of binoculars, it is far more awe inspiring when viewed against a dark night sky.

Out of curiosity, I looked up historical lunar occultations of Venus and found one visible from Europe on the evening of June 25, 1914, shortly before the writing of the first Eärendel poem (“Éphémérides” 27). Coincidence? Quite possibly. But consider another Tolkienian juxtaposition of the two objects in “‘I Vene Kemen’ – ‘The Map of the Ship of the World’,” a cosmological sketch composed circa 1916-20 (*BOLT I* 83). Christopher Tolkien (*BOLT I* 83) describes this as a “very remarkable” sketch in which the cosmology is “presented as a huge ‘Viking’ ship, with mast arising from the highest point of the Great Lands, single sail on which are the Sun and Moon.” Christopher does not comment on a curious astronomical error, a bright five-pointed star clearly within the horns of the Moon (called here Sil, to the Sun’s Ur). The phase of the Moon is very problematic, as the horns of the crescent always point away from the Sun. However, given that the Moon is shaded dark, it could be interpreted as a gibbous Moon rather than a crescent, but in either case having a star overlay the Moon is physically impossible. A quick survey of as many of Tolkien’s paintings and sketches of crescent Moons as I could find among my collection of books reveals that he often got the orientation of the Moon’s horns horribly wrong.

But as Table 1 shows, I could only find two instances of a star pictured within the horns of a crescent Moon (if you don’t count the rune in the Moon cover illustration for *The Hobbit*). These two are the Ship cosmology and the 1915 watercolour and black ink painting “The Shores of Faery” associated with the similarly titled poem. In this painting, the dying Two Trees of Valinor give birth to the Sun and Moon, each hanging from their respective branches. A close inspection

shows that a white star hangs from its own branch in front of the Moon. In their analysis of the work, Hammond and Scull (48) argue that based on the “prose preface to the later versions of the poem” the spot is meant to be Eärendel, the star hunted by the Moon. If this is so, then we are left with a mystery to solve - why was Tolkien apparently fascinated by this physically impossible scenario?

Name	Year	Star near moon
End of the World	1911-13	<u>Yes</u> but not within horns
The Shores of Faery	1915	<u>Yes</u> within horns
I Vene Kemen (The Map of the Ship of the World)	1916-20	<u>Yes</u> within horns
Halls of Manwe on the Mountains of the World above Faerie	1928	no
The Vale of Sirion	1928	no
Maddo	1928	no
Father Christmas Letter	1932	<u>Yes</u> but not within horns
Death of Smaug	Pre 1937	no
Dust jacket for <i>The Hobbit</i>	~ 1937	no
Design for spine and lower binding for <i>The Hobbit</i>	~ 1937	Sort of - runes within horns
Door of Durin original sketch	~ 1940	no
Door of Durin later sketch	1953	no
Draft dust jacket design for <i>The Two Towers</i>	1954	no
Final dust jacket design for <i>The Two Towers</i>	1954	no

Table 1: Tolkien Artwork Featuring a Crescent Moon

The combination of a crescent Moon and star is common iconography dating back at least as far as ancient Sumer. In some cases the star (or a dot called a pellet) appears inside the horns of the crescent Moon. While its most widespread use was as a symbol of the Ottoman Empire (for example, in its flag), it can more recently be found in the flags of Turkey, Algeria, Tunisia, Libya, Azerbaijan, Pakistan, and Mauritania, among other nations. The identity of the star can vary, and in some cases is identified as Venus. In his study of astronomical symbolism

on ancient and medieval coins, Marshall Faintich (84) found a number of examples with stars or pellets found within the horns of the crescent Moon (Figure 3). In some cases the pellet is related to the denomination of the coin and sometimes part of the design. It is therefore not completely unexpected for Tolkien to include the physically impossible image of Venus appearing literally “before the moon” in his *legendarium*. But there could be yet another, perhaps unconscious, source of inspiration.



Figure 3: Roman coin (c. 130 CE) featuring Hadrianus and a star/crescent Moon. Credit: Classical Numismatic Group, Inc. /Wikimedia Commons; CC-BY-SA-2.5

Samuel Taylor Coleridge’s famous 1798 poem “The Rime of the Ancient Mariner” features a description of “The horned Moon, with one bright star/Within the nether tip,” what Louis Berman (1) calls “one of the most widely quoted astronomical blunders known in English literature.” Did Coleridge make the mistake out of astronomical ignorance, or was he trying to demonstrate the unworldliness of the “spectral sea?” (Ogilvy 229). Was it a simple slip of the tongue, and he actually meant to describe the star as looking like it was nearly between the horns? In his study of Coleridge’s sources *Road to Xanadu*, John Livingston Lowes points out that not only was Coleridge generally well-read in the scientific literature of his day, but his personal notebook confirms that he had read the same volume of the *Philosophical Transactions of the Royal Society of London* in which Cotton Mather had discussed a report of a star being seen within the horns of the Moon (Ogilvy 229). Astronomer Royal Nevil Maskelyne had likewise communicated in a 1794 article in the same journal that two observers had recently reported seeing the same phenomena (Baum 284-5). Perhaps Coleridge was simply utilizing a seemingly otherworldly yet repeatedly reported phenomenon.



Figure 4: Venus just about to be occulted by the crescent moon. Credit: Vinish K Saini/Wikimedia Commons; CC-BY-SA-2.0

Fast-forward to 1859, and astronomer George Airy’s address to the Fellows of the Royal Astronomical Society concerning seventy-four documented instances of stars seeming to briefly appear in front of the Moon at the start of lunar occultations, something he had himself once witnessed. Various explanations, from the refraction of light to atmospheric turbulence and even the possible existence of an atmosphere around the Moon, were suggested and found lacking (Baum 287). As Richard Baum (297) noted of the so-called Coleridge Effect in 2007, “the phenomenon exists and is very well documented. Of its explanation we can affirm nothing except to say that it is possibly psychological in origin.”

When Douglas Anderson first asked my opinion of the white dot on “The Shores of Faery” painting, I thought it might represent a transient lunar phenomenon. Over the centuries there have been telescopic reports of small dots of light appearing in the dark side of the Moon, possible explanations including meteors, bright asteroids passing between the Earth and Moon, or the top of a lunar mountain catching a ray of sunlight. On November 15, 1953, amateur astronomer Dr. Leon Stuart photographed what appeared to be a bright flash on the Moon, possibly from a meteoroid collision. “Stuart’s Event” was largely ignored by professional astronomers until 2003, when images from the Clementine lunar orbiter were used to identify a fresh mile-wide crater at the position of Stuart’s photograph (Buratti and Johnson 260). More recently, some observers of the January 20, 2019 total lunar eclipse witnessed a small flash from a piece of space debris impacting the Moon (Andrews). But in the end, I have to agree that it is Venus seen before the Moon in both the Ship cosmology and the painting.

A decade after the publication of his famous poem, Coleridge wrote of a close conjunction between the crescent Moon and Venus “It was the most singular

and at the same time beautiful sight I ever beheld” (Baum 294). Could Tolkien have been influenced by an actual astronomical observation, or any of the literary and artistic representations described in this paper? Tolkien continued to take liberties with the apparent motions of Venus during his later writing of the *Silmarillion* texts, most notably in “Akallabêth,” where it is said that once Númenor was made ready for the Edain “the Star of Eärendil shone bright in the West as a token that all was made ready, and as a guide over the sea; and Men marveled to see that silver flame in the paths of the Sun” all night long (*Sil* 260). They certainly should have marveled, to see Venus traveling so far from the Sun in the sky along the ecliptic (the paths of the Sun). If you ever witness such a sight, head for the nearest fallout shelter, because it means Venus has changed its orbit!

While it is easy to criticize Tolkien for his astronomical liberties, we should acknowledge not only the consternation Venus’ motions caused medieval astronomers, but modern ones as well. German astronomer Johann Hieronymus Schröter noted in the 18th century that it is impossible to accurately predict the timing of the phases of Venus, something that should be geometrically trivial, as in the case of our Moon (Mallama 16). In addition, a mysterious illumination called the Ashen Light is sometimes seen in the “dark side” of Venus, first noted by Giovanni Riccioli in 1643 (Sheehan et al. 209). Neither of these is satisfactorily explained even today, except that they are most likely atmospheric or optical illusions. While I leave you with perhaps more questions than answers, I can assure you that in my own Moon Mariner-like pursuit of Eärendel, I have learned quite a bit about astronomical and literary history, and come to a renewed appreciation of the subtleties of one Oxford don’s subcreation.

REFERENCES

- Andrews, Robin George (2019) “During the Lunar Eclipse, Something Slammed into the Moon.” *New York Times*, <https://www.nytimes.com/2019/01/23/science/lunar-eclipse-meteor-moon.html>.
- Aveni, Anthony F. (1979) “Venus and the Maya.” *American Scientist* 67: 274-85.
- Baum, Richard (2007) *The Haunted Observatory*. Amherst, NY: Prometheus Books.
- Berman, Louis (1970) *The Wayward Heavens in Literature*. San Francisco: Astronomical Society of the Pacific Leaflet No. 488.
- Buratti, Bonnie J., and Lane L. Johnson (2003) “Identification of the Lunar Flash of 1953 with a Fresh Crater on the Moon’s Surface.” *Icarus* 161: 192-7.
- “Éphémérides Astronomique Pour Juin 1914” (1914) *Gazette Astronomique* 7: 27-29.

- Faintich, Marshall (2008) *Astronomical Symbols on Ancient and Medieval Coins*. Jefferson, NC: McFarland and Co.
- Grant, Edward (1996) *Planets, Stars and Orbs: The Medieval Cosmos*. Cambridge: Cambridge UP.
- Hammond, Wayne G. and Christina Scull (2000) *J.R.R. Tolkien Artist & Illustrator*. Boston: Houghton Mifflin.
- Mallama, Anthony (1996) "Schröter's Effect and the Twilight Model for Venus." *Journal of the British Astronomical Association* 106: 16-18.
- Ogilvy, Stanley (1947) "Lights on the Moon." *Popular Astronomy* 57: 229-32.
- Sheehan, William, et al. (2014) "The Ashen Light of Venus: the Oldest Unsolved Solar System Mystery." *Journal of the British Astronomical Association* 124: 209-15.
- Sheridan, James J., trans. (1973) *Alan of Lille, Anticlaudianus*. Toronto: Pontifical Institute of Medieval Studies.
- Taliaferro, R. Catesby, transl. (1952) "Ptolemy, *The Almagest*." In *Great Books of the Western World, Vol. 16*, ed. Robert Maynard Hutchins, 1-478. Chicago: William Benton.
- Tolkien, J.R.R. (1984) *The Book of Lost Tales, Part I*, ed. Christopher Tolkien. Boston: Houghton Mifflin.
- Tolkien, J.R.R. (1984) *The Book of Lost Tales, Part II*, ed. Christopher Tolkien. Boston: Houghton Mifflin.
- Tolkien, J.R.R. (2000) *The Letters of J.R.R. Tolkien*, ed. Humphrey Carpenter. Boston: Houghton Mifflin.
- Tolkien, J.R.R. (1986) *The Shaping of Middle-earth*, ed. Christopher Tolkien. Boston: Houghton Mifflin.
- Tolkien, J.R.R. (2001) *The Silmarillion, 2nd ed.*, ed. Christopher Tolkien. Boston: Houghton Mifflin.
- Wallis, Charles Glenn, trans. (1952) "Nicolaus Copernicus, *On the Revolutions of the Heavenly Spheres*." In *Great Books of the Western World, Vol. 16*, ed. Robert Maynard Hutchins, 499-838. Chicago: William Benton.