

**CHRISTIANITY AND ASTROLOGY: FUNDAMENTAL
INCOMPATABILITY CONCERNING GODS AND FREE WILL**

An Undergraduate Research Scholars Thesis

by

KATHERINE MILLER

Submitted to the Undergraduate Research Scholars program at
Texas A&M University
in partial fulfillment of the requirements for the designation as an

UNDERGRADUATE RESEARCH SCHOLAR

Approved by Research Advisor:

Dr. Justin Lake

May 2020

Major: Biology
Classical Studies

TABLE OF CONTENTS

	Page
ABSTRACT.....	1
Literature Review.....	1
Thesis Statement.....	1
Theoretical Framework.....	2
Project Description.....	2
ACKNOWLEDGMENTS	3
INTRODUCTION	4
CHAPTER	
I. THE PLANETS AS GODLY BEINGS.....	6
Babylon.....	7
Greece	9
Greek Fatalism.....	10
Good, Evil, and the Greek Perspective	13
Rome.....	14
II. ASTROLOGY, THE CHURCH, AND THE FREE WILL PROBLEM.....	18
Firmicus Maternus	19
Augustine and <i>City of God</i>	23
III. ATTEMPTS TO RECONCILE CHRISTIANITY AND ASTROLOGY	26
Attempts to Take the Determinism out of Astrology.....	26
Christian Astrologers	27
The Astrology of Jesus' Birth.....	29
CONCLUSION.....	30
WORKS CITED	31

ABSTRACT

Christianity and Astrology: Fundamental Incompatibility Concerning Gods and Free Will

Katherine Miller
Department of Biology
Department of International Studies
Texas A&M University

Research Advisor: Dr. Justin Lake
Department of International Studies
Texas A&M University

Literature Review

This paper will synthesize literature from classical, medieval, and modern authors. The works from modern authors will provide background information, but the bulk of the argument of the paper will come from the classical and medieval sources themselves. Documents from early Church sources that discuss astrology within a Christian context, such as Augustine's *City of God*, will be used. Some philosophical discussion around the tenets of fate and free will also be incorporated.

Thesis Statement

The practice of astrology passed down from the Greeks and Romans lingered on in Christian Medieval Europe as a peripheral science despite efforts from the Church to stamp it out. Although astrology in its original form proved to be incompatible with the essential tenets of Christianity, individuals who remained interested in it as a science sought various methods by which to doctor its objectionable components, incorporate the Christian God, and legitimize its use in the eyes of the Church.

Theoretical Framework

This paper will take a historical framework, focusing on astrology in Rome and the subsequent development and impact of Christianity in the West. The methodology and history of ancient astrology will provide necessary background information, but as the main argument has to do with free will and determinism, a discussion of theology and metaphysics will be incorporated.

Project Description

The various forms of divination practiced throughout the ancient world were largely eradicated on a social level by the ubiquity of Christianity in the mid- and late-Middle Ages in that it was not used as a component in religion. However, despite backlash from the Church against pagan practices, astrology remained a pseudo-scientific practice of varying degrees of legitimacy for scholars and learned men through the Middle Ages. This paper seeks to investigate the change in perceived mechanism through which astrological practitioners believed the planets to be enforcing celestial will upon human endeavors, and in doing so will lead to a more comprehensive answer as to why Christianity did not incorporate astrology (re-written to appropriately support the Christian narrative) as it incorporated artifacts of other pagan religions, such as the pagan holidays of Christmas and Easter.¹ Astrological interpretations of free will and determinism from classical and medieval perspectives will be compared, with emphasis on perspectives from Church sources.

¹ Malene Lauritsen et al., “Celebrating Easter, Christmas and their associated alien fauna,” *World Archaeology* 50:2, (2018): pp. 287.

ACKNOWLEDGMENTS

I would like to acknowledge the Undergraduate Research Scholars program for its structure, which, though initially constricting, proved itself to be of great help for the pacing and completion of this project. I would also like to acknowledge the staff of the Undergraduate Research Scholars program for helping to provide such an academic opportunity.

I would like to thank my faculty advisor, Dr. Lake, for his guidance of this project, and to convey my regrets that I can no more understand the math behind astrology than I can the math behind anything else. Luckily, however, the success of this paper did not rely on my ability to understand trigonometry.

Special thanks go to Nicole, without whom this paper could not have been completed. I greatly appreciate you.

I would also like to thank my parents, who supported me getting a degree in Classics, and my sister, who encouraged me with her own special brand of love.

INTRODUCTION

One of the hallmarks of humanity is the desire to understand the surrounding world, or, failing that, at least to interpret it in a way that makes sense. Even thousands of years ago, humans searched for ways to know the unknowable—they looked to the stars for answers about illnesses, natural disasters, and the future itself, eventually creating and passing down elaborate bodies of work with which to decode the secrets of the universe.

However, the purpose of this paper is not to delve into the system by which the ancients interpreted the stars, but rather to investigate the changing philosophical impact of free will and determinism upon the way that astrology was received within society.

The robust scientific enquiry of the Greeks stagnated in the later years of the Roman Empire, a state of matter which persisted in Western Europe until the Scientific Revolution in the sixteenth century. This meant that practices that relied on scientific knowledge, such as medicine and astronomy, were carried out using classical-era knowledge. However, many Greco-Roman ideals intrinsic to the study of astrology—such as the question of fatalism versus free will and the metaphysical identities of heavenly bodies—are fundamentally incompatible with Christianity. The purpose of this paper is to identify areas where astrology does not match up with Christian teachings and the steps that Christian practitioners of astrology took to make astrology more compatible with Christianity.

This paper seeks to address two questions. Firstly, how did the identity of the planets as metaphysical beings change between the classical and medieval periods? Secondly, how did Christians attempt to reconcile with Greek and Roman ideas of fate, destiny, and predetermination?

This paper was conceived out of the intersection of several interests: the specifics of interpreting the present and the future from the movement and position of the heavens, the practices and policies of the early Christian Church, and the Early Medieval Ages as a whole. The ultimate purpose of this paper is to determine what tenets of astrology made coexistence with Christian doctrine impossible and to investigate the methods individuals used to try and make astrological practice more palatable to Christian sensibilities. In this respect, this project is of more theological than historical interest.

Astrology as a classical practice will first be established. Its methods and uses in law and politics and interpreting the future will be investigated, and a conclusion will be drawn both about the role of the gods as the planets and about the causality of nature and its impact on human life.

CHAPTER I

THE PLANETS AS GODLY BEINGS

Astrology is a form of divination in which the movement of celestial bodies is used to interpret the present and predict the future. Since its development was an offshoot of observing constellations as agricultural indicators of times to plant and harvest,^{2,3} various systems of astrology have been created by different cultures across the world, and even within a single culture in the ancient world, there was often disagreement about what the planets were (metaphysically speaking) and by what mechanisms they were moved. Despite divergent practices, the basis of astrology remains clear: higher beings use the movement of celestial bodies to influence or command events on earth, often by either communicating with or flat-out controlling humans.⁴

However, although the basis is clear, investigating the particulars of how astrology was approached and regarded gives insight to why it failed to become integrated with Christianity as other pagan practices and religious holidays did. The first question that must be asked is how and to what extent pagan gods were involved in astrology, particularly as the planets share names with gods of the Roman pantheon even today.

Were the planets themselves considered to be the gods whose names they bore? If not, were the planets controlled by the gods? Were they controlled by a single god whose power reigned supreme over the universe and the other gods? Were the planets thought to operate

² Daniel Varisco, "The Agricultural Marker Stars in Yemeni Folklore," *Asian Folklore Studies* 52, no. 1 (1993): pp. 126.

³ Harriet Nash, "Stargazing in traditional water management: a case study in northern Oman," *Proceedings of the Seminar for Arabian Studies* 37 (2007): pp. 161.

⁴ Nicholas Campion, "The Celestial Mirror," *Astrology and Cosmology in the World's Religions* (NYU Press, 2012), 16.

independently of the gods, since their movement is mathematically consistent and not capricious at all? Were they thought to be controlled by an entity that existed outside of the gods? There was no universal answer to any of these questions, and the answers that were understood changed over time.

The next question has to do with free will and determinism. If it is understood that the future can be known by looking at the movement of the stars, then the future must already be set in stone. If the future has been set, then there must be an actor that has set it. Do the stars themselves write the future through the incidence of their movement through the heavens, or is the future written by another entity, which the stars helpfully narrate?

These are questions that must be asked because Christianity is fundamentally a monotheistic religion—theological arguments about the Trinity notwithstanding—and the more intrinsically pagan gods were involved in an astrological system, the harder it would be to rework that system to fit with a Christian worldview.

Babylon

In ancient Babylon, which is commonly cited as the birthplace of Western astrology (though Egypt is also cited alongside it), the planets (as well as several constellations) were invoked as gods of the pantheon⁵ through both various forms of divination⁶ and the Old Babylonian ‘Prayer to the Gods of the Night.’⁷ This indicates that the Babylonians considered the planets themselves to hold power over the earth and the events that occur thereon.

It would be logical to expect that, as the next step in the development of Western astrology, and having inherited the Babylonian astrological tradition, the Greeks would also view

⁵ Jastrow, Jr, Morris, “Hepatoscopy and Astrology,” *Proceedings of the American Philosophical Society* 47, no. 190 (1908): pp. 652.

⁶ Erica Reiner, “The Uses of Astrology,” *Journal of the American Oriental Society* 105, no. 4 (1985): 590.

⁷ Tamsyn Barton, *Ancient Astrology* (New York: Routledge, 1994), 11.

the planets as physical manifestations of the gods themselves. However, this is not so: not only did the Greeks not invoke the planets as the physical gods of the Greek pantheon, they also had an emphasis of fate and fatalism in their worldview that seems to have been unique to their civilization. From where did these divergences stem?

While it is true that elements of Babylonian celestial divination, such as the twelve-part system of dividing the heavens that evolved into the zodiac,⁸ were adapted into Greek astrology, many sources of Babylonian astrology that the Greeks drew upon were not in fact authentically Babylonian. Rather, they were forgeries by Greek writers, who utilized them as authoritative sources⁹ in order to increase the legitimacy of a practice that had largely been created by their own relatively young civilization.¹⁰

Despite the fact that Greek astrology is therefore fundamentally Greek,¹¹ the prominence of the incorporated Babylonian elements cannot be discounted. The zodiac, as mentioned, is one such element. The names of the planets, which by ancient tradition are shared with the Mesopotamian gods whom the Babylonians thought to physically *be* the planets, are another. When the Greeks integrated those few components of Babylonian astrology into their own practice, they changed the Babylonian names of the planets to the names of the corresponding Greek gods.¹²

As an aside, this explains an aspect of astrology that does not make sense through a purely Greek reading of the order and arrangement of the universe: namely, why it is the sun that is “best and greatest”¹³ and in command over the other planets. In Greek mythology, Zeus would

⁸ F. Rochberg-Halton, “Elements of the Babylonian Contribution to Hellenistic Astrology,” *Journal of the American Oriental Society* 108 no. 1(1988): 53.

⁹ Rochberg-Halton, “Elements,” 51.

¹⁰ Tamsyn Barton, *Ancient Astrology* (New York: Routledge, 1994), 9.

¹¹ Rochberg-Halton, “Elements,” 51.

¹² Richard Tarnas, “The Planets.” *Archai: The Journal of Archetypal Cosmology* 1(1), 2009. 36.

¹³ Firmicus Maternus, *Matheseos* (New Jersey: Noyes Press, trans. 1975 by Jean Rhys Bram), 30.

be expected to fill the role of “best and greatest” as the king of the gods and the head of the Greek pantheon. The planet Jupiter was admittedly one of the most powerful forces for human good in the heavens¹⁴ in that births and actions under its rise tended to produce favorable omens. However, it seems unusual that the Greeks would not have edited this system to maintain Zeus as the most central and most powerful being of their pantheon.

This is explained by lingering Babylonian influence. Although the Babylonians were likely not aware of the heliocentric nature of the revolutions of the planets,¹⁵ they personified the sun as their god Shamash. Since Shamash was revered as a law-giver,¹⁶ he would have been an appropriate choice to govern the planets. The Greeks kept this model, although whether because it presented less confusion in terms of the identities of members of their pantheon (since Zeus, the god of thunder, would not make an intuitive sun-god, even if that revision did place him back at the top) or because they knew that the sun is the center of the solar system¹⁷ can be debated. However, though the sun remained the preeminent planet, the Greeks prevented confusion by referring to it as its own entity in astrological texts rather than identifying it with either Helios or Apollo, the Greek gods of the sun.¹⁸

Greece

Though the Greek names for the planets were lifted from the Babylonian tradition, the Greeks did not also adopt the Babylonian concept of the planets as physical manifestations of the gods. Rather, the Greeks viewed the planets as lesser gods that served the gods of the pantheon

¹⁴ Barton, *Ancient Astrology*, 96.

¹⁵ H. F. Lutz, “Geographical Studies among Babylonians and Egyptians.” *American Anthropologist* 26, no. 2 (1924). 160.

¹⁶ Maud Makemson, “Astronomy in Primitive Religion,” *Journal of Bible and Religion* 22, no. 3. 169.

¹⁷ William Harris Stahl, “The Greek Heliocentric Theory and Its Abandonment,” *Transactions and Proceedings of the American Philological Association* 76 (1945): 321.

¹⁸ Firmicus Maternus, *Matheseos* (New Jersey: Noyes Press, trans. 1975 by Jean Rhys Bram), 30.

and used their names as an indication of ownership. This is evident in the Platonist dialogue the *Epinomis*, which is the earliest extant text that names all the known planets and “affirmed the divinity of the planets and then went on to introduce the specific Greek name for each planet according to the deity which that planet was understood to be “sacred to”—Hermes, Aphrodite, Ares, Zeus, Kronos.”¹⁹

(These gods accounts for the planets from Mercury to Saturn, which were all that were known to the ancients: Uranus and the planets even farther from the sun were not discovered until the early modern era.)

Therefore, the Greeks preferred to reference the planets as the “planet of” a deity, such as the “planet of Zeus” (Jupiter) or the “planet of Hermes” (Mercury), rather than identifying the planet as a physical manifestation of the god itself. In line with this unwillingness to identify the planets with godly names, the Greeks also identified heavenly bodies by an aspect of their appearance, such as calling Jupiter the “shining one” or Mercury the “scintillating one.”²⁰

If the planets are not gods but are distinctly under the control of the gods, then they are not controlling themselves and their own movement. If they are not controlling themselves, then by definition they are being controlled. The question is, by what? This requires a brief discussion of the Greek view of fate and determinism.

Greek Fatalism

The ancient Greeks used the concept of “fate” as a way to answer the age-old question of why bad things happen to good people without incriminating deities that might take offense. If a god is assumed to be omnipotent, then that god is responsible for evil as well as good.²¹

¹⁹ Richard Tarnas, “The Planets.” *Archai: The Journal of Archetypal Cosmology* 1(1), 2009. 36.

²⁰ Barton, *Ancient Astrology*, 111.

²¹ William Greene, “Fate, Good, and Evil, in Early Greek Poetry” (*Harvard Studies in Classical Philology* 46, 1935). 1.

However, if there is a force higher than the gods themselves, this provides an outlet for humans to explain evil without implicating the gods.

Early Greeks perceived the gods as just,^{22,23} whereas later Greeks were more likely to challenge the perception of the gods as moral, good, and all-powerful beings.²⁴ If the gods were just,²⁵ calamity would not befall mortals who lived moral and pious lives. However, since the Greeks understood that misfortune makes no distinction between good and evil individuals, undeserved misfortune is attributed to a force that stands outside the gods.²⁶ In much of Greek literature, this force acting within the mortal and metaphysical world is shown to supersede even the will of the gods themselves. In a classic example, the hero Achilles is given the choice between two fates: he may either die young in glory or live a long life in obscurity.²⁷ Though his immortal mother Thetis laments his decision to die so that his fame may live on, she cannot change either Achilles's mind or fate itself.²⁸

Similarly, in the precursor myth to the *Iliad*, Zeus, learning that the child of Thetis will be more powerful than its father, decides to not take Thetis for himself and instead marries her to the mortal king Peleus.²⁹ By doing this, he preserves his own power and prevents his own usurpation. He is forced to respond to the ultimate fate that has already been determined, rather than determining that fate through his own actions. More importantly, this story lends support to the idea that the particulars of one's fate are flexible, even if the end point is set in stone. Thetis' child will be more powerful than its father: this is fated. The identity of the father of Thetis' child

²² Aratus, *Phaenomena*. 1-19.

²³ Hesiod, *Works and Days*, 240-247; cf. 260-262.

²⁴ Greene, "Fate, Good, and Evil," 10.

²⁵ Greene, "Fate, Good, and Evil," 4.

²⁶ Greene, "Fate, Good, and Evil," 5.

²⁷ Homer, *Iliad* 9, 410-416.

²⁸ Homer, *Iliad* 1, 410-416.

²⁹ Isthmian Odes 8, 38-40.

is not. This model suggests that to the Greeks, “fate” is concerned with the important moments of an individual’s life, such as birth, death, and the overarching trend of one’s fortune and misfortune, which even the gods cannot change.

However, “fate” to the ancient Greeks does not appear to have been the most extreme, all-encompassing ideal of “fate” in which each individual action, thought, and interaction is accounted for and predetermined. Rather, to the Greeks, one’s “fate” referred to an inescapable end: attempts to avoid it led to its fulfillment. The most famous example of this in classical literature may be Sophocles’ Oedipus, who kills his father and marries his mother despite the actions he takes to avoid doing that very thing.

Despite such emphasis on fate and its role in human misfortune in literature, human free will was not discounted as a force unto itself. At the beginning of the *Odyssey*, Zeus has this to say: “How surprising that men blame the gods, and say their troubles come from us, though they, through their own un-wisdom, find suffering beyond what is fated.”³⁰ Even Achilles, operating under the geas of fate, had the unique right to choose that fate instead of the other equally valid fate that had lain open to him.³¹

This dichotomy in the Greek mindset is again evident in the *Iliad* when Priam comes to beg Achilles for the body of Hector: in their conversation, Achilles identifies that good things are to be accepted, the evil that the gods bestow must be resigned to, and pity from the suffering of one’s fellow man must be acknowledged.³² “Good and evil...are alike the gift of the gods; but man’s own folly aggravates the evil or nullifies the good.”³³

³⁰ Homer, *Odyssey* 2, 413-416.

³¹ Homer, *Iliad* 9, 410-416.

³² Greene, “Fate, Good, and Evil,” 11.

³³ Greene, “Fate, Good, and Evil,” 12.

This discussion of fate is relevant because astrology is almost intrinsically tied to the philosophy of determinism. “This is because, unlike omens from the flights of birds, or from marks in a sacrificial liver, where the diviner never really knows what to expect..., the signs from which astrologers make their predictions are unique in that they are themselves *predictable* and *regular*.”³⁴ This determinism is evident in the popular use of horoscopes and nativities, in which the conditions of one’s birth determine one’s health, personality, and even the events of the rest of one’s entire life.³⁵

Good, Evil, and the Greek Perspective

Greek mythology did not have the same concept of “sin” as Christian doctrine, in which things done against the word and will of God must be repented of and forgiven. It also did not have the same narrative of good battling evil: though Zeus had had to overthrow the Titans to gain his throne, that mythological war was over and done with.³⁶ There was no ongoing conflict between the gods and an opposing evil force.

In contrast, at the beginning of the Christian mythos, Lucifer defected from heaven with a third of the angels³⁷ and tempted Adam and Eve, which introduced sin into the world. Because of this, in the Christian narrative all people fight an ongoing war against sin, demonic influences, and the Enemy himself, a state of matters will not be resolved until the Second Coming of Christ. At that time, the demonic army will be crushed by the army of God and all will be made right with the world.³⁸

³⁴ Daryn Lehoux, “Tomorrow’s News Today: Astrology, Fate, and the Way Out,” *Representations* 95, no. 1(2006): 113.

³⁵ Maternus, *Matheseos*, 44.

³⁶ William Greene, “Fate, Good, and Evil, in Early Greek Poetry” (*Harvard Studies in Classical Philology* 46, 1935). 13.

³⁷ Revelation 12:9-7.

³⁸ *Book of Common Prayer*, (New York: Church Publishing Incorporated, 2007), 326-327.

The point of this tangent is that it is interesting that the planets are allotted natures and significance that oppose one another³⁹ when the gods themselves did not necessarily oppose each other in the same manner. It is easy to understand why the planets Mars and Saturn are perceived negatively, as they represent war and aging respectively, but the fact that Jupiter and Venus are able to negate the negative effects of Mars and Saturn⁴⁰ almost seems to suggest that there is an unseen war for the supremacy of good against evil in the Greek astrological narrative, just as there is within the Christian narrative.

In contrast, part of the Greek way of thinking (at least present in literature) is that one must accept good in a way that does not draw the attention of Providence.⁴¹ The gods, rather than fighting for the good of mankind, were liable to strike down mortals who overstepped their place or experienced too much favor. This is evident in Herodotus' story of Polycrates, who, having had a period of exceedingly good fortune, was advised by his ally Amasis to throw out a prized possession in order to balance his good fortune in the eyes of the universe. Polycrates obliged and threw his ring into the ocean, but the ring was swallowed by a fish that was caught and brought to the palace. The return of Polycrates' ring was enough of an incentive for Amasis to cut ties with Polycrates. Interestingly, this suggests that in the ancient Greek world, bad fortune was not only karmic, but contagious,⁴² which supports the idea that Greek fate was malleable and not entirely deterministic unto itself.

Rome

If to the ancient Greeks planets were understood not to be gods themselves, but to be agents of the gods whose names they bore, by Roman times this subtle distinction had been lost.

³⁹ Barton, *Ancient Astrology*, 96.

⁴⁰ Barton, *Ancient Astrology*, 108.

⁴¹ Greene, "Fate, Good, and Evil," 12.

⁴² Herodotus, *The Histories*, 3.9.

Likely as a result of the unwieldiness of the “the-planet-of” diction that the Greeks favored, the Romans shortened the forms by which the planets were addressed to simply the name of the relevant god, which increased the ambiguity of the planets as inherent deities.⁴³

After Greece was conquered by Rome from 229-146 BC, Rome began to assimilate Greek learning. Following the Mithridatic Wars, educated Greeks came to Rome, bringing Greek culture and philosophy with them. They were responsible for astrology becoming a respectable practice by linking the conditions of its use to Stoicism, whose practitioners “defended all types of divination.”⁴⁴

The transition of astrology from Greece to Rome was not fundamentally difficult. Rome accepted various forms of divination as not only useful, but necessary for political life. As an aggressively polytheistic state, there would have been no inherent reservations over or questions concerning the status of the planets as gods. One fundamental difference between the Greek and the Roman perception of the universe, however, was that Romans viewed the gods and the cosmos as a tool to be used for the achievement of their own purposes (the *do ut des* mentality), and not as a panel of bored deities playing with the lives and fates of mortals for fun. Roman politics, for instance, were filled with instances where the outcomes of divination played into a larger political agenda, as in the case with Augustus and his consolidation of power in the early Roman Empire.

Divination in Rome (Law and Politics)

Astrology in Rome did not become mainstream (i.e. in use by the upper classes) until the Late Republic, although it had remained in use in the lower classes.⁴⁵ One of the reasons why it

⁴³ Barton, *Ancient Astrology*, 112.

⁴⁴ Barton, *Ancient Astrology*, 34.

⁴⁵ Tamsyn Barton. *Power and Knowledge* (The University of Michigan, 1994), 33.

became popular was because it was a more sophisticated and aesthetically pleasing method of divination, especially when compared to augers cutting open an animal to look at the liver or waiting to see if a chicken would eat or not.⁴⁶

Whatever the reason, as a result of the rise in perception of astrology as a respectable form of divination, Augustus, the *princeps*, was able to use it as a tool to help legitimize his reign, and, as a consequence, the reign of the emperors that followed him. (Though the principate was technically an office of the Republic, it would function more as the beginning of a hereditary kingship.) Since the Roman people were so familiar with popular astrology, they would have understood the implied meaning when Augustus minted the coins of his reign with his face on one side and Capricorn, the ruling sign of his horoscope, on the other,⁴⁷ “to proudly proclaim his association with the start of a bright new order, like the return of the sun after the winter solstice in Capricorn.”⁴⁸ Augustus’ use of astrology would have soothed Roman fears about one-man rule; if it had been predetermined by either the gods or the universe that Augustus was meant to command Rome, then that was the end of it.

However, Augustus evidently felt as though he had made a mistake in recognizing astrological divination as a legitimate practice. In 11 AD, seeing that astrological divination could be used against him, he decreed it a form of “literary treason” to cast a horoscope in regard to the Emperor⁴⁹ and required individuals to only consult an astrologer in the presence of a witness.⁵⁰ Firmicus Maternus, writing three hundred years later, took this a step further and

⁴⁶ Barton, *Power and Knowledge*, 40.

⁴⁷ Cassius Dio. 56.25.5

⁴⁸ Radcliffe G. Edmonds III. *Drawing Down the Moon* (Princeton University Press, 2019), 243.

⁴⁹ Maternus, *Matheseos*. 5.

⁵⁰ Walter Hayes. “Tiberius and the Future,” *The Classical Journal* 55, no. 1 (1959): pp 3.

asserted that it was in fact impossible to take the emperor's horoscope, seeing as he alone among mortals held a position superior to the stars.⁵¹

Later emperors followed Augustus' example by introducing legislation against astrologers in order to undermine potential avenues of unrest, although they did seek to utilize astrology to their own advantage. Court astrologers were prominent until the death of Domitian in 96 AD; two, a father and son Thrasyllus and Balbillus, integrated themselves as close personal friends of the emperors Claudius, Nero, and Vespasian.⁵² Although fatalism remained an integral part of astrology, it was not unknown for individuals to "use every human means to make sure that the pre-established actually did happen,"⁵³ supporting the use of astrology as an avenue for increasing the power of the image of the political position, rather than being a source of implicit power unto itself.

⁵¹ Maternus, *Matheseos*. 69.

⁵² Frederick H. Cramer. *Astrology in Roman Law and Politics* (The American Philosophical Society, 1954), 81-83.

⁵³ Hayes, "Tiberius and the Future," pp 5.

CHAPTER II

ASTROLOGY, THE CHURCH, AND THE FREE WILL PROBLEM

One of the two most damning things that kept the Church from tolerating the practice of astrology was the idea that one could read future through the stars: that was the privilege of God alone.⁵⁴ The other was determinism, which went against Christian sensibilities and free will doctrine.

The Christian ideal of “free will” may have in fact developed from Platonist and Stoic ideas.⁵⁵ This ideal might have been used to interpret scripture in support of free will, although scripture never implicitly describes free will.⁵⁶ Many of the scriptures concerning free will actually have to do with man’s ownership of his own actions, most specifically his culpability for his sins.^{57,58} This not only demonstrates free will, but also refutes the concept of determinism. Since a man cannot be held responsible by a just God for actions which he had no choice but to commit, and Christians believed their God to be just,⁵⁹ by logic men must have the capacity to sin and do good of their own free will if they will be rewarded or condemned according to their actions. In addition, thanks to influence from the New Testament and the apostolic fathers, references to the immutable privilege of the soul to have a free will was common in Christian literature,⁶⁰ and the cultural osmosis into the mainstream Christian religion would have acted as another point against the inherent determinism of astrology.

⁵⁴ Grant, Edward. “Cosmology.” *Science in the Middle Ages*, edited by David C. Lindberg, 265-302. Chicago: University of Chicago Press, 1978. 284.

⁵⁵ Frede, “Origen,” 103.

⁵⁶ Frede, “Origen,” 103.

⁵⁷ Matthew 12:37.

⁵⁸ John 9:41.

⁵⁹ Psalm 9:7-8.

⁶⁰ Frede, “Origen,” 102.

Jesus Christ was crucified and resurrected in the early 30s AD. Though his followers faced persecution in polytheistic Rome, in the year 313 AD, Christianity had become ubiquitous enough through the empire that it was afforded the same status as other religions at the Edict of Milan. By 392 AD, Christianity would become the official religion of the state on the order of Emperor Theodosius.⁶¹ However, traditional polytheistic religion still flourished, as evidenced by the existence and rule of the pagan emperor Julian in 361 AD.⁶²

With increased political legitimacy, Christianity was able to turn its sights to disenfranchising pagan practice. It did this by pointing out logical and moral inconsistencies in pagan religions, as well as by converting to its cause emperors who would eventually legalize pagan practices and reject pagan religions wholesale. (Amusingly, although astrology was still on the blacklist, the Church was “favorably disposed toward secular learning, especially Aristotelian natural philosophy,”⁶³ which indicates that it may have been the fatalism part of astrology that was the deal-breaker.)

Two individuals, Firmicus Maternus and Augustine, who wrote their famous works in the fourth century AD, are important for understanding Christianity’s relationship with pagan practices in general and astrology specifically, although for different reasons.

Firmicus Maternus

When Firmicus Maternus, an upper-class Syracusan lawyer, retired, he wrote two books with diametrically different purposes. His first, the *Matheseos VIII (Eight Books of the Mathesis or Theory of Astrology)*,⁶⁴ was a comprehensive how-to guide of practical astrology, which today

⁶¹ Edward Grant, “The Fate of Ancient Greek Natural Philosophers in the Middle Ages: Islam and Western Christianity,” *The Review of Metaphysics* 61, no. 3 (2008): pp. 504.

⁶² Barton, *Ancient Astrology*, 64.

⁶³ Edward Grant, “The Fate of Ancient Greek Natural Philosophers in the Middle Ages: Islam and Western Christianity,” *The Review of Metaphysics* 61, no. 3 (2008): pp. 505.

⁶⁴ Maternus, *Matheseos*. 1.

remains the most the most complete work on astrology from the classical world.⁶⁵ In it, he not only discusses the practical aspects of interpreting the stars, but also preemptively defends the art from detractors who would seek to undermine astrology by pointing out logical inconsistencies.⁶⁶

Maternus also has the distinction of having converted to Christianity somewhere in the period of ten years between his *Matheseos* and his second book, *De Errone Profanarum Religionum* (*On the Error of the Pagan Religions*), which is a scathing diatribe against various paganistic practices. Although this work might be expected to have a clear-cut explanation of why astrology and Christianity are incompatible, the reality is, as usual, somewhat more complicated.

Stoicism and the Matheseos VIII

At the time of writing the *Matheseos*, Maternus was a follower of the Stoic school of philosophy, which emphasizes the highly fixed nature of the fate of the world. In fact, Maternus rejected the idea proposed by contemporaries that “partial fatalism” could exist; that is, that some things could be a result of fate and that others could be of free will.⁶⁷ The philosopher Chrysippus had argued that everything must have a cause:⁶⁸ this fed into the concept of universal causality, which “led the Stoics to accept divination as a branch of physics, not a superstition.”⁶⁹ Moreover, although the Stoics acknowledged that there may be such a thing as the concept of chance, “they thought of it (much like modern scientists) as a measure of human ignorance: random events are simply events whose causes are not understood by humans.”⁷⁰ These ideals

⁶⁵ Maternus, *Matheseos*. 1.

⁶⁶ Maternus, *Matheseos*. 19.

⁶⁷ Maternus, *Matheseos*, 2.

⁶⁸ Massimo Pigliucci, “Stoicism,” *Internet Encyclopedia of Philosophy*.

⁶⁹ Pigliucci, “Stoicism.”

⁷⁰ Pigliucci, “Stoicism.”

meshed well with the deterministic nature of astrological divination, and indeed it was Stoic support that helped legitimize astrology as a serious practice for divination.⁷¹

Though Maternus was a strong proponent of fatalism and ostensibly rejected the idea of partial fatalism, he argued that the emperor “belonged to a power higher than the stars” and that therefore mortal methods of divining through astrology would have no effect on him.⁷² While this argument would have echoed the contemporary belief that the emperors were divine and thought to have a special relationship with the heavens,⁷³ it is logically inconsistent with Maternus’ previous assertions. However, it does foreshadow Maternus’ attitude toward astrological divination in his other surviving work written following his conversion to Christianity.

De Errore Profanarum Religionum

It is deeply ironic that, having written the modern period’s foremost guide on the practical application and interpretation of classical astrology, Maternus later converted to Christianity, which stood against everything about which he had written. However, perhaps it is not quite so ironic: though Maternus wrote twenty-nine chapters against various forms of paganism in *De Errore Profanarum Religionum*, astrology is not even mentioned, though since he was very familiar with it, such a refutation would have been easy for him to do so. This indicates that, although Maternus had converted to Christianity, he may not necessarily have refuted astrology as a practice, despite the pagan nature and history inherent to it that he condemns elsewhere in the *De Errore*.

⁷¹ Barton, *Ancient Astrology*, 34.

⁷² Maternus, *Matheseos*, 4.

⁷³ Maternus, *Matheseos*, 4.

It is possible that, following Christian doctrine, Maternus refuted astrology in a separate work that is now lost, as several of his other works were. It is also possible that he did not, in fact, refute astrology at all. However, without textual evidence, it is impossible to know or even theorize one way or the other.

Although Maternus does not address the topic of astrology, he does include a chapter written from the perspective of the sun, which is complaining that it is being mal-used by cults that implicate it in pagan practices that it wants no part of.⁷⁴ On one hand, this might be taken as an indication that Maternus is still hung up on celestial bodies. On the other hand, there is a part where the sun says that “God made me to be different, he commands me to be different, and yet you divide me at your pleasure and lacerate me according to the greed of your decision. I am simply what I appear to be, and I do not want you to conceive anything about me except that which you see.”⁷⁵ Although Maternus contextually uses this passage to renounce various cults by the names of the pagan gods whom they worship, this passage might also be a veiled acknowledgement that astrological practices do not fit with the decrees of the Church and, indirectly, God.

Despite the fact that Maternus is not as famous for his diatribe against pagans as Augustine is, he does predate Augustine: *De errore Profanarum Religionum* is thought to have been written around 348 AD as a letter to the Emperors Constans and Constantius⁷⁶ during a time when sacrifices and other pagan practices had been made illegal.⁷⁷ Enforcement of these laws was not, however, as stringent as particular Christians (such as post-conversion Maternus,

⁷⁴ Richard Oster, Jr, “Julius Firmicus Maternus De errore Profanarum Religionum. Introduction, Translation, and Commentary.” Master’s thesis, Rice University, 1971. 41.

⁷⁵ Oster, Jr, “Julius Firmicus Maternus,” 42.

⁷⁶ Oster, Jr, “Julius Firmicus Maternus,” 1.

⁷⁷ Theodosian Code 16:10:2.

who believed that forced conversion was beneficial to the individual)⁷⁸ would have liked.⁷⁹ The work of Maternus set the mood for the works of Augustine, which would have a lasting impact on the reception of astrology in the Christian world.

Augustine and *City of God*

At the time that Augustine was writing *City of God* in the early 5th century (or, as it is also known, *De civitate Dei contra paganos*), Christianity was on the rise and pagan religions were on the defensive.⁸⁰ Having been a pagan himself before his own conversion,⁸¹ Augustine is particularly critical of pagan tradition and beliefs and seeks to refute them logically at the same time that he vaunts the rise and beliefs of Christianity.

Rather than deny the existence of the pagan gods (of which, according to the established spirit of Roman astrology, the planets were likely considered physical manifestations), Augustine re-defines them as evil spirits that take advantage of man's desire for supernatural power and knowledge.⁸² However, even having made this allowance, he still denies the notion that they might hold a position of power over God: "For, though the demons have some power in these matters, they have only as much as the hidden will of Almighty God allows them."⁸³

Moreover, Augustine rejects the use of divination, which is by nature under the control of these demons: this is because man is neither able to understand nor reject the will, judgement, and movement of God.⁸⁴ As Christianity forbids the worship of false gods⁸⁵ (which Augustine

⁷⁸ Oster, Jr, "Julius Firmicus Maternus," 2.

⁷⁹ Oster, Jr, "Julius Firmicus Maternus," vii.

⁸⁰ Oster, Jr, "Julius Firmicus Maternus," 1.

⁸¹ Augustine, *Confessions*, 397-401.

⁸² Augustine, Saint, S.J. Demetrius B. Zema, S.J. Gerald G. Walsh, and Etienne Gilson, *The City of God, Books I-VII (The Fathers of the Church, Volume 8)* (Washington: The Catholic University of America Press, 2010), 88.

⁸³ Augustine, *City of God*, 115.

⁸⁴ Augustine, *City of God*, 115.

⁸⁵ Augustine, *City of God*, 102.

asserts the planets to be) and communing with demons⁸⁶ (which Augustine also asserts the planets to be), divinatory practices cannot therefore coexist with Christianity.

In addition, Augustine declares that divination does not even work: in regards to the story of a man who had spoken a prophecy in regards to the rule of Sulla, yet who had then died unexpectedly himself, “this truly sad and lamentable outcome was not foretold to him by those gods, either by entrails or auguries, or by any dream or divination.”⁸⁷ And in any instance in which divination does accurately interpret the present or predict the future, Augustine asserts it is because evil spirits have acted in order to ensure it.⁸⁸

Beyond the metaphysical aspects, Augustine notes that astrology is scientifically unsound. Like many before him, he brings up the different fates and temperaments of identical twins,⁸⁹ (which, according to natal astrology, should be the same since both were conceived and born under the same planetary omens) and in doing so he prods a point of weakness that other detractors of astrology had attacked for years.

Having asserted that God’s will is law,⁹⁰ Augustine then declares that man is in control of his own actions: specifically, that each man is evil by his own will.⁹¹ By doing so, he rejects the deterministic principle of astrology in which each facet of a man’s life has already been dictated, which would inherently imply that any evil deed is not the fault of the doer, but actually the fault of whatever being is in charge of the universe and the actions thereof. From a Christian point of view, this would implicate God himself as the doer of bad deeds, which is unacceptable; from a pagan perspective, this had the potential to implicate the gods themselves and Jupiter in

⁸⁶ Augustine, *City of God*, 76.

⁸⁷ *Ibid*, 118.

⁸⁸ *Ibid*, 117.

⁸⁹ *Ibid*, 243.

⁹⁰ *Ibid*, 104.

⁹¹ *Ibid*, 79.

particular, which was also unacceptable. The only acceptable option was for the doer of bad deeds to be a third party: either mortals themselves or the ever-nebulous concept of fate.

Augustine further rejects one of the conciliatory pagan ideas that had sought to reconcile the gods with fate: this was the idea that Jupiter is in control of Fortune and sends Fortune to influence the lives of mortal men.⁹² According to Augustine, because she is sent by Jupiter (ostensibly to do Jupiter's bidding), then Jupiter is still implicated as a doer of bad deeds. If she is instead given free reign, then either she sows good and bad fortune indiscriminately, or she chooses who receives which fortune, which would make her more influential than Jupiter.⁹³

What are we to think of that definition of Fortune? What are we to think of a deity who derives her name from chance happenings? If she is merely chance, it is a sheer waste of time to worship her. If, on the contrary, she discriminates among her suppliants in order to benefit the good, then she is not chance. Does Jupiter send her wherever he will? In that case, he alone should be worshiped.⁹⁴

As one of the most influential members of the early Church, Augustine's refutations of astrology and the pagan traditions from which it sprung set a precedent that would be followed for centuries, preventing astrology from absorption into Christian practice.

⁹² Augustine, *City of God*, 213.

⁹³ *Ibid*, 214.

⁹⁴ *Ibid*, 215.

CHAPTER III

ATTEMPTS TO RECONCILE CHRISTIANITY AND ASTROLOGY

Despite the denouncement from members of the early Church concerning the morality and efficacy of astrology as a practice, the fact remained that many people, including Christians, retained interest in astrology as a way to obtain hidden knowledge. However, as the Church had so thoroughly rejected astrology along with other forms of pagan divination, Christians who sought to apply astrology as a legitimate science had to find a way in which they could justify using astrology without violating any of the Church's tenets.

Attempts to Take the Determinism out of Astrology

Even among pagans, the Stoic deterministic ideal regarding astrology was not universally accepted: many did not like the idea that the credit for anything they had done or would do would go to the planets. They sought a variety of methods to plausibly re-introduce some degree of free will into fatalist astrology.⁹⁵ These rationalizers dealt determinism a blow by their conclusion that astrology is, by its very nature of dealing with physical matter, hard to predict.⁹⁶ This is because matter is flimsy and uncertain. Astrology stands in contrast to astronomy, which deals with math and is therefore regular.⁹⁷ Moreover, they argued astrology cannot be the sole thing responsible for the reason why things happen the way that they do; there are too many variables that cannot be accounted for.⁹⁸ In modern parlance, this might be called the Butterfly Effect.

⁹⁵ Daryn Lehoux, "Tomorrow's News Today: Astrology, Fate, and the Way Out," *Representations* 95, no. 1(2006): 114.

⁹⁶ Lehoux, "Tomorrow's News Today," 115.

⁹⁷ *Ibid*, 115.

⁹⁸ *Ibid*, 115.

Christian Astrologers

Although official Church doctrine from Augustine onward condemned the use of astrology and other pagan practices, individual Christians had their own opinions about how astrology fit within the Christian framework. Canonical documents give the impression that Christians are absent from the study of astrology, whereas non-canonical documents (especially Gnostic documents) indicate that Christians were deeply involved in studying star science.⁹⁹ Augustine had condemned the planets as demons; revisionist Christians attempted to reaffirm the planets as “angels,”¹⁰⁰ which in a single fell swoop wiped away the residue of several pantheons of pagan gods and firmly established the planets as subordinate to the one true God.

The main issue that these revisionist Christians faced was figuring out where God could fit into their new theory of astrology, and the answer was simple: He would be the one pulling the strings, and the planets would move in accordance with His will. Origen, despite famously being one of astrology’s harshest critics, understood the movement of the stars to be God’s handwriting¹⁰¹ in accordance with this revisionist theory. However, this method of interpretation did not catch on with the rest of the Church.

Making God the penultimate power within the system of astrology is demonstrated through the non-canonical *Testament of Solomon*, which showcases Solomon defeating demons that live in the zodiac with the help of a magical ring given to him by the archangel Michael.¹⁰² When asked, the demon confesses that it lives within the zodiac sign Aquarius, from where it “strangle[s] those who reside in Aquarius because of their passion for women whose zodiacal

⁹⁹ Kocku von Stuckrad, “Jewish and Christian Astrology in Late Antiquity: A New Approach,” *Numen* 47, no. 1 (2000): 7.

¹⁰⁰ Von Stuckrad, “Jewish and Christian Astrology,” 19.

¹⁰¹ *Ibid.*, 9.

¹⁰² *Ibid.*, 17.

sign is Virgo...”¹⁰³ The emphasis is on Solomon’s ability to put the demons, which control lesser aspects of astrology, in their place with help from Almighty God.¹⁰⁴ The whole concept is summed up nicely here: “the stars are under God’s control and man is capable of invoking them in order to do some kind of pious work.”¹⁰⁵

There was also the thought that astrology (and the knowledge of the future that accompanied it) was in fact a gift from God to His creation.¹⁰⁶ However, the conquering of (non-canonical) demons is again a condition for winning this knowledge.¹⁰⁷

To effectively revise astrology for a Christian framework, it is important to establish that astrology is not essentially deterministic,¹⁰⁸ although it is intuitive to understand it that way. Unlike other forms of divination, where the results cannot be known until the birds had flown or the animal has been slaughtered, the planets run on paths that can be mathematically calculated, which means that astrology is a form of divination that is predictable and regular.¹⁰⁹ Instead of determinism, other mechanisms may be used for the stars to impart fate, such as the doctrine of correspondences, in which the heavenly realm—here the movement of the planets—mirrors the earthly realm and the mundane event upon it.¹¹⁰ This was hermeticism’s famous ‘as above, so below,’ which establishes sympathetic and symmetric correspondences between the planets and the earth instead of assuming that the movement of the stars is what causes things on earth to physically occur.¹¹¹

¹⁰³ Von Stuckrad, “Jewish and Christian Astrology,” 17.

¹⁰⁴ *Ibid*, 17.

¹⁰⁵ *Ibid*, 18.

¹⁰⁶ *Ibid*, 19.

¹⁰⁷ *Ibid*, 19.

¹⁰⁸ *Ibid*, 5.

¹⁰⁹ Lehoux, “Tomorrow’s News Today,” 113.

¹¹⁰ Von Stuckrad, “Jewish and Christian Astrology,” 9.

¹¹¹ Von Stuckrad, “Jewish and Christian Astrology,” 5.

The Astrology of Jesus' Birth

One Gospel-backed story which would have supported Christian astrologers' claims that astrology is a tool provided by God for human use is the story of the of the Star of Bethlehem. This star became visible at Jesus' birth and announced his earthly arrival of the Messiah to the Magi,¹¹² who were themselves astrologers.¹¹³ Not only was this story an example of the movement of the stars corresponding to earthly happenings as an explicit message to those who were looking, but the birth of Christ also traditionally occurred when there was a conjunction of Jupiter and Saturn in Pisces. To the minds of Christian astrologers, this in itself was heavenly proof of Jesus' divinity.¹¹⁴ Generally the *stars as signs* was a common motif within either canonical or non-canonical writing and the star of the Messiah intrigued the early Christians.¹¹⁵

However, the astrological significance of Jesus' birth, which was a one-time occurrence, did not have an impact on the fundamental problem of free will and determinism that permeated the rest of the practice of astrology. Significantly, the Star of Bethlehem appeared, rather than having been present for all history. This increases the role of God as an actor in the story, but simultaneously decreases that of astrology. In addition, the Magi approached Herod only after Jesus' birth, which eradicates the possibility of using the stars to predict the future from a Christian practice.

Modern academia has suggested that the Star of Bethlehem might have been a supernova,¹¹⁶ which would account for its sudden appearance. However, Chinese astrologers, who took detailed records of astronomic phenomena, did not note such an event.¹¹⁷

¹¹² Matthew 2:1-9.

¹¹³ Ruggles, Clive, *Ancient Astrology: An Encyclopedia of Cosmologies and Myth* (ABC-CLIO, 2005), 397.

¹¹⁴ Von Stuckrad, "Jewish and Christian Astrology," 31.

¹¹⁵ Ibid, 31.

¹¹⁶ Ruggles, *Ancient Astrology*, 397.

¹¹⁷ Ruggles, *Ancient Astrology*, 397.

CONCLUSION

Reinterpreting astrology so God is at the helm may not have been effective for the Church, but it was a perspective that persisted: “despite the variety of instrumentalities and mechanisms invoked to explain celestial motions, it was always assumed in medieval cosmology that the ultimate source of all such motions was God, the Prime Mover.”¹¹⁸

Although astrology lingered as a practice, it was never condoned by the Church, and although there were several avenues through which the Church could have accepted astrology as a method to bolster and support Christianity, it did not. Astrology simply had too much of a reputation as a pagan practice, and Christianity had done its level best to stamp out paganism, especially once it had achieved social prominence. The fact remained that even if astrology were practiced in a non-deterministic manner (allowing for the Christian doctrine of free will to remain unsullied), the possibility remained that an individual might use astrology as a tool for divination, which was strictly against Christian doctrine and ethics. The best-case scenario for Christianity would have been if astrology had become impermissible as other pagan practices had, such as burnt sacrifices and extispicy, or divination through entrails.

However, with the re-introduction of Greek astrological works from the Arabic world in the twelfth century, the theory and practice of astrology once again exploded, and it has remained culturally and socially relevant up unto the present day.

¹¹⁸ Grant, “Cosmology,” 284.

WORKS CITED

- Augustine's City of God: A Critical Guide*, edited by James Wetzel. Cambridge University Press, 2012.
- Augustine, Saint, S.J. Demetrius B. Zema, S.J. Gerald G. Walsh, and Etienne Gilson. *The City of God, Books I-VII (The Fathers of the Church, Volume 8)*. Washington: The Catholic University of America Press, 2010.
- Barton, Tamsyn. *Ancient Astrology*. New York, Routledge, 1994.
- Barton, Tamsyn. *Power and Knowledge: Astrology, Physiognomics, and Medicine under the Roman Empire*. Ann Arbor, University of Michigan Press, 1994.
- Campion, Nicholas. "Astrology: The Celestial Mirror." *Astrology and Cosmology in the World's Religions* (NYU Press, 2012.) 11-23. www.jstor.org/stable/j.ctt9qg5q5.5.
- Carey, Hilary M, and Florin Curta. *Courting Disaster: Astrology at the English Court and University in the Later Middle Ages*. University of Newcastle, Australia, 1992.
- Collins, Roger. *Early Medieval Europe 300-1000*. 3rd ed. Palgrave Macmillan, 2010.
- Cramer, Frederick H. *Astrology in Roman Law and Politics*. The American Philosophical Society, 1954.
- Dicks, D. R. "Astrology and Astronomy in Horace." *Hermes* 91, no. 1 (1963): 60-73. www.jstor.org/stable/4475236.
- Edmonds III, Radcliffe G. *Drawing Down the Moon*. Princeton University Press, 2019.
- Frede, Michael and David Sedley. "An Early Christian View on a Free Will: Origen." *A Free Will: Origins of the Notion in Ancient Thought*, edited by A. A. Long, 102-24. University of California Press, 2011. www.jstor.org/stable/10.1525/j.ctt1ppdd9.11.

- Grant, Edward. "Cosmology." *Science in the Middle Ages*, edited by David C. Lindberg, 265-302. Chicago: University of Chicago Press, 1978.
- Grant, Edward. "The Fate of Ancient Greek Natural Philosophy in the Middle Ages: Islam and Western Christianity." *The Review of Metaphysics* 61, no. 3 (2008): 503-26.
www.jstor.org/stable/20130975.
- Greene, William Chase. "Fate, Good, and Evil, in Early Greek Poetry." *Harvard Studies in Classical Philology* 46 (1935): 1-36. doi:10.2307/310720.
- Hekster, Olivier, and Nicholas Zair. "Christianity and Religious Change." In *Rome and Its Empire, AD 193-284*, 69-81. Edinburgh: Edinburgh University Press, 2008.
www.jstor.org/stable/10.3366/j.ctt1g0b4b5.13.
- Hesiod. *Works and Days*.
- Horrox, Rosemary, trans. *The Black Death*. Manchester: Manchester University Press, 1994.
- Jastrow, Morris. "Hepatoscopy and Astrology in Babylonia and Assyria." *Proceedings of the American Philosophical Society* 47, no. 190 (1908): 646-76.
www.jstor.org/stable/983836.
- Lauritsen, Malene, Richard Allen, Joel M. Alves, Carly Ameen, Tom Fowler, Evan Irving-Pease, Greger Larson, Luke John Murphy, Alan K. Outram, Esther Pilgrim, Philip A. Shaw, and Naomi Sykes. "Celebrating Easter, Christmas and their associated alien fauna." *World Archaeology* 50, no. 2 (2018): 285-299.
- Lawrence, Marilynn. "Hellenistic Astrology." *Internet Encyclopedia of Philosophy*.
<https://www.iep.utm.edu/astr-hel/>
- Lehoux, Daryn. "Tomorrow's News Today: Astrology, Fate, and the Way Out." *Representations* 95, no. 1 (2006): 105-22.
- Lutz, H. F. "Geographical Studies among Babylonians and Egyptians." *American Anthropologist*, New Series, 26, no. 2 (1924): 160-74. www.jstor.org/stable/660394.

Makemson, Maud W. "Astronomy in Primitive Religion." *Journal of Bible and Religion* 22, no. 3 (1954): 163-71. www.jstor.org/stable/1455974.

Malavasi, Giulio. "Diodore of Tarsus' Treatise Against the Manichaeans: A New Fragment." *Vigiliae Christianae* 69, no. 3 (2015): 296-304. www.jstor.org/stable/24754488.

Maternus, Julius Firmicus. *Ancient Astrology Theory and Practice: Matheseos Libri VIII*. Translated by Jean Rhys Bram. Park Ridge, New Jersey: Noyes, 1975.

Nash, Harriet. "Stargazing in Traditional Water Management: A Case Study in Northern Oman." *Proceedings of the Seminar for Arabian Studies* 37 (2007): 157-70. www.jstor.org/stable/41224064.

Oster, Jr., Richard E. "Julius Firmicus Maternus: De Errore Profanarum. Introduction, Translation, and Commentary." Master's thesis, Rice University, 1971.

Page, Sophie. *Astrology in Medieval Manuscripts*. University of Toronto Press, 2002.

Pharr, Clyde. "Constantine and the Christians." *The Classical Outlook* 16, no. 6 (1939): 57-58. www.jstor.org/stable/44005884.

Pigliucci, Massimo. "Stoicism." *Internet Encyclopedia of Philosophy*. <https://www.iep.utm.edu/stoicism/>

Raphals, Lisa. "Fate, Fortune, Chance, and Luck in Chinese and Greek: A Comparative Semantic History." *Philosophy East and West* 53, no. 4 (2003): 537-74. www.jstor.org/stable/1399982.

Reiner, Erica. "The Uses of Astrology." *Journal of the American Oriental Society* 105, no. 4 (1985): 589-95. doi:10.2307/602721.

Rochberg-Halton, F. "Elements of the Babylonian Contribution to Hellenistic Astrology." *Journal of the American Oriental Society* 108, no. 1 (1988): 51-62. doi:10.2307/603245.

- Schwartz, Regina. "Free Will and Character Autonomy in the Bible." *Notre Dame English Journal* 15, no. 1 (1983): 51-74. www.jstor.org/stable/40063297.
- Smoller, Laura Ackerman. "The Medieval Debate about Astrology." In *History, Prophecy, and the Stars: The Christian Astrology of Pierre D'Ailly, 1350-1420*, 25-42. Princeton, New Jersey, Princeton University Press, 1994. doi:10.2307/j.ctt1m322wn.6.
- Solomon, Robert C. "On Fate and Fatalism." *Philosophy East and West* 53, no. 4 (2003): 435-54. www.jstor.org/stable/1399977.
- Sontag, Frederick. "Augustine's Metaphysics and Free Will." *The Harvard Theological Review* 60, no. 3 (1967): 297-306. www.jstor.org/stable/1509058.
- Stahl, William Harris. "The Greek Heliocentric Theory and Its Abandonment." *Transactions and Proceedings of the American Philological Association* 76 (1945): 321-32. doi:10.2307/283344.
- Tarnas, Richard. "The Planets." *Archai: The Journal of Archetypal Cosmology* 1, no. 1 (2009): 36-49.
- Vallianatos, Evaggelos. "Deciphering and Appeasing the Heavens: The History and Fate of an Ancient Greek Computer." *Leonardo* 45, no. 3 (2012): 250-57. www.jstor.org/stable/41550641.
- Varisco, Daniel Martin. "The Agricultural Marker Stars in Yemeni Folklore." *Asian Folklore Studies* 52, no. 1 (1993): 119-42. doi:10.2307/1178453.
- Von Stuckrad, Kocku. "Jewish and Christian Astrology in Late Antiquity: A New Approach." *Numen* 47, no. 1 (2000): 1-40. www.jstor.org/stable/3270359.
- Wallace, William A, O.P. "The Philosophical Setting of Medieval Science." *Science in the Middle Ages*, edited by David C. Lindberg, 91-119. Chicago: University of Chicago Press, 1978.

Wilson, Robert. "Ancient Astronomy." *Astronomy through the Ages: The Story of the Human Attempt to Understand the Universe*, 7-22. Princeton, New Jersey: Princeton University Press, 1997. doi:10.2307/j.ctv3hh4q3.6.