



PLATO'S X & HEKATE'S CROSSROADS ASTRONOMICAL LINKS TO THE MYSTERIES OF ELEUSIS

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ABSTRACT

Recent research suggests that ancient Greek festivals with nighttime elements had astronomical links to specific celestial sights (Boutsikas, Hannah, Ruggles, Salt). Such an astronomical connection can be posited between the night sky at particular seasons and the Mysteries of Eleusis, the pre-eminent religious pilgrimage of the Hellenic and Hellenistic world.

The Mysteries of Demeter guaranteed those initiated at the sanctuary outside Athens a happier lot in the hereafter. By the end of the Republic, cultured Romans headed to Athens to participate in the rites of the Mother and her daughter.

Cicero had been initiated at Eleusis and, as an objective observer, he reveals that the Mysteries can be explained through natural philosophy – through science. What natural phenomena occurred in spring and in autumn – when the Lesser and the Greater Mysteries were celebrated?

Plato describes gates to the afterlife in the Myth of Er at the end of *Republic* – infernal gates like the cave of Hades at Eleusis, as well as celestial portals that would be located at the intersections in the sky that he describes in *Timaeus*. The initiated Cicero's translation into Latin of a section of *Timaeus* – the part with Plato's celestial X – suggests an astronomical aspect to the Mysteries.

Another astronomical connection to the Mysteries of Eleusis could be found two centuries later when the theurgist authors of the Chaldean Oracles connected Hekate – the goddess of crossroads who had helped Demeter in the Homeric hymn – to the World Soul that according to Plato has the form of a celestial X.

At that intersection of the Milky Way and the path of the Planets stand the gates to the afterlife according to Macrobius' *Commentary on Cicero's Dream of Scipio*, while Cicero had based the Dream of Scipio on Plato's soteriological Myth of Er and the cosmological *Timaeus*. At the portals to the afterlife – at the celestial crossroads – stood Hekate, the goddess who opened and closed the gates of Hades and helped Demeter find her daughter.

KEYWORDS: Athens, Demeter, Ceres, Persephone, Kore, Hades

1. INTRODUCTION

"It is clear that astronomy did play a crucial role in Greek religion and cult practices. The nocturnal character of some Greek religious festivals (e.g., the Arrephoria, the Eleusinian Mysteries, the Thesmophoria) performed in open space, with little artificial light, suggests the importance of the celestial dome that encircled these performances, integrating the sky in the cult experience." (Boutsikas, Ruggles, 2011, p. 56).

Efrosyni Boutsikas has authored and co-authored papers that demonstrate that specific events in the night sky could be tied to Greek cult practice, to Greek myth and religion, to the Greek festival calendar (Panathenaia, Arrhephoria).

Published in the journal *Antiquity*, 'Knowing When to Consult the Oracle at Delphi' (Salt, Boutsikas, 2005) showed that the heliacal rising of the constellation Delphinus could serve as a timer for when to head to Delphi, should one need to consult the oracle. Importantly, the paper connected the visibility of an astronomical event to the Greek religious calendar without the use of architectural alignment.

The Eleusinian Mysteries mentioned above included an all-night vigil (*pannychis*), suggesting an astronomical aspect to the mystic rites hosted by Athens, Plato's home city.

What might be the astronomical sight that the Mysteries of Eleusis – and Plato – were pointing to?

2. CICERO & THE MYSTERIES

We have one eyewitness who provides important data on the Mysteries. The Roman orator and statesman Cicero was initiated at Eleusis and, in *On Laws*, he tells us what the Mysteries meant to him.

"For among the many excellent and divine institutions which your Athens has brought forth and contributed to human life, none, in my opinion, is better than these mysteries. For by their means we have been brought out of our barbarous and savage mode of life and educated and refined to a state of civilization; and as the rites are called "initiations," so in very truth we have learned from them the beginnings of

life, and have gained the power not only to live happily, but also to die with a better hope." (Keyes, 1928, p. 415)

More specifically, in *On The Nature Of The Gods*, Cicero reveals that the Mysteries can be explained through natural philosophy – science.

"I say nothing of the holy and awe-inspiring sanctuary of Eleusis,

'Where tribes from earth's remotest confines seek Initiation'

"...since such mysteries when interpreted and rationalized prove to have more to do with natural science than with theology." (Rackham, 1933, p. 115)

With such a revelation, we should be able to find the natural phenomena that Cicero claims as an explanation of the Mysteries, elsewhere in his writings.

3. CICERO'S NATURAL PHENOMENA

Cicero could not openly reveal the secrets of the Mysteries, where he had taken an oath of silence. But like Plato – whose works he emulated (*Republic*, *Laws*) and translated (*Timaeus*) – he would encode mystic secrets in a mythic afterlife scenario.

In Cicero's 'Dream of Scipio' at the end of *On The Republic*, the protagonist Scipio Africanus the Younger meets his adoptive ancestors in the Milky Way which – according to Heraclides of Pontus, Ovid, Numenius, Macrobius, Martianus Capella, etc. – was the heavenly abode of gods and virtuous and heroic souls.

Shortly thereafter, our attention is directed to the music of the Planets, caused by the motion of celestial spheres through which gifted and virtuous souls could return to the heavenly regions.

"Learned men, by imitating this harmony on stringed instruments and in song, have gained for themselves a return to this region, as others have obtained the same reward by devoting their brilliant intellects to divine pursuits during their earthly lives." (Keyes, 1928, p. 273)

The descent and ascent of souls through the Planets would be vouchsafed around 400 AD by Macrobius who, in his *Commentary on Cicero's Dream of Scipio*, places the gates of heaven at the intersections of the

Milky Way and the Zodiac, the path of the Planets (Stahl, 1952, p. 136).

Cicero already writes of heavenly gates in an unplaced fragment from *On the Republic* found in Lactantius – just as Plato had at the end of *Republic* in the Myth of Er.

“If it is right for any man to climb to the tracts of the heavenly ones, then the great gate of heaven lies open for me alone... It is so indeed, Africanus, that same door lay open also to Hercules.” (Bowen, Garnsey, 2003, p. 101)

Cicero's ‘great gate of heaven’ is located along the ‘tracts of the heavenly ones’ – the course of the Planets, the ecliptic which marks out the Zodiac. The initiated Cicero's afterlife vision gives us two natural phenomena that intersect in the night sky: the Milky Way and the path of the Planets.

4. CICERO & PLATO'S CELESTIAL X

Cicero not only mimicks the gates of heaven in Plato's *Republic* in his *On The Republic*, he translates a specific section of *Timaeus*, zooming in on the part that deals with cosmogony and features Plato's cosmic X (27d-47b). Here Plato describes the creation of the cosmos out of primal elements – the Same and the Different – that are drawn into strands and then bent into cosmic circles that intersect.

Plato does say that the motion of the Different is the course of the Planets, while leaving the intersecting circle that partakes of the motion of the Same somewhat vague. Yet from Cicero to Manilius to Macrobius and Martianus Capella – the writers who most influenced the Platonist cosmology of the European Middle Ages – we find two cosmic motifs: the Milky Way and the intersecting path of the Planets.

At the intersections of these two celestial circles stood the heavenly gates, a tradition that stretches back, through Macrobius and Cicero, to Plato himself.

5. PLATO'S CROSSROADS & GATES

Published in the *Proceedings* of the 2012 SEAC Conference (Sprajc, Pehani, 2013), the paper ‘Plato's Cosmic X – Heavenly Gates at the Celestial Crossroads’ proposed that Plato's cosmic X in *Timaeus* corre-

sponds to the celestial gates that he describes in the Myth of Er at the end of *Republic* (Latura, 2013).

In support of this theory, we have the *Commentary on the Dream of Scipio*, where, as we've seen, Macrobius locates the portals to the beyond at the intersections in the sky (Figure 1) – following Cicero, who had followed Plato.



Fig. 1. The intersection of the Milky Way and the Zodiac – the path of the Planets – where stood the gates of the afterlife according to Macrobius. (Planisphere: Heifetz)

We should bear in mind that in the Myth of Er, Plato describes both celestial and infernal gates.

“There were two openings in the earth, and above them two others in the heavens, and between them judges sat. These, having rendered their judgment, ordered the just to go upwards through the door on the right, with signs of the judgment attached to their chests, and the unjust to travel downward through the opening on the left, with signs of all their deeds on their backs.” (Cooper, 1997, p. 1218)

Portals to the afterlife can be found at Eleusis itself – at the cave of Pluto whose inverted semi-spherical shape reflects the celestial vault (Figure 2). An Orphic hymn of the period connects Eleusis to the gates of Hades.

*All-receiver, master of death,
master of mortals, host of many,
Euboulos, you once took as your bride
pure Demeter's daughter:
you tore her away from the meadow,
and through the sea
you carried her to an Attic cave
upon your steeds
it was the district of Eleusis*

where the gates to Hades are.
(Athanassakis, Wolkow, 2013, p. 19)



Fig. 2. Semi-spherical cave of Hades, portal to the world beyond, at Eleusis today, about 18 kilometers outside Athens (Photo: G. Latura).

Plato's account of the gates to the underworld aligns with the rites of Eleusis where the gates to Hades can be found, suggesting that the celestial gates of the Athenian philosopher – at the intersections in the heavens – might likewise have a connection to the Mysteries of Eleusis.

6. CROSSROADS & THE MYSTERIES

Crossroads are not foreign to the Mysteries of Eleusis. Already in the 'Homeric Hymn of Demeter' from the 7th century BC, Deo (Demeter) – the mother searching for her daughter – is met by Hekate, the goddess of crossroads.

*Then for nine days divine Deo
roamed over the earth,
holding torches ablaze in her hands...
But when the tenth Dawn
came shining on her,
Hekate met her,
holding a torch in her hands...
The daughter of fair-tressed Rheia
said not a word, but rushed off at her side
holding torches ablaze in her hands.*
(Foley, 1994, p. 4).

In Barbetta Spaeth's *The Roman Goddess Ceres*, we find an illuminating quote from Servius' commentary on Vergil's *Aeneid*.

"When Ceres sought through all the earth with lit torches for Proserpina, who had been seized by Dis Pater [Pluto], she called her with shouts where three or four roads meet; from this

it has endured in her rites that on certain days a lamentation is raised at the crossroads everywhere by the matronae..." (Spaeth, 1996, p. 107)

With Ceres, the Roman version of Demeter, calling out to her lost daughter at crossroads according to Roman rites, we have an explanation of why Demeter in the Homeric Hymn meets the goddess of crossroads, Hekate.

7. HEKATE & THE GATES OF HADES

In *Hekate Soteira*, Sarah Johnston gives the chief attributes of this goddess.

"Hekate was present whenever souls crossed the boundaries between life and death..." In *"her role as the goddess of the crossroads... Hekate's control over passage of liminal points also included opening and shutting the gates of Hades..."* (Johnston, 1990, p. 150)

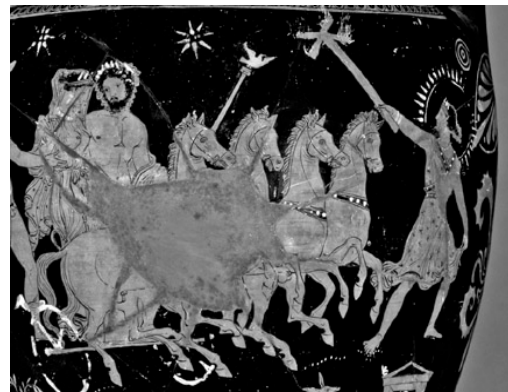


Fig. 3. Hades abducts Persephone, as Hekate holds up the Eleusinian cross torch on an Apulian red-figure krater, c. 350 BC (London British Museum).

With Hekate opening and closing the gates of Hades, we have a firm connection between Hekate and the Mysteries – as portrayed on Apulian vases (Figure 3), where the appearance of the Eleusinian cross torch in the context of Persephone's abduction – and reign as queen of the after-life – also suggests a connection between crossroads and the Mysteries.

At Eleusis could be found gates to the beyond through which departing souls passed, just as the abducted Persephone passed every fall through the gates of Hades at the crossroads controlled by Hekate.

8. HEKATE & PLATO'S COSMIC SOUL

Around 160 AD, the theurgist authors of the Chaldean Oracles brought Hekate, the goddess of crossroads, to renewed prominence by linking her to the World Soul in Plato's *Timaeus*, whose form was a celestial X.

"Scholars of the Oracles, ancient and modern alike, agree that Hekate represents the Cosmic Soul in the Chaldean system... An appendix to this book, "Evidence for the Equation of Hekate and Soul," summarizes the ancient evidence on which the modern opinions are based." (Johnston, 1990, p. 13)

In *Chaldaean Oracles and Theurgy*, Hans Lewy repeatedly identifies Hekate with Plato's Cosmic Soul (Lewy, 1956, p. 6, 47, 83, 95, 121, etc.), while in *The Chaldean Oracles*, Ruth Majercik points out the conflation of Hekate with the World Soul (Majercik, 1989/2013, p. 4, 7).

However in the chapter 'Plato's *Timaeus* and the Chaldaean Oracles' published in *Plato's Timaeus as Cultural Icon*, Luc Brisson objects:

"We must abandon the universally admitted idea according to which Hekate is identified with the World Soul... Hekate is too high in the hierarchy to be the World Soul; instead, it is the World Soul that emanates from her." (Reydam-Schils, 2003, p. 119).

Whether the World Soul is Hekate herself or whether the Cosmic Soul emanates from Hekate, either option has Plato's Universal Soul connected to Hekate, the goddess of crossroads who opens and closes the gates of Hades.

Majercik points out the shape of the Cosmic Soul, linking it to the Chaldean system:

"According to Plato (*Tim.* 36b-d), the World Soul had the shape of a Chi (X), the axes of which were bent and joined together... In Chaldean thought – since particular souls were patterned on the World Soul – they, too, had the same configuration." (Majercik, 1989/2013, p. 177).

In his *Commentary on Plato's Timaeus*, the Late Neoplatonist Proclus – who would provide about half of the surviving quotes from the Chaldean Oracles – also invokes Plato's Cosmic X.

"The shape X itself that results from the affixing [of the two strips] has the highest degree of appropriateness to the universe and to the soul." (Baltzly, 2009, p. 233).

Since the X-shaped Cosmic Soul is connected to Hekate – the goddess of crossroads who opens and closes the gates to the afterlife – it's appropriate that Macrobius would place the gates of heaven at the intersection of the Milky Way and the Zodiac, the path of the Planets.

9. VISIBLE CELESTIAL INTERSECTION

The celestial X – the Cosmic Soul that envelops the entire universe – is declared by Plato, at the end of *Timaeus*, to be a visible and discernible phenomenon.

"This world of ours has received and teems with living things, mortal and immortal. A visible living thing containing visible ones, perceptible god, image of the intelligible Living Thing... Our one universe... has come to be." (Cooper, 1997, p. 1291).

The Roman astrological writer Manilius, around the time of Augustus, likewise describes visible intersections in the night sky.

"To these you must add two circles which lie athwart and trace lines that cross each other. One contains the shining signs through which the Sun plies his reins, followed by the wandering Moon in her chariot, and wherein the five planets which struggle against the opposite movement of the sky perform the dances of their orbits... Nor does it elude the sight of the eye, as if it were a circle to be comprehended by the mind alone, even as the previous circles are perceived by the mind; nay, throughout its mighty circuit it shines like a baldric studded with stars and gives brilliance to heaven with its broad outline standing out in sharp relief."

"The other circle [the Milky Way] is placed crosswise to it." (Goold, 1977, p. 57-59)

The Milky Way stands out brightly in a night sky without light pollution, but the path of the planets, even with the zodiacal constellations, does not blaze forth in the manner described by Manilius.

The celestial phenomenon that does align with the description in *Astronomica* is the zodiacal light that envelops the planets, stands out in sharp relief and is clearly vis-

ible – to those who know when to look, in what season and at what time of the night (Figure 4).



Fig. 4. The zodiacal light rises from the horizon, envelops planets along the ecliptic, and intersects the Milky Way (Photo: Matt BenDaniel)

In *Exploring Ancient Skies: An Encyclopedic Survey of Archeoastronomy*, we find a reference to the zodiacal light:

“Dust is a common feature of the solar system... located predominantly in the ecliptic plane. Sunlight reflected from this dust is visible just after sunset or before sunrise... It is called zodiacal light. It is best seen at the times of year when the ecliptic rises most steeply from the horizon. This means early evening in the spring, and before dawn in the fall.” (Kelley, Milone, 2005, p. 138).

With the seasonal appearance of the zodiacal light in northern temperate climates, we find an alignment between this celestial apparition and the celebration of the Lesser and the Greater Eleusinian Mysteries that took place in the spring and in the fall.

10. CALENDAR OF THE MYSTERIES

There were two stages to the Eleusinian rites, one of a lesser degree, one of a higher degree.

“The Lesser Mysteries were held as a rule once a year in the early spring in the month of flowers, the Anthesterion...” (Mylonas, 1961, p. 239) while *“The Greater Mysteries were held once a year and every fourth year they were celebrated with special splendor... The month known as Boedromion was the sacred month of the Mysteries, and this corresponded*

to September and the beginning of October.” (p. 243)

These two connected Greek rites, held at opposite seasons of the year, suggest an astronomically determined ritual cycle.

Although the zodiacal light – the dust along the ecliptic – is always there, it is best seen at specific times. The solar year gives the seasons – at the equinoxes, when the ecliptic rises most steeply from the horizon. The lunar month gives the nights when the Moon, especially the Full Moon, might outshine fainter astronomical sights.

The lunar calendar that starts at the New Moon tells us – as per Mylonas – that Boedromion 15 was the first day of the Mysteries, on the night of the Full Moon. On that day, the high priests of Athens officially welcomed those who came to attend the Mysteries of Eleusis.

Four days later, the neophytes left Athens via the Sacred Road, and arrived at Eleusis on the evening that marked the beginning of Boedromion 20.

The torch-lit procession was followed by a *pannychis* – an all-night vigil that was a common feature of Greek festivals (Parker 2005, p. 166) and suggests an astronomical connection. Since the zodiacal light only appears for a short period before sunrise in the fall, a night-long vigil would ensure that initiates would be awake to witness the miraculous sight shortly before dawn.



Fig. 5. Zodiacal light rises from the horizon and envelops the crescent Moon and planets, at Skinakas Observatory, Crete, October 7, 2007 (Photo: Dr. Stefan Binnewies).

Given the timing –five days after the Full Moon– the ritual calendar of the Mysteries would seem to encode when the zodiacal light might again be seen, after the moon's glare has somewhat faded. The zodiacal light can in fact be seen when the Moon is in the sky (Figure 5).

In *Ion*, Euripides describes the night of the twentieth at Eleusis with specifically astronomical details.

*...the all-night torch of the twentieth day
when the star-gleaming heaven of Zeus
strikes up the dance
and the moon dances...*

(Kovacs, 1999, p. 449)

11. ZODIACAL LIGHT IN PINDAR ODE

The Greek poet Pindar, in a fragment preserved by Clement of Alexandria, paints a picture of the zodiacal light four centuries earlier than Manilius.

*First did the Fates bring wise-counseling,
heavenly Themis
on golden horses from the springs of
Okeanos
along a shining road to the hallowed stair of
Olympos...*

(Race, 1997, p. 231)

The zodiacal light qualifies as “a shining road” to the heavens, while the “hallowed stair of Olympos” corresponds to the planets along the ecliptic, planetary stairs that can be found in Vitruvius, Celsus, Martianus Capella, Macrobius, and even in Dante's 14th century *Paradiso*.

12. CONCLUSIONS

The initiated Cicero reveals that the Mysteries can be explained by natural science, and the all-night vigil held after the torchlit procession from Athens to Eleusis argues for an astronomical sight.

Manilius describes two *visible* circles that intersect in the night sky – one the Milky Way and the other along the path of the

Planets, best explained as the zodiacal light. The Lesser and the Greater Mysteries took place in spring and in fall – seasons when the zodiacal light is best seen in temperate climes – again indicating an astronomical connection to the Mysteries.

During her search in the Homeric Hymn, Demeter meets Hekate, goddess of crossroads, while in Roman ritual she – as Ceres – cries out to her daughter at crossroads, linking crossroads to the Mysteries of Eleusis.

Hekate, the goddess of crossroads who opens and closes the gates of Hades, has an astronomical aspect, as revealed by the Chaldean Oracles that connect her to Plato's cosmic Soul in *Timaeus*.

The World Soul, shaped like an X in the heavens, points to Plato's celestial gates in the Myth of Er in *Republic*, portals located at the visible intersection of the Milky Way and the zodiacal light.

Plato's infernal gates from the Myth of Er can be seen at Eleusis at the cave of Pluto, while his heavenly gates are located at the crossroads in the sky guarded by Hekate, goddess of crossroads, who is linked to the X-shaped World Soul.

The visible intersection in the night sky ties it all together: Plato's World Soul from *Timaeus* – the cosmic X that indicates Plato's celestial gates – is linked to Hekate's gates to Hades – to Hekate's crossroads – where Demeter cries out to her daughter.

To conclusively prove, or disprove, that the Mysteries of Eleusis had an astronomical aspect, we would need a truly dark sky like the one at Eleusis 2,000 years ago – five days after the Full Moon, ninety minutes before sunrise – when the zodiacal light shined a celestial path up to the Moon and to heaven beyond.

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