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THIS IS MY VERSION OF THE FINAL PUBLISHED VERSION

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Abstract.

In 475 and 484 CE rebellions took place against the eastern emperor, Zeno. Horoscopes for the proclamations of the two rebel emperors survive and the texts were published by Neugebauer and van Hosen in 1959, and Pingree in 1962.¹ Pingree suggests that the rebellions may have been associated with pagan opposition to the Christianising tendencies of Byzantine culture. Analysis of the astrological reasoning given in these charts, combined with the examination of the actual disposition of the observable planets, suggests that the astrology being used may have had little to do with Greek horoscopic astrology. An alternative hypothesis is that the rebel emperors' astrologers may have been working within a context provided by solar religion and a surviving tradition of observation-based Babylonian astrology. The possibility of textual continuity between the interpretation of planetary positions in Babylonian and Greek astrology is discussed. Finally, it is suggested that textual analysis of the horoscopic sources may be inadequate unless supported by a reconstruction of the observed sky and that the taking of celestial omens may add to an understanding of the religious environment in the fifth century.

1. The Religious Environment in the Fifth Century

The religious climate in the late Roman empire was complex and the relationship between Christianity and Paganism defies simple categorisation.² It has been argued, for example, that, in spite of the periodic and sometimes brutal persecutions of Christians, there is little evidence of Pagan-Christian conflict in Britain and evidence instead of peaceful transition.³ In addition, by the mid-fourth century, Christianity itself was subject to bitter disputes between Catholics, who had aligned themselves with the state, on the one hand, and various 'heresies' on the other. The Vandal kingdom in north Africa was Arian and, after years of intermittent harassment, king Huneiric (477-484) ordered all Catholics to convert to Arianism.⁴ Christianity's very diversity was the reason why there were such persistent attempts to establish and enforce a single set of dogma, beginning with the Council of Nicaea in 325. There also appears to have been a substantial problem (from the Church authorities' perspective) of Christians converting to Judaism,⁵ suggesting that the boundaries between different religious groups could be extremely fluid.

The dispute between Paganism and Christianity could, it is true, be bitter; when the emperor Aurelian died in 275, the year after he instated the worship of Sol Invictus, the Unconquered Sun, as the state religion, he was 'apparently planning a new attack on the Christians'.⁶ After an unsuccessful revolt by a Pagan sympathiser, Magnentius, who reigned from 350-3, the emperor Constantius II (337-361) enacted a series of anti-Pagan measures in 353-4,⁷ establishing a pattern which continued in spite of the attempt by the emperor Julian, Constantine's nephew, to restore the official Pagan religion in 360-3. Theodosius I (379-95), the last man to rule the entire

empire before its disintegration in the west, was strongly anti-Pagan, presided over a spate of violent assaults by Christians on Pagan sacred sites and passed laws prohibiting Pagan rites in 391 and 392. The worst violence of his reign occurred in Alexandria, where the bishop organised the destruction of the Serapeum, the temple of the Egyptian god Serapis and reputedly one of the most magnificent buildings in the empire. The direct consequence was a rebellion in 393 which, though led by a Christian, Eugenius, attracted widespread support from aristocratic pagans,⁸ an illustration of the complexity of theological-political allegiances. As John Moorhead put it, 'intellectual culture in late antiquity was subject to currents which flowed in different directions'.⁹

Within the Roman elite itself the Senate, based in Rome, remained far more friendly to Paganism than did the emperors, whose capital in Italy was now at Milan. Neither were the emperors necessarily hostile to the old ways. Their principle task was to maintain order and their interests were not necessarily served by enforcing religious laws against a substantial Pagan population.

Aside from concerns of state, the Pagan-Christian debate also involved genuinely rival cosmologies, with Pagans accepting the stars as a possible route to the divine and Christians denying this, insisting that the soul's relationship with God was always direct. The authoritative Christian theological position on astrology was established by Augustine when he complained that Manicheanism, of which he had been an adherent when he practiced astrology, came too close to worshipping the sun and the moon, in other words, worshipping the creation rather than the creator.¹⁰ However, as an illustration of the fluid nature of philosophical boundaries, Augustine had a high respect for Platonists who were themselves among the strongest advocates of astrology (whilst sometimes being critical of both its practitioners and Aristotelian cosmology).¹¹

Pagan teaching continued at a high level in the Platonic Academy in Athens, which offered a safe home to philosophical supporters of solar religion; as Cameron has pointed out, the major intellectual alternative to Christianity in the late Roman Empire was provided by Neoplatonism and its leading advocates, including Proclus (412-485), one of the last and most notable official teachers at the Academy.¹² For many, it was the state sun religion, Sol Invictus, which represented a preferable alternative to Christianity.¹³ One such was Proclus himself; amongst his surviving works are a series of hymns, of which the *Hymn to Helios*, the sun, is illustrative:

Hear golden Titan! King of mental fire,
Ruler of light; to thee supreme belongs
The splendid key of life's prolific fount;
And from on high thou pour'st harmonic streams
In rich abundance into matter's worlds.
Hear! For high rais'd above th' aetherial plains,
And in the world's bright middle orb thou reign'st
Whilst all things by thy sov'reign power are fill'd
With mind-exciting providential care.
The starry fires surround thy vig'rous fire,
And ever in unweary'd ceaseless dance,
Over earth wide bosom'ed, vivid dew diffuse.
By thy perpetual and repeated course
The hours and seasons in succession rise.¹⁴

The religious tone of Proclus' Neoplatonism and its close relationship to the worship of Sol Invictus is unmistakable. The rivalry between Paganism and Christianity was all the sharper because they both (particularly the Pagan religions of Isis, Dionysus and Mithras) 'took on universalist claims and pretensions, such as the offer of salvation'.¹⁵ Pingree's argument that Basiliscus's and Leontius' rebellions can be seen as Pagan challenges to the rising Christian orthodoxy suggests that both may be seen within the context of competing world views as well as personal ambition. The apparent use of astrology in both rebellions then becomes a sub-text in the historical narrative of Christianity's complex struggle with Paganism.

2. Basiliscus' Revolt

The first of the two horoscopes translated by Neugebauer and van Hosen, and Pingree, was set for the rebellion of Basiliscus against the Eastern Roman emperor Zeno in 475. By this time the empire was in a deep and prolonged crisis. It had been coping with massive Germanic migrations for most of the century; in 410 Rome had been sacked by the Visigoths, a trauma repeated in 455 at the hands of the Vandals. In the year after Basiliscus' rebellion, 476, Romulus Augustulus became the last Emperor to live in Italy and his abdication marked what is often considered the end of the Roman Empire in the west. Basiliscus' reign was itself short-lived and he was defeated by Zeno in July 477, having alienated all his supporters, especially those in the mainstream church.

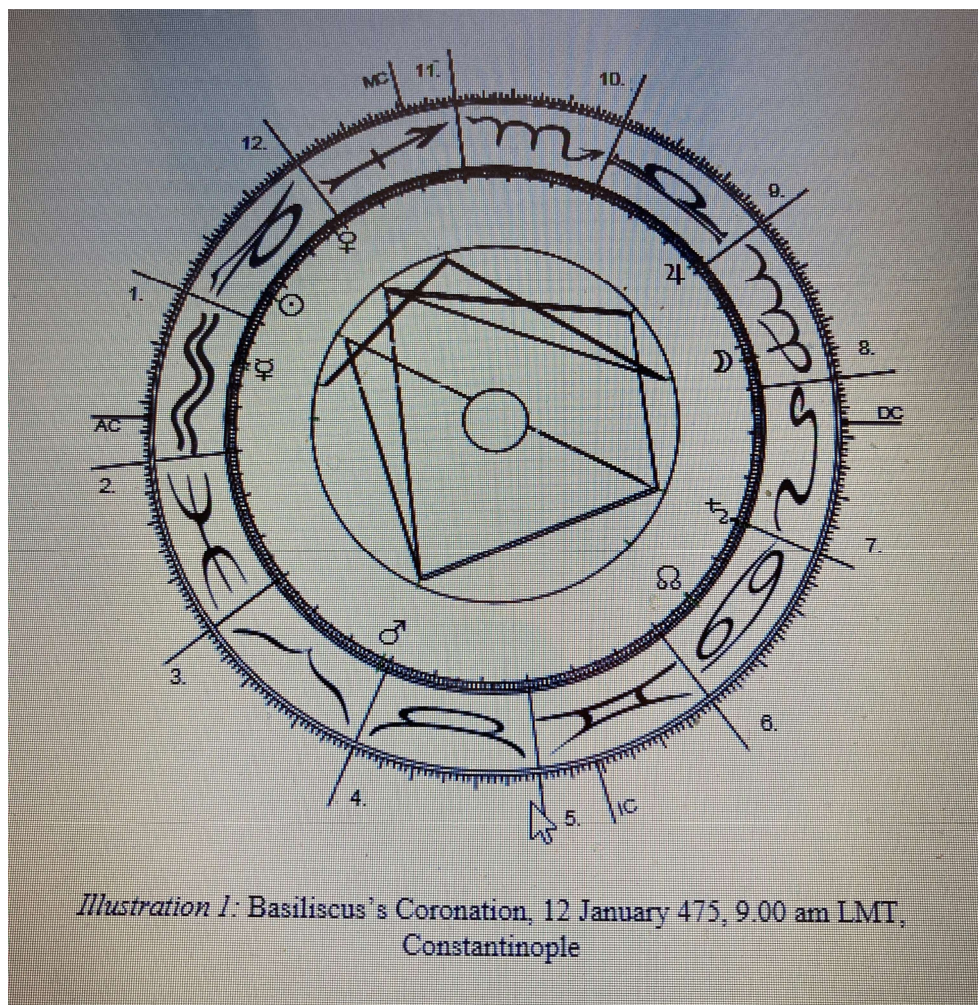
Basiliscus was extremely well connected; he was brother-in-law to Leo I (457-474) and uncle to Leo's daughter Ariadne, Zeno's wife.¹⁶ Basiliscus was not himself a Pagan, which complicates Pingree's argument that his revolt was part of a Pagan reaction to Christianity. Pingree's argument, though, is plausible given the precedent of the Christian-Pagan collaboration in Eugenius' revolt. Moreover that Basiliscus was a heretic, a monophysite, who rejected Christ's divinity, was a factor in his failure to secure lasting support in Byzantium. His educated, Hellenised instincts also hint at some sympathy for the Neoplatonic position. If the horoscopic sources are correct, then Basiliscus authorised the use of astrology in which case further questions arise: did either his monophysite allegiance or possible Platonic inclinations make it possible for him to use astrology where a more orthodox emperor would have refused? Clearly, Christian-Pagan rivalry was not bi-polar but multi-faceted, with complex rivalries and affinities.

Pingree noted that there had been a lunar eclipse on 8 January 475 which, being interpreted as a bad omen for Zeno, might have precipitated Basiliscus's revolt. The time for the coronation itself is assumed to have been elected by Basiliscus's astrologer, who was employed by another general, Illus, and the presumed astrological documentation was preserved and has been handed down to us in a Persian text from the late ninth century.¹⁷ The text contains what purports to be the astrologers' original rationale, together with the later Persian astrologers' subsequent explanation of why the coronation moment was, in their view, highly inauspicious. The data given is consistent with a horoscope set for 9.00 am, 12 January 475 and is set for Constantinople. The chart is given as Fig. 1A and is calculated using whole sign houses. There is a problem with this data, though: according to John Julius Norwich, Basiliscus actually deposed Zeno in November 475.¹⁸ It must be supposed that this horoscope, if set for a genuine astrological moment, was set for an event which may have been considered of astrological significance but preceded the revolt itself.

In the Greek text the horoscope is referred to as a *katarche*, a word which can be translated simply as ‘initiative’. The word also suggests, though, the descent of the archetype, and so potentially has clear significance in a Neoplatonic context; the horoscope may be set for the launch of a new enterprise, but it is one which carries the sanction of heaven. The house positions given in the text are consistent with the assumption that both horoscopes under consideration would have been calculated using whole sign houses in which the cusp of the sign containing the *horoscopus*, or ascendant, was the cusp of the first house.

2.1 Commentary on the *Katarche* for the Coronation of Basiliscus

9.00 am, 12 January 475, Constantinople.



A) The Original Positive Reading by Basiliscus' Astrologers

The following were given as reasons for Basiliscus' astrologer's belief that this was an auspicious moment.

- 1) Venus, one of the most benevolent planets was 'at the midheaven'. In fact it wasn't, but this statement may refer to Libra's elevated position; Libra is ruled by Venus.¹⁹
- 2) Venus is the lord of the Lot of Fortune.

- 3) Venus is lord of the triplicity of the Sun, i.e., the earthy triplicity (Taurus-Virgo-Capricorn – the sun is in Capricorn).²⁰
- 4) Jupiter, the most benefic planet, aspects the Sun 'from quartile' (i.e., Jupiter is in Libra, the Sun in Capricorn). We are told that 'This indicates power and eminence and splendour'.²¹

B) The Revised Negative Reading

Against this positive reading, the following reasons were given as the explanation for the failure of Basiliscus' revolt:

- 1) The sun is weak in the twelfth place (house) from the *horoscopus*, i.e., ascendant.
- 2) The sun is in the same sign as the descending (i.e. south) node.
- 3) Mars, a malefic planet, aspects the Sun by quartile (i.e., Mars is in Aries, the sun in Capricorn). Thus Basiliscus will fall from the power and splendour indicated by the quartile from Jupiter to the Sun.
- 4) Saturn, the most malefic planet is (a) weak, being cadent in the sixth place, 'diminishing and evil in its influence', (b) important, being lord of the sun and the *horoscopus* and (c) destructive, being quartile to Mars and opposed to the sun.
- 5) The moon is in the eighth house of death.
- 6) The Moon is in Virgo but is not aspected to Mercury, the ruler of Virgo.
- 7) Jupiter, the benefic planet, is weakened by the opposition from Mars.
- 8) The previous full moon was an eclipse, conjunct Saturn and in quartile to Mars.

The revised conclusion stated that, 'All of this indicates poverty, the loss of rulership and its diminution, and strife and evil and misery'.

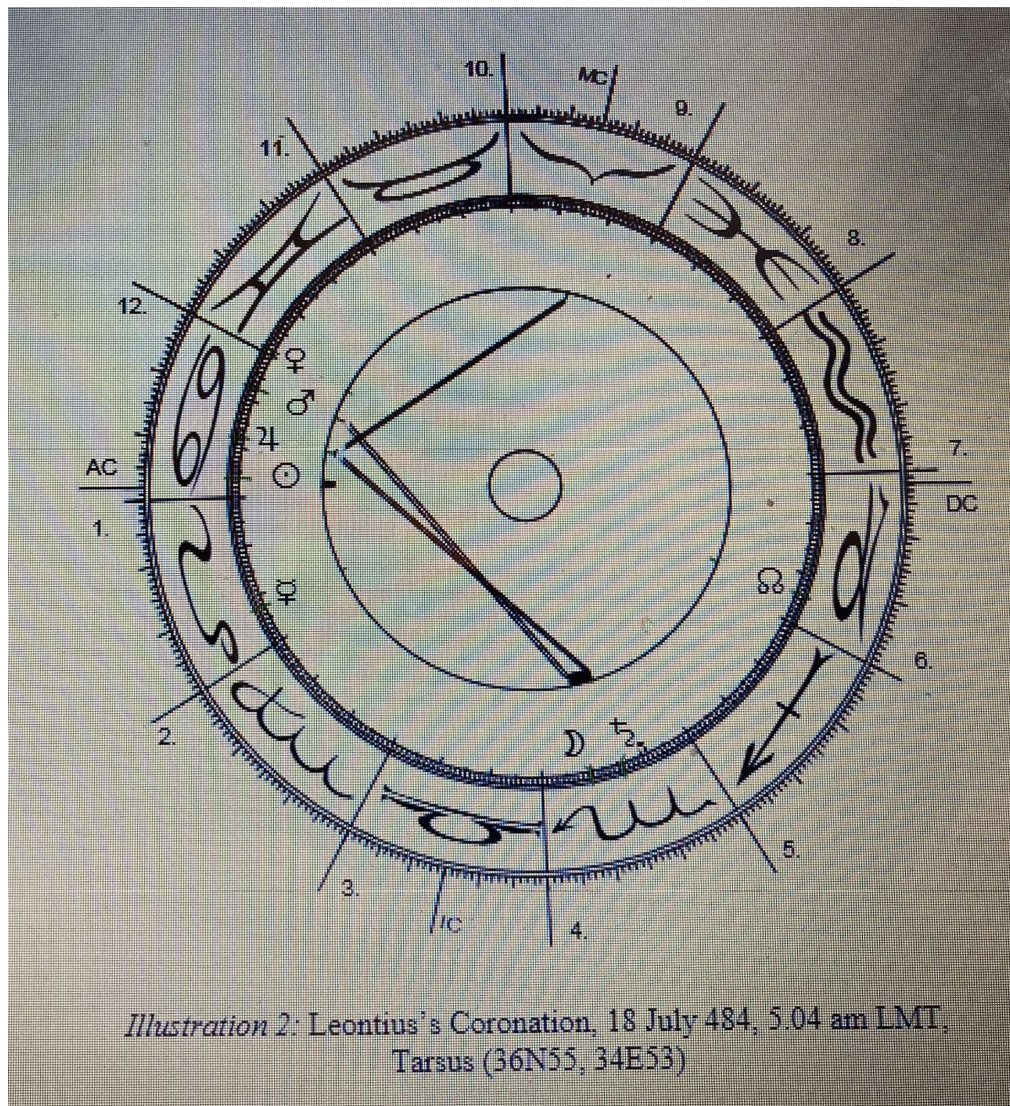
3. Leontius' Revolt.

In 484, nine years later and the year before Proclus' death, another general, Leontius, rebelled against Zeno in a last attempt to restore the pagan religion. According to the texts, Leontius was advised by two astrologers who elected the time for his proclamation. He was proclaimed in Tarsus in Syria and, like Basiliscus, was supported by the general Illus. Zeno defeated Leontius with assistance from the Ostrogothic king Theodoric, who was rewarded with Italy, over which Zeno was still nominal emperor.

The horoscope and commentary survives in two versions; the Greek was translated by Neugebauer and van Hoesen and the Persian by Pingree. Pingree reports that Leontius was crowned at Tarsus, Neugebauer at Antioch; the data is consistent with an coronation at sunrise on 18 July 484 in Tarsus.²² Neugebauer and Pingree's translations differ in style; for example, Neugebauer's 'Mercury in epanaphora'²³ is translated by Pingree as 'Mercury and how it happens to be in the second (place) from the ascendant, cadent...'.²⁴ The astrological significance of the comment in Neugebauer's text that by the time the moon passed Jupiter, so would Venus, is also unclear.²⁵ In addition there were errors in computation. In the texts Jupiter is mistakenly located at 5⁰ Cancer instead of 17⁰. Recalculation using Solar Fire software gives an ascendant of 23⁰ at 4.42 am as opposed to Neugebauer's assumed time of 6.00 am.

The fact that this chart, like that for the coronation of Basiliscus, is set for sunrise, suggests first that this was a struggle involving adherents of the solar religion and, secondly, that astrology was a means of arranging political events under this religion. The chart is given as Fig. 2A and is calculated using whole sign houses.

**3.1 Commentary on the *Katarche* for the Coronation of Leontius.
4.42 am, 18 July 484, Tarsus.**



A) The Original Positive Reading by Leontius' Astrologers.

According to the texts, Leontius' astrologer elected what they thought was the most auspicious moment possible for the following reasons:

- 1) The sun, Mars and Jupiter were in the *horoscopos*, i.e., Cancer, the sign containing the ascendant.
- 2) Mercury was in epanaphora.
- 3) The moon was in the fifth *locus* (sign) i.e., Scorpio, thus forming a benevolent relationship with the planets, and the *horoscopos*, in Cancer
- 4) After its conjunction with Saturn, an aspect with profound malefic consequences, the Moon forms a trine to Jupiter, a benevolent contact (N.B. although the text places Jupiter at 5°, its computed position is 17°).

B) The Revised Negative Reading.

It is not clear how soon after Leontius's defeat the horoscope reading was revised, but subsequent astrologers found good reasons why the *katarche* was inauspicious. In their opinion:

- 1) Mercury, being extremely important as lord of the day (Wednesday) and hour, 'had fallen into passivity', being at its greatest elongation from the sun (from then on Mercury's speed relative to the Sun began to slow down and the two bodies began to grow much closer).
- 2) Mercury was making only one aspect, a malefic square to Saturn (from Leo to Scorpio), indicating violent death.
- 3) Venus was unable to exert its benevolent role and relieve Mercury's passivity (Venus in Gemini was in a benefic relationship with Mercury in Leo, for the Sun was in between the two). Pingree's version gives a different rationale: the *Jami al-Kitab* claims that Venus is unable to drive Saturn's maleficence away from the Moon because it is cadent from the *horoscopus*, that is, in the second place (house) counting clockwise, an interesting claim as normally such places are counted anti-clockwise.
- 4) The Moon, the ruler of Cancer, and hence of the *horoscopus*, and therefore also of the supposedly beneficially located sun, Mars and Jupiter, was 'in depression' in Scorpio, that is, opposed to Taurus, the sign in which it is exalted.
- 5) The Moon was in the twelfth locus from the Part of Fortune, that is the twelfth *Athla*,²⁶ the *Bad Daimon*.
- 6) The Sun at 26° is trine the Moon at 7°, but Saturn at 17° blocks the beneficial results.

The revised conclusion was that the beneficial effect of the Sun-Jupiter-*horoscopus* conjunction is overwhelmed, the ruler of the sun and the moon, the two luminaries, are malefic, and Leontius can only rule for a short while. Note that neither the original nor revised readings considered what was later considered a crucial relationships between the Moon and Mars; that the Moon was in Mars' sign, Scorpio, while Mars was in the Moon's sign, Cancer. Neither is it mentioned that Venus would have been rising as morning star, a fact which would have been extremely significant to any group of solar Pagans watching and waiting for the dawn.

4. Critical Analysis of the Horoscopes

While the horoscopes for both rebellions may be subject to a variety of interpretations as the disputed readings which survive from the Persian manuscripts show, the horoscopes for both rebellions may be subject to a variety of interpretations, the damning indications in both horoscopes are undeniable. However, any attempt to reconstruct the rules which may have been used by the fifth-century astrologers is hampered by the fragmentary nature of the literature, the diversity of opinions, and the uncertainty of the extent to which the theoretical structures outlined in the written texts were actually applied by astrologers. There is a further problem: most of the surviving texts provide rules for the interpretation of nativities and almost none deal with *katarchai*, aside from brief passages in Dorotheus and Ptolemy.²⁷ Nevertheless, there is sufficient textual evidence from the rules for interpreting nativities to suggest that both horoscopes should indeed be regarded as inauspicious.

4.1 Basiliscus' *Katarche*

The rules of *katarche* are scarcely covered in the surviving Greek literature and, even then, they may be later Persian or Arabic interpolations. In one brief section in Dorotheus of Sidon's first century *Carmen Astrologicum*, a text which does not survive in any Greek original, instructions are given to look at the power of Mars in order to determine the outcome of war.²⁸ According to the rules outlined by Ptolemy (though in relation to nativities), Mars in the horoscope for Basiliscus' coronation was strong, being in its own sign, Aries, which, he claimed, supported its 'destructive and inharmonious' nature.²⁹ Yet, however strong Mars was in itself, it was still in a square, an inharmonious aspect,³⁰ to Saturn and the Sun. As Firmicus wrote (in line with standard astrological tradition), 'If Saturn and Mars are in any aspect or together with the Sun, this produces treacherous perjurers, miserable because of constant accusations of this crime. They will be gluttons, frequenters of secret dens of vice, and will be free with sacrilegious words against the gods. They will be disturbed by constant burning anxieties'.³¹ Had Firmicus not already stated unequivocally that not only was it wrong to comment on the emperor's horoscope, but that such a thing was theologically impossible,³² he might have mentioned that the Sun was a universal and very public symbol of the emperor, and had been so since Nero became the first ruler to portray himself on his coins wearing a gold crown with solar rays. The sun-emperor relationship was an accepted part of imperial iconography in the fourth century. According to Ferguson, writing of the period immediately before Firmicus, when the emperor Constantine Chlorus (305-6) returned to Britain after defeating the usurper Allectus, 'the great medallion which he struck proclaimed him REDDITOR LVCIS AETERNAE, the restorer of eternal light; this is the emperor's sunrise in other language'.³³ Ferguson adds that the same identification between the sun and emperor was followed by Constantine I, for whom the sun was, effectively, an ally.

Whatever else can be said about this horoscope, only an astrologer wishing to see Basiliscus fail can have elected the time for his coronation with the Sun applying to an opposition to malefic Saturn, no matter how weak that planet was, and a square to malefic Mars. An alternative hypothesis is that the astrologers' primary concern was not with the complex techniques of Hellenistic astrology but with observation of the night sky.

4.2 Leontius' *Katarche*

The horoscope for Leontius' coronation does indeed, as the positive reading claims, contain auspicious indications, and supporting evidence can be found in contemporary texts. For example, Firmicus, writing probably in 334, comments that 'Saturn in the fifth house, if by day, will make kings and leaders, very powerful men. But if the Sun is on the degree of the ascendant and Saturn comes into conjunction with the waxing Moon, continual good luck and great power are indicated'.³⁴ Yet, there is a problem with using the *Mathesis* as a reliable guide for fifth-century horoscope interpretation; Firmicus seems to have constructed the book entirely out of examples which are so specific that it is difficult to generalise. For example, the above text was directly contradicted later in the same passage when we are told that 'if the waxing Moon is in aspect with Saturn or moving toward him, this indicates widowhood for the mother and constant grief for the house of women'.³⁵ Firmicus added to the latter example the information that an individual born with this placement will work in a temple, lose their inheritance but later gain it back through their own efforts, suggesting that he is attempting to extrapolate general rules from a single example. The best that can be said is that the indications in the horoscope are ambivalent and, as is clear from the

very brief rules for initiating new enterprises included in Dorotheus of Sidon's *Carmen Astrologicum*,³⁶ benefic indications are balanced by malefic ones.

It is undoubtedly true that the Moon and Saturn in Scorpio are in a trine, a harmonious aspect,³⁷ yet the Moon's location in Scorpio, Mars' sign, in a conjunction with Saturn, is so serious as to completely destroy Leontius' chances of success; in spite of justified scepticism concerning Firmicus, his reading of the Moon in aspect with Saturn is in line with the astrology of the time.³⁸ Saturn and Mars, are quite simply, malefic planets.³⁹ Valens' judgements on Mars' and Saturn's aspects to other planets were universally damning.⁴⁰ As Dorotheus wrote, 'if a malefic is with it [the Moon] or aspects it, it will cut off [his] hope'.⁴¹ Antiochus of Athens, writing in the first or second century, reinforced the point, stating that 'when the Moon is conjoining Kronos [Saturn], opposition is encountered for everything'.⁴² Worse, discussing astrological indications of the length of life, Ptolemy wrote, 'the places of the maleficent planets, Saturn and Mars, destroy...'.⁴³ To have Saturn in Scorpio, as it was for over two years, was bad enough; according to Dorotheus, 'if Saturn is in Mars' house [i.e. sign], he will be difficult in his own and in others' work'.⁴⁴ To have the Moon in the same place compounded the problem; the Moon in Scorpio was in its 'depression'.⁴⁵ The question of house system is an additional complication. For this paper I cast the horoscope using whole sign houses, placing the Sun, Venus and Jupiter in the first house. Were the *horoscopos* to be the cusp of the first house, that would have placed all three planets in the inauspicious house of the *Cacos Daemon* or *Malus Daemon*.⁴⁶ That said, the Scorpionic Moon-Saturn conjunction was itself sufficient to lead Leontius to disaster. Such a malefic configuration could easily have been avoided by delaying the coronation for a matter of days. After ten days the Moon would have moved into Pisces, once again making trines to the Cancerian planets, but this time to Saturn as well. As Antiochus of Athens wrote, the Moon trine Saturn is fine for building, planting trees and intercourse and, when it is trine Jupiter, it is 'fine for everything'.⁴⁷

From the point of view of horoscopic astrology, the moments supposedly elected for the proclamations of Basiliscus and Leontius contain serious weaknesses. The former places the sun in the twelfth *locus* (house) in square to Mars and Jupiter and in opposition to Saturn while the latter puts a debilitated Moon in Scorpio in conjunction with malefic Saturn. Given that the judgment as to whether a horoscope is auspicious must always be made on the balance of probabilities, weighing up benevolent and malevolent factors, it is frankly unlikely that these horoscopes were elected with the aid of the rules of horoscopic astrology. It is clear that, whatever the provenance of both horoscopes, if they were chosen by astrologers using the text-based rules of Hellenistic astrology, the intent can only have been to destroy the rebel cause.

There are a number of solutions to this dilemma. One is that the texts originated in the astrologers' commentary on, rather than election of, the respective horoscopes. That is, the horoscopes were not cast at the time of the rebellions but were calculated retrospectively and were later assumed to have been elected. However, if the claim that the times of coronation were indeed elected is sound, then a different possibility emerges; that the actual disposition of the sky was more important than the rules of horoscopic astrology.

5. Phenomenology

Neugebauer and van Hosen and Pingree based their discussion of the Basiliscus and Leontius rebellion horoscopes on documentary sources. In both cases the veracity of

the texts as originating in horoscopic work undertaken by astrologers working for the respective rebel emperors was accepted on the basis of the manuscript evidence. However, examination of those texts in relation to the extended literary context, the instructional texts of Greek astrology, suggest that no fifth century astrologer working from the rules of Hellenistic horoscopic astrology would have elected such moments.

An alternative hypothesis is that, if astrologers were indeed employed by the rebel emperors, they were working from direct observations of the sky. Such an argument finds support in an application of phenomenology; that it is possible, within a modern perspective, to understand the actual experience of fifth century astrologers when faced with the awesome sight of a dramatic pre-dawn sky, especially one containing a prominent Venus.⁴⁸ As Husserl, who first set out the principles of phenomenology in the early twentieth century, argued, it is essential to understand the 'I', the individual's subjective, inner, often transcendent, experience,⁴⁹ the aim being, according to Twiss and Conser, the 'qualitative understanding of the forms of life of a religious tradition from that tradition's standpoint'.⁵⁰ This model is finding its way into archaeological thought, and from there into contemporary archaeoastronomy. For example Tim Robinson claimed, in his account of a Bronze age site in the west of Ireland, that he was able to understand its purpose and function better by experiencing a particularly brilliant setting sun in the same landscape.⁵¹ This approach has recently been championed by Clive Ruggles in relation to the study of archaeoastronomy, citing Ed Krupp, Director of the Griffith Observatory in Los Angeles on the experience of the solstice at Stonehenge. Krupp wrote,

One should make a point of being there. Celestial events take place in context. When you see what actually happens in the landscape, you learn a great deal more about it. It is, of course, possible to determine the alignment of a building with instruments, but nuances of light and shadow, details of the horizon, difficulties in practical observation, and many more subjective aspects of a site can only be appreciated in person.⁵²

Ruggles himself added, 'Similarly, by walking in the modern landscape we can try to appreciate patterns of relationship between monuments and the topographic elements of the landscape as experienced by people living in that landscape in prehistoric times'.⁵³ He concedes that we can never exactly know that we experience the same feelings when watching an especially bright full moon as did a prehistoric observer, but he does argue that 'the idea deserves serious consideration in contextual interpretations'.⁵⁴ It is that serious consideration which the horoscopes for Basiliscus' and Leontius' rebellions require.

Alfred Shutz, witting on the phenomenology of sociology, argued that phenomenology is the source of all philosophical thinking: 'phenomenology, searching for a real beginning of all philosophical thinking, hopes, when fully developed, to end where all the traditional philosophies start'.⁵⁵ Helmut Wagner added that phenomenology's 'starting point is given in the experiences of the conscious human being who lives and acts in a "world" which he apperceives and interprets, and which makes sense to him'.⁵⁶ Following Schutz and Wagner, then, it may be argued that the testimony of the night sky and an especially bright rising Venus might reveal more about the intentions of fifth century astrologers than the abstract interpretative structures of Hellenistic astrology. To paraphrase Ninian Smart, the goal should be to achieve a 'value-rich' appreciation of the world view of the fifth century astrologer.⁵⁷ The astrologer working for Basiliscus or Leontius would have lived in a culture in

which the planets might still be regarded as divine and their helical rising as heralds of the sun, Sol Invictus, Proclus' golden Titan', and might still send messages which were far more immediate and powerful than the complex readings contained in the astrological texts. It may therefore have been the astrologers' lived experience in their fifth-century world, and their numinous awe when faced with a brilliant pre-dawn sky, rather than their use of the rules of Hellenistic horoscopic astrology, which informed their work. Whatever the astrological texts claimed, the astrologers' primary perception, their 'real beginning', or 'starting point', was their experience of night giving way to dawn.

6. The Pre-Dawn Sky

The time for Basiliscus' coronation is given for early morning, that for Leontius for sunrise. It is evident from the horoscopes that the pre-dawn sky in both instances would have featured a prominent Venus. The pre-dawn sky for Leontius' rebellion would have been the most striking, with Mercury, Jupiter and Venus all rising. If the time of Leontius' coronation is moved from sunrise to before dawn then all three planets would have been rising and visible. Fig 2B shows the visible predawn sky for the morning of the coronation.

Venus' magnitude was especially bright at -3.2, a fact which would have held particular significance in the context of the survival of Babylonian, or, more properly, near-eastern astral religion, in the form of Ishtar worship;⁵⁸ the worship of Venus in association with astrological practice was a persistent feature of near-eastern religious culture. From the Assyrian period, probably the seventh century BCE, one tablet survives in which the astrologer wrote to his emperor

"Since the planet V[enus] is shining he[re], [the *time* is oppo]rtune for my reverence." The king, my lord, [kno]ws that the [Venu]s rituals of the "overseer's wife" are performed [...] the said [...]; now then Venus has risen [at] the (very time of its (computed) [appearance]. [Tod]ay is favourable [to] do [...].⁵⁹

In the second century CE Ptolemy reported the surviving reverence for 'the star of Venus under the name of Isis' in Mesopotamia and Iran,⁶⁰ while Venus worship appears to have survived into the Islamic period in the astrological-Hermetic religion based in Harran.⁶¹ That is, the religious context within which Babylonian astrology flourished, including Venus worship, survived in the near east until well after the late Roman period.

6.1 Basiliscus' Rebellion

Aside from Venus' distinctive presence as morning star, there were a number of potentially significant features in the night sky at Basiliscus' rebellion. Jupiter was very close to Spica and, even though it would have been partially obscured by moonlight on the night in question, it would have been very noticeable on preceding days. However, the most notable feature of this event is its preceding lunar eclipse, which was commented on in the text: Fig 1B is set for the full moon of January 475. The eclipse would have been visible in the early hours of the morning. The moon was in Cancer and its most distinct planetary relationship was its proximity to malefic Saturn. The eclipse omens from the *Enuma Anu Enlil* did not mention planets and were concerned solely with the day and month of the eclipse and phenomenological considerations such as its colour and the accompanying weather.⁶² Neither do the

eclipse reports to the Assyrian kings mention planets.⁶³ It is clear though, from both the omen texts and the eclipse reports, that an eclipse is an overwhelmingly bad indication for the king.

One indirect route by which Babylonian eclipse astrology was transmitted to the late classical world was via a set of texts derived from the *Enuma Anu Enlil*, introduced, adapted to local conditions in Egypt in the Persian period, around the sixth or fifth centuries BCE,⁶⁴ and subsequently paraphrased in Hephaistio's *Apotelesmatica*. The texts may then have been further edited in the second and third centuries CE. Hephaistio has just this one comment on lunar eclipses in Cancer: 'the ruler of Syria will clash with another ruler and a certain great man will be destroyed, and the leader will be given up by the multitude'.⁶⁵ It is possible that, if this text was current, Basiliscus' astrologers identified Zeno as the ruler of Syria and saw the eclipse as a benevolent indication for their candidate for the throne.

6.2 Leontius' Rebellion.

At Basiliscus' coronation, Venus was a bright morning star. Simply, this may have been taken as a good omen. However, at Leontius proclamation, Venus, Mars and Jupiter were all morning stars and Regulus was an evening star. In addition Sirius was rising (its heliacal rising would have taken place a few days earlier) and Orion was prominent. The interpretative possibilities are therefore more complex. The relevant texts would be concerned with Regulus setting, Venus, Mars and Jupiter rising in Cancer or Gemini and the relationship between them. If, for example, the reports of the astrologers to the Assyrian kings are consulted then there are some deeply relevant texts. For example,

If Jupiter reaches and passes Regulus, and gets ahead of it, (and if) afterwards Regulus, which Jupiter has passed and got ahead of, reaches and passes Jupiter, moving to its setting; there will be rivalry; someone will rise and seize the throne, variant: the land will have worries.⁶⁶

Jupiter had not performed the required manoeuvre, but it was close to Regulus, although it was a morning star while the latter was an evening star. But the report to the king may have been an adaptation of a more general omen concerning Jupiter and Regulus.

Mars, though, offers less ambiguous information. In the seventh century the Babylonian astrologer Akkallanu wrote to the Assyrian emperor,

Maybe someone will w[rite] the king my lord as follows: "If a strange star (i.e. Mars) comes close to Cancer: the ruler will [die]."⁶⁷

And again,

If a strange star [comes close] to Can[cer]; the ruler will die.⁶⁸

Further,

Mars reached Cancer; [the king sh]ould know and be circumspect until it goes out.⁶⁹

And

When Mars, furthermore, retrogrades from the Head of Leo and touches Cancer and Gemini, its interpretation is this: End of the reign of the king of the Westland.⁷⁰

Mars, in this case, was not retrograde, but it had just moved from Gemini to Cancer. Regarding Venus and Jupiter, a letter from an unknown astrologer reported,

[If Venus] comes close to [Jupite]r: the king of the Westland [will see destruction. [...] comes near: land will become hostile to king, brother to brother [.....].⁷¹

If Jupiter passes to the right of Venus: a strong one will conquer the land of the Guti (i.e., the north).⁷²

Another, which may, perhaps, have encouraged pagan rebels, predicts,

If Jupiter goes with Venus: there will be praying of the land to the gods.⁷³

There are a number of problems with the Babylonian hypothesis, not least the lack of evidence for the direct transposition into Hellenistic astrology of any texts apart from the eclipse omens. There are some textual comparisons between cuneiform and Greek texts; for example Firmicus Maternus stated that 'all kinds of danger' occur when Mars is in aspect to Cancer.⁷⁴ In relation to Jupiter and Venus, he wrote that individuals born when they are in conjunction 'are devout in religious rites'.⁷⁵ Yet these examples do not necessarily imply direct transmission. However, the phenomenological argument - the impact of the numinous power of the night sky or the rising sun - provides weight for the continuation of an observational astrology and simple supporting evidence is provided by the insistence in Jewish practice on the observation of the rising crescent Moon (a religious necessity inherited and maintained by Islam).

7. The Survival of Babylonian Astrology

There is a widely held view that Greek astrology was fundamentally different from Babylonian in both its conceptual foundations and technical applications, an opinion which pervades the literature on the history of astrology.⁷⁶ However, Francesca Rochberg has demonstrated aspects of technical continuity between Babylonian and Greek astrology,⁷⁷ while Alexander Jones has documented the influence of Babylonian astronomy, that is, the computations necessary for the practice of astrology, on its Hellenistic counterpart.⁷⁸ David Pingree has argued convincingly that Babylonian lunar and eclipse omens, were then incorporated into such texts as Vettius Valens' second-century *Anthologies*, Hephaistio of Thebes' fourth-century *Apotelesmatica* and John of Lydia's *On Signs*, composed around 550.⁷⁹ Certain passages in Hephaistio's text are clearly survivals from Babylonian tradition, such as the study of the colour of eclipses and comets, and meteorological omens.⁸⁰ Pingree also identifies passages derived from the *Enuma Anu Enlil*, the great seventh-century BCE Assyrian compilation of Babylonian astrological omen texts, in a Greek translation of the *Apocalypse of Daniel* made by Alexius of Byzantium in 1245. This text had been available in Arabic after the 660s, and was formerly known in Greek in

the late Roman period, if not earlier. Pingree records that the passages included in Alexius' text include the 'interpretation of solar and lunar eclipses, halos around the two luminaries, new moons, comets, falling stars, rainbows, flashes of light, the reddening of the sky, thunder, lightning, rain, hail and earthquakes'.⁸¹

There was, of course, an overlap between the technical procedures of Babylonian and Greek astrology. The codification of astrology, including the development of birth charts and a zodiac of twelve thirty degree-sized signs, which culminated in the complex rules evident in the extant Greek texts of the first century onwards, predated the Hellenisation of the near east and appears to have begun under Persian rule in the fifth century BCE.⁸² The only safe distinction to be made between Babylonian and Hellenistic astrology, is that the Babylonian art relied heavily on direct observation while the Hellenistic craft could be practiced in the basis of tables. Until such time as the astrology that the Babylonian priest Berossus taught to the Greeks on Kos around 280 BCE⁸³ can be reconstructed, we can have no absolute idea of the extent of the distinctive Greek contribution to astrology. Indeed, the evidence suggests that the observational Babylonian tradition was flourishing in the first century BCE, two hundred years after Berossus set up his school; Cicero reported that the Chaldeans, by whom he specifically meant the astrologers of the Babylonian tradition and race, were active in Syria and well-known for their knowledge of the stars and impressive intellectual qualities.⁸⁴ The magi, the Persian priesthood, were also active throughout the middle east and met regularly in sacred places, including hill tops, to conduct divinatory exercises, which, it can be assumed, on the basis of their inclusion in the Christian nativity story, would have include astrological consultations. Such prophecies may have been inseparable from the soothsaying, interpretation of oracles, lightning and prodigies which were an integral part of political decision making in the Mediterranean and Middle East.⁸⁵ It is known from evidence in the Dead Sea Scrolls that these practices surfaced in Jewish culture in the first century CE. Two passages from one surviving astrological text are typical:⁸⁶

if it thunders in the sign of Taurus, revolutions (in) the wor[ld]...

if you saw the moon upright towards the south and its other horn inclined towards the north, let it be a sign for you: be careful of evil; trouble will go out from the south.

There are no extant texts discussing observations of Venus in the Hellenistic period and to draw comparisons between cuneiform and Greek literature is problematic. Is it really possible to link the Venus tablet's claim, from around 1700 BCE, that Venus' reappearance in the east signifies messages of reconciliation from king to king, with pseudo-Valens' statement that when the star of Aphrodite [Venus] has come on to the *Horoscopes*, it produces gaiety with good cheer?⁸⁷ It is, though, reasonable to argue, on the basis of the survival of an observational Babylonian astrology together with a continuation of Venus worship, that Venus' physical appearance in the pre-dawn or early evening sky was still of astrological significance in the Roman near east.

Whereas Pingree looked for the direct incorporation of Babylonian omen texts in to Greek works, there may also have been a more subtle incorporation of the principles of Babylonian astrology. Hephaistio, for example, described a technique which was clearly an adaptation of Babylonian principles, and which he defined as 'spear-bearing',⁸⁸ essentially, spear-bearers were rising planets. At Leontius' coronation benefic Jupiter (and perhaps Venus and Mars) was spear-bearer to the sun,

rising immediately before it. Hellenistic astrology therefore maintained, in at least some respects, the principle of direct observation.

It is also significant that the Babylonians' theoretical model of astrology survived. As Gadd put it, the Babylonians regarded the stars as 'the writing of heaven', a question of interpreting signs of divine, intent, favour or displeasure to which humanity might then respond.⁸⁹ It is often argued that Greek astrology replaced omens and signs with a mechanistic Aristotelian model of causes and influences, and that Greek and Babylonian astrology were therefore necessarily fundamentally different practices.⁹⁰ However the notion of astrology-as-signs was not replaced by the theory of astrology-as-influence, but existed in parallel with it. Plotinus, who shaped late Roman Platonism, issued the most effective statement of the Babylonian position when he angrily dismissed the notion of planets as causes in favour of signs.⁹¹ The possible survival of Babylonian astrological practice was therefore complemented by the continuation of Babylonian astrological ideology at the highest intellectual level, in the Platonic Academy.

8. Conclusion

The horoscopes for the proclamations of the rebel pagan emperors Basiliscus and Leontius are of historical interest, being set in the period during which the Roman empire in the west disintegrated and that in the east was adopting its Greek, Byzantine, identity. It is, however, highly implausible that the astrologers were using the rules of Greek horoscopic astrology suggested in the commentaries translated by Neugebauer and van Hosen, and Pingree. In that case, other explanations must be considered. I have argued in this paper that an approach adapted from phenomenological principles should include an examination of the visual sky and an understanding of the numinous awe which a striking celestial display can inspire. It is therefore suggested that the key to understanding the astrological moments recorded in the texts lies not in the abstract interpretative procedures typical of Greek astrological texts, but in a surviving tradition of the observational astrology characteristic of Babylonian practice, linked to astral religion and flourishing within a philosophical context provided by Neoplatonism. As Pingree has shown, there is textual evidence for the survival of Babylonian eclipse and lunar omens into the Roman and Byzantine periods, though there is almost no evidence for the survival into the fifth century of a textual tradition of Babylonian planetary astrology, aside from general notions such as the importance of rising planets. The possibility of continuity between the interpretative frameworks of Babylonian and Greek horoscopic astrology has been discussed. However, it is suggested that the reconstruction of the pre-dawn sky provides more effective evidence for the fifth century astrologers' intentions than do the documentary sources. If such an observational astrology survived, it adds a further dimension to the understanding of the political uses of sky-based Pagan religion in the context of the religious complexity of Late Antiquity.

Acknowledgement.

I am grateful to Bernadette Brady for suggesting that the fifth-century astrologers may have been working with direct observations.

Chart Data

Chart data

Chart 1A Basiliscus Coronation

9 am LMT

12 January 475

Constantinople (Istanbul)

Whole sign houses

(1st house cusp 0 Aquarius. Ascendant 22 28 Aquarius, Moon 6 44 Virgo)

Chart 1B Basiliscus Full Moon

9.40 am LMT

8 Jan 475

Constantinople (Istanbul)

Whole sign houses

(1st house cusp 0 Pisces. Ascendant 01 57 Pisces, Moon 19 42 Cancer)

Chart 2A Leontius Coronation

05.04.37 am LMT

18 July 484

Tarsus (36N55, 34E53)

Whole sign houses

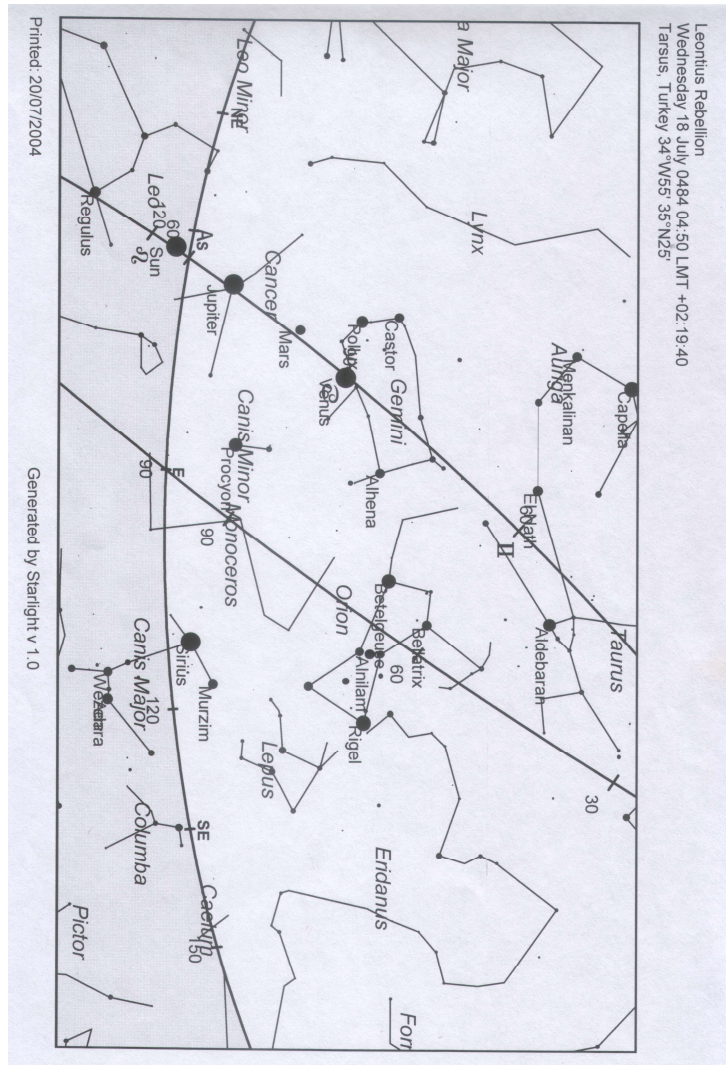
(1st cusp 0 Cancer. Ascendant 28 08 Cancer, Moon 09 30 Scorpio)

Fig 1A. The Horoscope for Basiliscus' Rebellion

Fig. 1B The Eclipsed Full Moon Prior to Basiliscus' Rebellion

Fig 2A. The Horoscope for Leontius' Rebellion

Fig 2B. The Predawn Sky on the Morning of Leontius' Rebellion.



Endnotes

- 1 Neugebauer, Otto and B.B. van Hoesen, *Greek Horoscopes*, Philadelphia: American Philosophical Society 1959, p 147, Pingree, David. 'Historical Horoscopes', *JAOS* 1962, Vol. 82, pp 487-502.
- 2 See the discussion in Cameron, Averil, *The Later Roman Empire*, London: Fontana 1993, esp. pp, 67-98. See also Lee, A.D., *Pagans and Christians in Late Antiquity*, London: Routledge and New York 2000 and Lançon, Bertrand, *Rome in Late Antiquity*, Edinburgh: Edinburgh University Press 2000, esp. pp. 92-7.
- 3 See the discussion in Hutton, Ronald, *The Pagan Religions of the Ancient British Isles: Their Nature and Legacy*, London and New York BCA 1991.
- 4 See Moorhead, John, *Justinian*, London: Longman 1994, p.65.
- 5 Cameron, Averil, *The Later Roman Empire*, London: Fontana 1993, p. 77.
- 6 Salway, Peter, *Roman Britain*, Oxford: Clarendon Press 1981, p. 715.

7 Cameron, *The Later Roman Empire*, p. 75.

8 Cameron, *The Later Roman Empire*, p. 75.

9 Moorhead, *Justinian*, p.28.

10 Augustine, *Confessions*, III.6, *City of God* V.30.

11 For Augustine on Platonists see *City of God* VIII.6-12, and for the Platonic position on astrology see Plotinus, 'On Whether the Stars are Causes', *Ennead* II, 3, trans., A.H. Armstrong, Cambridge Mass., London: Harvard University Press 1929..

12 Cameron, *The Later Roman Empire*, pp. 80-1.

13 Halsberghe, Gaston H., *The Cult of Sol Invictus*, Leiden: E.J. Brill 1972.

14 Proclus, 'Hymn to the Sun', trans. Thomas Taylor, in Marinus of Samaria, *The Life of Proclus or Concerning Happiness*, Grand Rapids, Michigan: Phanes Press 1986.

15 Elsner, Jas, *Imperial Rome and Christian Triumph*, Oxford and New York: Oxford University Press 1998, p 200. See also G. Fowden, *Empire to Commonwealth: Consequences of Monotheism in Late Antiquity*, Princeton: Princeton University Press 1993, pp 37-60.

16 Norwich, John Julius, *Byzantium: The Early Centuries*, London: Penguin 1988. p. 165. See also pp. 169-70, 174, 178, 206.

17 The text is translated by David Pingree from the astrological compendium *Jami al-Kitab*, written by Abu Yusuf Yaqub ibn 'Ali al-Qasrani in Persia in the late ninth century. See Pingree, David. 'Historical Horoscopes', *JAOS* 1962, Vol. 82, pp 487-502.

18 Norwich, John Julius, *Byzantium: The Early Centuries*, London: Penguin 1988. p. 169.

19 Ptolemy, Claudius, *Tetrabiblos*, trans. F.E.Robbins, Cambridge Mass., London: Harvard University Press, 1940, I.17, p. 81.

20 Ptolemy, *Tetrabiblos*, I.18, p. 85.

21 Yet see Firmicus; 'Those who have Jupiter in Libra will have disasters and riots in early life': Maternus, Julius Firmicus, *Mathesis*, translated as *Ancient Astrology: Theory and Practice*, Jean Rhys Bram, Park Ridge, New Jersey: Noyes Press 1975, V.iv.16, p. 176.

22 The Persian text is translated by Pingree in 'Historical Horoscopes', the Greek text is translated in Neugebauer, Otto and B.B. van Hoesen in *Greek Horoscopes*, Philadelphia: American Philosophical Society 1959, p 147.

23 Epanaphora = 'a sign which follows, in the order of signs of the zodiac, a centre'; thus Taurus is the epanaphora if Aries in on the Midheaven; 'that which immediately follows a centre, which is one of the four angles; the zodiac signs on the cusps of houses 2, 5, 8, and 11 are called epanaphora. See Neugebauer and van Hosen, *Greek Horoscopes*, pp. 7, 8.

24 Mercury is succedent.

25 Neugebauer and van Hosen, *Greek Horoscopes*, p. 147, n. 14.

26 The *athla* were twelve houses in which the cusp of the first house was the Part of Fortune. For a description see Manilius, *Astronomica*, 3.43-159, trans. G.P. Goold, Cambridge Mass.: Harvard University Press 1978, and the description on pp lxii-lxv.

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- 27 Dorotheus of Sidon, *Carmen Astrologicum*, ed and trans David Pingree, Leipzig 1976, BSG B.G. Teubner Verlagsgesellschaft. English edition only, Nottingham, Ascella Books 1993, V.30, pp. 290-1, 'The Commencement of all Things'; Ptolemy, Claudius, *Tetrabiblos*, trans. F.E. Robbins, Cambridge Mass., London: Harvard University Press, 1940, esp. IV.4, pp. 381-393, 'Of the Quality of Action'.
- 28 Dorotheus of Sidon, *Carmen Astrologicum*, ed and trans David Pingree, Leipzig 1976, BSG B.G. Teubner Verlagsgesellschaft. English edition only, Nottingham, Ascella Books 1993, V.30,6-7, p. 291.
- 29 Ptolemy, *Tetrabiblos*, I.17, p. 81.
- 30 Ptolemy, *Tetrabiblos*, I.13, p. 75.
- 31 Maternus, Julius Firmicus, *Mathesis*, translated as *Ancient Astrology: Theory and Practice*, Jean Rhys Bram, Park Ridge, New Jersey: Noyes Press 1975, III.v.16, p. 90.
- 32 Maternus, *Mathesis*, II.xxx, 4-5, p. 69. Firmicus still allowed himself to discuss general indicators of imperial status: see for example II.ii.20.
- 33 Ferguson, John, *The Religions of the Roman Empire*, London: Thames and Hudson 1972, p. 55.
- 34 Maternus, *Mathesis*, III.ii.10, p. 76.
- 35 Maternus, *Mathesis*, IV.ii.1.
- 36 Dorotheus of Sidon, *Carmen Astrologicum*, ed. and trans David Pingree, Leipzig 1976, BSG B.G. Teubner Verlagsgesellschaft. English edition only, Nottingham, Ascella Books 1993, V.30, 1-2, p. 290.
- 37 Ptolemy, *Tetrabiblos*, I.13, p. 75.
- 38 See also, for example, Maternus, *Mathesis*, III.ii.9. 17, pp. 76-7.
- 39 Ptolemy, *Tetrabiblos*, I.5, p. 39.
- 40 Valens, Vettius, *The Anthology*, Book IV, trans. Robert Schmidt, Project Hindsight Greek Track, Vol. XI, Berkeley Springs VA, Golden Hind Press 1996, 20 and 22, pp. 50-2, 54-6.
- 41 Dorotheus, *Carmen Astrologicum*, I.21.ii, p. 224.
- 42 Antiochus of Athens, *The Thesaurus*, trans Robert Schmidt, Project Hindsight Greek Track Vol. II B, Berkeley VA: The Golden Hind Press 1993, II.1, p. 40.
- 43 Ptolemy, *Tetrabiblos*, III.10, p. 283.
- 44 Dorotheus, *Carmen Astrologicum*, I.21.ii, p. 224. II.28.2, p. 231.
- 45 Claudius, *Tetrabiblos*, I.19, p. 89.
- 46 Ptolemy, *Tetrabiblos*, III.10, p. 275; Maternus, *Mathesis*, II.xix.13, p. 51.
- 47 Antiochus, *The Thesaurus*, II.1, pp. 40-1.
- 48 For a useful discussion of phenomenology as applied to questions of landscape and sacred space, see Tilley, Christopher, *A Phenomenology of Landscape*, Oxford: Berg 1994.
- 49 Husserl, Edmund *Ideas: General Introduction to Pure Phenomenology*, London: Collier-MacMillan 1972 [1913, Eng. trns.1931], p. 7.

-
- 50 Twiss, Sumner B, and Walter H. Conser, *Experience of the Sacred*, Hanover: University Press of New England 1992, p. 27.
- 51 Robinson, Tim, *Setting Foot on the Shores of Connemara and other Writings*, Dublin: The Lilliput Press 1996. p. 201.
- 52 Ed Krupp, HASTRO History of Astronomy e mail list 8 August 1995, cited in Ruggles, Clive, *Astronomy in Prehistoric Britain and Ireland*, New Haven and London: Yale University Press 1999, p. 151.
- 53 Ruggles, Clive, *Astronomy in Prehistoric Britain and Ireland*, New Haven and London: Yale University Press 1999, p. 151.
- 54 Ruggles, Clive, *Astronomy in Prehistoric Britain and Ireland*, New Haven and London: Yale University Press 1999, p. 151.
- 55 Schutz, Alfred, *On Phenomenology and Social Relations*, ed Helmut R. Wagner, Chicago: University of Chicago Press 1979, p. 54.
- 56 Wagner, Helmut R., 'Introduction' in Schutz, Alfred, *On Phenomenology and Social Relations*, ed Helmut R. Wagner, Chicago: University of Chicago Press 1979, pp. 1-50., p. 5
- 57 Smart, Ninian, *The Science Of Religion And The Sociology Of Knowledge: Some Methodological Questions*, Princeton: Princeton University Press 1973, p. 21.
58. Green, Tamara, *The City of the Moon God: Religious Traditions of Harran*, Leiden: E.J. Brill, 1992, pp. 59, 62-3.
- 59 Hunger, Hermann, *Astrological Reports to Assyrian Kings*, Helsinki: Helsinki University Press 1992, 31, p. 23.
- 60 Ptolemy, *Tetrabiblos*, II.3, p. 139.
- 61 See the discussion in Green, *The City of the Moon God*, inc. pp. 158-9.
- 62 Rochberg-Halton, Francesca, 'Aspects of Babylonian Celestial Divination: The Lunar Tablets of Enuma Anu Enlil', *Archiv für Orientforschung*, 22, 1988.
- 63 See Hunger, Hermann, *Astrological Reports to Assyrian Kings*, Helsinki; Helsinki University Press 1992.
- 64 Parker, R.A., 'Egyptian Astronomy, Astrology and Calendrical Reckoning', in Coulston, Charles (ed.), *Dictionary of Scientific Biography*, New York: Charles Scribners and Sons, p. 723.
- 65 Hephaistio, *Apotelesmatics*, I.21, p. 46
- 66 Hunger, *Reports*, 502.4, p. 279.
- 67 Hunger, *Reports*, 101.6-8, p. 60.
- 68 Hunger, *Reports*, 452.6, p. 255.
- 69 Hunger, *Reports*, 380.4, p. 218.
- 70 Parpola, Simo. *Letters from Assyrian and Babylonian Scholars*, Helsinki: Helsinki University Press 1993, p. 9
- 71 Hunger, *Reports*, 212.4, p. 119. Also for Venus-Jupiter conjunctions see 214.1-2, p. 120.

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- 72 Hunger, *Reports*, 448.1, p. 251.
- 73 Hunger, *Reports*, 244.r.2, p. 136.
- 74 Maternus, *Mathesis*, VIII.ix.2.
- 75 Maternus, *Mathesis*, VI.xxiii.4.
- 76 See for example, Tester, Jim, *A History of Western Astrology*, Woodbridge, Suffolk: Boydell Press 1987.
- 77 Rochberg-Halton, Francesca, 'Elements of the Babylonian Contribution to Hellenistic Astrology', *Journal of the American Oriental Society*, Vol. 108, no 1, January-March 1988, pp 51-62.
- 78 Jones, Alexander, 'Babylonian Astronomy and its Legacy', *Bulletin of the Canadian Society for Mesopotamian Studies*, Quebec, 32, 1977, pp. 11-17.; Jones, Alexander, 'Evidence for Babylonian Arithmetical Schemes in Greek Astronomy', in *Die Rolle der Astronomie in den Kulturen Mesopotamiens*, Grazer Morganländische Studien, 3. pp. 77-94, ed. Hannes D. Galter, Graz: : RM-Druck-& Verlagsgesellschaft m.b.H 1993; Jones, Alexander, 'On Babylonian Astronomy and its Greek Metamorphoses', in F.Jamil Ragep and Sally P. Ragep (ed.), *Tradition, Transmission, Transformation*, Leiden and New York: E.J. Brill 1996, p 139-155.
- 79 Pingree, David, 'Legacies in Astronomy and Celestial Omens', in Dalley, Stephanie (ed.), *The Legacy of Mesopotamia*, Oxford: Clarendon Press 1998, pp. 133-137.
- 80 Hephaistio of Thebes, *Apotelesmatics*, trans. Robert Schmidt, 2 vols., Berkeley Springs WV: Golden Hind Press 1994, I.25-26.
- 81 Pingree, 'Legacies', p. 134.
- 82 For discussion see Champion, Nicholas, 'Babylonian Astrology: Its Origins and Legacy in Europe' Helaine Selin (ed.), *Astronomy Across Cultures: the History of Non-Western Astronomy*, Dordrecht: Kluwer Academic Publishers 2000, pp. 509-554.
- 83 Vitruvius, *De Architectura*, 9.6.2.
- 84 Cicero, *De Divinatione*, I.i.2, I.xli.90- xlii.93.
- 85 Cicero, *De Divinatione*, I.vi.12; I.xliii.95.
86. 4Q318: A Divination Text (Brontologion) in Wise, Michael, Martin Abegg and Edward Cook, *Dead Sea Scrolls*, London: Harper Collins 1996, pp. 303-5. See also Martinez, Florentino Garcia, *The Dead Sea Scrolls Translated: The Qumran Texts in English*, Leiden, New York and Cologne: E.J.Brill 1994, pp. 451-4.
- 87 Pingree, David and Erica Reiner, Babylonian Planetary Omens, Part 1, Enuma Anu Enlil, Tablet 63: The Venus Tablet of Ammisaduqa, Undena Publications, Malibu, 1975, I, p. 29; Dorotheus, Orpheus, Anubio and Pseudo-Valens, *Teachings on Transits*, trans. Robert Schmidt, Project Hindsight Greek Track Vol. IX, Berkeley Springs WV: Golden Hind Press 1995, p. 20.
- 88 Hephaistio, *Apotelesmatics*, I.17, p. 35. See also the discussion in Schmidt, Robert and Robert Hand, *Companion to the Greek Track*, Berkeley Spring: Golden Hind Press 1994, p. 35, and Ptolemy, *Tetrabiblos*, discussing the doryphory (p. 114).
- 89 Gadd, C.J., *Ideas of Divine Rule in the Ancient East*, Schweich Lectures of the British Academy, 1945, Munich: Kraus Reprint 1980, p. 57.

90 See for example, Rochberg-Halton, Francesca, 'Elements of the Babylonian Contribution to Hellenistic Astrology', *Journal of the American Oriental Society*, Vol. 108, no 1, January-March 1988a, pp 51-62.

91 Plotinus, *Ennead* II.3, 'On Whether the Stars are Causes', trans A.H. Armstrong, Cambridge Mass.: Harvard University Press 1929.