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INTRODUCTION

I am pleased to present *Astrology of the World I: The Ptolemaic Inheritance* (*AW1*), the first in a three-volume series on traditional mundane astrology. It will be followed *AW2*, on ingress charts, conjunctional theory, and astrological theories of history, and *AW3*, a translation of Abū Ma'shar's *Book of Religions and Dynasties* from the Latin edition by Burnett and Yamamoto—also known as *On the Great Conjunctions*. In this Introduction I will give a general overview of the book and Ptolemy's methods. Detailed introductions will precede each of the book's four Parts, with shorter introductions in each of the Sections which contain the translated texts. With these three volumes, my *Essential Medieval Astrology* series (see Appendix A) will come to a close, followed by a Greek and Latin Hellenistic series, an Arabic series, and later Medieval, Renaissance, and early Modern series.

The present works on mundane astrology are primarily *horoscopic*: that is, based on charts cast for a specific time and with an Ascendant. Thus, we will deal hardly at all with older omen-based astrology, apart from some lore on comets and, in *AW2*, time-lord theories of history that are not at all (or hardly) based on specific charts. I have given this volume the subtitle *The Ptolemaic Inheritance*, because most of our texts—most of which were written in Arabic even if later translated and redacted into Latin¹—draw directly or indirectly on Book II of Ptolemy's *Tetrabiblos*, which itself is on mundane techniques. Some of the authors in the series speak about relating individuals' nativities to mundane charts, but for the most part they deal only with astrological phenomena which are present for the whole world: especially New/Full Moons and eclipses. Indeed, one challenge for mundane astrology is to make its judgments specific to a particular region or topic, and this is especially true for weather prediction. Let us first look briefly at the four Parts of the book, and then turn to Ptolemy and other topics.

¹ I have translated many of the texts from Latin, but others I have translated directly from Arabic (or from the Latin, with corrections based on separate Arabic manuscripts). I am grateful to the Urania Trust for a generous grant which allowed me to study Arabic more deeply at the University of Minnesota in 2012.

Structure of the book

Part I: Weather. In this Part, we will address traditional methods of weather prediction. Of our authors, al-Kindī is the most Ptolemaic: that is, he uses Ptolemy's naturalistic approach to astrology, in which the planets at certain New and Full Moons causally predict weather, with their ongoing transits being monitored to judge weather throughout the seasons. In fact, where Ptolemy is only very general or skimpy on details, al-Kindī is at pains to describe his understanding of this approach in great detail. But al-Kindī and the other authors describe many other methods as well: certain Lots of rains and winds, the lunar mansions, various versions of the "opening of the doors," the "centers" or "posts" or "foundations" of the Moon (which Ptolemy mentions only briefly), and so on. Some authors draw on Persian and Indian accounts. There is also disagreement on whether malefics cause rain or prevent it. All of this provides a wealth of resources for future research. And throughout these texts, we must remember that a chief job of the astrologer is to figure out how to *localize* the effects: if an application of the Moon to Saturn means rain, it cannot mean rain everywhere in the world at the same time, so how can we tell where the rain will fall? I will summarize a variety of answers in in Section I.1.

Part II: Prices & Commodities. Although Ptolemy does not deal directly with prices and commodities, later astrologers took many of his remarks and used their own ingenuity to decide how to use New and Full Moon (or even ingress) charts to predict prices—both of the market as a whole, and of individual commodities. Notable in this respect is al-Qabīṣī, who provides a list of Lots for individual commodities. This topic is related to weather, since periods of little rain lead to a scarcity in crops, which directly affects prices. Some authors describe how to distinguish supply and demand in a chart.

Part III: Eclipses & Comets. Ptolemy himself had made eclipses (and to a tiny degree, comets) a central aspect of his mundane approach. Our authors follow Ptolemy to a great extent, but they emphasize the meaning of the eclipse chart in its own right as a statement about political events. For example, Ptolemy hardly spoke of the importance of the Ascendant and its lord at an eclipse, but our Arabic-speaking astrologers give it a prime place. From the eclipse chart, they reach in two directions: to effects on weather, crops, and animals (as did Ptolemy), and to political events they otherwise analyze from ingress charts. This "middle position" of eclipses was already inherent in Ptolemy's approach. Indeed, one of the frustrating things about Ptolemy's

mundane astrology to my mind is that it does not proceed in an orderly manner like the other parts of the *Tetrabiblos* do. That is, while Ptolemy uses both luration charts and eclipses, *Tet.* II can hardly be read sequentially: the text seems to constantly make references backwards and forwards, and at the end one is not always quite sure how to bring the techniques together. Later astrologers pretty much solved this problem by embedding lunations and eclipses within the broader framework of conjunctional and ingress theory.

Part IV: Chorography & Climes. One of the more unusual and less-known aspects of traditional mundane techniques is the application of chorography and climes. Chorography is the method of associating cities, countries, and territories, with the signs and planets. Climes are either discrete lines of latitude or bands of latitude on the earth, each of which comes under the management of either the signs or planets (or both). Of course in the ancient and medieval periods, these regions were more restricted: not much was known about southern latitudes (although they do appear here), nor about longitudes east of modern Pakistan and western India—to say nothing of the Americas. Ptolemy also developed a way of applying the triplicities mundanely (including special mundane triplicity lords which are mostly unknown now), as well as describing how individual cities may be associated with signs and planets based on their founding date or the nativities of their political rulers. For Ptolemy this was particularly useful in judging eclipses, since the sign in which an eclipse took place, determined both the regions and the types of beings (animals or humans) effected by it: for example, that an eclipse taking place in Libra would affect regions and beings ruled by Libra. In our texts, we will see some Ptolemaic-type attributions (such as in ibn Labban) as well as associations which have no explanatory context, simply asserting that such-and-such a region is ruled by (say) Mercury and Capricorn. A Greek text will purport to give the founding charts for certain cities, although more work will have to be done in order to understand what the charts are really based on. We will have to investigate further to understand how these types of rules may be applied to regions unknown to Ptolemy and the medieval Arabic-speaking astrologers.

Finally, in this volume I have decided not to provide an Index to methods or authors, since the extensive Sectioning and cross-referencing found throughout the book made it seem redundant.

Ptolemy's Mundane Astrology

To understand traditional, horoscopic mundane astrology, we really must begin with Ptolemy. His *Tetrabiblos* Book II provides foundational material for later works on weather prediction, eclipses, lunation charts that precede solar ingresses, chorography, and more. But here and throughout *AWI*, for the most part I will provide only summaries of Ptolemy's astrology, rather than direct translations. The summaries are based on the Robbins translation, in cooperation with Hübner's critical edition where necessary, as well as Schmidt's translation of parallel material in Hephaistio (who frequently copied Ptolemy's material, albeit with some changes). I hope this will help ease the reader into Ptolemy's approach, which he enjoys expressing in a way that is both very compressed and wordy. Throughout, I will provide chapter references and sentence numbers (in boldface) for the Robbins/Hübner editions, for those who wish to check the sources.

Let us begin with Ptolemy's opening statements about mundane astrology, before moving on to his theory of weather prediction. In his introductory chapter (*Tet.* II.1), Ptolemy recognizes two main branches of astrology (2): mundane (the "universal" part) and natal (the "individual" part), of which the mundane obviously has broader effects which sometimes override the normal expected outcomes of individuals' nativities (3). Here we are obviously interested in the universal, mundane part.

But within mundane astrology, there are also several divisions (4): one part considers broad changes and effects pertaining to regions, another to cities, another to various events like wars and natural disasters (pestilence, earthquakes, famine), and another to local weather trends. Ptolemy prefers to stick to regions, as he thinks it is very difficult to get down to localized particulars in mundane astrology (1, 5). (Of course this is one of the chief problems in traditional weather prediction, which I address a bit in Section I.1.)

In order to make these predictions, we need two types of information or tools. The first is some way of associating heavenly phenomena with the world (5), and for Ptolemy the chief ways involve associating geographic regions with the zodiacal triplicities, and the individual planets with the climes and ethnic groups in them.² The second is to identify which heavenly phe-

² See Section IV.2. Ptolemy's justification for this is based on his association of planets and signs with winds and physical processes.

nomena actually matter in mundane astrology (5-6): for Ptolemy, these include the visible eclipses of the Sun and Moon, lunar phases (especially those immediately preceding solar ingresses), and planetary phases and stations, particularly those of the superior planets. Later on, he will also include comets and other omens (II.9, II.13).³

So while Ptolemy does want to track ongoing transits and phases of various kinds, his mundane techniques rest on two types of charts: New/Full Moons (and the stages of the lunar month called the “centers” of the Moon, see Section I.1), and visible eclipses of the Sun and Moon. In each case he notes the signs involved, the rulers of those signs (see especially Section III.2), and the types of beings and areas of the earth affected (Sections I.2, III.2). In Sections I.2, III.2, and IV.2, I will go through Ptolemy’s interpretive steps. But the reader should keep in mind that later astrologers went beyond Ptolemy in their interpretations: as an example, Ptolemy pays little attention to the Ascendant and its lord, but these take center stage in later authors.

Editorial conventions in this book

In putting together this set of translations, I have divided the book up in certain ways, and have also added details to the texts themselves. At the purely editorial level, I have divided it into four *Parts*, each of which is devoted to a different area of mundane astrology: weather, prices, eclipses and comets, and chorography. But within each Part is a variety of *Sections*: the first Section contains my own introduction, the second Ptolemy’s approach (except for Part II, since Ptolemy has no doctrine of prices), with the rest of the Sections being devoted to other authors.

In addition, since 2012 I have decided to start adding sentence numbers to my translations. This is especially useful for translators comparing texts in different languages, but I think it will also be helpful for readers who are looking for precise references. In the text itself I indicate the sentence with a boldface number, such as: **5** And if Mars were in the seventh.... When citing a certain sentence in a footnote or in one of my introductions, I follow the usual reference with the boldface number. For instance, if something is found in the fifth sentence of Chapter II.3 of the *Tetrabiblos*, I will write: *Tet.* II.3, **5**. In a few cases it was important to indicate which language a sentence came from, such as when a text in multiple languages has a paragraph that

³ See Section III.2.



**‘Umar al-Tabarī: *Book of Questions* Ch. 81:
On the knowledge of the weather, the times ☿ seasons,
and how they effect change in heat ☿ cold
(from al-Rijāl: *Book of the Skilled* VIII.26)**

2 This will be known from [1] the place of the meeting or opposition² of the Sun and Moon, and from [2] the Ascendant of the meeting or prevention, which was before the entrance of the Sun into Aries, and from [3] the place of the luminaries in the figure (and likewise from the places of the planets).³

3 Whence, if you found Saturn in one of the stakes from the Ascendant, or in any of the stakes from the lord of the Ascendant, [Saturn] being firm in that same place, in any of his own dignities (and especially in the stake of the Midheaven), it signifies diversity in the air, harm, and darkness, and in a time of heat it diminishes⁴ the heat, and in a time of cold it makes great cold. 4 And if he were remote from the stakes, the seasons will be stable and even, just like they should be. 5 However, if Saturn were in the stakes from the lord of the Ascendant,⁵ his signification will be less and weaker than when he will be in the stakes from the Ascendant.

6 And if Mars were in that very status which we stated with respect to Saturn, and especially in the stake of the Midheaven, heat will be increased in a time of heat, and cold will be diminished in a time of cold;⁶ and spring and autumn will incline towards heat.

² Burnett’s ‘Umar and the Tehran al-Kindī only have the meeting or conjunction, but Hugo agrees with the Latin al-Rijāl.

³ I have put this last part in parentheses, because they are not explicitly stated in ‘Umar’s Arabic but are obviously relevant in what follows.

⁴ I am reading with al-Rijāl here, who agrees with the Tehran al-Kindī *On Rains* (*kasara*, “it breaks”). Burnett reads *kathrah*, “abundance.” But this does not make astrological sense, and throws off the parallels with Mars below. Because Saturn naturally signifies cold, he should diminish heat and increase cold.

⁵ Burnett’s ‘Umar makes this the angles of the Ascendant itself, not its lord; but the Tehran al-Kindī and Hugo affirm it is the lord of the Ascendant, which makes more astrological sense: for ‘Umar has already said the angles of the Ascendant will be powerful in their signification.

⁶ Reading with the Tehran al-Kindī and Hugo; Burnett’s ‘Umar has the cold increasing, not decreasing.

7 And if Jupiter or Venus or the Moon⁷ were in the manner which we said, they make the air fit, and temper [it], and make it be of a good complexion, and [make] what is sown and planted, sprout and grow.

8 And look likewise at Mercury: because if you found him in the Mid-heaven from the Ascendant of the meeting,⁸ and he were in any of the airy signs, and any of the infortunes were in any of the stakes of Mercury himself,⁹ it signifies diversity in the air, and many damaging winds. 9 And you will judge in this way if you found any of the infortunes¹⁰ in the angles from Mercury, and Mercury [were] in an angle from the fortune: because this is worth as much as if the infortunes¹¹ are in the sign of the meeting.¹²

[The significator with Mars or Saturn]

10 Whence, whatever planet you found in the stakes from the Ascendant of the meeting (or in [its] succedents), make that one a significator.

11 Afterwards, inspect to see what kind of commixtures it has with Saturn and Mars: and if you found it to be mixed with Mars from the square or from the opposition or assembly, and Mars were in one of the fiery signs, heat will increase in a time of heat, and cold will be decreased in a time of cold. 12 And if the aspect were from the trine or sextile, and Mars [were] in the fiery signs, it signifies what we said, but not so much.

13 But if the significator-planet had a commixture with Saturn¹³ from the square or from the opposition or assembly, and Saturn were in the cold and dry signs, or in the cold and moist signs, cold increases in a season of cold, and heat is diminished in a season of heat. 14 And if the aspect were from the trine or sextile, and Saturn [were] in the signs which we said before, it signifies what we said before, but not so much. 15 And if Saturn were in the hot and moist signs (which are Gemini and its triplicity), and he had a com-

⁷ The Ar. has all of them doing this, but 'Umar might mean "any one" of them being in such a condition.

⁸ That is, the conjunction or New Moon (but we should probably follow al-Rijāl in adding the New Moon).

⁹ Burnett's 'Umar and Hugo put the infortune in the same angular place as Mercury, not merely in any of the angles of Mercury.

¹⁰ Reading *infortunarum* with Burnett and Hugo, for the Latin al-Rijāl's *fortunatarum*.

¹¹ Again, reading *infortuna*e with Burnett and Hugo, for *fortuna*e.

¹² I do not understand this last sentence: how could an infortune harming Mercury by square, but Mercury being related to other fortunes, be in any way related to an infortune being in sign of the conjunction itself?

¹³ The Ar. specifically mentions a "connection," indicating a degree-based aspect.

mixture with the significator from the opposition or square or assembly, it signifies that the air will be tempered and of a good complexion. **16** And if this commixture were from the trine or sextile, with [Saturn] appearing in the signs we said before, the signification will be greater, and of greater [proper] mixture,¹⁴ and a better complexion. **17** And likewise, if Mars had a commixture with the significator, and he were in the cold, dry signs, or the cold and moist signs, and the commixture were from the square or opposition or conjunction, it tempers the air and makes it be of a good complexion and manner. **18** And if the aspect were from the trine or sextile, with [Mars] appearing in the aforesaid signs, the tempering will be greater and every thing which sprouts and is generated will increase.

[The Lot of air and winds]

19 And help yourself in this with the Lot of air and winds, and make it be a partner with the significator.¹⁵ **20** And if you found Saturn or Mars with the Lot or its lord,¹⁶ judge from them just as we said before about their appearance in the stakes and in the aspects of the significator. **21** For you will take this Lot from the degree of Mercury (if he were not in his own house) up to the degree of the lord of the house in which he is, and add on top of this the degrees of the Ascendant, and project from the Ascendant:¹⁷ and where the number is ended, there is the Lot. **22** And if Mercury were in his own house, take his own degrees, adding the degrees of the Ascendant to them, and projecting from the Ascendant: and where [the counting] applied to, there is the Lot. **23** And you will do the same at the entrances of the Sun in the quarters (which are Aries, Libra, Cancer, and Capricorn). **24** You will do likewise at the entrance of the Sun into each of the twelve signs.

¹⁴ *Temperiei.*

¹⁵ This sentence differs greatly among the authors. The Tehran al-Kindī says to consult the Lot “with these indications”; Hugo says that this Lot’s testimonies “resemble the significators” mentioned above; Burnett’s ‘Umar says to consult the Lot “and the partners of these indicators.” To my mind, al-Rijāl’s reading here is the clearest and most natural.

¹⁶ Reading with Burnett’s ‘Umar and the Tehran al-Kindī for al-Rijāl’s “their lords.”

¹⁷ Burnett’s ‘Umar reads, “subtract.”

[Interpolation: *Abū Ma'shar's Lot of days*]¹⁸

7:L6 And Abū Ma'shar spoke of another Lot [although it does not belong in this book],¹⁹ which is called the Lot of days: and it is taken on any day from the degree of the Sun up to the degree of Saturn, and is projected from the degree of the Moon when the Sun arises on any day. **7** Whence, if Mercury aspected this Lot or he were with it in one place, say that on that day there will be wind; **8** and the judgment will be nailed down more if the Moon were with him, and if Venus had any commixture there, it will be more.

7:L9 There is another way of judging by the days: determine the Ascendant at the hour in which the Moon enters the first minute of a sign, and look to see which [planet] aspects the Ascendant: you should take that as the significator, and judge by that one²⁰ as long as the Moon was in that sign, and you will find what you wanted, by God.

**'Umar al-Tabarī: *Book of Questions* Ch. 82:
On the knowledge of rain, thunder, lightning, ☼ winds
(from al-Rijāl: *Book of the Skilled* VIII.27 [part])**

2 You²¹ will know this from the entrance of the Sun into 20° and one minute²² of Scorpio. **3** Whence, determine the Ascendant, the stakes, and the planets at that hour, and afterwards look at Venus, Jupiter, and Mercury. **4** And if you found all three to be western, [slow], or retrograde, judge that in that year there will be many rains and moistures. **5** And if you found them to be eastern or direct or of a great course,²³ it signifies that in that year there will be few rains and moistures.

¹⁸ What follows is a later interpolation, which corresponds to *DMT* Ch. 7:L 6-9 (lines labeled as such here). 'Umar was dead by the time Abū Ma'shar's astrological career was getting underway, so 'Umar could not have written this himself.

¹⁹ Adding based on the Arabic. According to Bos and Burnett, this Lot is the second of those listed in Abū Ma'shar's *Kitāb al-Sirr* ("Book of the Secret"). See my list of Lots of rain and wind in Section I.1.

²⁰ That is, according to the typical weather patterns it suggests.

²¹ Burnett continues the line numbering from the previous chapter, even though the Arabic clearly labels this as a new one.

²² Or rather, once he enters 20° exactly (Ar., "to the minute"), because then he will be in the first minute of that degree.

²³ That is, moving quickly.

SECTION II.6: ABŪ MA'SHAR, *FLOWERS*

Comment by Dykes. In this Section I simply reproduce without comment a short passage by Abū Ma'shar on prices, taken from the Latin *Flowers of Abū Ma'shar*.¹ For the full version with footnotes and comments, see *AW*2.



Chapter III.1: On high and low prices

2 However, you will know these things from each of the superior planets, since every burden is of the work of Saturn, and all ease is of the work of Jupiter. **3** Therefore, however often you saw Saturn (in the revolution of the quarters of years) in a sign in which there was a conjunction which signified a sect, and Jupiter (or Venus with the Head), did not aspect him, without a doubt this will be of the signals of severity. **4** Therefore, commingle your account of him [using these factors], and do not have fear. **5** And if it were so that the Tail were with [Saturn] in one [and the same] sign, judge the burden of the yield and the terror of men, unless Jupiter aspects this place at the hour in which the Tail is being separated from him. **6** Moreover, the years that signify famine, are themselves those over which Saturn is in charge, in the conjunction or opposition in which the revolution was, and more severely so if he were in the conjunction or opposition of Mercury—this is [in the revolutions] of years. **7** For the months, if you saw him in the ninth place or the third at the conjunction or opposition, this will be a signal of ease.

8 Therefore, know the Ascendant of the prevention or the conjunction. **9** After this, look at its lord: which if [the lord] were increased in light or course, then the yield will be increased in price in that same month; and likewise, if it were increased in the Midheaven, the price of the yield will be increased in the same way. **10** And if it were decreased in course, the price of the yield will be decreased. **11** And if it were going to its own descension, likewise the price of the yield will go down. **12** But if it were in the subterranean angle, or in the seventh [angle], the price will be stable in its own condition.

¹ This was a Latin translation of a distinct Arabic work on mundane techniques by Abū Ma'shar (Sezgin pp. 142-43 #3), whose title in some manuscripts can be abbreviated as *The Report*.

13 However, in other matters besides wheat and barley, you should look at the manager of the year, to see if it were made fortunate; look even to see in what kind of sign it is, and what the essence of that same sign is. **14** Which if it were of the essence of fire, this will be in silver and gold, and in everything which is worked through fire. **15** Which if it were in the earthy ones, this will be in earthy things. **16** If however it were in a sign of air, then this will be in animate things: look at the place of that same sign from the Ascendant, and speak about that. **17** Look to see if it were in watery signs: this will be in animals of the water, and in everything which comes from out of it. **18** However, all of these [are] places in which there will be every burden of the yield. **19** If however [the lord of the year] were in Aries or its triplicity, it will be in the direction of the east; if in Taurus or its triplicity, in the direction of the south; if however in Gemini or its triplicity, it will be in the west; but if in Cancer or its triplicity, it will be in the north.

20 Consider the market value of the yield when the Sun has entered the first minute of Aries or the signs in which the exaltations of the planets are (which are the movable ones). **21** Now, the dismounting of the Sun onto the first minute of Aries is stronger and more lofty than all of his [other] dismountings in the beginnings of the movable signs, and more lofty than his dismountings at the beginnings of each sign. **22** Know this secret in market value, and do not pass over it, and do not look at [anything] else. **23** And if you wanted to have the knowledge of some thing by name, look at the planetary significator of that thing, and of the market value of that thing, [and] in what kind of sign it is; and look at what [*illegible/incoherent*] to that sign and to that planet. **24** And I have already made [*illegible*] to you in this book on the natures of the signs. **25** Therefore, know and work through that, and you will discover [it], if God wills.

Chapter 26: Concerning an eclipse

[2] Know that the two eclipses have a powerful effect in the world, and I [will] explain to you what is needed for knowledge of it. **3** And so, one must know that an eclipse cannot happen except around the Head or the Tail. **[4]** The Tail is cold, its bond is with the two infortunes, and with Saturn especially; and the Head is hot, moist from the nature of the fortunes, and its bond is with the fortunes. **5** Therefore, with an assembly of the benevolents around the Head, there is no greater omen [of good]; with it conjoining the harmful ones, there is no greater misfortune than the Tail. **[6]** And if the Tail was with the fortunes, it breaks its evil; and the Head with the infortunes breaks their evil. **[7]** And the worst is [if] the eclipse is with the Head in a house of Mars, or with the Tail in a house of Saturn.

[8] And look at the sign in which the eclipse was: what belongs to it of the quarters of the earth, and of the division of the areas belonging to that triplicity, and what belongs to that sign in terms of cities and existence.² **[9]** And look at the viewpoint of the sign of the eclipse from the Ascendant and the quarters of the circle: for from that viewpoint in which the sign of the eclipse is, is the quarter from which the vice is: the east and the west and the north or the south. **[10]** And if the sign and the quarter disagreed, (such that one is eastern, the other western, and in this manner), one will have to mix the nature between each, and concede it to the one which was stronger.³

11 But an eclipse of the Sun must be feared for those parts of the lands whose sight it [actually] reaches. **12** For if it happens under the earth, it will harm nothing of the upper hemisphere.

[13] And look at the sign of the eclipse, and the place of the eclipse from the Ascendant of the middle of the eclipse, **[14]** and who is connecting at⁴ the beginning of its eclipse, and its middle, and its end, and is it connecting with the infortunes or with the fortunes, **[15]** and with what colors it is being eclipsed, and what is the nature of the sign of the eclipse. **16** For, these things which are observed steer the certain path of the one judging.

² Ar. *al-kawn*.

³ For example, if the eclipse were in a fiery sign (which indicates the east), but in the western quadrant, then one would have to see if there are any special indications for one or the other. William Lilly's approach to this may be found in *Christian Astrology* II, pp. 364-65, 391, and 393.

⁴ Ar. *fī*, which can also mean "through, throughout."

[17] For Aries is in charge of all hairy things and four-footed things, but to Leo belong what has claws,⁵ and to Sagittarius belongs what has hooves, and a share of the horse, and its liveliness.⁶ [18] But in Taurus and its trigon, it is harmful to young boys and fruits and trees and vegetation and sheep, and it is like a scarcity of rain and planting. And cows belong to Taurus, [19] and to Virgo the plants and food, and it is without rain in it.⁷ [20] And to Capricorn are goats and everything which is sown at high cost,⁸ and vegetation. [21] But in Gemini and its triplicity, it is death and killing in men and birds, and the disaster of beasts, and the tyranny⁹ of the winds; for Gemini belongs to kings and majesty, [22] and Libra belongs to the pious, and trade. [23] And Aquarius belongs to the lowest part of [society]. [24] But in Cancer and its trigon, it is dangerous enough for waters and aquatic things, for Cancer belongs to everything which descends from heaven, and Scorpio to every water which is flowing, and Pisces to every water which is stagnant.¹⁰

[25] Erect the Ascendant of the middle of the eclipse, and look at the lord of the sign of the eclipse: how is its place [from its own house]¹¹ and what is its condition relative to the lord of the Ascendant of the eclipse, and what does it have from the lord of the Ascendant of the year and [from] the significator of kings, and how do the infortunes and fortunes look at it? [26] And if it looked at the eclipse in [the time of] the eclipse, and it was made unfortunate from an aspect to the infortunes, then what it indicated increases and intensifies. [27] And the strongest thing for that is if the lord of the house of the eclipse were the significator of kings: and if it was that, and the infortunes are aspecting it, [there is] injustice upon the king when the Sun reaches the Midheaven of the eclipse. And¹² if it were the lord of the year, there is injustice upon the citizens when the Sun reaches the Ascendant of the eclipse.

⁵ In a later sentence, Sahl adds that an eclipse of the Sun in Leo has indications for kings.

⁶ Ar. *wa-āsharhā*.

⁷ Reading *yuhqīṭu*.

⁸ Reading *fi al-ghalāʾ*.

⁹ Reading *ʿasf* for *ʿasūf* (“tyrant”).

¹⁰ Pisces and Scorpio should be reversed: Scorpio should rule stagnant water, and Pisces flowing water.

¹¹ Adding with Beatty.

¹² Adding this sentence from Vatican.

Bonatti (IV.10) does just such a thing, even going so far as saying how much territory is covered by each bound.

Triplicities. Both Ptolemy and ibn Labban employ a method of assigning the triplicities to regions of the known world, which Ptolemy then uses as a template to describe the characteristics of the people falling under them. Ptolemy's scheme is rather complicated and requires some explanation, while ibn Labban changes the attributions without explanation. Of course, such schemes could not account for most of the southern hemisphere, extreme east Asia, and the Americas.

Others. Finally, there are several other methods mentioned in our texts. The first is a way of counting the number of cities in each clime based on the number of minutes in the zodiacal circle: this is described briefly by al-Rijāl who quotes Hermes (Section IV.4, in his Ch. VIII.34), and by Māshā'allāh (IV.9). After that are a few schemes in al-Bīrūnī (IV.6) which I do not discuss, but the reader is invited to investigate them: various divisions into three parts justified by legends (attributed to a King Farīdūn or Afrīdūn, Noah, and the Greeks), the seven *kishmarāt* of the Persians (attributed to Hermes), and a nine-fold division attributed to the Indians.⁴

*The seven climes*⁵

A "clime" is a line of geographical latitude, but defined in terms of how many hours of daylight there are on the longest day of the year. Since daylight is a function of one's latitude, all positions in the same hemisphere with the same amount of daylight will share the same clime and latitude. The clime can be expressed as a ratio between the longest and shortest hours, as follows: suppose that a city has 14 hours of daylight on the summer solstice (the longest day). Since there are only 24 hours in a day, this means that there are 10 hours of night. And contrariwise, on the winters solstice (the shortest day), there will be 10 hours of daylight and 14 of night. So, the latitude of the city can be expressed as the ratio of longest to shortest, or 14:10 (by reduction, 7:5). Any place with this ratio will be on the same clime, provided it is in the same hemisphere: ancient astrologers knew only of the northern hemisphere, so they did not formally define the climes for the southern one, and certainly did not list any cities for it in their tables.

⁴ For details, see al-Bīrūnī 1934, §240, and Kennedy (1973), pp. 73-74.

⁵ In this section I am indebted to Neugebauer 1987, pp. 4-6.

Ancient astronomers were originally interested in casting charts using the climes of the most important cities of that time, namely Babylon and Alexandria, whose ratios of longest to shortest were taken to be 3:2 and 7:5, respectively. Of course, not all cities fall on one of these lines, nor even did Babylon and Alexandria, because the ratios of 3:2 and 7:5 are a little idealized. The longest daylight hours for Alexandria are really 14.179 hours, which means the shortest days are 9.821 hours, yielding a ratio that is not exactly 7:5 without some rounding up and down of the hours to 14 and 10. Nevertheless, calculating climes for regular intervals did allow for the creation of more accurate maps as well as the use of ascensional times tables for certain predictive methods in astrology (such as distributions through the bounds), not to mention other astronomical and astrological purposes.

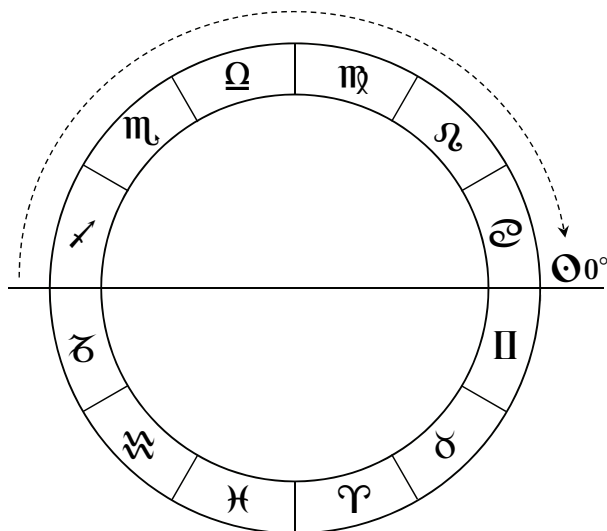
The idea of climes and hours of longest daylight is closely related to the use of ascensional times for the signs of the zodiac, simply because the hours of daylight and the ascensional times are a function of one's latitude on the earth. As many readers know, the ascensional time of a sign is the amount of "time" (measured in degrees of right ascension) that it takes for a sign to ascend fully across the horizon in the east—which varies based on one's location.⁶ Now, in the northern hemisphere the longest day is the summer solstice, when the Sun is at 0° Cancer.⁷ If we measured the time between sunrise and sunset on that day (thus measuring the hours of longest daylight), then all of the signs between Cancer and Sagittarius—the so-called "straight" signs or signs of "long" ascension—would have completely arisen by the time the Sun set (see figure below).

Now, since there are 360° of right ascension, but 24 hours in a day, the relation between ascensions and hours of the day is $15: 360^\circ/15 = 24$.

$$\text{Ascensions} / 15 = \text{hours of daylight}$$

⁶ My own website (www.bendykes.com/reviews/study.php) has a table of ascensional times for many latitudes, and the software for Delphic Oracle automatically calculates them for every chart.

⁷ In the southern hemisphere, it is when the Sun is at 0° Capricorn.



**Figure 62: Signs arising on day of longest daylight
(northern hemisphere)**

Therefore, hours of longest daylight are nothing more than the number of ascensions of the longest or straightest signs at one's latitude, divided by 15. For example, the sum of ascensional times for Cancer through Sagittarius (from 0° Cancer to 0° Capricorn) at my location (Minneapolis, Minnesota, USA, 45° N) is 231.44 according to Delphic Oracle:

$$231.44 \text{ asc. times} / 15 = 15.429 \text{ hours of longest daylight, or } 15\text{h } 25\text{m}$$

Now, this number is mathematically correct, but slightly off in terms of actual daylight. If we use a program or newspaper to discover how long the period from sunrise to sunset was, we find it was about 15.36 hours, roughly 10 minutes longer than our calculation. Why was the actual period of daylight longer? Well, the reason is that the Sun is also moving forward through the zodiac, so that by the time we reach sunset, he will already have moved about 30' forward in the zodiac, taking longer to set than the actual degree of 0° Cancer. At any rate, the principle is this: the time of longest daylight, and the sum of the ascensional times of the longest signs, are directly correlated to the latitude of a place.

The Babylonians had two ways of calculating ascensional times, called System A and System B. These systems give the ascensional times for all of

the signs at the latitude or clime of Babylon. Following are both systems,⁸ along with the modern trigonometric values (for the latitude 32° 32' N):⁹

	System A	System B	Modern
Υ/Ϡ	20°	21°	20.47°
♌/♍	24°	24°	23.81°
♊/♋	28°	27°	29.66°
♏/♐	32°	33°	34.70°
♍/♎	36°	36°	36.01°
♊/♋	40°	39°	35.35°

Figure 63: Ascensional times for Babylon

Based on the descriptions above, we can figure out the longest hours of daylight for Babylon. Add together the ascensional times for the six signs Cancer through Sagittarius, and divide by 15:

System A and B: $216 / 15 = 14.40$ hours

Modern: $212.12 / 15 = 14.14$ hours

The modern calculations give Babylon slightly longer daylight hours, which means that it puts Babylon in a slightly higher latitude than Systems A and B do. Later astrologers decided to do the same thing for Alexandria:

	System A	System B	Modern
Υ/Ϡ	21° 40'	22° 30'	20.85
♌/♍	25°	25°	24.13
♊/♋	28° 20'	27° 30'	29.80
♏/♐	31° 40'	32° 30'	34.56
♍/♎	35°	35°	35.69
♊/♋	38° 20'	37° 30'	34.97

Figure 64: Ascensional times for Alexandria

⁸ See Neugebauer and Van Hoesen 1987, pp. 3-4.

⁹ Calculated using Delphic Oracle.

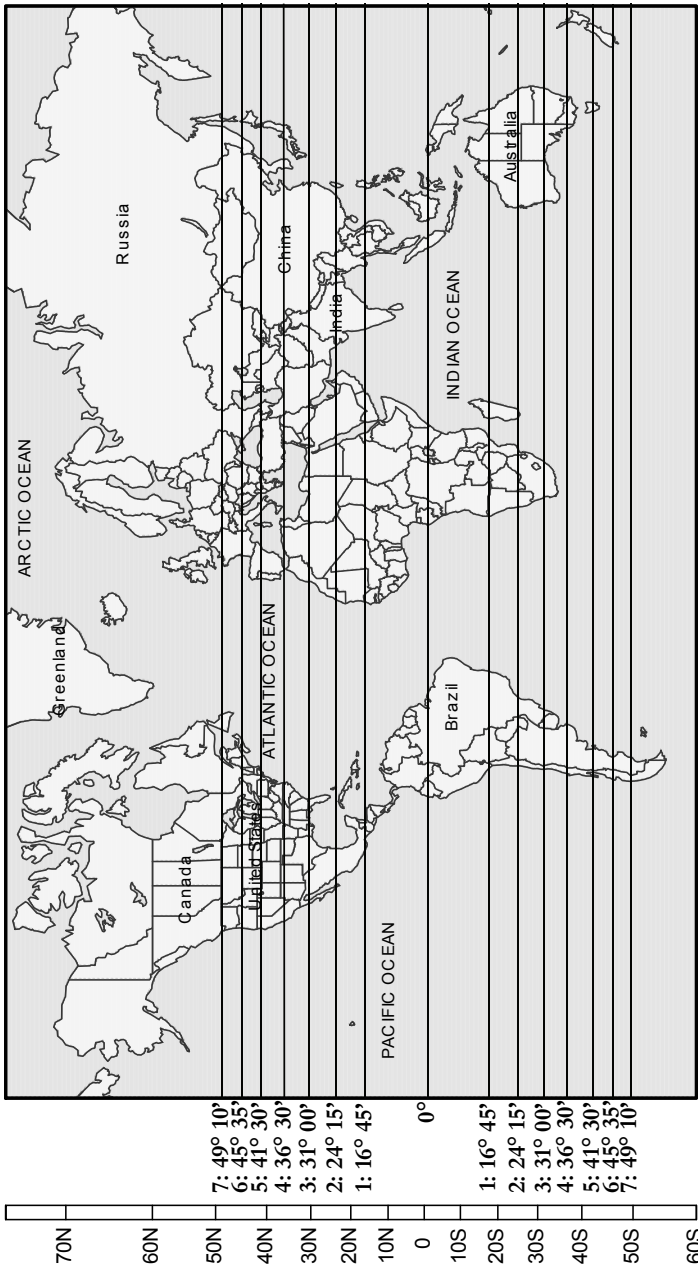


Figure 67: Ptolemaic climes by modern calculation (North/South)

SECTION IV.2: PTOLEMY'S TRIPLICITIES

According to Berggren and Jones,¹ Ptolemy's conception of the world and its size changed a bit between the *Almagest*, the *Tetrabiblos*, and the *Geography* (in that order). First of all, Ptolemy's world was much more limited than ours, and in his geographical discussions² he took the Canary Islands (about 28° N, 15° W) as being the western edge of the known world, and somewhere around the Ganges river and associated parts of China (perhaps near the end of the Silk Road) as the eastern edge. For the north, he identified 63° N and the seas containing the isle of Britain. The southern border was between 16°-17° S, at a latitude with about 13 hours of longest daylight, which he refers to generally as a land surrounding "Ethiopia," south of "Libya."

As for the size of this territory, Ptolemy had originally thought it fit into a 90° section of the northern hemisphere (as measured eastward from the Canary Islands), but by the time of the *Geography* he believed it encompassed 180° (although by then he thought the earth was somewhat larger than it is). To his credit, he was aware of the limits of contemporary geographical knowledge, and supposed that there were other land masses beyond these borders, including an uncertain land which formed the southern edge of what we now know as the Indian Ocean.³

The map in the figure below approximates his world—I say "approximates," because Ptolemy's proportions for land masses were not always correct—not to mention that he barely knew of India's geography, nor much of sub-Saharan Africa. And so, his *Geography* encompasses this territory by its *coordinates*, but not in all of its *details*.

¹ Berggren and Jones 2000, p. 21; I have relied broadly on their Introduction as well as their new translation of the theoretical chapters of Ptolemy's *Geography*.

² See Ptolemy's Book 7 of the *Geography*, in Berggren and Jones, pp. 108ff.

³ Berggren and Jones, p. 108.

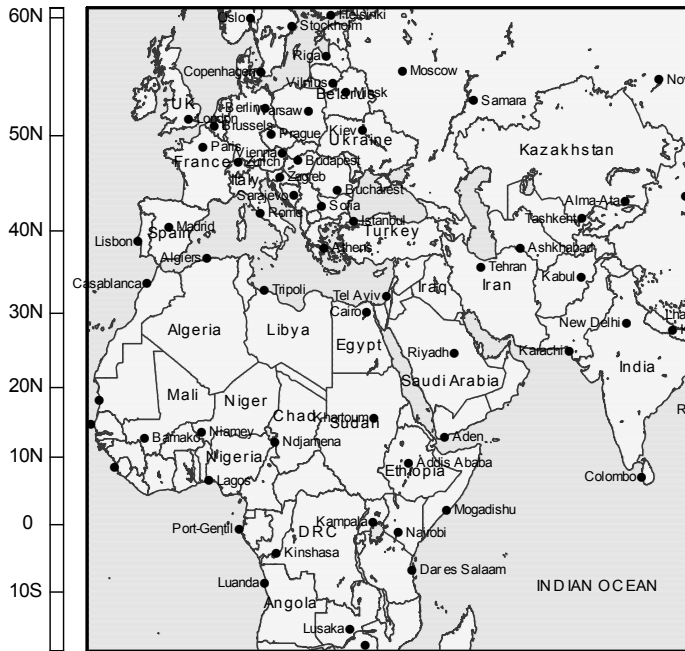


Figure 68: Geographical limits of Ptolemy's world

Later Persian and Arabic authors adopted his scheme of climes, as I mentioned in my Introduction above. But they also drew on another chorographical scheme described in the *Tetrabiblos*, which he devised⁴ for astrological prediction: the assignment of the triplicities to territories on the earth.

In *Tet.* II.3, Ptolemy identifies two axes which divide the known world into four parts, and essentially define the center of the world. The horizontal axis goes from the Straits of Gibraltar through the Gulf of Issus, to the Taurus Mountains. The vertical axis goes from the Persian/Arabian gulf to the Black Sea and the Sea of Azov. Oddly, he also identifies the Aegean Sea as being on this line, but even in the old maps in Berggren and Jones, that is too far to the west even by Ptolemy's standards. At any rate, the map below illustrates the four regions, each of which Ptolemy assigned to certain triplicities and planets. He also used this scheme to help explain broad cultural differences between peoples of different regions.

⁴ As with much of Ptolemy's astrology, it is hard to say how much he borrows straight from his predecessors, or streamlines or even invents himself.

In order to understand Ptolemy’s triplicity scheme for geography, we must understand something about his concept of triplicities in general as well as his notion of winds, because both are necessary for dividing the earth as he does.

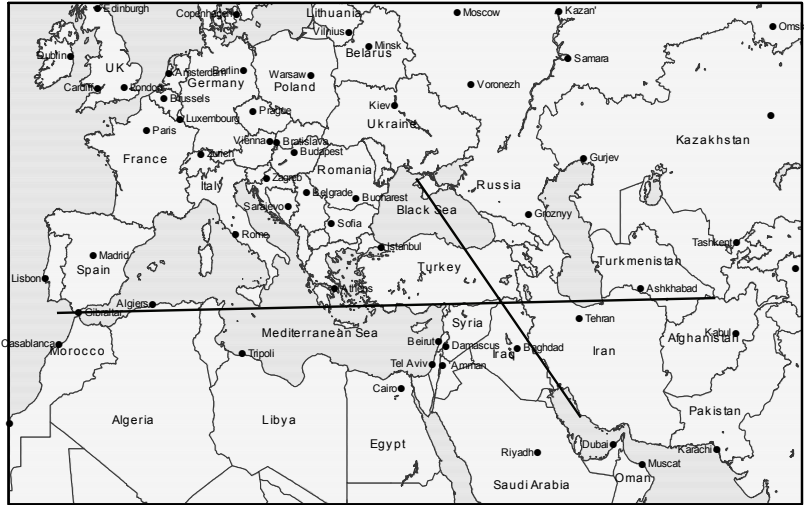


Figure 69: Approximate center of Ptolemy’s earth (*Tet.* II.3)

Triplicities in general. A “triplicity” (Lat. *triplicitas*) is a group of three or something “threefold”: in this case, a group of three signs. The Greek is a bit more straightforward, as a triplicity is simply a “triangle” (Gr. *trigon*), and one may easily see that the signs can be grouped into threes by overlaying triangles onto the zodiac.

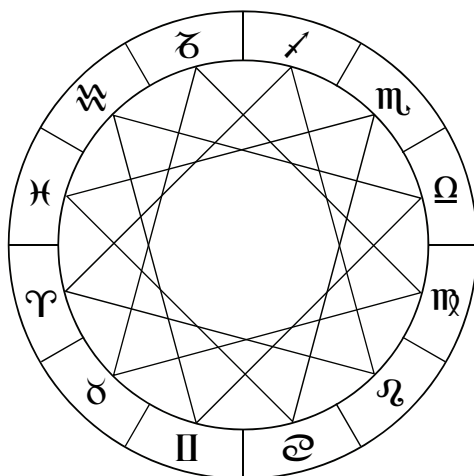


Figure 70: Zodiacal triplicities or triangles

Most traditional astrologers in the Greek, Persian, and Arabic-speaking worlds used what are sometimes called the “Dorothean” triplicity lords, so-called because they were described by Dorotheus in his astrological poem; but Vettius Valens had described them as well. In this system, the signs joined by the points of each triangle are jointly ruled by a set of three planets: one in day charts, another in night charts, with a third, partnering planet assisting the others. However, these planets are *not* the same as the lords of these signs. For example, in the triplicity of Aries-Leo-Sagittarius, the three triplicity lords are the Sun (diurnal), Jupiter (nocturnal), Saturn (partner): but Saturn does not actually rule, nor is he even exalted in, any of these three signs.⁵ These triplicity lords were used for a number of purposes, both interpretive (such as in judging eminence and life success) and predictive (assigning the lords to different periods of life).

Throughout the *Tetrabiblos*, Ptolemy tries to preserve many essential points of standard astrological doctrine, especially if he can explain them naturalistically by reducing them to processes such as heating and cooling: for example, that Mars causes heating and drying. On the other hand, sometimes he virtually rejects entire areas of astrological knowledge, such as the use of Lots (apart from his own version of the Lot of Fortune). When it comes to his

⁵ Occasionally there has been speculation as to why these lords were assigned in the way they were, and in that order. I have some proposals to make which I will reserve for another time.

treatment of the triplicities (I.18), something very odd is happening, and his arguments often receive a strained reception. When all is said and done, Ptolemy has rejected the category of partnering planets, and only changes the lords of Cancer-Scorpio-Pisces. In the Dorothean system, the two main planets are Venus (diurnal) and Mars (nocturnal), but for Ptolemy they are Mars (diurnal *and* nocturnal), with the assistance of Venus (by day) and the Moon (by night).

	By Day/ Diurnal	By Night/ Nocturnal	Partnering
♈ ♉ ♊	☉	♂	♀
♈ ♉ ♊	♀	♂	♂
♈ ♉ ♊	♀	♂	♂
♈ ♉ ♊	♀	♂	♂

Figure 71: Dorothean triplicity lords

	By Day/ Diurnal	By Night/ Nocturnal
♈ ♉ ♊	☉	♂
♈ ♉ ♊	♀	♂
♈ ♉ ♊	♂ (♀)	♂ (♂)
♈ ♉ ♊	♀	♂

Figure 72: Ptolemy’s version of standard triplicity lords

At first glance, this does not seem to be so great a change: after all, the partnering planets were always tertiary in importance, and Mars was always one of the two main triplicity lords of Cancer-Scorpio-Pisces anyway (and is still being assisted by Venus and the Moon). But when it comes to Ptolemy’s actual arguments and explanations, *Tet.* I.18 makes little sense. First of all, Ptolemy seems to want to derive the triplicity lords from the lords of those signs, which does not always work (the Moon does not rule any earthy sign). The rules seem to change from triplicity to triplicity, with criteria for identifying one set of lords being dropped in favor of others in the next one. The discussion is permeated by talk about winds. Finally, while trying to derive roughly the same lords as the Dorothean model, Ptolemy suddenly introduces what will turn out to be alternative lords—for instance, wanting Jupiter