

Abraham Ibn Ezra
The Book of the World

Études sur le Judaïsme Médiéval

Fondées par
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TOME XXXIX

Abraham Ibn Ezra
The Book of the World

A Parallel Hebrew-English Critical Edition
of the Two Versions of the Text

Abraham Ibn Ezra's Astrological Writings, Volume 2

Edited, translated, and annotated by

Shlomo Sela



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*To the memory of my father,
David Slucki*

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PREFACE

The present volume represents the first critical edition of the Hebrew text of the two versions of Abraham Ibn Ezra's *Sefer ha-'Olam* (Book of the World), accompanied by an English translation and commentary. *Sefer ha-'Olam* was the first theoretical work in Hebrew to discuss the theories and techniques of historical and meteorological astrology, as they had accumulated from Antiquity to Ibn Ezra's own time, and drew on Greek, Hindu, Persian, and Arabic sources.

This volume also incorporates the first critical edition, again accompanied by an English translation and commentary, of the Hebrew translation, ascribed to Ibn Ezra, of Māshā'allāh's *Book on Eclipses*, a work on mundane astrology. Other appendices contain three brief texts in which Ibn Ezra either conveyed his own opinion about world astrology or presented astrological techniques that are not discussed in the two versions of *Sefer ha-'Olam*.

The title page and cover refer to the present work as volume 2 of *Abraham Ibn Ezra's Astrological Writings*. This series is intended to comprise critical editions of all of Abraham Ibn Ezra's astrological works, with English translation and commentary. The first volume in this series, published in 2007, contained the two versions of *Sefer ha-Ṭe'amim* (Book of Reasons); unfortunately, owing to a technical problem, this first volume of *Abraham Ibn Ezra's Astrological Writings* was not described as such there.

Lenn Schramm revised the translations and the English sections of this book and contributed valuable suggestions about the interpretation of the Hebrew texts. Prof. Charles Burnett carefully read the translations and offered helpful comments on matters astrological, astronomical, and linguistic. Prof. Gad Freudenthal provided advice about the organization of the volume as a whole, along with useful assistance, suggestions, and criticism in related fields. I am grateful to the Israel Science Foundation (Grant No. 113/08) and the Ministerio de Ciencia e Innovación de España (proyecto de investigación HUM2005-01252/FILO), which provided generous grants that made this work possible.

Sh.S.

July 2009, Kfar Saba

ABBREVIATIONS

BNF	Bibliothèque Nationale de France
JNUL	Jewish National and University Library
IMHM	Institute for Microfilmed Hebrew Manuscripts, Jewish National and University Library, Jerusalem
Long comm. Ex. 33:21, § 1:2	Abraham Ibn Ezra, long commentary on Ex. 33:21, section 1, sentence 2, in Part Five, Related Texts: <i>A Fragment of the Long Commentary on Ex. 33:21</i> , below, on pp. 271–279
Māshā'allāh, <i>Book on Eclipses</i> , § 1:2	Māshā'allāh, <i>The Book on Eclipses</i> , section 1, sentence 2, in Part Five, Related Texts: <i>The Book of Māshā'allāh on the Eclipses of the Moon and the Sun, the Conjunctions of the Planets, and the Revolutions of the Years</i> , below, on pp. 235–259
<i>Mivḥarim</i> I	First version of <i>Sefer ha-Mivḥarim</i>
<i>Mivḥarim</i> II	Second version of <i>Sefer ha-Mivḥarim</i>
<i>Mivḥarim</i> III	Third version of <i>Sefer ha-Mivḥarim</i>
<i>Moladot</i> , Introduction, § 1:2	Abraham Ibn Ezra, <i>Sefer haMoladot</i> , Introduction, section 1, sentence 2, in Part Five, Related Texts: <i>The Introduction to Sefer haMoladot</i> , below, on pp. 281–291
<i>Neḥoshet</i> I	First version of <i>Keli ha-Neḥoshet</i>
<i>Neḥoshet</i> II	Second version of <i>Keli ha-Neḥoshet</i>
<i>Neḥoshet</i> III	Third version of <i>Keli ha-Neḥoshet</i>
'Olam I	First version of <i>Sefer ha'Olam</i>
'Olam II	Second version of <i>Sefer ha'Olam</i>
<i>Reshit Ḥokhmah</i> , ch. X, § 1:2	Abraham Ibn Ezra, <i>Reshit Ḥokhmah</i> , chapter X, section 1, sentence 2, in Part Five, Related Texts: <i>The Tenth Chapter of Reshit Ḥokhmah</i> , below, on pp. 261–269
<i>Reshit Ḥokhmah</i> , 1939, V, li:9	Abraham Ibn Ezra, <i>Reshit Ḥokhmah</i> in <i>The Beginning of Wisdom, An Astrological Treatise by Abraham Ibn Ezra</i> , edited by Raphael Levy and Francisco Cantera, Baltimore, 1939, fifth chapter, page li, line 9.
<i>Reshit Ḥokhmah</i> I	First version of <i>Reshit Ḥokhmah</i> .

<i>Reshit Hokhmah</i> II	Second version of <i>Reshit Hokhmah</i> .
<i>She'elot</i> I	First version of <i>Sefer ha-She'elot</i>
<i>She'elot</i> II	Second version of <i>Sefer ha-She'elot</i>
<i>She'elot</i> III	Third version of <i>Sefer ha-She'elot</i>
<i>Te'amim</i> I, § 2.6:2, pp. 36–37	First version of <i>Sefer ha-Te'amim</i> , ed. Sela, chapter 2, section 6, sentence 2 on pp. 36–37
<i>Te'amim</i> II, § 5.1:11, pp. 218–219	Second version of <i>Sefer ha-Te'amim</i> , ed. Sela, chapter 5, section 1, sentence 11 on pp. 218–219
<i>Te'amim</i> I	First version of <i>Sefer ha-Te'amim</i>
<i>Te'amim</i> II	Second version of <i>Sefer ha-Te'amim</i>

INTRODUCTION

Abraham Ibn Ezra (ca. 1089–ca. 1161) was born in Muslim Spain. He left there when he was about fifty years old, led the life of an intellectual vagabond in Italy, France and England,¹ and finally vanished from the scene in London after having made a very significant contribution in the field of astrology to both Christian and Jewish readers. For medieval Latin culture, *Abraham Avenezra* was considered to be mainly an intermediary and transmitter of Arabic science and astrology in twelfth-century Europe.² From a Jewish perspective, Abraham Ibn Ezra's contribution was quite different: by incorporating astrological ideas into his influential biblical exegesis he promoted the smooth absorption of astrological content into the hard core of Jewish culture;³ on the other hand, he created the first comprehensive corpus of Hebrew astrological textbooks that address the main systems of Arabic astrology and provided Hebrew readers with access to astrology. The list of his Hebrew astrological writings has been recently enlarged by new discoveries; today we know of sixteen works.⁴ They include the two versions of *Sefer ha-'Olam* (Book of the World), which deals with “world astrology,” the branch of Arabic

¹ For his biography during his wanderings through Italy, France and England, see Fleischer, 1930/2, pp. 69–106; Fleischer, 1931, pp. 69–76, 107–111, 129–133, 160–168, 189–203; Fleischer, 1932/3, pp. 97–100, 129–131, 148–150, 169–171 (1932), 134–136, 152–155 (1933); Fleischer, 1934, pp. 107–124; Friedlander, 1894/5, pp. 47–60; Golb, 1976, pp. 45–66.

² Thorndike, 1944; Smithuis, 2004, chapter 4; Smithuis, 2006, pp. 244–269.

³ Langermann, 1993; Sela, 1999; Sela, 2003, pp. 9–12, 288–323. See below, pp. 31–34.

⁴ Ibn Ezra's extant Hebrew astrological corpus comprises the following: (a) introductions to astrology: the extant version of *Reshit Hokhmah* (Beginning of Wisdom), the recently discovered fragment of the second version of *Reshit Hokhmah*, the two versions of *Sefer ha-Te'amim* (Book of Reasons), and *Mishpetei ha-Mazzalot* (Judgments of the Zodiacal Signs); (b) world astrology: the two versions of *Sefer ha-'Olam* (Book of the World); (c) nativities: *Sefer ha-Moladot* (Book of Nativities) and the recently discovered *Sefer ha-Tequfah* (Book of the Revolution); (d) elections and interrogations: three versions of *Sefer ha-She'elot* (Book of Interrogations) and three versions of *Sefer ha-Mivharim* (Book of Elections), including the recently discovered fragments of the third versions of *Sefer ha-She'elot* and *Sefer ha-Mivharim*; (e) medical astrology: *Sefer ha-Me'erot* (Book of the Luminaries). For the new discoveries see: Sela, “*Sefer ha-*

astrology concerned with the reconstruction, interpretation, and prognostication of political, historical, and religious events, on the one hand, and with weather forecasting, on the other.

The present volume is part of the larger enterprise of producing a critical edition, with English translation and commentary, of all of Abraham Ibn Ezra's astrological writings, a project begun with the two versions of *Sefer ha-Te'amim* (Book of Reasons).⁵ Here I offer the first critical edition of the Hebrew text of the two versions of Ibn Ezra's *Sefer ha-'Olam*, accompanied by an English translation and a commentary. These twin treatises represent the first Hebrew theoretical work, unique in medieval Jewish science, to discuss the theories and techniques of historical and meteorological astrology that had accumulated from Antiquity to Ibn Ezra's time, on the basis of Greek, Hindu, Persian, and Arabic sources.⁶ In addition, because the two versions of *Sefer ha-'Olam* are not the only place where Ibn Ezra addressed "world astrology," this volume includes a study of four brief texts that are directly concerned with that topic. I decided to incorporate the four here because in them Ibn Ezra either conveyed his own opinion about world astrology or presented astrological techniques that are not discussed in the two versions of *Sefer ha-'Olam*.⁷

The phenomenon of two different versions of *Sefer ha-'Olam* is typical of Ibn Ezra's literary career in general: there are at least two versions of most of his biblical commentaries, scientific treatises, and astrological writings—an artifact of his nomadic existence and a manifestation of the fact that Ibn Ezra supported himself by his pen. He would write a new version of an old work for a new patron when he arrived in a new town, continuing to stimulate the attention and curiosity of readers along his itinerary through Latin Europe.

Tequfah"; Sela and Smithuis, "Two Hebrew Fragments"; Sela, "Unknown Redaction of *Re'shit Hokmah*." For a chronological listing of the other treatises, see Sela and Freudenthal, 2006, pp. 13–55.

⁵ *Te'amim*, 2007.

⁶ The fifth chapter of Abraham Bar Ḥiyya's *Megillat ha-Megalleh* (Scroll of the Revealer), which slightly predates Ibn Ezra's *Sefer ha-'Olam*, is definitely concerned with world astrology. As we shall see, however, Bar Ḥiyya's work is not a theoretical compendium but a Jewish and universal astrological history. The only theoretical discussion in Bar Ḥiyya's work is related to the various cycles of the Saturn-Jupiter conjunctions. See Sela, 2006, pp. 131–137.

⁷ These texts are: (a) the tenth chapter of *Reshit Hokmah*; (b) the astrological section of the exegetical excursus in the long commentary on Ex. 33:21; (c) the introduction to *Sefer ha-Moladot*; (d) the Hebrew translation of Māshā'allāh's *Book on Eclipses*. The first three texts will be discussed below (pp. 28–40). For the Hebrew of these four texts, accompanied by an English translation and commentary, see Part Five.

The two versions of *Sefer ha-'Olam* circulated widely during the Middle Ages and modern times. Their prospective or actual existence was first made known by Ibn Ezra himself, who announced his intention to write a book on topics related to historical and meteorological astrological, or referred to it as already written, in various places in his astrological corpus. As a rule he used the name *Sefer ha-'Olam* to designate both the first version of *Sefer ha-'Olam* (henceforth 'Olam I) or the second version of *Sefer ha-'Olam* (henceforth 'Olam II);⁸ in other cases, however, he referred to 'Olam I as *Sefer Mishpeṭei ha-'Olam* (Book of the Judgments of the World) or *Sefer ha-Maḥbarot* (Book of Conjunctions).⁹ That the title of this work never crystallized in Ibn Ezra's mind is borne out by the fact that in three anticipatory references to 'Olam I in the first version of *Sefer ha-Ṭe'amim* he designates it by two different names: *Sefer ha-'Olam* and *Sefer ha-Maḥbarot*;¹⁰ and in the first canticle of 'Olam I he called it as *Sefer ha-'Olam we-maḥberot ha-meṣaretim kullam* (Book of the World and of the Conjunctions of all the Planets).¹¹

The most important factor in the spread of 'Olam I and 'Olam II during the Middle Ages and modern era was the repeated copying of manuscripts of these twin works: the earliest surviving copy dates from the fourteenth century, the latest from the nineteenth century. Today we know of at least 34 copies of 'Olam I and of at least 26 copies of 'Olam II.¹² 'Olam I and 'Olam II were also transmitted in the Middle Ages through incorporation by scribes (named and unnamed) into manuscript anthologies of Hebrew texts on astrology and astronomy.¹³ Another channel of transmission was provided by the supercommentaries on

⁸ References to the Hebrew text or corresponding translation of these two works are in the following format: (a) 'Olam I, § 2:1 = first version of *Sefer ha-'Olam*, section 2, sentence 1; (b) 'Olam II, § 2:1 = second version of *Sefer ha-'Olam*, section 2, sentence 1. For the Hebrew texts and their corresponding translations, see Part One and Part Three.

⁹ See Appendix B, notably examples 2 and 5.

¹⁰ See Appendix B, examples 3, 4 and 5.

¹¹ See, below, 'Olam I, initial canticle, on pp. 52–53.

¹² See Appendix A.

¹³ One example is the anonymous anthology composed no later than 1257 and found in MS Paris, Bibliothèque Nationale de France, héb. 1058, ff. 50–194. Its contents are described in detail below (pp. 45–46). It includes an excerpt from 'Olam I (ff. 62a–62b) and a complete copy of 'Olam II (ff. 87b–93a). The anthologist contributed his own commentary on the 120 conjunctions of the seven planets (ff. 85b–86b), a topic developed by Ibn Ezra in 'Olam I and 'Olam II. A second example is the so-called *Sefer ha-Kolel* (The Comprehensive Book), attributed to Levi ben Abraham ben Ḥayyim (1235–1305), which incorporates a complete copy of 'Olam I. See, inter alia, MS New York, Jewish Theological Seminary 2601 (IMHM: F 28854), ff. 115a–119a.

Ibn Ezra's biblical commentaries, such as *Šafanat Pa'neah*—a supercommentary on Ibn Ezra's commentary on the Pentateuch, written by Joseph ben Eliezer Bonfils (or Tov Elem) at the end of the fourteenth century—in which 'Olam I is either paraphrased or quoted under three different names and 'Olam II is also alluded to.¹⁴

Several factors suggest that the two versions of *Sefer ha-'Olam* circulated in the Middle Ages and modern era as two distinct treatises rather than as variants of a single text. For one thing, in at least nine manuscript collections of Ibn Ezra's astrological treatises 'Olam I and 'Olam II were copied one after the other—discontinuously in four manuscripts¹⁵ and consecutively in the other five¹⁶—as if they were two dissimilar treatises that should be read separately. In one notable case 'Olam I and 'Olam II were not only copied discontinuously but at different times: 'Olam I in the fourteenth century and 'Olam II in the seventeenth century.¹⁷ In addition, although 'Olam I and 'Olam II share the same central topics, as may be expected of two texts written by the same author on the same astrological genre, they differ sharply in their organization: common topics are addressed in a different order and fashion and sometimes at very different length: a long digression in one version in contrast to a single sentence in the other;¹⁸ some topics covered in 'Olam I are altogether absent from 'Olam II, and vice versa.¹⁹

We turn now to the impact of *Sefer ha-'Olam* on medieval Latin culture. Henry Bate of Malines (1246–ca. 1310), a student in theology and the arts at the University of Paris, incumbent of several ecclesiastical

¹⁴ In *Šafanat Pa'neah*, Joseph Bonfils refers three times to the astronomical digression in 'Olam I, §§ 11–18, with regard to calendar issues. He mentions ספר המהברות במשפטי העולם (Book on the Conjunctions about the Judgments of the World) and paraphrases 'Olam I, § 18:2 (*Šafanat Pa'neah*, 1911, I, p. 75); he refers to ספר משפטי העולם (Book on Judgments of the World) and quotes 'Olam I, § 18:1–2 literally (*ibid.*, II, p. 27); and he refers to ספר העולם בנסחה השנית (Second version of the Book of the World), thereby implicitly alluding to the other version as well, and paraphrases 'Olam I, § 17:1–12 (*ibid.*, II, p. 36).

¹⁵ See Appendix A, Manuscripts of 'Olam I, n. 11, 18, 1, 4; Manuscripts of 'Olam II, n. 5, 9, 13, 26.

¹⁶ See Appendix A, Manuscripts of 'Olam I, n. 9, 14, 20, 31, 29; Manuscripts of 'Olam II, n. 4, 8, 11, 22, 20.

¹⁷ See Appendix A, Manuscripts of 'Olam I, n. 1; Manuscripts of 'Olam II, n. 13.

¹⁸ This is noticeable in the treatment of the topic of the 120 conjunctions of the seven planets. See 'Olam I, § 2:1–4; § 3:1–3; § 4:1–4; § 5:1–20; § 6:1–7 in contrast to 'Olam II, § 2:1.

¹⁹ This can be seen from Appendices C and D, which display the tables of contents of 'Olam I and 'Olam II and the correspondences between them.

offices, proficient in astronomy and astrology and an author on these topics, organized a translation project that included Ibn Ezra's astrological writings. Bate commissioned a Jewish scholar known as Hagin le Juif to translate them from Hebrew into French, after which he translated them from French into Latin. According to the colophons, in 1281 (or 1292) Bate produced, in Liège and Malines, a Latin version of 'Olam I—*De mundo vel seculo*—to which he added his own prologue.²⁰ This translation was printed by Petrus Liechtenstein at Venice in 1507, under the title *Liber coniunctionum planetarum et revolutionum annorum mundi qui dicitur de mundo vel seculo*, together with the Latin translations of Ibn Ezra's astrological works that Peter d'Abano (ca. 1250–ca. 1315) executed in 1293 from pre-existing French translations and apparently without reference to the Hebrew original.²¹ *De mundo vel seculo* was probably known to Peter d'Abano and to Arnoul de Quinquempoix (d. 1321/6), a physician at the court of Philip the Fair, who also translated a number of Ibn Ezra's astrological writings, given that neither attempted to revise or duplicate it. But no intermediary French translation of 'Olam I has been found, and it has been suggested that Bate learned Hebrew himself and produced the translation of 'Olam I directly from the original.²² Not only does Bate's translation of 'Olam I belong to the earliest of the four waves of Latin translation of Ibn Ezra's astrological writings,²³ it also antedates any of the surviving Hebrew manuscripts of 'Olam I. 'Olam II remained unknown to medieval Latin culture.

In the modern era, the bibliographer Moritz Steinschneider, in his essay "Zur Geschichte der Uebersetzungen aus dem Indischen ins Arabische und ihres Einflusses auf die arabische Literatur" (1870), unambiguously identified both versions of *Sefer ha-'Olam*, using a nomenclature that is still in use.²⁴ In 1937, J.L. Fleischer, who made an important

²⁰ Smithuis, 2004, Chapter 6. For a list of manuscripts, see Thorndike, 1944, pp. 294–295.

²¹ *Abrahe Avenaris Iudei Astrologi Peritissimi in Re Iudicali Opera ab Excellentissimo Philosopho Petro de Albano post Accuratam Castigationem in Latinum Traducta* (Venice: Petrus Liechtenstein, 1507), sig. 77B2–85A1.

²² Thorndike, 1944, p. 293.

²³ The fourth translator is Ludovicus de Angulo or Loys de Langle (15th c.), who translated *Sefer ha-Moladot* from Catalan into Latin at Lyons in 1448. For their translations of Ibn Ezra's astrological writings, see Smithuis, 2006, pp. 246–254.

²⁴ Steinschneider, 1870, pp. 343–344. Steinschneider designated 'Olam I as העולם A and 'Olam II as העולם B. For this identification he employed MS Munich, Bayerische Staatsbibliothek, Cod. Hebr. 304, which incorporates a copy of both 'Olam I (ff. 1a–10a)

contribution to the elucidation of Ibn Ezra's biography and literary work, edited and published the Hebrew text of *'Olam I* on the basis of a single manuscript.²⁵ Although Fleischer neither commented on the Hebrew text nor explained astrological terms, he accompanied his edition with an introduction in which he offered enlightening information about *'Olam II*.²⁶ The Hebrew text of *'Olam II* has never been edited or translated into a European language. Renate Smithuis has recently offered new insights and a valuable contribution to the astrological content of *'Olam I* and *'Olam II*, particularly concerning the relationship between them and one of the components of *Epitome totius astrologiae*, a twelfth-century Latin astrological text attributed to John of Seville.²⁷

Early-Jewish World Astrology

Abraham Ibn Ezra was by no means the first Jew to be concerned with meteorological and historical astrology. Although he anchored his world astrology in non-Jewish sources, not only was Ibn Ezra aware of previous Jewish contributions in this field, but also took these Jewish traditions into account in important places in his own work. In this section I provide a historical sketch of earlier Jewish contributions to meteorological and historical astrology. There is no explicit mention of astrological beliefs in the Bible, let alone of historical or meteorological astrology; but some verses may be construed as vague references to the influence of the stars in the context of a repudiation of the diviner and the soothsayer,²⁸ and others as loose allusions to earthquakes, thunderstorms, and solar

and *'Olam II* (ff. 136b–145a). See Appendix A, manuscripts of *'Olam I*, item 4; manuscripts of *'Olam II*, item 26. This manuscript was also used in the present edition of *'Olam II* (MS ב). *'Olam II* was unmistakably identified by Steinschneider as העולם B by specifying that “worin das J. 1142 vorkommt.” See below, *'Olam II*, § 31:1. However, only *'Olam I* was referred to in Steinschneider, 1880, p. 497. Later in the nineteenth century, D. Rosin, too, dealt with Ibn Ezra's astrological writings but referred only to *'Olam I* (Rosin, 1898, p. 250).

²⁵ See *'Olam I*, Fleischer. His edition was based on MS Vatican, Biblioteca Apostolica Vaticana ebr. 390, ff. 146a–157b, which was also used in the present edition of *'Olam I* (MS ט). This manuscript is especially faulty in the introduction, where Ibn Ezra offers his explanation of the pattern of the 120 conjunctions of the seven planets.

²⁶ See *'Olam I*, Fleischer, introduction, p. 5, where J.L. Fleischer showed that *'Olam II* could not possibly have been written in Rome.

²⁷ Smithuis, 2004, esp. Chapter 1 (5.7); Chapter 3; Appendix E.

²⁸ Isa. 47:13–14; Jer. 10:1–3; Deut. 4:19; Dan 2:27; 5:7,11.

and lunar eclipses.²⁹ In the post-biblical and talmudic periods there is evidence of a growing Jewish interest in astrology in general and of an increasing curiosity about historical and meteorological astrology in particular.³⁰

A fundamental talmudic source that molded medieval Jewish views of historical astrology is B Shabbat 156a. In this text two Amoraim, R. Ḥanina and R. Joḥanan (ca. 180–ca. 279), discuss the astrological status of the Jews vis-à-vis the stars. The former maintains that the stars give wisdom and wealth and that even Israel stands under the sway of astrological influence; the latter retorts by invoking the famous aphorism “there is no *mazzal* for Israel.” Ibn Ezra paid attention to this text not only in a strategic passage of *Sefer ha-‘Olam* II but also in his biblical commentaries and in one of his monographs.³¹ Samuel, a third-century Babylonian Amora (one of those who agrees that “there is no *mazzal* for Israel” and who claimed to be as “familiar with the paths of heaven as with the streets of [his hometown of] Nehardea”), maintains that the world would be destroyed were a comet to pass through the constellation *Kesil* (B Berakoth 58b). He also makes statements about how the weather is affected if the vernal equinox or winter solstice takes place in the hour of Jupiter (B Erubin 56a) and about the influence of the constellations *Kesil* and *Kimah* (Amos 5:8, Job 9:9, 38:31) on the temperature (B Berakoth 58b).³²

²⁹ See Joel 3:4; Isa. 24:21,23; 50:3.

³⁰ The *Book of Jubilees* (probably written in the second century BCE) depicts Abraham as an astrologer who “sat up throughout the night on the new moon of the seventh month to observe the stars from the evening to the morning, in order to see what would be the character of the year with regard to the rains” (Jub. 12:16–17, in Charlesworth, 1987, p. 933 [trans. R.H. Charles]). The talmudic sages claimed that Abraham was conversant with astrology or was an astrologer (B Baba Bathra 16b; B Shabbat 156a). In a fragmentary Aramaic *brontologion* (a prediction of ill omens by an interpretation of the sound of thunder on specified days of the month) found at Qumran, the author, after giving an account of the days of each Jewish month in tandem with the Moon’s place in the zodiac, makes a prediction of toil for the country, destruction in the royal court, and distress caused by an invasion of foreigners (see Vermes, 1995, p. 371). A tannaitic dictum predicts misfortune for Israel or for the Gentiles, as well as war and famine, depending on whether a solar or lunar eclipse takes place (see T. Sukkah 2:6, quoted in Bar-Ilan, 2004, p. 2033).

³¹ See *‘Olam* II, §14:2–5; long comm. Ex. 33:21, §6:2 (below, pp. 278–279); long comm. Ex. 6:3, 20:2, 23:25; *Yesod Mora’*, 2007, §7:6 (pp. 142–144).

³² The *Treatise of Shem*, a Jewish pseudepigraphic text in Aramaic, composed in the last third of the third century CE, offers meteorological and historical predictions about the character of a year according to the zodiacal sign in which it begins (see Charlesworth, 1987, p. 937).

The fourth chapter of the *Baraita de-Shemuel*, a Hebrew astronomical-astrological text attributed to the aforementioned Samuel, well known in the Middle Ages in general and by Ibn Ezra in particular,³³ is devoted to a cryptic description of the influence of the planets on the weather at the beginning of the season (תְּקִיפָה).³⁴ From the tenth century, a series of commentaries on *Sefer Yeṣirah* (Book of Creation), which speculates about God's creation of the world, offered information about historical or meteorological astrology. In *Sefer Hakhmoni*, a Hebrew commentary by Shabbetai Donnolo (913–ca. 982), extensive astrological material is accompanied by references to the influence of the planets on weather.³⁵ In a section on astrology in the Hebrew commentary by Judah b. Barzillai, the leading rabbinic authority of Barcelona in the twelfth century, we also find references to the influence of the planets on weather at the beginning of the seasons; this presumably draws on the aforementioned chapter of the *Baraita de-Shemuel*.³⁶

Following the Islamic conquest of the Mediterranean basin, Jews integrated into the ruling society and adopted the Arabic language for their literary and scientific works. Prominent astrologers of Jewish extraction are well known, including Sahl Ibn Bishr, Ibn Saumūya, Abū Da'ūd, and notably Māshā'allāh a Jew from Basra, in Iraq, who made a significant contribution in meteorological and historical astrology.³⁷ Their work, however, was no different from that of Muslims or members of other religious communities, neither in contents nor in language.³⁸ An important and significantly Jewish contribution to historical astrology was made by Saadia Gaon (882 or 892–942) at the hub of the Arab world. In the introduction to his commentary on the book of Daniel, Saadia offered an extremely detailed account of the standard tripartite model of the Saturn-Jupiter conjunctions³⁹ and went to great length to explain subtleties such as the fact that because astrologers were unable to determine

³³ For Ibn Ezra's references to this text, see *Iggeret ha-Shabbat*, 1894/5, p. 66; long comm. on Ex. 12:2.

³⁴ *Baraita de-Shemu'el ha-Qatan*, 1998, chapter IV.

³⁵ *Hakhmoni*, 1994, VI, p. 84.

³⁶ For a study of this fragment, see Sela, 2008, pp. 271–288 cf. *Yeṣirah*, 1885, pp. 247–248.

³⁷ For Māshā'allāh's work on historical and meteorological astrology, see, below, p. 119.

³⁸ See Goldstein, 2001, pp. 17–57; Ben-Shammai, 2004, pp. 32–38; Sela, 2003, 4–6.

³⁹ According to Saadia, Saturn-Jupiter conjunctions that recur every 20 years allow for predictions about individual kings; those with a cycle of 238 or 258 years, about the

the ascendant at the time of the conjunction they took the ascendant of the whole year.⁴⁰ Despite the neutral tone of his account of the technicalities of the Saturn-Jupiter conjunctions, Saadia also expressed a negative opinion about the relationship between astrology and prophecy.⁴¹ Ibn Ezra voiced a similar opinion in his own commentary on Daniel, as we shall see.⁴²

In subsequent centuries, the scrutiny of horoscopes at the vernal equinoxes of years in which Saturn-Jupiter conjunctions take place remained the main macro-astrological doctrine applied by Jewish thinkers for historical astrological predictions, much as in the Islamic world.⁴³ From Ibn Ezra's long commentary on Daniel 11:31 we know that Solomon Ibn Gabirol (ca. 1021–1058) and Abraham Bar Ḥiyya (ca. 1065–ca. 1140) wanted to link the Saturn-Jupiter conjunctions to computation of the advent of the Messiah, an activity for which they were sharply criticized by Ibn Ezra.⁴⁴ In fact, the most significant Jewish contribution to historical astrology prior to Ibn Ezra, and the most important medieval Jewish work in the literary genre of astrological histories, is the fifth chapter of Abraham Bar Ḥiyya's *Megillat ha-Megalleh* (Scroll of the Revealer).⁴⁵ This chapter, an impressive astrological work in its own right, was meant to provide a Jewish and general astrological history as well as an

governance of families; and those with a cycle of 944 or 964 years, about the passage of governance from nation to another (Ben-Shammai, 2004, pp. 70–72). Cf. *'Olam II*, § 11:1–3 and notes.

⁴⁰ Ben-Shammai, 2004, p. 72. Ibn Ezra, too, emphasizes this point. See below, *'Olam I*, § 11:1–5 and notes.

⁴¹ Ben-Shammai, 2004, p. 70.

⁴² Ibn Ezra, in his own commentary on Dan. 11:31 (see below, n. 44), was probably following Saadia's negative opinion about the relationship between astrology and prophecy. Note that Ibn Ezra implicitly censures Saadia for incorporating astrological and astronomical digressions into his biblical exegesis on Genesis 1:14. See Ibn Ezra's introductions to the long commentary ("third method") and short commentary ("first method") on the Pentateuch. See also Ibn Ezra's short and long commentaries on Gen. 1:14.

⁴³ For the impact of this doctrine of Persian origin on Arabic civilization, see below, pp. 19–21.

⁴⁴ Ibn Ezra's long commentary on Dan. 11:31: הקץ לקשור ה' רצה לבשר הקץ "רבי שלמה בן גבירול ז"ל רצה לבשר הקץ" במחברת הגדולה על שני הכוכבים העליונים גם דברי רבי אברהם הנשיא בספר קצים ... הכל הבל "Rabbi Solomon Ibn Gabirol [of blessed memory] wanted to connect the reckoning of the End of Days to the great conjunction of the two upper planets, also Rabbi Abraham, the Nasi', in *Sefer ha-Qiṣsim* (Book of the End of Days) ... all this is nonsense and pursuit of the wind, because Daniel did not know the End of Days."

⁴⁵ The following analysis of this work is based on Sela, 2006, 131–136.

astrological prognostication of the coming of the Messiah.⁴⁶ This was accomplished by means of three main astrological techniques: the historical signification of the various cycles of Saturn-Jupiter conjunctions;⁴⁷ an analysis of the horoscopes cast at the vernal equinoxes, particularly for years in which Saturn-Jupiter conjunctions took place;⁴⁸ and the procedure of directions, which consists in setting an imaginary pointer in motion at a certain speed and analyzing its trajectory across the zodiac.⁴⁹ Ibn Ezra was acquainted with the fifth chapter of *Megillat ha-Megalleh*, but he never tried to emulate Bar Ḥiyya by writing an astrological history. He did refer to these three astrological techniques in three different treatises⁵⁰ and coined a different terminology for world astrology.⁵¹

Although conjunctionalism continued to appeal to medieval Jewish society until the dawn of the modern era,⁵² I will conclude this sketch with two developments that took place a few years after the end of Ibn Ezra's career. A study of a Hebrew prognostication based on the "small" conjunction of Saturn and Jupiter in 1166, taken as a sign of the strengthening of the Christian kingdoms and waning of Muslim power in the Iberian peninsula, shows that its anonymous author employed certain astrological terms characteristic of Abraham Ibn Ezra, alongside others

⁴⁶ Four main parts may be discerned: (a) a prefatory justification of the use of astrology as a tool to foretell the coming of the Messiah, in particular, and to analyze the course of history, in general (*Megilat haMegaleh*, 1924, pp. 111–119); (b) a chronicle of Jewish history from the birth of Moses and the exodus from Egypt until the construction of the Second Temple (*ibid.*, pp. 119–135); (c) a history of the world from the birth of Jesus and the founding of Christianity until the Crusader conquest of Palestine (*ibid.*, pp. 135–145); (d) a prospective history of the world until the coming of the Messiah, which, according to Bar Ḥiyya's calculations, should have been in 1448 or 1468 (*ibid.*, pp. 145–155).

⁴⁷ Besides the three ordinary cycles of roughly 20, 240 and 960 years, Bar Ḥiyya presented two quite unusual cycles of 60 and 2859 years. See *ibid.*, pp. 116–117; Sela, 2006, pp. 133–135.

⁴⁸ See *Megilat haMegaleh*, 1924, pp. 119–121 *et passim*.

⁴⁹ *Ibid.*, pp. 122–123 *et passim*.

⁵⁰ See, below, p. 29.

⁵¹ For Ibn Ezra's and Bar Ḥiyya's different terminology for conjunctionalism, see Sela, 2003, pp. 103–104; Rodríguez Arribas, 2010; for their terminology of directions, see below, pp. 20, 142.

⁵² One outstanding example is the prognostication for the year 1345 (a small conjunction of Jupiter and Saturn in the airy triplicity) carried out by Levi ben Gerson (1288–1344). See *Prognostication for 1345*, 1990, pp. 10–21. Another notable example is the prognostication for the years 1504–1531 carried out by Abraham Zacut (ca. 1450–ca. 1510) by means of an analysis of Saturn-Jupiter conjunctions (MS Jerusalem, Jewish National and University Library Heb. 8°3935, ff. 1a–4a).

typical of Bar Ḥiyya.⁵³ In his *Epistle to Yemen*, composed between 1167 and 1173,⁵⁴ Maimonides (1135–1204), a staunch opponent of astrology, provides a detailed account of the standard tripartite model of conjunctionalism.⁵⁵ He also refers to “one of our ingenious fellows in Andalusia,” who applied astrology to reckon the coming of the Messiah but whose prediction came to naught: instead of the messianic manifestation, what appeared was “the rebel from the Maghrib who decreed the forced apostasy.”⁵⁶ This “ingenious fellow in Andalusia” was probably Ibn Gabirol, who, according to Ibn Ezra, “intended to connect the reckoning of the End of Days to the great conjunction of the two upper planets.”⁵⁷ It could not have been Abraham Bar Ḥiyya, since the latter predicted that the Messiah would come in 1448 or 1468.

Main Sources, Theories and Doctrines in ‘Olam I and ‘Olam II

The content of the two versions of *Sefer ha-‘Olam*, like that of all medieval treatises on world astrology, is an accumulation of sources and doctrines that go back to the very beginnings of the astrological literature. In contrast to other medieval treatises, however, *‘Olam I* and *‘Olam II* provide rich information about previous sources and doctrines concerned with world astrology.⁵⁸ When Ibn Ezra presents some astrological doctrine or scientific theory, and notably when he explicitly addresses his sources, he adopts as a rule an eclectic approach: either he invokes the authority of a specific prominent scientist or refers collectively to a group of scientists, by their area of specialization, their geographical and national affiliation, or the age in which they flourished.⁵⁹ Here I want to survey Ibn

⁵³ Goldstein, 2004, pp. 735–753.

⁵⁴ Davidson, 2005, p. 489.

⁵⁵ *Epistle to Yemen*, 2000, p. 121. But Maimonides scorned astrology and therefore drove home the purportedly glaring contradictions in the astrologers’ predictions based on the shifting of the Saturn–Jupiter conjunction across the triplicities.

⁵⁶ *Ibid.*, 2000, p. 123.

⁵⁷ See above, n. 44.

⁵⁸ For instance, Abū Ma’shar’s *Book of Religions and Dynasties* (*Kitāb al-milal wa-d-duwal*), perhaps the most influential medieval treatise on historical astrology (as remarked by the editors of this work), does not cite any sources or authorities other than “the ancients,” “the masters of the talismans,” and an unidentifiable authority on chronology (*On Great Conjunctions*, 2000, I, “The sources and doctrines of *The Book of Religions and Dynasties*,” p. 573).

⁵⁹ See Appendix H.

Ezra's major sources and their most important doctrines as he conceived of them. We should keep in mind that in no few cases his information is rooted in legendary traditions.

The presentation of the relevant material will proceed chronologically, except for the last period, to conform to Ibn Ezra's own explicit categorizations of his sources: (a) the ancient period; (b) the Hellenistic period; (c) Indian and Persian contributions; (d) contributions by astrologers working in the Muslim world; and (e) connections with twelfth-century Latin work on world astrology. These divisions are not absolute; in *'Olam I* and *'Olam II* it is not uncommon to see some astrological theory being elaborated gradually through the ages, or some scientist of one of these historical periods cooperating with another scientist of another period.⁶⁰ Nor is this section intended to be exhaustive; for a more detailed treatment of the sources and doctrines, in close connection to the texts of *'Olam I* and *'Olam II*, readers are invited to consult the notes on the English translations.

The Ancient Period

This layer, which incorporates the ancient biblical, Egyptian, and Babylonian traditions, is embodied in Enoch, a legendary figure who derives from the god incarnate Hermes Trismegistus (who represents the Egyptian god Thoth and is also viewed as the author of philosophical, scientific, and magic works) and was taken up in the Muslim world divided into the triple Hermes. It was probably Abū Ma'shar who was responsible for the creation and dissemination of this myth.⁶¹ Ibn Ezra follows closely in Abū Ma'shar's footsteps and refers to the triple Enoch in three separate sections of *'Olam I*. The common denominator of Ibn Ezra's three Enochs—the "Ancient Enoch," "Enoch the First," and "Enoch the Egyptian"—is that they did not make astrological predictions in the usual form of protases and apodoses; instead, they issued "lists" establishing correspondences between planets or pairs consisting of a single planet and a single zodiacal sign, on the one hand, and various groups of people or geographical zones, on the other.

The "Ancient Enoch"—probably the same as the "first Hermes," who, according to Abū Ma'shar is identical with the biblical Enoch, was the

⁶⁰ E.g., *'Olam I*, § 18:2.

⁶¹ *Kitāb al-Ulūf*, 1968, pp. 14–19; *Tabaqāt al-'Umam*, 1991, pp. 19, 36; Burnett, 1976, pp. 231–234; Plessner, 1954; Plessner, 1971, pp. 45–59.

first to speak of heavenly things from the motions of the stars, studied medicine, lived in Egypt before the flood, and built the pyramids—is cited in *‘Olam I* as the author of the rule that the seven planets give indications about categories of people in accordance with their age, gender, or profession.⁶² “Enoch the First”—possibly identical with the “second Hermes,” who, according to Abū Ma‘shar, was a Babylonian skilled in medicine, philosophy, and numerology and reinvented these sciences after their obliteration by the flood in Babylon—is cited in *‘Olam I* as the author of a list in which various geographical zones are under the sway of pairs consisting of a single planet and a single zodiacal sign.⁶³ Finally, “Enoch the Egyptian”—probably the same as the third Hermes, who, according to Abū Ma‘shar, lived in the “city of Egypt” (probably Alexandria), wrote about various sciences in Egypt, taught alchemy, passed on his wisdom to Asclepius, and corresponds to the Hermes of the *Corpus Hermeticum*—is cited in *‘Olam I* as the author of another list that associates various regions of Earth with pairs consisting of a single planet and a single zodiacal sign.⁶⁴

‘Olam I also invokes “Enoch,” with no accompanying epithet; this is how Enoch is frequently referred to in Ibn Ezra’s oeuvre, usually in an approving tone. Ibn Ezra quotes from the *Book of Secrets* by Enoch and mentions the dodecatemoria, which divide each of the zodiacal signs into twelfths. This doctrine is frequently mentioned in introductions to astrology; here Ibn Ezra stresses its importance for predictions related to world astrology and points out that it may be applied in two different versions.⁶⁵ One of these two versions—that the degrees of a certain sign are successively and recurrently assigned to the 12 signs—is ascribed to Enoch by Abū Ma‘shar and, following him, by Ibn Ezra as well.⁶⁶

⁶² See *‘Olam I*, § 36:1–2 and note.

⁶³ See *‘Olam I*, § 56:1–15 and note.

⁶⁴ See *‘Olam I*, § 37:1–2 and note.

⁶⁵ See *‘Olam I*, § 32:1 and note.

⁶⁶ *Kitāb al-Madḥal*, 1996, V:18, v, pp. 204–205; *Reshit Ḥokhmah*, 1939, II, xi:2–5. In the same section of *‘Olam I* that refers to the dodecatemoria, Ibn Ezra provides an example that illustrates how the doctrine actually works. The method employed (i.e., that the sign is divided into twelfths of 2.5°), however, does not match the version of the dodecatemoria that Abū Ma‘shar and Ibn Ezra ascribe to Enoch. See *‘Olam I*, § 32:1–8 and notes.

Hellenistic Period

This period is represented by two sources. One of them is Dorotheus of Sidon, a first-century Hellenistic astrologer who wrote a didactic poem on horoscopic astrology, known in Greek as the *Pentateuch* (five books); Ibn Ezra knew him as Doronius, a misnomer caused by a faulty pointing of the Arabic. That Ibn Ezra was acquainted with the Arabic translations of Dorotheus' work, which were contaminated with Sasanian material and references to Hermes and other astrologers,⁶⁷ is suggested by the fact that in both 'Olam I and 'Olam II he is referred to as a king, just as in the translation of Dorotheus' work.⁶⁸ What is more, 'Olam I has Dorotheus quoting from the aforementioned *Book of Secrets* by Enoch,⁶⁹ while 'Olam II assigns to him a list of correspondences between single planets and single zodiacal signs, on the one hand, and various countries, on the other, just like "Enoch the First" and "Enoch the Egyptian."⁷⁰

The other and far more important source from the Hellenistic period is Claudius Ptolemy. The persona known to Ibn Ezra, however, is not the historical scientist of classical antiquity but a compound of legends and myths. In 'Olam I Claudius Ptolemy is designated *Batalmiyūs*, that is, Ptolemy in an Arabic accent; but in 'Olam II he is referred to as *king Tal-mai*, the post-biblical or talmudic Hebrew equivalent of king Ptolemy. Ibn Ezra, drawing on Abū Ma'shar, created a new and mythical King Ptolemy who initiated the translation of the Septuagint, the Greek version of the Hebrew Bible, in order to purloin the astrological secrets concealed in the *Pentateuch*.⁷¹ Claudius Ptolemy is Ibn Ezra's most important astrological and scientific source, to whom he refers in his entire work more frequently than to any other scientist or astrologer. This holds for 'Olam I and 'Olam II as well, in which Ptolemy is not only the most frequently cited source⁷² but is also credited with a number of significant cosmological patterns, methodologies, and astrological doctrines, as follows.

⁶⁷ These translations were made by 'Umar b. al-Farrukhān al-Ṭabarī and Māshā'allāh from a previous translation from Pahlavī. See Pingree, 1997, p. 46.

⁶⁸ See 'Olam I, § 32:1; 'Olam II, § 24:1; cf. *Carmen astrologicum*, 1976, p. 262.

⁶⁹ See 'Olam I, § 32:1.

⁷⁰ See 'Olam II, § 13:1.

⁷¹ See 'Olam II, § 8:1 and note; long comm. Ex. 33:21, § 1.3, and note below (p. 273).

⁷² See Appendix H.

1. Solar and Lunar Eclipses

The most prominent tool for making world predictions originating in the Hellenistic period, and the main astrological doctrine for which Ibn Ezra is indebted to Ptolemy, is the astrological theory of solar and lunar eclipses, addressed by two sizeable sections of *'Olam I* and *'Olam II*.⁷³ Ptolemy, whom Ibn Ezra repeatedly and explicitly cites as his main source, set out in the *Tetrabiblos* (II:4–8) a well-organized chapter on solar and lunar eclipses, which is structured under four main headings: (a) the places affected by the eclipse, based on an analysis of the region of the zodiac where it took place; (b) the time of the beginning, duration, and climax of the predicted event, which is based on the analysis of the horoscope cast at the moment of the eclipse; (c) the class of the predicted event, based on the form of the zodiacal sign where the eclipse takes place and where the heavenly bodies that govern the sign of the eclipse and the *cardo* following it are located; (d) the quality of the class of the event, namely, whether it is productive of good fortune or misfortune, which is based on analysis of the nature of the activity of the planets that rule the dominant places of the eclipse. Ibn Ezra follows Ptolemy's approach in broad strokes but employs only scattered elements of Ptolemy's theory and does not refer explicitly to these four headings. Moreover, Ptolemy's opinion is combined with that of other ancient and modern scientists;⁷⁴ in some cases ideas that cannot be found in the *Tetrabiblos* are ascribed to him.⁷⁵ This suggests that Ibn Ezra, although he explicitly invokes the authority of the *Tetrabiblos*,⁷⁶ drew on some secondary source that referred to that work, explicitly or implicitly. This could have been the twenty-fourth aphorism of Pseudo-Ptolemy's *Centiloquium*, well known to Ibn Ezra,⁷⁷ or sections 5 and 7 of Māshā'allāh's *Book on Eclipses*.⁷⁸

2. The 120 Conjunctions of the Seven Planets

The “120 conjunctions of the seven planets,” that is, the sum of the combinations of two, three, four, five, six, and seven planets, is the

⁷³ See *'Olam I*, § 19:1–2; § 29:1–8; § 30:1–6; § 31:1–2; *'Olam II*, § 6:1–2; § 7:1–10; § 8:1–3; § 9:1–8; § 10:1 and notes.

⁷⁴ See *'Olam I*, § 30:4; *'Olam II*, § 10:1 and notes.

⁷⁵ See *'Olam I*, § 30:5; *'Olam II*, § 8:2–3, § 9:1 and notes.

⁷⁶ *'Olam II*, § 9:2.

⁷⁷ See *'Olam I*, § 30:4 and note.

⁷⁸ Māshā'allāh, *Book on Eclipses*, § 5:1–4; § 7:1–6 (below, pp. 248–253).

first topic addressed in both versions of *Sefer ha-'Olam*, though the treatments are very different: a lengthy and detailed discussion in *'Olam I*, as opposed to a single laconic statement in *'Olam II*.⁷⁹ Ibn Ezra borrowed this numerical-cosmological pattern from the fiftieth aphorism of what he called *Sefer ha-Peri* (Book of the Fruit),⁸⁰ a short work organized in 100 statements that during the Middle Ages was considered to be a compendium of the *Tetrabiblos* and an authentic work by Ptolemy. It was called *Kitāb al-Tamara* in the Arabic world and later became known as the *Centiloquium* in Latin Europe. In the tenth century Aḥmad Ibn Yūsuf, a mathematician active in Egypt, composed a commentary on the *Centiloquium*; it has been plausibly argued nonetheless that he was the author of the *Centiloquium* as well.⁸¹ At the beginning of the thirteenth century Qalonymus ben Qalonymus translated both the compendium of the 100 statements, which he called *Sefer ha-Peri*, and Aḥmad Ibn Yūsuf's commentary into Hebrew.⁸²

Ibn Ezra, who believed that *Sefer ha-Peri* was by Ptolemy,⁸³ was the first to introduce it into medieval Jewish educated circles.⁸⁴ A reading of the fiftieth aphorism of *Sefer ha-Peri* makes clear why the 120 conjunctions of the seven planets, which have hardly any practical significance in world astrology, feature at the very top of Ibn Ezra's agenda in *'Olam I* and *'Olam II*: "Ptolemy said: do not be oblivious to the 120 conjunctions of the planets, because from them comes the knowledge of almost everything that occurs in the world of generation and corruption."⁸⁵

The lengthy explanations of the 120 conjunctions in *'Olam I*⁸⁶ constitute a significant mathematical contribution: rather than a mere quote, they constitute Ibn Ezra's original attempt to provide a mathematical demonstration of each of the partial combinations of two, three, four, five, six, and seven planets as given in the tenth century by Aḥmad Ibn Yūsuf in his commentary on the fiftieth aphorism of the *Centiloquium*.⁸⁷

⁷⁹ See *'Olam I*, § 2:1–4; § 3:1–3; § 4:1–7; § 5:1–20; § 6:1–7 cf. *'Olam II*, § 2:1.

⁸⁰ *Moladot*, BNF 1056, f. 48b; *Reshit Hokhmah*, ch. X, § 3:4 (below, pp. 268–269).

⁸¹ Lemay, 1987, pp. 58–59, n. 1, pp. 71–70.

⁸² *Sefer ha-Peri*, BNF 1055, ff. 52a–72a.

⁸³ See *Reshit Hokhmah*, ch. X, § 3:4 (below, pp. 268–269).

⁸⁴ *Moladot*, BNF 1056, f. 48b; *Reshit Hokhmah*, 1939, X, lxxvi:24.

⁸⁵ *Sefer ha-Peri*, BNF 1055, f. 60a: "אמר בטלמיוס: לא תתעלם מענין המאה ועשרים: 'דבור נ'. מחברות אשר לכוכבים הנבוכים כי מהם ידיעת רוב מה שיפול בעולם ההויה וההפסד."

⁸⁶ See *'Olam I*, § 2:1–4; § 3:1–3; § 4:1–7; § 5:1–20 and notes.

⁸⁷ Sela, 2003, pp. 313–323; Aḥmad Ibn Yūsuf's commentary on the 50th aphorism is quoted in the note on *'Olam I*, § 2:1.

3. Syzygies

In *‘Olam I* Ptolemy is also credited with an astronomical theory (elaborated, in Ibn Ezra’s account, with the collaboration of the Indian, Egyptian, and Persian scientists, as well as Dorotheus) which holds that, because it is impossible to determine the sign of the ascendant at the hour of the conjunction of Saturn and Jupiter, the astrologer should observe the moment of the luminaries’ conjunction or opposition, whichever occurs last before the Sun enters Aries. This is because its timing may be precisely determined “without approximation” and because from it the astrologer can know “all the judgments of the world.”⁸⁸ Ptolemy does indeed refer to the importance of observing the syzygies of the sun and moon at new and full moon in a number of places in the *Tetrabiblos*, notably in the first chapter of the second book, which addresses general astrology,⁸⁹ but he never refers to the conjunctions of Saturn and Jupiter as a tool for historical predictions. For the presentation and justification of this theory Ibn Ezra embarks on a long excursus⁹⁰ (his favorite explanatory tool in his biblical commentaries⁹¹ and in the two versions of *Sefer ha-Ṭe’amim*), converts himself into Ptolemy’s analyst,⁹² and briefly puts forward a number of astronomical theories and findings propounded by Ptolemy in *Almagest*.⁹³ But Ibn Ezra is also critical of Ptolemy: he states that Ptolemy’s value for the arc of the Sun’s inclination is not exact enough⁹⁴ and that Ptolemy’s astronomical tables are of no use in his own days.⁹⁵

⁸⁸ See *‘Olam I*, § 11:1–5; § 18:2 and notes.

⁸⁹ *Tetrabiblos*, 1980, II:1, pp. 119–121. See note on *‘Olam I*, § 18:2.

⁹⁰ See *‘Olam I*, § 12:1–3; § 13:1–9; § 14:1–10; § 15:1–8; § 16:1–2; § 17:1–12 and notes.

⁹¹ See below, p. 31.

⁹² See, notably, *‘Olam I*, § 13:1.

⁹³ These theories and findings include: a procedure to measure the day and the minute of the beginning of the revolution of the year in an approximate manner (*‘Olam I*, § 13:9; § 14:1–4); a statement to the effect that the arc of the Sun’s inclination is greater than 23° plus more than 45’ and less than 51’ (*‘Olam I*, § 14:6.); a statement to the effect that the Sun’s apogee is at Gemini 6° and will remain so forever (*‘Olam I*, § 17:2); a statement to the effect that the motion of the stars of the “uppermost orb” is one degree in one hundred years (*‘Olam I*, § 17:7).

⁹⁴ *‘Olam I*, § 14:7.

⁹⁵ *‘Olam I*, § 17:4.

4. The Musical Tones of the Planets

In *‘Olam I* Ibn Ezra credits Ptolemy with the following statement: “the ratio of Jupiter to Saturn is not as noble as the ratio of Jupiter to Venus.”⁹⁶ That Ibn Ezra uses the expression “noble ratio” in the same context where he quotes Ptolemy’s reference to the ratio of one planet to another suggests that this statement depends on the theory, of Pythagorean origin, that each of the seven planets (as well as the fixed stars) have numbers that correspond to the musical tones produced by the rotation of their orbs. Ibn Ezra explicitly ascribes this theory to Ptolemy in both versions of *Sefer ha-Ṭe’amim*, where he assigns a number to each of the seven planets and explains that a planet is considered to be benefic if its number has a “noble” or harmonious ratio to the number of another planet.⁹⁷ This ascription is vouched for by other sources as well. The same numbers given by Ibn Ezra are found in the *Canobic Inscription*, an early work by Ptolemy, predating the *Almagest*, which contains a list of parameters of his mathematical astronomy.⁹⁸ Ptolemy may have expounded this theory in chapter 3.14 of the *Harmonics* (entitled “By which least numbers the fixed tones (notes) of the perfect system may be compared to the primary spheres in the universe”), whose contents are by now lost. But Ibn Ezra probably derived his information on this theory from the *Epistle on Music* of the Ikhwān al-Ṣafā’, which incorporates a full account of the theory⁹⁹ and an explanation of the notion of a “noble ratio.”¹⁰⁰

Persian and Indian Contributions

Ibn Ezra is well aware of a Persian and Indian layer in world astrology. In *‘Olam I* and *‘Olam II* he explicitly mentions the scientists of Persia and the scientists of India in a variety of astrological doctrines, as well as the astronomical tables of the latter. In other cases, the Persian and Indian contribution is encapsulated in quotations from the work of astrologers

⁹⁶ *‘Olam I*, § 26:4.

⁹⁷ See *Ṭe’amim I*, § 4.1:1–4, pp. 68–71 (= first version of *Sefer ha-Ṭe’amim*, ed. Sela, § 4.1:1–4, on pp. 68–71), and notes on pp. 154–157.

⁹⁸ Swerdlow 2004, pp. 166–167.

⁹⁹ *Epistle on Music*, 1978, pp. 38, 45–46.

¹⁰⁰ *Epistle on Music*, 1978, pp. 34–35: “Some of these proportions are superior and noble, others less so. Among the noble and superior proportions we include: that which is equal (octave), that of 4:3 (fourth), that of 3:2 (fifth), that of 5:4 (natural third) and that of 9:8 (tone).”

writing in Arabic after the emergence of Islam. From other sources we know that the Persians of the Sassanian period, combining the Hellenistic ideas of anniversary horoscopes and prorogation with Indian theories of vast chronological cycles containing integer numbers of rotations of the planets, invented historical astrology, which reconstructs the history or foretells the fate of nations, religions, dynasties, prophets, and individual kings. Here we shall focus attention on two doctrines of Persian origin with a bearing on historical astrology—the conjunctions of Saturn and Jupiter and the *fardār*—and two doctrines of Indian origin with a bearing on meteorological astrology—the “opening of the door” and the 28 mansions of the Moon.

1. The Conjunctions of Saturn and Jupiter

The most prominent Persian doctrine received by the Arabic world, and later bequeathed to Hebrew and Latin culture, is the use of the cycles of the conjunctions of Saturn and Jupiter for world predictions or historical analysis. In its standard form these conjunctions are divided into three types or cycles: the “small” conjunction, with a period of 20 years between two successive conjunctions; the “middle” conjunction, with a period of 240 years between two shifts from one triplicity to another; and the “great” conjunction, with a period of 960 years between two conjunctions in the head of Aries. This theory of Persian origin gained great popularity in late eighth- and ninth-century Islam, when it was employed to interpret the history of Islam by Theophilus of Edessa (d. 785), Pseudo-Stephanus of Alexandria as preserved by Achmat the Persian, Māshā'allāh (d. ca. 815) in his *Book of Religions and Dynasties* as preserved in the *Kitāb al-Mughnī* of Ibn Hibintā (composed after 928), 'Umar b. al-Farrukhān al-Ṭabarī (fl. ca. 800) in his *Kitāb al-Qirānat wa-taḥwīl as-sinīn*, Kanakah al-Hindī (early Abbasid period) in his large and small *Kitāb al qirānāt* (Book of conjunctions), Abū Ma'shar in his *Kitāb al-mīlāl wa-d-duwal*, and others.¹⁰¹ From the tenth and particularly during the twelfth century, as we have seen, Jewish intellectuals, building on Arabic astrology, began putting conjunctionalism to good use for reinterpreting Jewish history.¹⁰²

¹⁰¹ Pingree, 1962, pp. 487–502; *On Great Conjunctions*, 2000, I, “Sources and Doctrines,” pp. 582–587; Pingree, 1997, pp. 39–75.

¹⁰² For the role of Saadia Gaon, Solomon Ibn Gabirol, Abraham Bar Ḥiyya and Maimonides, see above, pp. 8–11.

The closest Ibn Ezra comes to mentioning the Persian provenance of this theory is in *Te'amim* I, where he speaks of a series of cycles, including the three types of Saturn-Jupiter conjunctions, as the product of the “opinion of the scientists of Persia and India.”¹⁰³ In ‘*Olam* I Ibn Ezra repeatedly refers to Māshā'allāh¹⁰⁴ and once to Al-Andruzagar,¹⁰⁵ two figures whom the Arabs associated with Persian astrology, as his explicit sources for predictions in which the Saturn-Jupiter conjunction are involved. Ibn Ezra devotes two substantial sections in ‘*Olam* I and ‘*Olam* II to the exposition of the tripartite model of conjunctionalism,¹⁰⁶ but his main innovation lies in a novel Hebrew terminology.¹⁰⁷ After this parallel presentation, the treatment of the conjunctions is scattered throughout the two texts in passages where other astrological agents are dealt with as well.

As a rule, in ‘*Olam* I and ‘*Olam* II the Saturn-Jupiter conjunctions play the relatively modest role of shaping the history of cities, signifying war, high or low prices, famine, and drought or plenty.¹⁰⁸ But in ‘*Olam* I (§ 10:2) we read that the great conjunction “signifies that a prophet will come to found a nation”; and in a remarkable passage of ‘*Olam* II Ibn Ezra provides a succinct but comprehensive picture of how the conjunctions of Saturn and Jupiter brought about the emergence of the three monotheistic religions. In this account the births of Jesus Christ and Muhammad were foreshadowed by two Saturn-Jupiter conjunctions in Leo and Scorpio.¹⁰⁹ Ibn Ezra maintains that Aquarius is the Jews' zodiacal sign,

¹⁰³ This statement appears in a section of *Te'amim* I (§ 10.9:1, pp. 106–107) that comments on the tenth chapter of *Reshit Hokhmah*, where the Saturn-Jupiter conjunctions are mentioned among a number of other cycles. See *Reshit Hokhmah*, ch. X, § 2:1–9; § 3:1–3 (below, pp. 264–269). In the same place Ibn Ezra writes that “Ptolemy laughs at them,” which is his peculiar manner of indicating that these cycles, including the Saturn-Jupiter conjunctions, are not mentioned in the *Tetrabiblos*.

¹⁰⁴ ‘*Olam* I, § 25:1; § 42:1; § 43:1; § 57:1.

¹⁰⁵ ‘*Olam* I, § 58:2.

¹⁰⁶ ‘*Olam* I, § 7:1–4; § 8:1–4; § 9:1–6; § 10:1–2; ‘*Olam* II, § 5:1–9.

¹⁰⁷ Instead of *dibbuq*, used by Abraham Bar Ḥiyya to denote conjunction, Ibn Ezra employs the biblical neologism *maḥberet* (see Glossary, s.v. “conjunction”); rather than *ha-dibbuq ha-qaṭon*, *ha-gadol*, and *ha-rav* (lit. small, great, and greatest conjunctions) used by Bar Ḥiyya, Ibn Ezra employs *ha-maḥberet ha-qeṭannah*, *ha-emsā'it*, and *ha-gedolah* to denote the concepts of small, middle, and great conjunctions with periods of 20, 240 and 960 years, respectively.

¹⁰⁸ See ‘*Olam* I, § 25:1–5 (cities); § 32:1–8 (cities); § 39:1–9 (wars, cities); § 40:1–3 (famine and plenty, high/low prices); § 42:1–7 (cities, high/low prices of wheat); § 43:1–9 (price of olive oil); § 57:1–4 (drought/plenty in cities); ‘*Olam* II, § 21:1–2 (good or bad fortune in cities); § 27:1–2 (high/low prices).

¹⁰⁹ See ‘*Olam* II, § 14:1, 6 and notes.

although he implicitly refers to a Saturn-Jupiter conjunction in Aquarius.¹¹⁰ In the same passage Ibn Ezra addresses the Jews' dual astrological status vis-à-vis the stars—sometimes immune to astrological influence and sometimes subject to it—a topic on which he expands in his biblical commentaries.¹¹¹

A comprehensive picture of the historical weight of conjunctionalism is offered in another remarkable passage of 'Olam II. The three types of Saturn-Jupiter conjunctions, together with the annual horoscopes cast at the revolution of the year, hierarchically mark the rhythm of human history at almost all its levels. The length of their periods (960 years, 240 years, 20 years, one year) is not only commensurate with the time intervals in which the dominance of each of those astrological agents continues to be felt, it is also directly proportional to the historical significance of each of those four astrological agents: the great Saturn-Jupiter conjunction gives an indication “about every nation,” the middle conjunction “about the kings of every nation,” the small conjunction “about an increase or decrease in the kingdom,” and the horoscope at the revolution of the year signifies “events that come as if were by chance, and they wane quickly.”¹¹²

2. The *fardār*

Ibn Ezra also explicitly mentions the Persian contribution apropos of the *fardār*.¹¹³ This Persian term,¹¹⁴ which appears in Arabic, Hebrew, and Latin texts, is used in both historical astrology and nativities as a period of 75 years. Abū Maʿshar, in *Kitāb al-Ulūf*, expands the range of the term in historical astrology to include four types of *fardār*.¹¹⁵ Only the last of

¹¹⁰ See 'Olam II, § 14:2–5 and notes.

¹¹¹ See below, pp. 33–34, 276–279.

¹¹² 'Olam II § 11:1–4.

¹¹³ 'Olam I, § 23:1; § 24:1; 'Olam II, § 30:1; § 32:1.

¹¹⁴ According to the French classicist Claudius Salmasius (1558–1653), this Persian term derives from the Greek *periodaron* or *periodon*. See Bouché-Leclercq, 1899, p. 491 n. 1.

¹¹⁵ These types are: (a) the mighty *fardār*, a period of 360 years ruled by a combination of a zodiacal sign and a planet, like the *dawr*; this cycle is employed in 'Olam I, § 58:1–3; (b) the big *fardār*, a period of 78 years ruled in sequence by the twelve zodiacal signs in decreasing turns (Aries 12, Taurus 11, Gemini 10 ... Pisces 1); (c) the middle *fardār*, a cycle of 675 years, which includes 9 *fardārāt* of 75 years each; (d) the small *fardār*, a period of 75 years, distributed to the seven planets and to the Head and Tail of the Dragon in the order of their exaltations, beginning with Aries. See *Kitāb al-Ulūf*, 1968, pp. 60–63.

these, the small *fardār* with a period of 75 years, is the sense in which the term *fardār* is used in two fairly large sections of ‘*Olam* I and ‘*Olam* II,¹¹⁶ as well as in Abū Ma‘shar’s *Book of Religions and Dynasties*.¹¹⁷ As we shall see, the *fardār* is used in this sense in the tenth chapter of *Reshit Hokhmah*, too; but there Ibn Ezra refers to it as one of a number of methods of direction or prorogation applied in world astrology.¹¹⁸

The mechanism for the distribution of *fardār*ships to the planets and the two lunar nodes in the order of their exaltations is explained in similar terms in ‘*Olam* I and ‘*Olam* II, along much the same lines as in other introductions to astrology. But a peculiarity is that Ibn Ezra attempts to accommodate the calculations for finding the planet that rules the *fardār*ship of some year to two different calendars—in ‘*Olam* I to the reckoning of the Persians and in ‘*Olam* II to the Hebrew calendar¹¹⁹—and that in ‘*Olam* I the discussion of the *fardār* lead to a digression, based on a statement of *Sefer Yeširah*, about whether every cycle of 75 years is the same as the previous ones.¹²⁰

3. “Opening of the Door”

‘*Olam* II credits the Indian scientists with an astrological procedure according to which “if you want to know about rain, observe the place of the conjunction and the opposition of the luminaries each month and ⟨determine⟩ which ⟨planet⟩ is the lord of the sign of the ascendant. If the planet aspects the lord of the seventh place ⟨after it⟩, then ⟨this⟩ is called an ‘opening of the door.’”¹²¹ “Opening of the door” is defined in Al-Qabīṣī’s *Introduction to Astrology* as the condition “when an inferior planet applies (i.e., it is in conjunction to or aspects) to a superior planet and their houses are in opposition”;¹²² Al-Qabīṣī’s definition is echoed in *Tractatus pluviarum* and *Apertio Portarum*, two closely related twelfth-century Latin texts.¹²³ Although Ibn Ezra’s definition in ‘*Olam*

¹¹⁶ ‘*Olam* I, § 23:1–12; § 24:1–2; § 24:3–8; ‘*Olam* II, § 30:1–11; § 31:1–3; § 32:1–6; § 33:11; § 34:1–2; § 35:1–3.

¹¹⁷ *On Great Conjunctions*, 2000, I, § 8.2:12–24, pp. 503–511.

¹¹⁸ *Reshit Hokhmah*, ch. X, § 2:8 (below, pp. 266–267).

¹¹⁹ ‘*Olam* I, § 24:1–2 and notes; ‘*Olam* II, § 31:1–3; § 32:1–6 and notes.

¹²⁰ ‘*Olam* I, § 24:3–8 and notes.

¹²¹ ‘*Olam* II, § 37:1.

¹²² Al-Qabīṣī, 2004, III:11, pp. 95–97.

¹²³ *Tractatus pluviarum*, ed. Burnett, 8, p. 240: “Et portarum apertiones sunt coniunctiones Solis vel Lune cum Saturno vel eorum aspectus ad Saturnum, Iovis eodem modo

II is similar,¹²⁴ it diverges from the others in that (a) it explicitly mentions the Indian scientists as the originators of this doctrine; (b) it establishes that the procedure should be carried out every month at the conjunction or opposition of the luminaries; and (c) it states that one of the two participating planets is the lord of the ascendant at this precise moment.¹²⁵

In *‘Olam I* Ibn Ezra offers an analogous although by no means identical exposition of the same doctrine. Instead of ascribing it to the Indian scientists, he traces it to “Ibn Ṣariq,” who may be plausibly identified with Ya‘qūb ibn Ṭāriq, one of the earliest Arabic astronomers and astrologers (late eighth century) involved in the transmission of Indian science to Arabophone civilization. Instead of the “opening of the door” (פתיחת השער), he speaks of a planet that is a “key” (מפתח) to another: “the lord of the seventh place ⟨counting⟩ from the ⟨house of an⟩ upper planet is always its key.”¹²⁶ This suggests that *‘Olam I* and *‘Olam II*, although referring to the same doctrine, are following different sources. In addition, *‘Olam I* and *‘Olam II* offer a full account of the “12 keys of the Moon”—12 phases of the Moon that are considered to have influence on the weather, particularly on rain—and connect them to the aforementioned procedure for forecasting rain, in which a planet is a “key” to another, or link the “12 keys of the Moon” to the “opening of the door.”¹²⁷ This link is

cum Mercurio, Veneris cum Marte”; *Apertio Portarum*, 13–15 (Al-Kindī, 2000, p. 386): “Apertio portarum dicitur proprie cum coniungitur planeta inferior planete superiori et fuerint cum hoc eorum domus opposite.”

¹²⁴ These definitions tally with the definition in *‘Olam I* if one takes into consideration the following factors: (a) the Moon, Mercury, and Venus are considered “lower” planets, whereas Mars, Jupiter, and Jupiter are “upper” planets; (b) the planetary house of an “upper” planet is in the seventh place with respect to the planetary house of a “lower” planet because the planetary houses of the “upper” planets are in opposition to the planetary houses of the “lower” planets (e.g., Sagittarius and Pisces, which are the planetary houses of Jupiter, are in opposition to Gemini and Virgo, which are Mercury’s planetary houses).

¹²⁵ This is similar, although by no means identical, to the last sentence of *Apertio Portarum* (Al-Kindī, 2000, p. 389): “apertio portarum dicitur quando dominus ascendentis aspicio dominum septime domus vel eius coniunctus est,” and to Chapter 38:675–676 of Al-Kindī’s *Forty Chapters* (Al-Kindī, 2000, p. 401): “Then look at every conjunction and establish the Ascendant and know the twelve centres. . . . When the Moon arrives in one of these centres, and a lower planet applies from opposition to one of the higher planets, it brings forth its nature, when the luminaries aspect each other, and when there is an aspect to the Ascendant of the land and an aspect of their lords with them.”

¹²⁶ *‘Olam I*, § 47:1–2.

¹²⁷ *‘Olam I*, § 47:4; § 48:1–14; *‘Olam II*, § 18:1–13; § 39:7.

vouched for in a number of sources, such as *Kitāb mukhtaṣar al-masā'il* by 'Umar b. al-Farrukhān al-Ṭabarī, *Kitāb al-Bārī* by 'Alī ibn abī-l-Rijāl, etc.¹²⁸

4. The 28 Mansions of the Moon

'*Olam* I and '*Olam* II also ascribe the 28 mansions of the Moon to the scientists of India. Throughout history, various civilizations have divided the zodiac into 28 parts that bear on weather forecasting and astrology. The Indians divided the ecliptic into 28 divisions associated with diverse deities and called *nakṣatra*. In pre-Islamic times, the Arabs distinguished 28 fixed stars, each of them a *naw'* (plural *anwā*), whose rising and settings divided the solar year of 365 days into roughly 28 periods of thirteen days, each with its own characteristic weather. Also ascribed to the Indians and the Arabs are the 28 lunar mansions (Arab. *manāzil al-qamar*), which have a special bearing on rainfall. Because the lunar month has approximately 28 days, each lunar mansion was taken to be the place where the Moon "lodges" on one day of the lunar month. In Arabic sources the *anwā* are related to the lunar mansions. Texts attributed to Hermes Trismegistus prescribe the activities to be undertaken when the Moon is located in each of these 28 constellations.¹²⁹ Al-Bīrūnī points out that the *anwā* are associated with rain because the times of their occurrence are related to the setting of the mansions in the west in the morning.¹³⁰ The lunar mansions are frequently mentioned, catalogued, and described in Arabic (mainly translated into Hebrew and Latin) and Latin sources, generally in close connection with weather or rain forecasting.¹³¹

The 28 lunar mansions feature prominently throughout Ibn Ezra's oeuvre. In his commentary on Ecclesiastes 3:1 and the long commentary on Exodus 26:2 he harshly criticizes anonymous (presumably Jewish) commentators who associated the 28 lunar mansions with the 28 varieties of

¹²⁸ See note on '*Olam* I, §47:4.

¹²⁹ Al-Kindī, 2000, "Introduction," pp. 19–20.

¹³⁰ *Kitāb al-Tafhīm*, 1934, §166, p. 87.

¹³¹ Al-Kindī's *Letter* II, pp. 83–107 ("On the causes attributed to the higher bodies which indicate the origin of rains," Al-Kindī, 2000, pp. 253–256); Jafar Indus, *Liber imbrium* 44–51, and the parallel sections in *Sapientes Indi*, 44–47 (Al-Kindī, 2000, pp. 368–369); *Kitāb al-Tafhīm*, 1934, §164–166, pp. 81–87; *Tractatus pluviarum*, ed. Burnett, 68–101, pp. 249–254; *Epitome*, 1548, Lib. I, cap. xi, sig. H1v–H3v; Lib. IV, xvii, sig. S3r–T3r.

time enumerated in Ecclesiastes 3:2–8 and with the 28 cubits of the curtains of the sanctuary (Ex. 26:2). In the introduction to his short commentary on the Pentateuch, however, Ibn Ezra notes without comment that the 28 letters of the Hebrew alphabet correspond to the 28 lunar mansions. In his scientific treatises, Ibn Ezra devoted complete chapters to the 28 lunar mansions in *Keli ha-Neḥoshet* I (Book of the Astrolabe), where he invokes the authority of the Ancients,¹³² as well as in *Keli ha-Neḥoshet* II, where he refers instead to the Arabs.¹³³ In those two chapters he defines the lunar mansions, provides instructions for finding the Moon in the mansions with respect to the place of the Sun at the beginning of the month, and offers a complete catalogue of the 28 lunar mansions, including their Arabic names, translation into Hebrew, and the number and size of the stars thereof; in *Keli ha-Neḥoshet* II he adds the graphical representation of each asterism. As for his astrological work, in addition to relevant passages in ‘*Olam* I and ‘*Olam* II,¹³⁴ in the sixth “place” of the recently discovered *Sefer ha-Mivḥarim* III Ibn Ezra provides a complete list of the 28 lunar mansions and, citing the authority of the scientists of India and of Dorotheus, enumerates the actions it is worthwhile to undertake (i.e., taking a medicine, getting married, embarking on a sea voyage, etc.) when the Moon “lodges” in each of its mansions.¹³⁵

Arabic Contributions

As a rule, Ibn Ezra speaks in highly favorable terms about the contributions of Arab astronomers. Thus, in ‘*Olam* I, in an account of the controversy about the arc of the Sun’s inclination, after presenting the values given by the Indian scientists, Ptolemy, and Hipparchus, Ibn Ezra concludes that “the Arab scientists were more precise than everyone else and agreed that the arc of inclination is $23^{\circ}35'$, except Yahyā ben Abī Mansūr and Abraham al-Zarqāl, who were even more precise and said that it is $23^{\circ}33'$.”¹³⁶ He also refers approvingly to the astronomical tables compiled by Arab astronomers—referring to them collectively as “scientists who

¹³² *Neḥoshet* I, BNF 1061, ff. 156b–157a.

¹³³ *Neḥoshet* II, Mant. 10, ff. 46a–46b.

¹³⁴ ‘*Olam* I, § 62:1–5, § 63:1–2; ‘*Olam* II, § 37:4, § 43:4, § 44:1–3, § 45:1–4, § 49:6.

¹³⁵ *Eleccionum*, Erfurt, ff. 42a–44a; *Mivḥarim* III, Archivio di Stato, 368.3. A similar list, also based on the authority of the scientists of India and on Dorotheus, is in *Epitome totius astrologiae*. See Epitome, 1548, Lib. IV, cap. xvii, sig. S3r–T3r.

¹³⁶ ‘*Olam* I, § 142:9.

rely on experience”¹³⁷—or specifically to the tables of al-Battānī,¹³⁸ and does not fail to mention the contribution of Arab builders of astronomical instruments, as the Banū Shākir.¹³⁹

By contrast, Ibn Ezra unleashes a harsh attack on Abū Ma‘shar, the most prominent astrologer of the Middle Ages. In the very first sentence of *‘Olam I* Ibn Ezra enjoins readers neither to like nor to trust Abū Ma‘shar’s *Book on the Conjunction of the Planets*, because it relies on the mean motion for the planetary conjunctions; later, readers are warned not to trust Abū Ma‘shar’s book because a certain prediction regarding rain was not borne out by experience.¹⁴⁰ Ibn Ezra’s negative attitude towards Abū Ma‘shar is a puzzle, notably because elsewhere in his astrological corpus he depends heavily on Abū Ma‘shar’s work or refers to him approvingly.¹⁴¹ But this ambiguity is not unusual; Ibn Ezra is in the habit of attacking prominent scholars (Jews too) on whose work he relies.¹⁴² As a rule, however, Ibn Ezra frequently mentions the work of prominent astrologers in the Islamic world, though he does not credit them with specific astrological doctrines or theories, and restricts himself to invoking them as repositories of astrological lore that is usually of pre-Islamic origin. Thus Māshā’allāh is repeatedly invoked in applications of the conjunctions of Saturn and Jupiter, a doctrine of Persian provenance.¹⁴³ Ibn Ezra also refers to the innovative work of Arab astrologers apropos of the secular or religious history of Islam, as in the case of the conjunction of Saturn and Jupiter that foreshadowed Muhammad’s birth,¹⁴⁴ predictions related to the “kingdom of the Muslims,”¹⁴⁵ and observations made by the “scientists of Spain” regarding the signs of cities in the Iberian peninsula.¹⁴⁶

¹³⁷ *‘Olam I*, § 11:3.

¹³⁸ *‘Olam I*, § 17:5; § 63:3.

¹³⁹ *‘Olam I*, § 13:4–5.

¹⁴⁰ *‘Olam I*, § 1:1–5; § 61:1–5.

¹⁴¹ See note on *‘Olam I*, § 1:1.

¹⁴² For instance, Ibn Ezra’s harsh attack on the Geonim, in general, and on Saadia Gaon, in particular, for employing secular sciences in their biblical commentaries in an irrelevant manner and without being sufficiently knowledgeable about the sciences. See Sela, 2003, pp. 331–335.

¹⁴³ *‘Olam I*, § 25:1; § 42:1; § 43:1; § 57:1.

¹⁴⁴ *‘Olam I*, § 14:6 and note.

¹⁴⁵ *‘Olam I*, § 56:10.

¹⁴⁶ *‘Olam II*, § 15:7.

Links to Twelfth-Century Latin Works on World Astrology

‘*Olam* I and especially ‘*Olam* II display close links to two twelfth-century Latin works on world astrology attributed to John of Seville: the *Liber primus de gentibus, regibus, civitatibus, aeris mutatione, fame et mortalitate*¹⁴⁷ and the *Tractatus pluviarum et aeris mutationis*, which is largely a portion of the latter work.¹⁴⁸ These links were first identified by Charles Burnett, who also focused attention on the *Tractatus Pluviarum*, and have recently been fleshed out by Renate Smithuis, who found striking parallels between various parts of Ibn Ezra’s astrological oeuvre and the *Epitome totius astrologiae*, such as the use of Hebraisms that are translations of Ibn Ezra’s neologisms, the formulation of doctrines, and the organization of the material.¹⁴⁹ The present edition, while focusing exclusively on the links between ‘*Olam* I and ‘*Olam* II, on the one hand, and the *Liber primus de gentibus* and *Tractatus Pluviarum*, on the other, fully corroborates these findings. These connections will be treated separately in the notes to the English translation of ‘*Olam* I and ‘*Olam* II and en bloc in Appendix E. Here three examples can serve as an illustration.

The first example relates to the motif of the 120 planetary conjunctions, which is the first topic addressed in both versions of *Sefer ha-‘Olam*. Interestingly enough, although it does not occur in Arabic astrological literature, let alone in works about world astrology, the motif of the 120 planetary conjunctions appears in the very first paragraph of the *Liber primus de gentibus*, just before the presentation of the diverse types of Saturn-Jupiter conjunctions, just as in ‘*Olam* I and ‘*Olam* II.¹⁵⁰

¹⁴⁷ *Epitome*, 1548, sig. F1v–H3r. This is the first component of the *Liber quadripartitus*, which together with *Ysagoge* (an introductory book) is part of the *Epitome totius astrologiae*, a popular work, dated at least in part to 1142, that addresses the main sub-branches of Arabic astrology: world astrology, nativities, interrogations, and elections.

¹⁴⁸ *Tractatus pluviarum*, ed. Burnett, pp. 219–265.

¹⁴⁹ Charles Burnett first advanced this thesis in a still unpublished work: “John of Seville and the Authorship of the *Epitome totius astrologiae* (*Ysagoge* and *Liber quadripartitus*).” Renate Smithuis developed these ideas further in her doctoral dissertation: Smithuis, 2004, especially chapter 3; see also *Tractatus pluviarum*, ed. Burnett, pp. 236–238. The connections were in some cases so close that it has been suggested that the *Epitome totius astrologiae* was in fact written by Ibn Ezra himself (Smithuis, 2004, chapter 3). This is a very attractive hypothesis, but it seems that there is still need for a critical edition of the *Epitome totius astrologiae* and a close comparative study of its contents and Ibn Ezra’s complete astrological oeuvre before we can arrive at a more authoritative judgment in this matter.

¹⁵⁰ ‘*Olam* I, § 2:1–4; § 3:1–3; § 4:1–4; § 5:1–20; § 6:1–7 and notes; ‘*Olam* II, § 2:1 and notes; cf. *Epitome*, 1548, Lib. I, cap. ii, sig. F1v.

The second example relates to a list of cities and their corresponding zodiacal signs, which appears in 'Olam II, on the one hand, and in the *Liber primus de gentibus* and *Tractatus Pluviarum*, on the other. The list in 'Olam II contains two outstanding features: (i) Rome, Pisa, and Lucca are recorded in this order, which corresponds to what we know about Ibn Ezra's peregrinations; (ii) information is given about the author's own observations to determine the zodiacal sign of the city. Interestingly enough, virtually the same information is given in the *Liber primus de gentibus* and *Tractatus Pluviarum*.¹⁵¹ The third example refers to four consecutive sections of 'Olam II, whose common denominator is the attempt to quantify astrological influence by assigning portions of powers to the planets and to the 12 keys of the Moon (according to the precedence of their dignities, their position in the horoscopic places, and their various conditions with respect to the Sun). As it happens, virtually the same information is offered in a long passage of the *Liber primus de gentibus*.¹⁵²

World Astrology in Other Parts of Abraham Ibn Ezra's Oeuvre

The two versions of *Sefer ha-'Olam* are no doubt Ibn Ezra's longest, most concentrated, and most substantial contribution in world astrology, but they are by no means his only achievement in this field. To complete the picture, we should examine the contents of three additional short texts, provided in Hebrew, English translation, and commentary, in Part Five, below. These texts, which are directly concerned with word astrology, are: (a) the tenth chapter of *Reshit Hokhmah* (Beginning of Wisdom), where Ibn Ezra presents a series of cycles related to world astrology, a topic virtually ignored in 'Olam I and 'Olam II; (b) the astrological section of the exegetical excursus in the long commentary on Exodus 33:21, where Ibn Ezra inserts material on world astrology into his biblical commentary, notably, the pattern of the 120 conjunctions of the seven planets, the tripartite model of the Saturn-Jupiter conjunctions, and the Jews' dual astrological status vis-à-vis the stars; (c) the introduction to *Sefer ha-Moladot* (Book of Nativities), where

¹⁵¹ See 'Olam B, § 15:23–24 and note; cf. *Epitome*, 1548, Lib. I, cap. viii, sig. G4r; *Tractatus pluviarum*, 54–55 (ed. Burnett, p. 246).

¹⁵² 'Olam B, § 16:1–4, § 17:1–17, § 18:1–13, § 19:1–13 and notes, cf. *Epitome*, 1548, Lib. I, cap. ii, sig. F2r–F3r.

Ibn Ezra juxtaposes world astrology and the doctrine of nativities and presents a series of original ideas about world astrology.

1. *The Tenth Chapter of Reshit Hokhmah*

Abū Ma‘shar elected to provide a separate account of the two main doctrines of historical astrology employed in his day: he wrote about the conjunctions of Saturn and Jupiter and other related topics in *Kitāb al-Qiranāt* (Book of Conjunctions);¹⁵³ but cyclical world astrology, a complex system of cycles that determine the dominant planetary or zodiacal influences at various points of time, was rigorously excluded from that work and dealt with in *Kitāb al-Ulūf* (Book of Thousands).¹⁵⁴ As it happens, Ibn Ezra followed Abū Ma‘shar’s lead: conjunctive astrology is discussed mainly in the two versions of *Sefer ha-‘Olam*, while cyclical world astrology is dealt with almost exclusively in the tenth chapter of *Reshit Hokhmah*, an introduction to astrology that is considered to be the zenith of Ibn Ezra’s astrological work.¹⁵⁵

The tenth chapter of *Reshit Hokhmah* has three sections. The first discusses the calculation of the astrological aspects, particularly the technicalities of the procedure of “directions.”¹⁵⁶ This is because Ibn Ezra characterizes all of the cycles presented in the next two sections as “directions.” As he explains, “*direction* means that you direct some planet or degree to the body of some planet or to the aspect of its ray in order to know how many years there are between them.”¹⁵⁷ Interestingly enough, Ibn Ezra uses neither the word “directions” (Heb. נִיְהוּגִים) nor collocations thereof in the two versions of *Sefer ha-‘Olam*. The procedure of direction is often used in nativities,¹⁵⁸ but in our text it is applied in world astrology, as explained by Ibn Ezra, to “know all good and evil that befalls kings, and (the transfer of) the conduct of the realm from one nation to another, and the alterations that occur in the world affecting general and private

¹⁵³ *On Great Conjunctions*, 2000.

¹⁵⁴ *Kitāb al-Ulūf*, 1968.

¹⁵⁵ See below, *Reshit Hokhmah*, ch. X (pp. 261–269).

¹⁵⁶ *Reshit Hokhmah*, ch. X, § 1:1–11.

¹⁵⁷ *Reshit Hokhmah*, ch. X, § 1:10. In other words, the procedure of “direction” entails establishing an arc of the zodiac between two zodiacal places and then converting this arc into a period of time by means of an imaginary clock hand or pointer that travels at a certain speed from the initial point until it reaches the final zodiacal place.

¹⁵⁸ *Te‘amim* II, § 8.6:2, pp. 252–253 (= Second version of *Sefer ha-Te‘amim*, ed. Sela, § 8.6:2, on pp. 252–253) and note on pp. 331–332.

affairs, from evil to good and from good to evil.”¹⁵⁹ The aspects are used in all the branches of astrology, of course, but here they are applied specifically to world astrology.¹⁶⁰

The second section enumerates five cycles, all of them characterized as “directions,”¹⁶¹ as follows: (i) “thousands,” which move one zodiacal sign every thousand solar years;¹⁶² (ii) “hundreds,” which move one sign every century;¹⁶³ (iii) “tens,” which move one sign every ten years;¹⁶⁴ (iv) the *fardār*, a period of 75 years distributed to the seven planets and to the Head and Tail of the Dragon in the order of their exaltations;¹⁶⁵ and (v) “units,” which move one sign each year.¹⁶⁶ Ibn Ezra’s source for these doctrines seems to be Abū Ma’shar’s *Kitāb al-Ulūf*, which collects previous Persian sources and reports on five cycles that are virtually identical with Ibn Ezra’s five “directions.”¹⁶⁷ The same cycles are echoed in Al-Bīrūnī’s *Kitāb al-Taḥḥīm*.¹⁶⁸ Commenting in *Ṭe’amim* I on this section of *Reshit Ḥokhmah*, Ibn Ezra refers neither to Abū Ma’shar nor to Al-Bīrūnī and writes that “this is the opinion of the scientists of Persia and India, but Ptolemy laughs at them.”¹⁶⁹

¹⁵⁹ *Reshit Ḥokhmah*, ch. X, § 1:11.

¹⁶⁰ *Reshit Ḥokhmah*, ch. X, § 3:4.

¹⁶¹ *Reshit Ḥokhmah*, ch. X, § 2:1–9.

¹⁶² *Reshit Ḥokhmah*, ch. X, § 2:2–3.

¹⁶³ *Reshit Ḥokhmah*, ch. X, § 2:4–5.

¹⁶⁴ *Reshit Ḥokhmah*, ch. X, § 2:6–7.

¹⁶⁵ *Reshit Ḥokhmah*, ch. X, § 2:8–9. This is the only component that is mentioned in ‘*Olam* I, § 23:1–12; § 24:1–2 and ‘*Olam* II, § 30:1–11; § 31:1–3.

¹⁶⁶ *Reshit Ḥokhmah*, ch. X, § 2:10. For the *fardār*, see above, pp. 21–22.

¹⁶⁷ These cycles are: (i) the mighty *intihā’*, which moves one zodiacal sign every 1000 solar years (corresponds to the “thousands”); (ii) the big *intihā’*, which moves one sign every 100 years (corresponds to the “hundreds”); (iii) the middle *intihā’*, which moves one sign every 10 years (corresponds to the “tens”), (iv) the small *fardār* (corresponds to the *fardār*); and (v) the small *intihā’*, which moves one sign every year (corresponds to the “units”). See *Kitāb al-Ulūf*, 1968, pp. 60, 63–64; Kennedy, 1964, pp. 26–28. In ‘*Olam* I, § 59:1, Ibn Ezra presents Abū Ma’shar as claiming that “in the opinion of the Indian scientists one thousand years are assigned to each degree.” This does not correspond to the mighty *intihā’*. See ‘*Olam* I, § 59:1 and note.

¹⁶⁸ *Kitāb al-Taḥḥīm*, 1934, § 517, pp. 320–321: “Secondly, the signs are made equal to a thousand years each; this is the term of the thousands. Thirdly the signs are made equal to single years, the terminus of years being thus produced as we said before. Fourthly the degrees are made equal to single years, and this is the small division. Between the units and thousands two other terms are introduced, one in which each sign equals a hundred years and another in which each is ten.”

¹⁶⁹ *Ṭe’amim* I, § 10.9:2, pp. 106–107. This means that Ibn Ezra was aware of the Persian-Indian origins of these techniques; as for his comment on Ptolemy, this is the typical way in which Ibn Ezra denotes that these cycles are not mentioned in the *Tetrabiblos*.

The third section presents four additional directions, three of them intimately related to (although not identical with) the three well-known types of Saturn-Jupiter conjunctions. The “great,” “middle,” and “small” conjunctions of Saturn and Jupiter, however, are not addressed as conjunctions *per se* with their own specific type of historical signification (as in the standard form of conjunctionalism), but as initial and final points of cycles of 960, 240 and 20 years in the framework of three additional types of directions, each of which moves 360° in each of their respective cycles.¹⁷⁰ Al-Bīrūnī, too, considers the Saturn-Jupiter conjunctions to be directions, but not the same as those cited by Ibn Ezra.¹⁷¹ These three are complemented by a fourth type of direction that moves one degree a year.¹⁷²

2. *The Long Commentary on Exodus 33:21*

A main feature of Ibn Ezra’s working method as a biblical commentator is the exegetical excursus, an independent article inserted into the running biblical commentary. In these he took the liberty of deviating from the close reference to the words of the biblical text to add new perspectives on some burning exegetical issue (particularly when he was concerned with unfolding the secret meanings of the Tetragrammaton) and display his knowledge of astronomy, mathematics, cosmology, Hebrew grammar, logic, and particularly astrology. A telling example is found in the long commentary on Exodus 33:21.¹⁷³

The astrological section of this exegetical excursus consists of a concise two-layer account of astrological influence on the world, in general, and of the Jews’ dual astrological status, in particular. The first layer begins with the fixed stars, which are divided into the classical 48 constellations of Ptolemy and held to be responsible for the fixity of the species,¹⁷⁴ the

¹⁷⁰ *Reshit Ḥokhmah*, ch. X, § 3:1–3.

¹⁷¹ *Kitāb al-Taḥfīm*, 1934, § 517, p. 320: “The degrees at which Saturn and Jupiter meet in conjunction, together with the ascendant of that time, and the ascendant of the year of the conjunction all move in the direction of the succession of the signs through a whole sign in a complete solar year.”

¹⁷² *Reshit Ḥokhmah*, ch. X, § 3:4.

¹⁷³ This exegetical excursus has a grammatical, a mathematical, and an astrological section. Ibn Ezra addressed it to the initiated and learned and considered it to be a cardinal component of his exegetical work. See the cross-references to this excursus in the long commentary on Exodus: 6:3, 6:7; 7:3, 14:19, 15:11; 19:20, 20:2, 20:18; 25:26.

¹⁷⁴ Long comm. Ex. 33:21, § 1:1 (below, pp. 272–279).

same as in the introduction to *Sefer ha-'Olam II*.¹⁷⁵ Before turning to the planetary layer Ibn Ezra, in a remarkable digression, construes an ostensibly historical talmudic narrative¹⁷⁶ as a plot in which King Ptolemy—whom Ibn Ezra imagines to be no other than Claudius Ptolemy the astronomer¹⁷⁷—on the pretext of sponsoring a Greek translation of the Pentateuch, planned to “steal” the astrological arcana embedded in the Torah.¹⁷⁸ The core of these secrets is Deuteronomy 4:19, which, in Ibn Ezra’s interpretation, indicates that “it is known by experience that each and every nation has a specific planet and zodiacal sign, and so too each and every city. God has granted Israel a most-favored status, in that He determines their future, and not a star. Thus Israel is the portion of God.”¹⁷⁹ In other words, Deuteronomy 4:19 cloaks the essentials of historical astrology about nations and cities as well as about the Jews’ privileged astrological status vis-à-vis the stars, the two main topics on which he proceeds to expand in the exegetical excursus.

The layer of the planets is treated in two stages; in both Ibn Ezra incorporates topics and ideas that appear in the two versions of *Sefer ha-'Olam*. In the first stage the planets are treated collectively, through the motif of the 120 conjunctions of the seven planets—much the same as in a

¹⁷⁵ *'Olam II*, § 1:2 and notes.

¹⁷⁶ Babylonian Talmud, 1938, Megilah 9b, p. 49: “It is related of *King Ptolemy* that he brought together seventy-two elders and placed them in seventy-two [separate] rooms, without telling them why he had brought them together, and he went in to each one of them and said to him. Translate for me the Torah of Moses your master. God then prompted each one of them and they all conceived the same idea and wrote for him: ... Which the Lord thy God distributed *to give light* to all the peoples (instead of ‘Which the Lord thy God has allotted unto all the peoples under the whole heaven,’ Deut. 4:19).”

¹⁷⁷ For Claudius Ptolemy as “King Ptolemy,” see above, *'Olam II*, § 8:1 and note. For the opinion that Ibn Ezra identified King Ptolemy, who promoted the translation of the Pentateuch into Greek, with Claudius Ptolemy, see the highly reliable testimony of Joseph Bonfils (*Šafenat Pa'neah*, 1911, I, p. 84).

¹⁷⁸ Long comm. Ex. 33:21, § 1:2–3. Ibn Ezra’s reference to King Ptolemy may be regarded as his particular version of the “theft of science from the Jews by the Greeks.” Twelfth-century Jewish intellectuals like Abraham Bar Ḥiyya, Judah Halevi, and Abraham Ibn Ezra claimed that the Jews of antiquity had engaged in scientific activity, which brought them into close contact with the scientific achievements of the Gentile nations, and especially with Greek science. The accomplishments of ancient Jewish science were coveted and sometimes even stolen by the scholars of other nations. The chief aim of this argument was to legitimize the study of the “external sciences” by Jews; the main method for achieving that purpose was converting the new Arabic-Greek science into a refined version of pristine Jewish wisdom, thereby blurring its innovative character, which might be thought to undermine religious faith. See Sela, 2003, pp. 305–313; Roth, 1978, pp. 53–67.

¹⁷⁹ Long comm. Ex. 33:21, § 1:2 and note.

remarkable digression of ‘*Olam I*.¹⁸⁰ There are, however, two striking differences between the two parallel accounts. (a) Whereas ‘*Olam I* begins with a discussion of the method for solving the combinatorial problem¹⁸¹ and then gives a detailed solution of each partial result,¹⁸² readers will search the excursus in vain for any hint about the method employed by Ibn Ezra or how he obtained the partial results. (b) Whereas ‘*Olam I* presents the partial results of the combinations in the expected ascending consecutive order (two, three, four, five, six, and seven stars), in the biblical excursus Ibn Ezra follows a totally different and apparently incoherent order (seven, two, five, three, four, and finally six stars).¹⁸³

The second stage focuses on the Saturn-Jupiter conjunctions by means of a stock account of the tripartite model of conjunctionalism, as in the two versions of *Sefer ha-‘Olam*.¹⁸⁴ It must be borne in mind, however, that this account is embedded in a biblical commentary (not in an astrological treatise) and that it contains a strong warning against turning a blind eye to the rigid Aristotelian separation between the super- and sublunary domains (because of the possibility of assigning physical qualities of sublunary matter to the fiery, airy, watery, and earthy triplicities)¹⁸⁵ and an injunction against perverting astrology into astral idolatry.¹⁸⁶

In the last part of the excursus Ibn Ezra is concerned with the Jews’ dual status vis-à-vis the stars: sometimes the Jewish nation is immune to astrological influence and sometimes is subject to it. He proceeds in three stages. In the first, he presents a “significant parable” about a community that turns to God and cleaves to Him and is saved by a prophet, even though an inexorable disaster takes place, as predetermined by the stars.¹⁸⁷ The same message underlies the second parable, which tells of a blind man who is about to be run over by horses, but is saved because he

¹⁸⁰ Long comm. Ex. 33:21, § 2:1–5; cf. ‘*Olam I*, § 2:1–4; § 3:1–3; § 4:1–8; § 5:1–20; § 6:1–7 and notes. See also ‘*Olam II*, § 2:1.

¹⁸¹ ‘*Olam I*, § 2:2–4.

¹⁸² ‘*Olam I*, § 3:1–3; § 4:1–7; § 5:1–20; § 6:1–7.

¹⁸³ ‘*Olam I*, § 3:1–3; § 4:1–7; § 5:1–20; § 6:1–7; cf. long comm. Ex. 33:21, § 2:2–5. For the rationale behind this order of the partial results, see ‘*Olam I*, § 6:7 and note; note on long comm. Ex. 33:21, § 2:1–5. For a discussion of the two different approaches, see Sela, 1999, pp. 313–323. See also ‘*Olam II*, § 2:1.

¹⁸⁴ Long comm. Ex. 33:21, § 3:3–4 cf. ‘*Olam I*, § 7:1–3; § 8:1–4; § 9:1–6; § 10:1–2; ‘*Olam II*, § 3:1–4.

¹⁸⁵ Long comm. Ex. 33:21, § 4:1.

¹⁸⁶ Long comm. Ex. 33:21, § 4:3–4.

¹⁸⁷ Long comm. Ex. 33:21, § 5:1–4.

relies on a sighted person who knows how the horses run.¹⁸⁸ The lesson of the two parables is revealed in the third stage, where Ibn Ezra expounds the Jews' dual astrological status vis-à-vis the stars: on the one hand, he enlists the famous talmudic dictum "there is no *mazzal* for Israel" to buttress the idea that the Jewish nation is immune to astrological influence "as long as they keep the Torah";¹⁸⁹ on the other hand, he maintains that "if they do not keep the Torah then the zodiacal sign rules over them." Because he is aware of what "has been proven by experience" he places Jewish history under the sway of a conjunction of Saturn and Jupiter in Aquarius, which is responsible for the Jews' abject condition.¹⁹⁰ The same pair of contradictory ideas, along with a clearer reference to Israelites' exodus from Egypt under the direction of Moses, recurs in a remarkable passage of 'Olam II.¹⁹¹

3. *The Introduction to Sefer ha-Moladot*

Why should the introduction of a treatise on individual astrology, such as *Sefer ha-Moladot*, be relevant for learning about Ibn Ezra's view of world astrology, which is concerned with broad classes of people as well as their history, fate, and natural environment? One reason is that in the opening lines of this introduction Ibn Ezra, drawing on Ptolemy's *Tetrabiblos*,¹⁹² maintains that the astrological judgments that include human beings in larger social and geographical units take precedence over the astrological judgments that limit individuals to their own personal destiny.¹⁹³ The second reason is that this introduction consists of eight remarkable ways by which Ibn Ezra demonstrates the correctness of the foregoing statement. We should pause to look at the gist of these eight ways, in which Ibn Ezra not only proclaims the supremacy of world astrol-

¹⁸⁸ Long comm. Ex. 33:21, § 5:5–6.

¹⁸⁹ Long comm. Ex. 33:21, § 6:2.

¹⁹⁰ Long comm. Ex. 33:21, § 6:3–4.

¹⁹¹ See 'Olam II, § 14:2–5 and notes; above, pp. 20–21. Abraham Bar Ḥiyya, too, refers to the Jews' dual astrological status vis-à-vis the stars and grounds his views in a discussion of the talmudic dictum that "there is no *mazzal* for Israel" (B Shabbat 156a), but he consistently interprets Jewish history, from the Exodus until the destruction of the Second Temple, as the consequence of a series of Saturn-Jupiter conjunctions. See *Megilat ha-Megaleh*, 1924, pp. 119–135.

¹⁹² See *Tetrabiblos*, 1980, II:1, pp. 117–119, quoted in note on *Moladot*, Introduction, § 1:2 (below, p. 283).

¹⁹³ *Moladot*, Introduction, § 1:2 (below, p. 283). For the following references to this text, see below, pp. 282–291.

ogy over the doctrine of nativities,¹⁹⁴ thereby giving a clear indication of the great importance he attaches to the former, but also conveys a series of ideas that reveal his opinion about the significance of world astrology.

The first way, in which Ibn Ezra transforms the native's national or religious affiliation into a powerful macro-astrological principle, draws on two astrological agents.¹⁹⁵ The first is the "great" conjunction of Saturn and Jupiter,¹⁹⁶ which is made responsible for the ongoing exile of the Israelite nation, the main feature of Jewish history as Ibn Ezra himself knew it in his day. Consequently an Israelite whose personal horoscope destines him to be crowned a king (even though he belongs to a nation without territory or self-government) will never be more than a courtier. This makes it clear that, ultimately, the decrees of macro-astrology override those of micro-astrology.¹⁹⁷ The function played by the Saturn-Jupiter conjunction in the first way is very close to that assigned to the Saturn-Jupiter conjunction "when Aquarius is in an evil configuration" in the long commentary on Exodus 33:21.¹⁹⁸ It is also strongly reminiscent of the role of the sign of Aquarius in *'Olam II*, § 14:2, except that in the introduction to *Sefer ha-Moladot* Ibn Ezra does not allow the Jews any privileged status vis-à-vis the stars, thereby suggesting that the baneful sway of this Saturn-Jupiter conjunction is the prevalent and permanent astrological condition of the Jewish nation.

The second macro-astrological agent is the malefic Saturn, which, in the context of the first way, plays the unexpected role that a Jew will not commit apostasy despite an unfortunate natal horoscope.¹⁹⁹ Underlying this passage is an implicit reference to Saturn as the planet in charge of

¹⁹⁴ The introduction to *Sefer ha-Moladot* is not an attack on the doctrine of nativities or an attempt to expose its Achilles' heel, but a sophisticated defense against its detractors, based on explaining away its structural weaknesses by means of factors from world astrology. These weaknesses, traditionally invoked by the opponents of astrology (see, for instance, Cicero, *De divinatione*, II:90, 97), may be subsumed under two heads: (a) why two natives born at the same time and in the same place (i.e., twins), and therefore having the same natal chart, have a different fate (see *Moladot*, Introduction, § 2:1–4; § 3:1–4; § 6:1–2); (b) why many natives, born at different times and in different places, and therefore having different natal charts, have the same fate (see *Moladot*, Introduction, § 4:1–2, § 5:1–2; § 7:1–2; § 8:1–4).

¹⁹⁵ *Moladot*, Introduction, § 2:1.

¹⁹⁶ See below, n. 212.

¹⁹⁷ *Moladot*, Introduction, § 2:2–3.

¹⁹⁸ Long comm. Ex. 33:21, § 6:3–4.

¹⁹⁹ See *Moladot*, Introduction, § 2:4.

the Jews.²⁰⁰ Although this is not a novel idea,²⁰¹ Ibn Ezra is the first Jewish thinker to be concerned with the astrological elements of the problematic association between Saturn and the Jews. Greek and Arabic astrology considered Saturn to be the most malignant of the seven planets;²⁰² the natural inference is that the Jews, too, astrologically governed by Saturn, ought to be contaminated by the planet's malignant and wicked nature.²⁰³ Ibn Ezra did not try to blur the uneasy connection between Saturn and the Jews or cover up the extremely unfavorable attributes of that planet. Instead, he removed the sting of this embarrassing linkage by stressing that Saturn is conducive to a Jew's religious faith.²⁰⁴ Another way in which he palliated the association was to place Judaism on the same footing as the other monotheistic religions: the very planet that favors the members of its assigned religious congregation bodes ill for the members of other creeds.²⁰⁵

²⁰⁰ For the link between Saturn and the Jews, see Sela, 2004, pp. 21–53; Zafran, 1979, pp. 16–27. The topic of the governance of religions and nations by specific planets is touched on in *‘Olam I*, § 66:1–2, where the Sun is said to be in charge of the Christians and Venus of the Muslims; but in this passage Ibn Ezra is silent about Saturn's role vis-à-vis the Jews.

²⁰¹ Prominent Roman historians such as Tacitus (56–120) and Dio Cassius (ca. 155–after 229), as well as outstanding Christian thinkers such as St. Augustine (354–430), acknowledged that a special link connects Saturn with the holiest day of the week for the Jews. See Tacitus, *Historiae*, 1967, V, 4; Dio Cassius, *Roman History*, 1914, lib. XXXVII, p. 129; St. Augustine, *De consensu*, 1969, lib. I, caput xxi–xxii, col. 1055. That Jewish society of the talmudic period assimilated the same association is attested to by the fact that in the Babylonian Talmud (B Shabbat 156a) Saturn is called *Shabbetai*; i.e., the star of *Shabbat*, the most sacred day of the week. The same connection between Saturn and the Jews appears in the work of prominent medieval Arabic astrologers like Al-Qabīṣī, Abū Ma‘shar, and Al-Bīrūnī. See Al-Qabīṣī, 2004, II:4–5, pp. 64–65; *On Great Conjunctions*, 2000, I, pp. 44–45; *Kitāb al-Taḥḥīm*, 1934, § 433, p. 253.

²⁰² *Tetrabiblos*, 1980, II:8, pp. 179–180; Al-Qabīṣī, 2004, II:4–5, pp. 64–65; *Kitāb al-Madḥal*, 1996, VII:8, v, pp. 311–312; *Kitāb al-Taḥḥīm*, 1934, § 433, p. 253; *Abbreviation*, 1994, V:4–7, pp. 60–61.

²⁰³ See *Memorias de ‘Abd Allah*, 1980, p. 315: “¿No dicen los judíos que son ‘saturnianos’? La cosa es indudable, pues, de hecho, ¿no hacen fiesta el sábado, que es el día de Saturno, y no está su carácter del todo acomodado a las cualidades de que es indicio Saturno, o sea, avaricia, sordidez, ruindad, engaño y traición?” The link between Saturn and the Jews was a welcome addition to the arsenal of antisemitism and was used in iconographic sources from the end of the Middle Ages and the beginning of the Modern Era to identify the Jew, after the model of Cronus, with Saturn and depict him swallowing his own children. See Schreckenber, 1996, pp. 330–331.

²⁰⁴ This idea is forcefully conveyed in Ibn Ezra's long commentary on Ex. 20:13.

²⁰⁵ See *Liber de nativitatibus*, 1484, sig. E1r: “Saturnus in nona nativitate Iudei suam fidem constanter servaturam ostendit, in Christiani vero nativitate suam fidem negluc-turam iudicat, Sarraceni quoque nascentis idem fidem infirmat. Sol vero in nona, fidem Christiani nascentis consolidat, Iudei et Sarraceni, fidem nascentis negligendam ostendit.

The second way in the introduction to *Sefer ha-Moladot* converts the terrestrial climates²⁰⁶ into a macro-astrological factor.²⁰⁷ Ibn Ezra writes that astrological influence is not uniform on earth but varies significantly as a function of these seven bands, to the extent that the climate of an individual's birth is more important than his or her natal chart.²⁰⁸ This aspect is completely neglected in 'Olam I and 'Olam II but plays a prominent role in other parts of Ibn Ezra's oeuvre, including his biblical commentaries.²⁰⁹ To explain the macro-astrological properties of the climates on Earth, Ibn Ezra applies the Hippocratic-Galenic theory of the four humors. According to this second way, those born in Ethiopia, even if favored by the planet Mercury, cannot be as wise as people born in other climates.²¹⁰ He explains this succinctly by the argument that the Ethiopians' temperament is not balanced because of the intense heat prevailing in their country.²¹¹

Mars in nona Sarraceni fidem servandam docet, Christiani vero et Iudei nascentis fidem in irritum ducit.”

²⁰⁶ In Antiquity and the Middle Ages, the climates were considered to be seven bands covering the entire oikumene and extended in latitude between two parallels where the same phenomena were to be found, such as a prevailing weather or the length of the longest day in summer. Fontaine, 2000, pp. 101–137.

²⁰⁷ *Moladot*, Introduction, § 3:1.

²⁰⁸ *Moladot*, Introduction, § 3:2–4.

²⁰⁹ As for the climatological-astrological theory, in *Reshit Hokhmah* Ibn Ezra correlates each of the seven climates to each of the twelve zodiacal signs and to each of the seven planets; in *Te'amim* I he explains this astrological relationship in terms of a sympathetic link connecting the qualities of a particular sign to the weather or to other natural characteristic of a certain climate. See *Reshit Hokhmah*, 1939, II, ix:7; xi:28, *et passim*; *Te'amim* I, § 2.2:13, pp. 38–39; § 2.13:6, pp. 52–53, *et passim*. To Ibn Ezra's mind, the climates were created as part of the divine blueprint of Genesis; he also expects the climates to remain stable and is worried that climatological variations might usher in the end of the world. See his commentary on Psalms 89:12 and Job 38:5. See also Sela, 1999, pp. 248–252.

²¹⁰ Here Ibn Ezra follows in the footsteps of Claudius Ptolemy. See *Tetrabiblos*, 1980, I:11, pp. 120–123.

²¹¹ *Moladot*, Introduction, § 3:3–4. The same point, although producing an opposite result, is driven home in the commentary on Ecclesiastes 1:12: בעבור — בירושלם — ואמר: בירושלם נכון לקבל החכמה. כי ידוע שהיישוב נחלק לשבעה חלקים, ולא יתכן היות ישרי לב לקבל היות מקומה נכון לקבל החכמה. כי החלקים האמצעיים; כי החלקים הראשונים והאחרונים ימנע רוב החום או הקור החכמה כי אם בשלשה חלקים האמצעיים; כי החלקים האמצעיים; כי החלקים הראשונים והאחרונים ימנע רוב החום או הקור היות תולדת אדם ישרה. וידוע כי רוחב ירושלם שלשים מעלות, והוא הצי היישוב” (“He said ‘in Jerusalem,’ because it is located in a place specially apt to receive wisdom. For it is known that the inhabited part of the earth is divided into seven parts and it is impossible that upright people, capable of receiving wisdom, should be found anywhere except in the middle three sections. For in the first and last pairs of sections, excessive heat or cold prevents (the formation of) a sound human temperament. And it is known that the latitude of Jerusalem is 33°, that is, the middle of the oikumene”).

The third and fourth ways are the only ones in which two classical astrological agents work as macro-astrological principles. In the third way, the “great”²¹² conjunction of Saturn and Jupiter appears again as a macro-astrological principle in its own right (and not merely as an illustrative tool, as in the first way). Now it plays the ostensibly less spectacular role of holding power over every city (in contrast to the more stupendous task of causing the Jews’ ongoing exile, as in the first way).²¹³ This suggests that in the third way the Saturn-Jupiter conjunctions play what Ibn Ezra deemed to be their standard and most frequent role, whereas the function assigned to them in the first way is exceptional. This is corroborated by the fact that in ‘*Olam* I and ‘*Olam* II, too, the Saturn-Jupiter conjunctions generally play the less dramatic role of molding the political history of cities and causing high or low prices.²¹⁴

In the fourth way Ibn Ezra presents the “revolution of the world” as a macro-astrological principle that causes the inhabitants of a city to succumb to a plague even though their natal horoscopes do not indicate such an outcome.²¹⁵ The “revolution of the world” is a special horoscope cast every year, when the Sun enters Aries, to forecast world affairs during the next year;²¹⁶ the peculiar name of this astrological agent evokes the creation of the world, which, according to Indian cosmology, occurred when all the planets met in conjunction in the head of Aries. But the expression “revolution of the world” (תְּקוּפַת הָעוֹלָם) is never used in either version of *Sefer ha-‘Olam*, where the same astrological factor is cited, instead, as the “revolution of the year” (תְּקוּפַת הַשָּׁנָה) to forecast the fortunes of cities and kingdoms, even in years of a Saturn-Jupiter conjunction, or in a hierarchical arrangement of the three types of Saturn-Jupiter conjunctions, taken along with the revolution of the year, according to the lengths of their periods.²¹⁷

²¹² In the introduction to *Sefer ha-Moladot* Ibn Ezra uses “great conjunction” as a generic term for all types of Saturn-Jupiter conjunctions and not as a reference to the conjunction that takes place every 960 years. See also ‘*Olam* I, § 20:1–3; § 58:1.

²¹³ *Moladot*, Introduction, § 4:1–2.

²¹⁴ See ‘*Olam* I, § 25:1–5; § 39:1–9; § 40:1–3; § 42:1–7; § 43:1–9; ‘*Olam* II, § 21:1–2; § 27:1–2 *et passim*. See also above, p. 20.

²¹⁵ *Moladot*, Introduction, § 5:1–2.

²¹⁶ The astrological function of the “revolution of the world” is analogous in a personal scale to that of the anniversary horoscope, which is mentioned in *Moladot* (Introduction, § 9:2) and is cast when the Sun arrives at the same point in the zodiac where it was at the native’s time of birth to forecast his fate in the next year.

²¹⁷ See ‘*Olam* I, § 25:1–5; § 32:1–8; § 39:1–9; § 40:1–3; § 42:1–8; § 44:1–6; § 53:1–7; ‘*Olam* II, § 11:1–4 and note. For an explanation of the term, see ‘*Olam* I, § 10:2 and note.

The fifth way is concerned with the social rank of the family; the sixth, with the authority of the king. These are two seemingly non-astrological factors whose societal application may be taken as the antithesis of the obviously astrological character of the agents of the third and fourth ways.²¹⁸ But the fifth and sixth ways provide a window into the socio-political mindset and awareness of an astrologically minded intellectual of the twelfth century: instead of conceiving of social status arising from family standing or political power as sociological factors created by a combination of structural and anonymous traits of society, or as personal factors determined by the free will of individuals, Ibn Ezra converts them into macro-astrological factors that control human social mobility. This is evident in the case of a king, whose natal chart, in Ibn Ezra's interpretation (if it indicates that the king will drag many people into war), overrides the indications of the natal charts of his subjects.²¹⁹

The seventh way focuses on a classic scenario of the Mediterranean basin (where sailing in winter is an extremely dangerous venture) and converts astrological influence on weather into a powerful macro-astrological principle.²²⁰ This concept is pithily denoted here by the Hebrew word *toledet*, an idiosyncratic neologism seldom used with this meaning.²²¹ In this particular case, Ibn Ezra contrasts the stars' sway over the weather with the uselessness for predicting disaster of a horoscope cast according to the doctrine of elections (which aims to find the most propitious moment for beginning a particular activity).²²² Ibn Ezra theatrically proclaims that the fury of the elements has the power to doom a thousand persons, even though their natal horoscopes have reassured them that they will survive this year.²²³

In stark contrast to the utter fatalism of the seventh way (as well the third and fourth ways), the eighth way brings to the fore the possibility of salvation from the stars. Here Ibn Ezra converts "the power of the soul, whose power resides in wisdom," into a macro-astrological principle able to cancel out the decrees of the natal chart. He is referring to the "superior soul", the highest component of the tripartite soul (the vegetative or appetitive soul; the animal or locomotive soul; and the

²¹⁸ *Moladot*, Introduction, § 6:1–2; § 7:1–2.

²¹⁹ *Moladot*, Introduction, § 7:2.

²²⁰ *Moladot*, Introduction, § 8:1–4.

²²¹ See *Moladot*, Introduction, § 8:1.

²²² *Moladot*, Introduction, § 8:2.

²²³ *Moladot*, Introduction, § 8:3–4.

wise or superior soul), and, in Ibn Ezra's view, also the most significant means by which human beings can evade the decrees of the stars.²²⁴ Following in the footsteps of Sherira Gaon (d. 1006) and Hai Gaon (d. 1038), Ibn Ezra presents two significantly different ways by which the wise human soul can overcome the bodily injuries indicated by the individual horoscope.²²⁵ The first way is embodied in the astrologer, who epitomizes a rational and manifestly scientific methodology that allows him to remedy some of the physical injuries inflicted upon him by the stars.²²⁶ The second way is personified by the righteous person, who blends sublime godly devotion with the scholar's characteristics and is described by Ibn Ezra as being completely saved, thanks to divine intervention, from the injuries ordained in his personal horoscope.²²⁷

Place and Date of Composition

'*Olam* I was written in AM 4908, i.e., 1148CE, in the town of Béziers in southern France. This year is mentioned as the date of composition in the section on the planetary *ḥardārāt*, where Ibn Ezra also reveals that the year 4908 is the fourth in the *ḥardār*ship of Mars, according to the reckoning of the Persians.²²⁸ In addition, a colophon indicates that the work was completed in Marḥeshvan 4909 [= November 1148].²²⁹ '*Olam* I uses latitude 42°30' to demonstrate that "nobody can know when the Sun enters Aries in any particular city unless he knows the latitude of the place, meaning its latitude with respect to the equator."²³⁰ This latitude corresponds to the neighborhood of Béziers.²³¹

²²⁴ See note on *Moladot*, Introduction, § 9:1 (below p. 291). The sources of the tripartite soul can be traced back to Plato (*Timaeus* 69a, 69d, 79d), Aristotle (*De anima* 413a, 413b, 414a, 414b), and Galen (Lloyd, 1973, pp. 140). In medieval Jewish culture, the theory of the tripartite soul is mentioned and applied by Saadia Gaon (882–942) (*Book of Beliefs and Opinions*, 1976, pp. 241–245; *Book of Theodicy*, 1988, 154–155), and then, in the twelfth century, by Judah b. Barzillai of Barcelona (*Commentary on Sefer Yeširah*, 1885, p. 264), Judah Halavai (*Kuzari*, 1998, pp. 270–281), Abraham Bar Ḥiyya (*Megilat haMegaleh*, 1924, pp. 55, 58, 73; *Yesodé ha-Tebuna*, 1952, pp. 4–6), and notably by Maimonides (*Guide of the Perplexed*, 1963, I:72, p. 187).

²²⁵ See *Moladot*, Introduction, § 9:4 and note; *Queries on Astrology*, 2004, pp. 100–101.

²²⁶ *Moladot*, Introduction, § 9:2–3.

²²⁷ *Moladot*, Introduction, § 9:4–5. For this interpretation, see Sela, 2003, pp. 178–191.

²²⁸ '*Olam* I, § 24:1.

²²⁹ MS Munich, Bayerische Staatsbibliothek, Cod. Hebr. 304 (IMHM: F 01109), f. 10a.

²³⁰ '*Olam* I, § 14:1; § 15:1.

²³¹ According to Matthew, 1996, p. 232, the latitude of Béziers is 43°21'.

Cross-references from 'Olam I to other parts of Ibn Ezra's astrological corpus, and vice versa, show that it was composed after the completion of *Reshit Hokhmah* I, *Sefer ha-Te'amim* I, *Sefer ha-Mivharim* I, and *Sefer Keli ha-Neḥoshet* III (Book of the Astrolabe).²³² Thus 'Olam I is in all likelihood the last component of the astrological encyclopedia rapidly composed in Béziers between June and November of 1148.²³³ Other cross-references indicate that 'Olam I was written before the recently found *Sefer ha-Mivharim* III and before *Sefer ha-Te'amim* II, which are not part of the Béziers astrological encyclopedia.²³⁴

There is no clear information about the date and place of composition of 'Olam II, although a number of indications offer clues. The year AM 4902 (1142 CE) is mentioned in the section on the planetary *fardārāt* ('Olam II, § 31:1);²³⁵ three of the seven manuscripts employed in the present edition also mention the year 4908 [= 1148] in the same context.²³⁶ But when it comes to dating 'Olam II, these data are not as useful as those in 'Olam I. (a) Whereas 'Olam I offers a straightforward solution to the problem of determining the planet in charge of the *fardār*ship of certain year,²³⁷ 'Olam II speaks in riddles.²³⁸ (b) Whereas 'Olam I uses the reckoning of the Persians and explicitly mentions AM 4908 [= 1148 CE] as the year of its composition, 'Olam II attempts to adapt the calculation to the Jewish calendar and consequently mentions AM 4902 [= 1142 CE] not as the date of composition but as the beginning of the 259th Metonic

²³² These cross-references are: a retrospective reference to *Sefer Reshit Hokhmah* in 'Olam I, § 64:2 (see note there); three anticipatory references to 'Olam I in the first version of *Sefer ha-Te'amim* (see Appendix B, examples 3,4,5); a retrospective reference to *Sefer ha-Mivharim* in 'Olam I, § 34:6 (see note there), and a retrospective reference in 'Olam I, § 62:5 (see note there) to the third version of *Sefer Keli ha-Neḥoshet*, where the year AM 4908 [1148 CE] is given by the star list on the rete.

²³³ According to a colophon, *Reshit Hokhmah* I, the first component of the encyclopedia, was composed in Tammuz 4908 [= June 1148]. See MS Berlin, Staatsbibliothek 220 [Or. Qu. 679] (IMHM: F 01779), f. 30. Another colophon indicates that 'Olam I was completed in Marḥeshvan 4909 [= November 1148] (Munich, Bayerische Staatsbibliothek, Cod. Hebr. 304 [IMHM: F 01109]), f. 10a. For the other components of the Béziers astrological encyclopedia, see Sela and Freudenthal, 2006, pp. 20, 34–36.

²³⁴ These are a past-tense references to 'Olam I, § 39:1–9 in the recently discovered third version of *Sefer ha-Mivharim*, which also contains a reference to the recently identified second version of *Reshit Hokhmah* (see 'Olam I, § 39:1–9 and note, and Appendix B, example 2); a past-tense reference to 'Olam I, § 18:2–3 in the second version of *Sefer ha-Te'amim* (see Appendix B, example 6).

²³⁵ 'Olam II, § 31:1.

²³⁶ See 'Olam II, § 32:3 and *variae lectiones* to 'Olam II, § 32:1–4.

²³⁷ 'Olam I, § 24:1.

²³⁸ 'Olam II, § 31:1–3.

cycle.²³⁹ As for the reference to AM 4908 [= 1148 CE], found in several manuscripts, this is a later interpolation by a glossator or copyist to solve Ibn Ezra's riddle by means of a comparison with the solution in 'Olam I of a similar problem regarding the year 4908 [1148].²⁴⁰ Therefore, all that can be positively said on the basis of this chronological information is that 'Olam II was composed between the beginning of the 259th Metonic cycle, that is, AM 4902 [= 1142 CE], and the beginning of the 260th cycle (4921/1161).

The list of cities and their signs in 'Olam II²⁴¹ is evidence of Ibn Ezra's familiarity with a number of places in the Iberian peninsula, the Maghreb, Italy, and France, the places where he lived at various times in his life. Particularly significant are the five Italian cities included in the list: Rome, Pisa, Lucca, Mantua, and Verona. For one thing, they correspond exactly with what we know about Ibn Ezra's travels in Italy; their order of presentation coincides with the order in which Ibn Ezra visited them.²⁴² Moreover, Ibn Ezra's reference to the sign of the cities of Pisa and Lucca makes plain that in these cities he performed astronomical observations for astrological uses.²⁴³ But the list also includes Marseilles,²⁴⁴ which suggests that *Sefer ha-'Olam II* was composed after Ibn Ezra passed from Italy into southern France.

A scrutiny of the cross-references from 'Olam II to Ibn Ezra's astrological corpus, and vice versa, confirms this perception. 'Olam II refers in the past tense to *Sefer Reshit Hokhmah*, *Sefer ha-Ṭe'amim*, *Sefer ha-Moladot*, and *Sefer Keli ha-Neḥoshet*,²⁴⁵ whereas *Sefer ha-She'elot II* refers in the

²³⁹ See 'Olam I, § 24:1 and note; cf. 'Olam II, § 31:1–3 and note.

²⁴⁰ See 'Olam II, § 32:1–5 and note.

²⁴¹ 'Olam II, § 15:1–25.

²⁴² The Italian phase of Ibn Ezra's literary career was based in the following cities: (a) Rome (1140–1142): Sela and Freudenthal, 2006, items 1–8 on pp. 18, 23–26; (b) Pisa (1142–1145): Sela and Freudenthal, 2006, item 20 on pp. 19, 31; (c) Lucca (1142–1145): Sela and Freudenthal, 2006, items 10–19 on pp. 18–19, 27–31; (d) Mantua (1145–1146): Sela and Freudenthal, 2006, items 21–22 on pp. 19, 31–32; (e) Verona (1146): Sela and Freudenthal, 2006, items 23–25 on pp. 19, 32–33.

²⁴³ 'Olam II, § 15:24–25: "Pisa, some say Pisces, but according to what I have verified by experience its sign is Aquarius 6°. Lucca, according to what I have verified by experience several times its sign is Cancer, but in Jupiter's term." This reference to Pisa is the only evidence we have that Ibn Ezra lived in that city, where he purportedly composed a set of astronomical tables and their corresponding canons, called *Liber de Rationibus Tabularum*. See *Rationibus tabularum*, 1947, p. 87.

²⁴⁴ See 'Olam II, § 15:13.

²⁴⁵ See respectively 'Olam II, § 21:1, § 36:8 and notes (*Sefer Reshit Hokhmah*); § 45:4 and note (*Sefer ha-Ṭe'amim*); § 23:1 and note (*Sefer ha-Moladot*); § 45:3 (*Sefer Keli ha-Neḥoshet*).

past tense to 'Olam II.²⁴⁶ Of these links, the cross-reference to *Sefer ha-Moladot* is the most important, because its contents allow us to establish unequivocally that it targets *Sefer ha-Moladot* I, composed in Béziers in 1148,²⁴⁷ thus establishing a certain *terminus post quem* for *Sefer ha-'Olam* II. Likewise, a reliable *terminus ante quem* for 'Olam II is furnished by the cross-reference to *Sefer ha-Te'amim*: a study of its content shows that it targets *Sefer ha-Te'amim* II, which may well have been composed around 1154 in northern France.²⁴⁸

The Critical Edition of the Hebrew Text

The present critical edition was executed in three stages. First I carried out a preliminary scrutiny of the available manuscript copies of 'Olam I and 'Olam II, focusing on strategic loci that made it possible to detect specific families and other features in the transmission of the texts. In a second stage I selected seven copies for each text from among the available manuscript copies of 'Olam I and 'Olam II, on the basis of the following criteria: (i) finding the oldest, most legible, and, as far as possible, most complete copies; (ii) finding copies that are representative of specific manuscript families; (iii) the number of seven copies was chosen not only because of the abundance of available manuscripts but especially because past experience indicates that a collation of a fairly large number of copies is necessary to obtain a final text that is meaningful and reliable in all parts. Finally, I collated the selected copies, thereby obtaining a final Hebrew text and a critical apparatus that seeks to record, in an abbreviated manner, all the readings in the copies consulted. To identify the different copies of each text I have used Hebrew letters, most of which are suggestive of the archive from which the manuscript comes.

²⁴⁶ See Appendix B, example 1.

²⁴⁷ See 'Olam II, § 23:1: "יסתכלו בית הסוף בדרך תקופת המולד כאשר פרשתי בספר המולדות" ("they observe the terminal house using the method of the anniversary of the nativity, as I have explained in the *Book of Nativities*"). This retrospective reference deals with a topic related to continuous horoscopy, which is expanded in *Sefer ha-Moladot* I. By contrast, neither *Liber Nativitatum*, the recently found Latin translation of *Sefer ha-Moladot* II, nor *Liber Nativitatus*, an additional treatise on nativities ascribed to Ibn Ezra, is concerned with this subject. To flesh this point out, see 'Olam II, § 23:1 and note.

²⁴⁸ See 'Olam II, § 45:4 and note.

Manuscripts for the Critical Edition of 'Olam I

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Oxford, Bodleian Library, Add. Qu. 160 [Neubauer 2518] (IMHM: F 22230), ff. 141a–154a. This is an octavo paper manuscript of 179 folios, written in a Greek rabbinical script in Thebes in 1367. The manuscript is one of the earliest, if not the earliest, with a collection of astrological works by Ibn Ezra: *Reshit Ḥokhmah* I, ff. 13a–65b; *Ṭe'amim* I, ff. 65b–87b; *Sefer ha-Moladot*, ff. 88a–117b; *Sefer ha-Me'orot*, ff. 118a–126a; *Mivḥarim* I, ff. 128b–140a; *'Olam* I, ff. 141a–154a; *'Olam* II, ff. 165a–167b (written in a seventeenth century hand).

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Philadelphia, University of Pennsylvania, Schoenberg Collection Ljs 57/2 (IMHM: F 09357), ff. 86–92. This vellum manuscript, written in a Sephardi hand in the fourteenth century, contains the following selection of Ibn Ezra's astrological works: *Reshit Ḥokhmah* I, ff. 25–60; *Mivḥarim* II (fragment), ff. 61–62; *She'elot* II (fragment), ff. 63–68; *Mishpetei ha-Mazzalot*, ff. 69–86; *'Olam* I, ff. 86–92; *Sefer ha-Me'orot* (fragment), ff. 93.²⁴⁹

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Vatican, Biblioteca Apostolica Vaticana ebr. 390 (IMHM: F 00472), ff. 146a–157b. Written in a Byzantine hand in 1436, this manuscript contains: *Reshit Ḥokhmah* I, ff. 1a–57a; *She'elot* I, ff. 58a–76a; *Mivḥarim* I, ff. 76b–82a; *Ṭe'amim* I, ff. 85a–108a; *Sefer ha-Moladot*, ff. 108a–138b; *Sefer ha-Me'orot*, ff. 138b–146a; *'Olam* I, ff. 146a–157b. This is the manuscript on which J.L. Fleischer based his edition of *'Olam* I, published in 1937.²⁵⁰

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Paris, Bibliothèque Nationale de France, MS héb. 189 (IMHM: F 04173), ff. 134a–142b. This paper manuscript, written in a Byzantine hand in the

²⁴⁹ For an exhaustive description of this manuscript, see Langermann, 1988, pp. 253–292.

²⁵⁰ *'Olam* I, Fleischer, pp. 33–49.

fourteenth/fifteenth century, contains: *Ṭe'amim* I, ff. 72b–87b; *Sefer ha-Moladot*, ff. 87b–109a; *She'elot* I, ff. 109a–120a; *Sefer ha-Me'orot*, ff. 120a–125b; *Mivḥarim* I, ff. 125b–133b; *'Olam* I, ff. 134a–142b.

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Munich, Bayerische Staatsbibliothek, Cod. Hebr. 202 (IMHM: F 01649), ff. 116b–125a. This manuscript, written in an Italian hand in the fifteenth century, contains: *Reshit Ḥokhmah* I, ff. 1b–37b; *Ṭe'amim* II, ff. 37b–52b; *Ṭe'amim* I, ff. 52b–67b; *Sefer ha-Moladot*, ff. 70a–91a; *She'elot* I, ff. 91b–101b; *Sefer ha-Me'orot*, ff. 101b–108a; *Mivḥarim* I, ff. 108b–116a; *'Olam* I, ff. 116b–125a; *'Olam* II, ff. 138a–144b; *Mivḥarim* II, ff. 144b–150a; *Mishpeṭei ha-Mazzalot*, ff. 150a–163b.

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Paris, Bibliothèque Nationale de France, MS héb. 1056 (IMHM: F 14659), ff. 80a–86a. This paper manuscript, written in a Sephardi hand in the fifteenth century, contains: *Reshit Ḥokhmah* I, ff. 3b–34a; *Ṭe'amim* I, ff. 34b–46a; *Sefer ha-Moladot*, ff. 46b–61b; *She'elot* I, ff. 62b–70b; *Sefer ha-Me'orot*, ff. 70b–74a; *Mivḥarim* I, ff. 74b–79b; *'Olam* I, ff. 80a–86a.

ז

Paris, Bibliothèque Nationale de France, héb. 1045 (IMHM: F 33996), ff. 168b–177b. A vellum manuscript, written in a Sephardi hand in the fifteenth century, it contains: *Reshit Ḥokhmah* I, ff. 89a–117a; *Ṭe'amim* I, ff. 117b–127a; *Sefer ha-Moladot*, ff. 127b–146a; *She'elot* I, ff. 146a–155b; *Sefer ha-Me'orot*, ff. 155b–161a; *Mivḥarim* I, ff. 161a–168b; *'Olam* I, ff. 168b–177b; *'Olam* II, ff. 196b–200b.

Manuscripts for the Critical Edition of 'Olam II

ח

Paris, Bibliothèque Nationale de France, MS héb. 1058 (IMHM: F 22230), ff. 87b–93a. This paper and vellum manuscript, written in the fourteenth century in a Sephardi script, is divided into two distinct parts. The first contains a typical collection of Ibn Ezra's astrological works: *She'elot* II, ff. 1a–8b; *Mivḥarim* II, ff. 8b–13b; *Mishpeṭei ha-Mazzalot*, ff. 13b–26a;

Te'amim II, ff. 26b–39b. The second part (ff. 50–194) contains the last four chapters of a vast 35-chapter astrological and astronomical anthology, comprising a careful selection of more or less lengthy fragments and complete treatises from the Hebrew astrological and astronomical work of Abraham Bar Ḥiyya and Abraham Ibn Ezra. The importance of this anthology resides in the fact that it was assembled no later than 1257.²⁵¹ Because this is substantially earlier than the date of any other manuscript of any scientific treatise by Ibn Ezra or Bar Ḥiyya, it offers the earliest known copies of all its components: A brief description of its contents follows:

Chapter 32 (ff. 50a–63b): long excerpts from Bar Ḥiyya's *Ḥeshbon mahalakhot ha-kokhavim* (Computation of the motions of stars), *Ṣurat ha-'ares* (The shape of the earth), and *Sefer ha-'Ibbur* (Book of Intercalation). At the end there is a fragment from 'Olam I and the entire tenth chapter of *Reshit Ḥokhmah I*.

Chapter 33 (ff. 64a–92b): the complete astrological history from the fifth chapter of Bar Ḥiyya's *Megillat ha-Megalleh*; a commentary written by the anthologist on the 120 conjunctions of the seven planets, which is developed by Ibn Ezra in 'Olam I, 'Olam II, and other parts of his work; excerpts from the Hebrew translation of Māshā'allāh's *Book on Eclipses*; and the complete text of 'Olam II.

Chapter 34 (ff. 93a–98a): excerpts from the second version of *Keli ha-Nehoshet* by Ibn Ezra; the complete tenth chapter of *Sefer ha-Te'amim I* (ff. 94b–98a).

Chapter 35 (ff. 98a–124a): a smooth and clever combination of excerpts from *Te'amim I* and *Te'amim II*, which, avoiding repetitions and redundancies, in fact creates a new version of *Sefer ha-Te'amim*; the treatise “On the storms of the stars,” ascribed here to Ptolemy but which is in fact the *Eisagoge* by Geminus, translated by Moshe Ibn Tibbon in 1246 (this provides the *terminus post quem* for the anthology).²⁵²

ת

New York, Jewish Theological Seminary, Mic 2626 (IMHM: F 28879), ff. 126b–133b. Written in a Sephardi script in the fifteenth century, this manuscript contains the following astrological works by Ibn Ezra: *Reshit Ḥokhmah I*, ff. 33a–75b; *Mishpetei ha-Mazzalot*, ff. 75b–91a; *Sefer*

²⁵¹ See f. 85b.

²⁵² Vajda, 1960, p. 161.

ha-Moladot, ff. 91b–116b; *‘Olam II*, ff. 126b–133b; *Sefer ha-Me’orot*, ff. 134a–140a; *Ṭe’amim II*, ff. 143b–159b.

ב

Munich, Bayerische Staatsbibliothek, Cod. Hebr. 202 (IMHM: F 01649), ff. 138a–144b. For a description of this manuscript, see above under the manuscripts used for the critical edition of *‘Olam I*.

ב

Vatican, Biblioteca Apostolica Vaticana, ebr. 477 (IMHM: F 00530), ff. 86b–95a. Written in an Italian script in 1545, it contains the following astrological works by Ibn Ezra: *Reshit Ḥokhmah I*, ff. 22a–23a; *She’elot II*, ff. 53a–67b; *Mishpetei ha-Mazzalot*, ff. 67b–86a; *‘Olam II*, ff. 86b–95a; *Mivḥarim I*, ff. 97a–108a; *‘Olam I*, ff. 108a–121a; *Ṭe’amim II*, ff. 121b–140a.

ב

Munich, Bayerische Staatsbibliothek, Cod. Hebr. 304, (IMHM: F 01109), ff. 1a–10a. This manuscript was written in an Italian hand in the fourteenth/fifteenth century and contains the following works by Ibn Ezra: *‘Olam I*, ff. 1a–10a, *She’elot I*, ff. 13a–30b; *Ṭe’amim I*, ff. 30a–54b; *Reshit Ḥokhmah I*, ff. 551–116a; *Mivḥarim I*, ff. 116b–128a. This manuscript was used by Steinschneider for his identification of *‘Olam I* and *‘Olam II*.

כ

Madrid, Biblioteca de la Real Academia de la Historia 7 (IMHM: F 07370), ff. 89a–96b. This paper manuscript, written in the fifteenth century in Sephardi script, contains: *Sefer ha-Moladot*, ff. 53a–70b; *Sefer ha-Me’orot*, ff. 72a–76b; *She’elot II*, ff. 79a–86a; *‘Olam I*, ff. 89a–96b; *‘Olam II*, ff. 101a–106a; *Ṭe’amim II*, ff. 112a–124b; *Ṭe’amim I*, ff. 126a–139a; *Mivḥarim I*, ff. 152a–158b; *Mivḥarim II*, ff. 164a–169a.

כ

Paris, Bibliothèque Nationale de France, héb. 1045 (IMHM: F 33996), ff. 196b–200b. See above under the manuscripts used for the critical edition of *‘Olam I*.

Editorial and Translation Principles

A careful scrutiny of the *variae lectiones* made it possible to divide the manuscripts used for the critical edition of 'Olam I and 'Olam II into two families. For 'Olam I, strong affinities were detected among MSS במר, on the one hand, and among MSS טשאט, on the other.²⁵³ From the first family I selected MS ג (Oxford, Bodleian Library, Add. Qu. 160) as my copy text, because it provides a complete, clear, and quite exact text, and because it is the earliest extant copy (written in 1367). For 'Olam II strong affinities were detected among MSS פמקא, on the one hand, and among MSS רתכ, on the other.²⁵⁴ From the first family I selected MS פ (Paris, Bibliothèque Nationale de France, MS héb. 1058) as my copy text, not only because it renders a complete, clear, and quite precise text, but notably because it is part of an anthology composed no later than 1257 and thus substantially earlier than any other manuscript of a scientific treatise by Ibn Ezra.²⁵⁵

The Hebrew apparatus is intended to offer a succinct indication of all readings in the Hebrew manuscripts consulted that differ from the text printed here. A distinction is made between variants, additions, and lacunae. To differentiate a lacuna from an illegible word, I have recorded not only the manuscripts that present a different reading but also those that coincide with the printed text; hence, where the siglum of a manuscript is omitted, the MS in question is illegible at this point.

To determine readings for the Hebrew texts I proceeded as follows. As a rule, when the manuscripts did not agree, the preferred reading was that given by my copy text. However, when the reading in the copy text was lacking or when the reading in the copy text implied a syntactic or grammatical error, I have preferred the readings of other manuscripts. In a few cases—when the readings in the manuscripts were in glaring or logical contradiction to other parts of Ibn Ezra's work or to relevant data available in contemporary (with Ibn Ezra) authoritative and reliable sources—I have offered a new reading that is consistent with these sources. With regard to orthography I have attempted to adopt

²⁵³ See the following *variae lectiones*: § 40:1, n. 24, p. 78; § 41:4, n. 2, p. 80; § 45:1, n. 10, p. 82.

²⁵⁴ See the following *variae lectiones*: § 20:1, n. 1, p. 170; § 24:4, n. 17, p. 172; § 26:3, n. 3, p. 174; § 29:1, n. 20, p. 174.

²⁵⁵ Two caveats are in order: (a) MS פ itself was written in the fourteenth century and incorporates, among other items, a copy of chapters 32 through 35 of this anthology, which was written no later than 1257. (b) The compiler of the anthology added notes and comments to present his own opinions about the contents of the included texts, usually without revealing his sources; in some strategic and controversial places he significantly altered the original text.

a policy of uniformity, except where a variant may indicate a different reading. I have added punctuation to the Hebrew text and, to facilitate references, I have divided it into sections and sentences.

As already noted in my edition of the two versions of *Sefer ha-Te'amim*, there are solid indications that during the more than one hundred years that passed between the composition of Ibn Ezra's astrological treatises and the date of the earliest available manuscripts his students and admirers actively modified and added to his astrological work as they copied it; this must drastically lower any expectations that an exhaustive study of the manuscripts might enable scholars to restore with precision the original Hebrew texts of Ibn Ezra's astrological works.²⁵⁶ This caveat applies to the current edition as well. As will be shown in due course, 'Olam II, § 32:1–5 incorporates a fairly long passage that a later glossator or copyist interpolated in order to solve a riddle that Ibn Ezra posed in a previous section.²⁵⁷ In order to be true to a significant part of the manuscripts tradition, I have incorporated this interpolation in the Hebrew text and the corresponding English translation, but I have marked it in such a way as to highlight its spurious status.

The translation is meant to help readers understand the two Hebrew texts with as much fidelity as possible and is not addressed only to those who do not read Hebrew. As already noted in the introduction to my previous edition, a critical edition without a translation into a widely used modern language would leave most of the difficulties posed by obscure and convoluted medieval Hebrew texts as Ibn Ezra's astrological writings as incomprehensible as before, even for those who are fluent in modern Hebrew. In the final analysis, these translations represent a commentary on the Hebrew text. The English is divided into the same sections and sentences as the Hebrew. The paragraphing and punctuation in the translation is virtually the same as in the Hebrew text and may be also regarded as an interpretation of the text. The numbers in the English translation refer to the notes that follow the texts. These notes are intended to illustrate the links between 'Olam I and 'Olam II as well as between them and other parts of Ibn Ezra's scientific corpus, to explain astrological or astronomical concepts and terms whenever necessary, and to identify sources. To the extent possible, Hebrew astrological terms have been rendered into the modern English technical nomenclature of astrology, although this procedure sometimes comes at the cost of

²⁵⁶ *Te'amim*, 2007, "Introduction," pp. 18–19.

²⁵⁷ See 'Olam II, § 32:1–5 and notes.

losing the special flavor of Ibn Ezra's Hebrew astrological vocabulary. Accordingly, a special effort has been made in the notes to explain this vocabulary and especially the idiosyncratic neologisms.

Editorial and Translation Changes with Respect to the Previous Edition

To make cases in which the Hebrew text departs from the copy text clear to readers, the incipits of all readings that do not correspond to the copy text have been marked with an asterisk in the Hebrew critical apparatus. When necessary, I have explained the grounds for my decision. Ibn Ezra employs the word "house," Hebrew **בֵּית**, to denote a disconcerting variety of astrological meanings: horoscopic house, zodiacal sign, planetary house, house of exaltation, etc. To partially disambiguate among these senses, I have rendered it as "place" (corresponding to the Greek *topos*) when the reference is to any of the twelve horoscopic houses and as "house" in all the other cases.

Abbreviations and Sigla

- < (in Hebrew text) after incipit
- > (in Hebrew text) before incipit
- חסר (in Hebrew text) lacuna
- פ (in Hebrew text) position of words shifted
- [] (in Hebrew text) folios in the copy texts of the editions
- ⟨ ⟩ in the translation: word(s) added to clarify the meaning
- [] in the translation: paraphrase or gloss
- () in the translation: biblical sources
- { } in the Hebrew text and in the English translation: interpolation

PART ONE

**FIRST VERSION OF THE BOOK OF THE WORLD
BY ABRAHAM IBN EZRA**

HEBREW TEXT AND ENGLISH TRANSLATION

בשם אלהי עולם
 אחל ספר העולם¹
 ומחברות המשרתים כלם²

1 (1) אם מצאת ספר³ אבו מעשר במחברות המשרתים לא תאבה לו ולא תשמע אליו, ^{א141} כי הוא סומך על מחברות⁴ המשרתים במהלך השווה. (2) ואין⁵ חכם מודה לו, כי האמת להיות המחברת כנגד גלגל המזלות. (3) גם לא תסמוך במחברות הכוכבים על לוחות חכמי הודו, כי אינם נכונים כלל. (4) והנכון שתסמוך על לוחות חכמי הנסיון בכל דור ודור.

2 (1) והמחברות הם מאה ועשרים. (2) וככה תוכל לדעת מספרם: ידוע כי כל חשבון שיחובר מאחד עד איוה⁶ מספר שתוצה⁷, תוכל להוציאו מן ערכו אל חצי ואל⁸ חצי אחד. (3) ודמיון זה רצינו לדעת כמה מספר המחובר מאחד עד עשרים. (4) והנה נערוך⁹ עשרים על חציו, שהוא עשרה, ועל חצי אחד, והנה יעלה המספר מאתים ועשרה.

3 (1) והנה נחל לדעת כמה¹⁰ מספר המחברות¹¹ השניות¹², והטעם שיתחברו שני כוכבים לבדם. (2) וידוע כי המשרתים הם שבעה. והנה יש לשבתאי עם המשרתים מחברות ששה.¹³ (3) והנה נערוך¹⁴ ששה על חציו וחצי אחד יעלה אחד ועשרים, וככה מספר המחברות השניות.

4 (1) רצינו לדעת כמה השלישיות. (2) והנה החלונו ושמונו צדק עם שבתאי, ועמהם אחד מן האחרים החמישה, ויעלה המספר חמשה¹⁵. (3) ערכנו אותו על¹⁶ שלשה, שהוא חצי המספר וחצי אחד, עלה ט'ו, וזאת מחברת שבתאי. (4) והנה ראוי להיות מחברות

¹ בשם אלהי עולם/אחל ספר העולם] ברסמש; ט בעז א' חי מכל נעלם/יחל ספר העולם; א ושירים לבורא כל יצורים/יתעלה לדודי דודים אלהי עולם/אחל ספר העולם. ² ומחברות המשרתים כלם] ברסמשא; א ספר העולם. ³ ספר] בסטרמש; א חסר. ⁴ מחברות] בסרמא; ט המחברות. ⁵ ואין] בסטאמש; ר ואם. ⁶ וככה תוכל לדעת מספרם. ידוע כי כל חשבון שיחובר מאחד עד איוה] בסטרמ; א משעה שיתחברו שבעה המשרתים במעלה אחת מן הגלגל עד שישובו להתחבר יחד במעלה אחת יש להם ק"כ מיני מחברות והם זה. ⁷ שתוצה] במט; ארש שירצה; ס שיהיה. ⁸ ואל] בסאמ; ט עם; ר אל; ש או אל. ⁹ נערוך] בסטרמש; א חסר. ¹⁰ כמה] באמ; סטרש < יהיה. ¹¹ המחברות] בסרמש; ט המחובר. ¹² השניות] בסטרמש; א < פ" המחברות השניות ש"צ ש"מ ש"ח ש"נ צ"מ צ"ח צ"נ צ"כ צ"ל מ"ח מ"ג מ"כ מ"ל א"נ מ"ב א"ל פ"ב כ"ל כ"ל. ¹³ מחברות ששה] בסרמש; ט שש מחברות; א מחברות. ¹⁴ נערוך] בארמש; ס ערוך; ט חסר. ¹⁵ החמישה ויעלה המספר חמשה] בסטרמש; א בחמישה מספר המחברות שלו עם החמשה הנוטרים. ¹⁶ אותו על] בסרמש; א אותם; ט חסר.

In the name of God of the world
I commence the *Book of the World and of the
Conjunctions of All the Planets.*

1 (1) If you come across Abū Ma‘shar’s¹ *Book on the Conjunctions² of the Planets³* you would neither like it nor trust it, because he relies on the mean motion for the planetary conjunctions. (2) No scholar concurs with him, because the truth is that the conjunctions should be reckoned with respect to the zodiac.⁴ (3) Nor should you trust the planetary conjunctions calculated according to the ⟨astronomical⟩ tables of the Indian scientists, because they are wholly incorrect. (4) Rather, the correct approach is to rely on the ⟨astronomical⟩ tables of the scientists of every generation who rely on experience.^{5,6}

2 (1) There are 120 conjunctions ⟨of the seven planets⟩.¹ (2) You can calculate their number in the following manner: it is known that you can calculate the number that is the sum ⟨of all the whole numbers⟩ from one to any other number you wish by multiplying this number by ⟨the sum of⟩ half its value plus one-half. (3) As an illustration, ⟨suppose⟩ we want to find the sum ⟨of all the whole numbers⟩ from 1 to 20. (4) We multiply 20 by ⟨the sum of⟩ half its value, which is 10, plus one-half, and this yields the number 210.²

3 (1) We begin by finding the number of double conjunctions, meaning the combinations of only two planets. (2) It is known that there are seven planets. Thus Saturn has six conjunctions with the other planets. (3) Hence we multiply 6 by ⟨the sum of⟩ half its value plus $\frac{1}{2}$, and the result is 21 [i.e., $6 \cdot (\frac{6}{2} + \frac{1}{2})$], and this is the number of double conjunctions.

4 (1) We want to find the ⟨number of⟩ triple conjunctions. (2) We begin by taking Jupiter and Saturn, and ⟨then take⟩ any of the other five ⟨planets⟩ with them; the result is the number 5. (3) We multiply it by 3, which is ⟨the sum of⟩ half its value plus $\frac{1}{2}$, and the result is 15 [i.e., $5 \cdot (\frac{5}{2} + \frac{1}{2})$], and those are Saturn’s conjunctions. (4) Jupiter should have

צדק ארבעה,¹ ערכנו אותם על שנים וחצי, עלו עשרה.² | (5) ומחברות מאדים שלשה,^{141ב} ערכנום על שנים, עלו ששה. (6) ומחברת חמה שנים,³ ערכנום על⁴ אחד וחצי, עלו שלשה. (7) ומחברת נגה עם השפלים אחת. (8) והנה הכל חמשה ושלים, ואלה הם מספרי⁵ המחברות השלישיות.

5 (1) רצינו להוציא המחברות⁶ הרביעיות. (2) והנה נחל משבתאי וצדק ומאדים עמו. (3) ובעבור שצריך לשלשה שיתחברו עמו, תחלת המחברת ארבעה. (4) ערכנום על שנים וחצי, יעלו⁷ עשרה. (5) ואחר כך יהיה⁸ מחברת⁹ שבתאי וצדק עם האחרים, ויהיו בתחלה¹⁰ שלשה.¹¹ (6) ערכנום על שנים, עלו ששה, והנה ששה עשר. (7) ואחר כך יחל שבתאי עם מאדים, ויהיו¹² שנים. (8) ערכנום על אחד וחצי, עלו שלשה. (9) ואחר כך מחברת אחת, והנה עלה מספר שבתאי עשרים מחברות. (10) והנה יחל¹³ צדק משלשה. (11) ערכנום על שנים, עלו ששה. (12) ואחר כך שנים. (13) ערכנום על אחד וחצי, עלו שלשה. (14) ואחר כך מחברת אחת.¹⁴ (15) והנה מחברות צדק עשר. (16) ויחל מאדים משנים. (17) ערכנום על אחד וחצי, עלו שלשה.¹⁵ (18) ואחר כך מחברת אחת, הנה ארבע מחברות¹⁶. (19) ומחברות חמה עם השפלים ממנה אחת. (20) והנה הכל חמש ושלים מחברות רביעיות.

6 (1) רצינו להוציא¹⁷ החמישיות. (2) ומצאנו¹⁸ לשבתאי חמש עשרה, ולצדק חמש, ולמאדים אחת. (3) הנה עלו המחברות החמישיות אחת ועשרים¹⁹. (4) והמחברות השישיות, יש²⁰ לשבתאי שש, ואחת לצדק, והנם²¹ שבע. (5) ומחברת השבעה אחת. (6) והנה עלה המספר מאה ועשרים מחברות. (7) וכל המחברות הם ממספר שאינו זוג ויתחלקו על שבעה.

¹ ערכנו אותו על ג' שהוא חצי המספר וחצי אחד עלה ט"ו. וזאת מחברת שבתאי. והנה ראוי להיות מחברות צדק ארבעה] בסארמש; ט חסר. ² עשרה] בסרמש; ט חמש עשרה; א עשרה המחברות השלישיות. ³ חמה שנים[*] סטרמשא; ב נח. ⁴ ערכנום על] בסטארש; מ ערכנו אותו על. ⁵ מספרי] בסטאמש; ר מספר. ⁶ השלישיות. רצינו להוציא המחברות] בסטרמא; ש חסר. ⁷ יעלו] באטרש; ס ועלו; מ עלו. ⁸ יהיה] ברש; סט יהיו; א יהיו המחברות הרביעיות. ⁹ מחברת] בסטרא; ש המחברת; מ חסר. ¹⁰ בתחלה] שב; סאר בתחלת; טמ חסר. ¹¹ ערכנום על שנים ... בתחלה שלשה] בסטארש; מ חסר. ¹² והנה ששה עשר. ואחר כך יחל שבתאי עם מאדים ויהיו] בסטארש; מ חסר. ¹³ יחל] בסטרש; אמ חסר. ¹⁴ והנה עלה מספר ... מחברת אחת] בסארש; מט חסר. ¹⁵ ואחר כך ב' ... עלו ג'] ברסמ; ט חסר. ¹⁶ ויחל מאדים ... ארבע מחברות] בסטרש; א חסר. ¹⁷ להוציא] באסרמש; ט למצוא. ¹⁸ ומצאנו] ברמש; סטא ומצינו. ¹⁹ לשבתאי חמש עשרה ... אחת ועשרים] בסטאמש; ר חסר. ²⁰ יש] בסאמש; ר של. ²¹ והנם] ברטש; סאמ והנה.

four conjunctions; we multiply that by ⟨the sum of⟩ 2 plus $\frac{1}{2}$, and the result is 10 [i.e., $4 \cdot (\frac{1}{2} + \frac{1}{2})$]. (5) Mars has three conjunctions; we multiply them by 2, and the result is 6 [i.e., $3 \cdot (\frac{3}{2} + \frac{1}{2})$]. (6) Mercury has two conjunctions; we multiply them by ⟨the sum of⟩ 1 plus $\frac{1}{2}$, and the result is 3 [i.e., $2 \cdot (\frac{2}{2} + \frac{1}{2})$]. (7) Venus has one conjunction with the planets beneath it. (8) So the total is 35 [i.e., $5 + 15 + 10 + 6 + 3 + 1$], and this is the number of triple conjunctions.

5 (1) We wish to find out the quadruple conjunctions. (2) We begin with Jupiter and Saturn, and Mars with it. (3) For ⟨these⟩ three ⟨planets⟩ to conjoin ⟨with one of the remaining planets⟩, we start with four conjunctions. (4) We multiply them by $2\frac{1}{2}$ and the result is 10 [i.e., $4 \cdot (\frac{1}{2} + \frac{1}{2})$]. (5) Then come the conjunctions of Saturn and Jupiter with the others, and we start with three ⟨conjunctions⟩. (6) We multiply that by 2 and the result is 6 [i.e., $3 \cdot (\frac{3}{2} + \frac{1}{2})$], and ⟨the partial sum⟩ is 16 [i.e., $10 + 6$]. (7) Then we have Saturn with Mars, and there are two ⟨conjunctions⟩. (8) We multiply them by $1\frac{1}{2}$ and the result is 3 [i.e., $2 \cdot (\frac{2}{2} + \frac{1}{2})$]. (9) Then comes another conjunction, and ⟨the partial sum for⟩ Saturn is 20 conjunctions [i.e., $10 + 6 + 3 + 1$]. (10) Now we have Jupiter with three ⟨conjunctions⟩. (11) We multiply that by 2 and the result is 6 [i.e., $3 \cdot (\frac{3}{2} + \frac{1}{2})$]. (12) Then come two ⟨conjunctions⟩. (13) We multiply that by $1\frac{1}{2}$ and the result is 3 [i.e., $2 \cdot (\frac{2}{2} + \frac{1}{2})$]. (14) Then comes one conjunction. (15) ⟨The partial sum of⟩ Jupiter's conjunctions is 10 [i.e., $6 + 3 + 1$]. (16) Then we have Mars with two ⟨conjunctions⟩. (17) We multiply that by $1\frac{1}{2}$ and the result is 3 [i.e., $2 \cdot (\frac{2}{2} + \frac{1}{2})$]. (18) Then comes one conjunction, making four conjunctions. (19) The Sun has one ⟨quadruple⟩ conjunction with the planets beneath it. (20) So the sum total is 35 quadruple conjunctions [i.e., $20 + 10 + 3 + 1 + 1$].

6 (1) We wish to find the quintuple conjunctions. (2) We find 15 for Saturn, five for Jupiter, and one for Mars. (3) So there are 21 quintuple conjunctions. (4) As for sextuple conjunctions, there are six for Saturn and one for Jupiter, making a total of seven. (5) There is one septuple conjunction. (6) So we have obtained 120 conjunctions [i.e., 21 (2 planets) + 35 (3 planets) + 35 (4 planets) + 21 (5 planets) + 7 (6 planets) + 1 (7 planets)]. (7) All these conjunctions [of any group of planets] are odd numbers that are divisible by seven.¹

7 (1) והמחברת הגדולה היא מחברת צדק עם שבתאי במזל¹ טלה, וזה היה בעבור שהם כוכבים | כבדים. (2) והנה לא יורו על הפרטים כי אם על הכלל. (3) ובעבור^{א142} כי מזל טלה תחלת המזלות, על כן תקרא זאת המחברת גדולה. (4) וזאת² תהיה קרוב מאלף שנה, כי³ כן דרך מהלך שניהם.

8 (1) כי אחר שיתחברו⁴ במזל טלה⁵ יתחברו אחר עשרים שנה בבית השלישות של טלה, שהוא מזל קשת, והוא תשיעי⁶ ממקום מחברתם הראשון. (2) ואחר עשרים שנה אחרות⁷ יתחברו בבית השלישות האחר, שהוא מזל אריה, שהוא תשיעי למזל קשת. (3) ואחר ששים שנה ממחברת הראשונה יתחברו במזל טלה כאשר החלו בתחלה,⁸ כי הוא תשיעי לאריה. (4) רק לא יתחברו במעלה הראשונה רק בקרוב מרביעית מזל⁹ יותר.

9 (1) ככה יעשו עד סוף מאתים וארבעים שנה או מאתים וששים,¹⁰ והנה יתחברו בבתי השלישות שנים עשרה פעמים או שלש עשרה. (2) ואחר כן יצאו ממזלות האש אל מזלות¹¹ העפר, שהם סמוכים להם. (3) וכאשר יחלו לצאת שם¹² תקרא המחברת התיכונה. (4) וככה ילכו משלישות אל שלישות עד סוף י"ב פעמים או י"ג.¹³ (5) ואחר כן יצאו לשלישות מזלות הרוח, ואחר כן למזלות המים,¹⁴ על המשפט שהזכרתי. (6) ובקרוב¹⁵ מאלף שנים ישובו להתחבר במזל טלה.

10 (1) והנה מחברתם מעשרים שנה לעשרים שנה¹⁶ בבתי השלישות, באיזון¹⁷ שלישות שיהיו,¹⁸ תקרא המחברת הקטנה. (2) המחברת הגדולה תורה על נביא שיקום להקים אומה, אם היה¹⁹ מקום המחברת בבית התשיעי או בבית השלישי כנגד המזל הצומח בתקופת שנת²⁰ המחברת, כי אלה השני בתיים²¹ יורו על אותות ומופתים.²²

¹ במזל] בסטרמש; א > בתחלת. ² וזאת] בסמשאר; ט < המחברת. ³ כי] בסמשרט; א חסר. ⁴ שיתחברו] בסמשאר; ט < שניהם. ⁵ טלה] בסמשארט; ר חסר. ⁶ התשיעי] בסמשרט; א תשיעי. ⁷ אחרות] בסמשרט; א אחרת. ⁸ בתחלה] בסמארט; ש בראשונה. ⁹ מזל] בסמארט; ש או. ¹⁰ וישיים] בסמשאר; ט שנה. ¹¹ מזלות] בסמשארט; מ חסר. ¹² שם] בסמשרט; א משם. ¹³ י"ג] בסמשאר; ט < פעמים. ¹⁴ המים] בסמארט; ש הרוח. ¹⁵ ובקרוב*] סא; בשמר וקרוב; ט והקרוב. ¹⁶ שנה] בסמשרט; א חסר. ¹⁷ באיזון] בסמרט; ש לאיזו; א באי זה. ¹⁸ שיהיו] בשמר; סא שיהיה; ט שיקרא. ¹⁹ היה] בסמשרט; א היתה. ²⁰ שנת] בסמשארט; מ שנה. ²¹ השני בתיים] בסאר; ש שני בתיים; רט שני הבתיים. ²² אותות ומופתים] בסמשארט; מ נח.

7 (1) The great conjunction is the conjunction of Saturn and Jupiter in Aries, and this is because they are slow planets. (2) Now they bear a portent for the collective and not for individuals. (3) Because Aries is the first sign, this conjunction is referred to as “great.” (4) It occurs approximately every thousand years, because that is the nature of the paths of the two ⟨planets in question⟩.

8 (1) Twenty years after having conjoined in Aries they conjoin ⟨again⟩ in another house of Aries’ triplicity, namely, in Sagittarius, which is the ninth ⟨sign⟩ from the house of their first conjunction. (2) After another twenty years they conjoin in the other house of the triplicity, which is Leo, which is the ninth ⟨sign⟩ after Sagittarius. (3) Sixty years after the first conjunction they conjoin ⟨again⟩ in Aries, as in the beginning, because it [Aries] is ⟨the⟩ ninth ⟨sign⟩ after Leo. (4) However, they do not conjoin in the first degree ⟨of Aries⟩ but approximately a quarter of the sign further on.

9 (1) They proceed in this manner until 240 or 260 years have passed, so that they conjoin in the houses of the ⟨same⟩ triplicity 12 or 13 times. (2) After that they move from the fiery signs into the earthy signs, which are contiguous to them. (3) When they begin leaving ⟨the fiery triplicity⟩ it is called a “middle conjunction.” (4) In this fashion they shift from triplicity to triplicity ⟨and do not leave a triplicity⟩ until ⟨they have conjoined in it⟩ 12 or 13 times. (5) After that they move into the triplicity of the airy signs, and then to the watery signs, in accordance with the rule that I have already mentioned. (6) After roughly a thousand years they again conjoin in Aries.

10 (1) Their conjunctions that take place every twenty years in the houses of one triplicity, whichever triplicity it may be, are called a “small conjunction.”¹ (2) A great conjunction signifies that a prophet will come to found a nation, on condition that the location of the conjunction is the ninth or third place with respect to the sign of the ascendant at the revolution of the year¹ of the conjunction, for these two places signify portents and wonders.²

11 (1) ורבים יחשבו כי יש כח בחכם¹ | להוציא המזל הצומח בשעת התחברות^{142ב} הכוכבים העליונים. (2) וזה לא יתכן בעבור שני דברים. (3) האחד, שאין מקום צדק ושבתאי² בכל הלוחות שוה, אפילו בלוחות חכמי הנסיון, אע"פ שנייה המחלוקת שיש בין חכמי הודו וחכמי הנסיון,³ כי הם היום בקרוב מתשעה מעלות. (4) ומדרך אחרת, אלו התברר לנו מקום שבתאי במהלך השוה,⁴ גם מקום צדק הוא אמת ונכון⁵ באיזה לוח שיהיה מלוחות הנסיון,⁶ לא נוכל להוציא רגע המחברת⁷ בעבור כובד⁸ תנועת⁹ אלה שני¹⁰ הכוכבים. (5) ואם יכולנו לדעת היום שיתחברו,¹¹ דבר גדול הוא.

12 (1) והנה¹² עוד אוסיף¹³ לך ביאור.¹⁴ (2) אמר בטלמיוס: חכמי¹⁵ דורנו מתהללים כי יוכלו להוציא המזל הצומח בכל מדינה ומדינה בתקופת השנה, שהיא רגע הכנס השמש במזל טלה. (3) ואני אומר כי אין יכולת¹⁶ בי¹⁷ לדעתו, גם לא ידעוהו¹⁸ אשר היו לפני¹⁹ גם הבאים אחרי.

13 (1) ואני אברהם²⁰ אפרש לך טעם בטלמיוס. (2) דע כי אין יכולת באדם לדעת כמה שנת החמה באמת, וטעם השנה שוב השמש אל נקודת מחברת שני²¹ הגלגלים הגדולים ששם תחלת צפון. (3) והכלים העשויים לדעת בהם גבהות השמש בחצי היום, אם היו מדוקדקים היטב, יוכלו להוציא בהם הראשונים ולא השניים. (4) וכבר אמרו בני²² שאכר שעשו שלשה כלים שחלקום²³ לראשונים, גם היו לוקחים בהם עשרה שניים. (5) וכשהיו לוקחים בהם גבהות השמש בחצי היום היה מחלוקת ביניהם כמו שני חלקים ראשונים, וזה הדבר יבא מטעות האומנות. (6) ואם אמרנו שנקח הצל על הארץ, גם יבא הטעות לשם²⁴ מפאת הארץ | אם לא היתה ישרה, גם מפאת העמוד^{143א} אם לא היה ישר, גם מפאת עמידתו. (7) ואחר שהדבר ככה, הוצרכו כל חכמי המזלות לדקדק דור אחר דור. (8) כי הנה אברכו²⁵ אמר כי שנת החמה שס"ה²⁶

¹ כח בחכם] בסמשאר; ט בחכם. ² ושבתאי] בסשארט; מ חסר. ³ אע"פ שנייה המחלוקת שיש בין חכמי הודו וחכמי הנסיון] בשמארט; ס חסר. ⁴ במהלך השוה] בסמשרט; א במזל שוה. ⁵ ונכון] בסשארט; מ נכון. ⁶ הנסיון] בסמשרט; א חסר. ⁷ רגע המחברת] בסמשרט; א כאשר המחבר. ⁸ כובד] בסשרט; א רוב; מ חסר. ⁹ תנועת] בסמשרט; א תנועות. ¹⁰ אלה שני] בסשארט; מ נח. ¹¹ שיתחברו] בסמשאר; ט < בו. ¹² והנה] בסמשארט; ר חסר. ¹³ עוד אוסיף] בסמאט; ר ואני אוסיף; ש נח. ¹⁴ ביאור*] מרט; ש לבאר; בסא באר. ¹⁵ חכמי] בסמשרט; א חכם. ¹⁶ יכולת] בארט; סמש חסר. ¹⁷ בן] בסשרט; מ לכחם. ¹⁸ ידעוהו] בסמשארט; ר ידעו כן. ¹⁹ אשר היו לפני] בסשארט; מ הבאים לפני. ²⁰ ואני אברהם*] ר (ראה להלן, § 47:1); בסמ אמר רבינו אברהם, הנה; אט אמר אברהם, הנה; ש א"ר אברהם, הנה. ²¹ שני] בסמשרט; א חסר. ²² בני] בסמשרט; א בנו יש. ²³ שחלקום] בסמשרט; א שחלקו. ²⁴ לשם] בסשרט; מ שם. ²⁵ אברכו] בסמשארט; ר אבי כן. ²⁶ שס"ה*] סאר; בשמט חסר.

11 (1) Many think that scientists can determine the sign of the ascendant at the hour of the conjunction of the upper planets.¹ (2) But this is impossible,² for two reasons. (3) First, because the location of Saturn and Jupiter is not the same in all ⟨astronomical⟩ tables, not even in the tables of the scientists who rely on experience,³ and not even if we ignore the disagreement between the Indian scientists and the scientists who rely on experience, because ⟨the difference between them⟩ today is approximately 9°. (4) Again, even if we knew Saturn's location in its mean motion, and even if Jupiter's location were true and correct in some table of ⟨the scientists who rely on⟩ experience, we would not be able to find the moment of the conjunction, because of the slowness of these two planets' motion. (5) It is a great achievement if we can know the day of the conjunction.

12 (1) Now I will give you another explanation. (2) Ptolemy said: The scientists of our generation boast that they can find the sign of the ascendant in any city at the revolution of the year, which is the moment when the Sun enters Aries. (3) But I say that I cannot do so and that those who preceded me did not know how, nor will those who come after me.¹

13 (1) I, Abraham, will explain Ptolemy's meaning to you.¹ (2) Nobody can know the true length of the solar year² (the meaning of ⟨the term⟩ year is when the Sun returns to the point of intersection of the two great circles where the north begins³ [i.e., at the vernal equinox the Sun's path begins to incline toward the north]). (3) The instruments used to determine the Sun's altitude at noon, if they are very accurate, can provide ⟨a result in⟩ minutes but not seconds. (4) The Banū Shākir said that they made three instruments that were graduated in minutes and with which they could also measure ten seconds. (5) But when they measured the Sun's altitude at noon there was a discrepancy among them of two minutes, which stems from the inaccuracy of the craft [i.e., the imprecision of the instruments]. (6) There will be an error if we cast a shadow on the earth, too, either because the surface of the earth is not straight, or because the stake is not straight, or because it does not stand ⟨upright⟩.⁴ (7) That being so, all astrologers had to proceed meticulously ⟨and follow each other's observations⟩ generation after generation. (8) For Hipparchus said that the solar year is 365 whole days plus a quarter

ימים שלמים ורביעית יום ופחות ממנו, ולא ידע כמה הפחות. (9) ובא בטלמיוס אחריו, ודקדק יום תקופת השנה והרגע בדרך קרובה, וככה עשה.

14 (1) אין יכולת באדם¹ לדעת מתי תכנס במזל טלה² בכל מדינה ומדינה אם לא ידע כמה מרחב המקום, שטעמו מרחבו³ מהקו השווה. (2) והנה יסתכלו כמה רוב גבהות השמש בחצי היום בהיותה בסוף צפון, שהוא ראש סרטן. (3) גם יעשו ככה בהיותה בסוף דרום, שהוא ראש גדי. (4) ואחר דעתם זה, יוכלו להוציא⁴ כמה מרחב המקום במעלות וראשונים,⁵ אם היא⁶ קשת נטיית השמש נכונה. (5) כי חכמי הודו⁷ אמרו⁸ שהיא כ"ד מעלות שלמות. (6) ובטלמיוס אמר כי היא יותר מכ"ג מעלות, ויותר מן מ"ה⁹ חלקים ופחות מן ג"א חלקים. (7) והנה בטלמיוס לא יכול¹⁰ לדעת האמת. (8) ואברכו¹¹ אמר שהיא אחד עשר¹² חלקים¹³ משמנים ושלוש בכל הגלגל והנה הוא כ"ג ג"א. (9) וחכמי ישמעאל דקדקו יותר מכולם והסכימה דעתם כי קשת הנטייה היא כ"ג ל"ה, חוץ מן יחיי¹⁴ בן אבי¹⁵ מנצור ואברהם¹⁶ אל¹⁷ זרקל¹⁸ שדקדקו¹⁹ יותר מכולם ואמרו²⁰ כי הוא כ"ג ל"ג. (10) ואחר שידע²¹ מרחב הארץ במעלות ושברים, יקח גבהות השמש בחצי היום שהיא קרוב להכנסה²² אל מזל טלה, ומשם ידע.

15 (1) ודמיון זה היינו במקום שרחבו מ"ב מעלות ל חלקים. (2) והנה ראוי להיות גבהות ראש טלה,²³ והטעם שתכנס השמש במזל טלה²⁴, מ"ז מעלות ל' חלקים²⁵. | 143ב (3) והנה לקחנו גבהות²⁶ השמש בחצי היום קודם שתכנס במזל טלה ומצאנוה מ"ז כ'. (4) גם לקחנו גבהות השמש בחצי היום הבא אחריו, והנה ראוי להיותו מ"ז מ"ד. (5) וטעם זה בעבור כי נטיית השמש ביום אחד, כשהיא במזל טלה, קרוב מן כ"ד חלקים; והנה יבא לכל שעה, בין היום והלילה, חלק אחד. (6) וכבר אמרנו כי היה גבהות השמש ביום²⁷ שעבר מ"ז²⁸ כ'. (7) והנה נשאר עשרה²⁹ חלקים להשלמת גבהות טלה במקומו. (8) או ידענו כי אחר עשרה³⁰ שעות אחר חצי היום תכנס השמש במזל טלה, שהם ארבע שעות³¹ מן הלילה.

¹ באדם] בסמארט; ש לאדם. ² טלה] בסמרט; א חסר. ³ מרחבו] בסארט; שמ מרחקו. ⁴ להוציא] בסמרט; א להוליד. ⁵ וראשונים] בסמרט; שא הראשונים. ⁶ היא] בסמארט; מ היתה. ⁷ חכמי הודו] במארט; סח חכמים. ⁸ אמרו] בסמרט; א אומרים. ⁹ ויותר מן מ"ה] בשמארט; ס ומ"ה. ¹⁰ יכול*] סמרט; ב יוכל. ¹¹ ואברכו] בסמארט; ר ואברהם. ¹² אחד עשר] בסמארט; מ עשר. ¹³ חלקים ברט; סמטא חלק. ¹⁴ יחיי] בסמא; ש יחיא; ר יקיי. ¹⁵ אבי] בסמארט; ט אבו. ¹⁶ ואברהם] בסמארט; ר > ואני. ¹⁷ אל] בסמארט; מ בן; ר חסר. ¹⁸ זרקל] בסמארט; ר זקראל. ¹⁹ שדקדקו] בסמארט; מ ודקדקו; ר דקדקתי. ²⁰ ואמרו] בסמארט; ר ואמרת. ²¹ שידע] בסמרט; א שתדע. ²² להכנסה] בסמארט; ר להכנסתו. ²³ טלה] בא; סמרט חסר. ²⁴ טלה] בסארט; שמ חסר. ²⁵ והנה ראוי ... מעלות ל' חלקים] בסמארט; מ חסר. ²⁶ גבהות*] ס (ראה להלן, § 15:4); ר גובה; בשמארט חסר. ²⁷ ביום] בסמארט; א בעבור. ²⁸ מ"ז] בסארט; ש מח; מ כ"ז. ²⁹ עשרה] בסמארט; מ שלש עשרה. ³⁰ אחד עשרה] בשמא; ס אחר י'. ³¹ שעות אחר ... ד שעות] בסמרט; א חסר.

of a day less a fraction, although he did not know how much that fraction was.⁵ (9) He was followed by Ptolemy, who meticulously measured the day and the minute of the revolution of the year in an approximate manner; he proceeded as follows.⁶

14 (1) Nobody can know when (the Sun) enters Aries in any particular city unless he knows the latitude of the place, meaning its latitude with respect to the equator. (2) So they have to find the maximum altitude of the Sun at noon when it [the Sun] is farthest north, namely, the beginning of Cancer. (3) They must do the same when it [the Sun] is farthest south, namely, the beginning of Capricorn. (4) After they know that, they can find the latitude of the place in degrees and minutes, on condition that the arc of the Sun's inclination is correct. (5) For the Indian scientists said that it is 24 whole degrees. (6) But Ptolemy said that it is greater than 23° plus more than $45'$ and less than $51'$. (7) So Ptolemy could not know the truth [i.e., achieve an exact result]. (8) Hipparchus said that it is $\frac{11}{83}$ of the circle, namely $23^{\circ}51'$. (9) The Arab scientists were more precise than everyone else and agreed that the arc of inclination is $23^{\circ}35'$, except Yahyā ben Abī Mansūr and Abraham al-Zarqāl, who were even more precise and said that it is $23^{\circ}33'$.¹ (10) After one has determined the latitude of the city in degrees and fractions, one takes the altitude at noon on the day that the Sun enters Aries, and from that one can know (when the Sun enters Aries).

15 (1) As an illustration, suppose we are at a location whose latitude is $42^{\circ}30'$.¹ (2) So the Sun's altitude at the beginning of Aries, namely, when the Sun enters the sign of Aries, should be $47^{\circ}30'$. (3) We take the Sun's altitude at noon before the Sun enters Aries and find that it is $47^{\circ}20'$. (4) We also take the Sun's altitude at noon on the next day; it should be $47^{\circ}44'$. (5) This means that the Sun's inclination (increases by) nearly $24'$ a day when it is in Aries; that is, one minute for each hour of day or night. (6) We have already said that the Sun's altitude the previous day was $47^{\circ}20'$. (7) Therefore, 10 minutes are needed to complete the altitude of Aries at our location. (8) We deduce that the Sun enters Aries 10 hours after noon, i.e., at the fourth hour of the night.

16 (1) וכאשר יהיה זמן ארוך בין תחלת השנה שדקדק אחד מחכמי המזלות ובין חכם אחר¹ הבא אחריו, כִּי² יתחברו מן השניים שלא יוכל אדם³ לדקדקם⁴ ראשונים עד שיעלו לימים, והנה יחלק החכם האחרון מדת הזמן שיש בינו ובין הקדמון ויוציא מהלך השנה לשמש. (2) ואם טעה הקדמון מעט, יהיה הטעות נמצאת⁵ עם האחרון, כי הוא סמך⁶ עליו, כי אין לאל ידו לעשות דבר אחר.

17 (1) והנה מצא בטלמיוס כנגד ערך זמנו אל זמן אברכו, שנת החמה היא פחותה מרביעית יום חלק מן שלש מאות ביום, והיה⁷ הזמן בינו ובין אברכו ר'פ⁸ שנה. (2) ובטלמיוס אמר כי מקום גבהות השמש במעלה⁹ הששית ממזל תאומים, ככה היה וככה יהיה לעולם. (3) והנה באו אחריו מדקדקים רבים, אינם פחותים ממנו בחכמה, ומצאו בשבע מאות ועשרים שנה שיש בינם¹⁰ ובין בטלמיוס ארבע מעלות¹¹ יותר על¹² המהלך¹³ השנה של בטלמיוס. (4) על כן, לוחות בטלמיוס אין בהם¹⁴ ממש היום. (5) והתימה¹⁵ מאדם גדול, שתקן לוחות במהלך | חשנה של אל בתאני,¹⁶ והוא אומר¹⁴⁴ כי הם¹⁷ לוחות בטלמיוס. (6) גם אלה המדקדקים מצאו גבהות השמש בזמנם על שנים ועשרים מעלות ממזל תאומים. (7) גם בטלמיוס אמר כי מהלך הכוכבים שהם בגלגל העליון מעלה אחת בכל מאה שנה, ואלה מצאו מהלכם למאה¹⁸ שנה מעלה וחצי. (8) והנה יש מהם שאמר כי הגרעון מרביעית יום בכל שנה¹⁹ חלק ממאה וששה ביום, ויש מהם שאמר חלק ממאה ועשרה. (9) והנכון כפי זמנו²⁰ שהוא חלק ממאה ושלושים ואחד. (10) והנה נסמוך על מקום השמש שהיתה בימי אל צופי, ולא שמענו שהיה כמה²¹ מדקדק בחשבון המזלות, והוא הודה כן. (11) ובא אחריו²² אברהים²³ אל זרקאל, ולא היה בדורו חכם כמוהו.²⁴ (12) ודקדק²⁵ מקום השמש בזמנו, והנה היתה שנה כדרך²⁶ שאמר אל צופי.

18 (1) והנה התברר לך כי אין כח באדם לדעת מזל הצומח בתקופת השנה. (2) על כן, אמר בטלמיוס וחכמי הודו ומצרים ופרם ודורוניוס,²⁷ כי לעולם נסתכל²⁸ אל רגע

¹ חכם אחר | ב; ששארט החכם האחר; מ אדם חכם אחר. ² כִּי | בסמרט; א חסר. ³ אדם | בסמרט; ש האדם. ⁴ לדקדקם | בסמרט; שא לדקדק. ⁵ נמצאת* | מט; ששא נמצא; בר נמצאה. ⁶ סמך | בסמרט; ש סומך. ⁷ והיה | בסמרט; א והנה. ⁸ ר'פ | בסמרט; ש לפ; א חסר. ⁹ במעלה | בסמרט; א חסר. ¹⁰ בינם | בסמרט; מ ביניהם. ¹¹ מעלות | בסמרט; ט מאות. ¹² על | בסמרט; ש חסר. ¹³ המהלך | בסמרט; מ מהלך. ¹⁴ בהם | בסמרט; שט להם. ¹⁵ והתימה | בסמרט; ש שטרה והתמה. ¹⁶ לוחות במהלך חשנה של אל בתאני | בסמרט; מ לוחות אל בתאני במהלך חשנה. ¹⁷ הם | בסמרט; רט חסר; ב כל. ¹⁸ למאה | בסמרט; מט למאת; ש לפאת ק'. ¹⁹ מרביעית יום בכל שנה* | תוקן עפ"י כ"י א; ראה גם ספר מולדות, כ"י פאריס 1056, דפים 59-55; א מהרביעית יום בכל שנה; מ מרביעית יום; ס מרביעית בכל שנה; שט מרביעית שנה בכל שנה; בר מרביעית שנה בכל שנה. ²⁰ זמנו | בסמרט; מ זמנו; אט אמנתי. ²¹ כמהו | בסמרט; סאט כמותו. ²² ובא אחריו | בסמרט; ר ובאתי אני. ²³ אברהים | מ; בסמרט אברהם. ²⁴ ולא היה בדורו חכם כמוהו* | בסמרט; ב ולא היה חכם כמוהו; ר חסר. ²⁵ ודקדק | בסמרט; ר ודקדקתי. ²⁶ שנה כדרך | בסמרט; א חסר. ²⁷ ודורוניוס | במר; ששאט ודורוניאוס. ²⁸ נסתכל | בסמרט; א השתכל.

16 (1) When there is a long interval between the beginning of the year as calculated by one astrologer and by another scientist who lived later, so that the seconds that no one can be precise about add up to minutes, which correspond to days, the later scientist should divide the difference between his ⟨value⟩ and the earlier scientist's, which yields the mean motion of the Sun. (2) If the earlier scientist erred slightly, there will be an error in ⟨the value of⟩ the modern scientist, who relied on his predecessor because he had no alternative.¹

17 (1) Ptolemy, comparing the value of his time with that of Hipparchus, found that the solar year is ⟨365 days plus⟩ $\frac{1}{300}$ of a day less than a quarter of a day; and the interval between him and Hipparchus was 280 years.¹ (2) Ptolemy ⟨also⟩ said that the Sun's apogee is at Gemini 6° , and that so it was and so it would be forever. (3) After him came many who measured closely and were not inferior to him in wisdom, and they found 4° more than Ptolemy's mean motion in the 720 years between them and Ptolemy. (4) Therefore Ptolemy's tables are of no use today. (5) So I am astonished at that great man who corrected al-Battānī's tables of mean motion and claimed that they are Ptolemy's tables.² (6) Those who measured closely found out that the Sun's apogee in their time was at Gemini 22° .³ (7) Ptolemy also said that the motion of the stars of the uppermost orb⁴ is one degree in one hundred years, but they found out that their motion is one and a half degrees.⁵ (8) Now some of them said that the shortfall from one quarter of a day in every year is $\frac{1}{106}$ of a day, and others said it is $\frac{1}{110}$. (9) But the correct value for our era is $\frac{1}{131}$.⁶ (10) Now we can trust the Sun's place in the time of al-Sūfi; we have not heard of any who was as precise as he was in reckoning the zodiacal signs, and that is what he said. (11) Ibrāhim al-Zarqāl followed him, and he had no peer among the scientists of his generation. (12) He reckoned the Sun's place in his time and it was the same as al-Sūfi's value.⁷

18 (1) So now you realize that no man can know the sign of the ascendant at the revolution of the year. (2) This is why Ptolemy said, along with the scientists of India, Egypt, and Persia, and Dorotheus, that we should

מחברת המאורות או נכחם, ההוה מהם בתחלה קודם הכנס השמש במזל טלה, כי נוכל לדקדק אותו כהוגן שלא יהיה בו שום קירוב¹ בכל מקום שנרצה², וממנו³ נוכל⁴ לדעת⁵ כל דיני העולם. (3) וזה נכון בעבור כי שני המאורות יורו על העולם יותר מכל המשרתים, כי הם⁶ המושלים וכל הקדמונים מודים כן.

19 (1) והנה בטלמיוס אמר: הסתכל אם נקדרה השמש או הלבנה, ומהם תוכל לדעת כל המקרים שיקרו⁷ באותה שנה. (2) ואינו סומך אלא⁸ על המזל הצומח ברגע מחברת המאורות אם נקדרה השמש, או על המזל הצומח ברגע נכח המאורות | אם נקדרה¹⁴⁴ הלבנה, כאשר אפשר עוד.

20 (1) והנה הסתכל במחברת הגדולה אל המזל הצומח ברגע מחברת המאורות או נכחם, אי זה מהם שיהיה תחלה קודם הכנס השמש במזל טלה. (2) גם הסתכל אל המזל הצומח ברגע מחברת המאורות⁹ או נכחם קודם הכנס השמש אל תחלת רביעית הגלגל ששם תהיה המחברת הגדולה. (3) גם הסתכל אל המזל הצומח ברגע מחברת¹⁰ המאורות או נכחם, אי זה מהם שיהיה קודם המחברת הגדולה, שתהיה המחברת באותו החודש. (4) והנה, אם היתה המחברת במזל טלה, אין צורך להוציא מזל צומח אחר¹¹ רק אחד לבדו. (5) ואם בשאר הרביעיות, פעמים יש להוציא מזל אחר עם הראשון, גם יש פעמים שיש צורך להוציא שנים. (6) וזה יקרה אם לא היתה המחברת במזל הראשון מרביעית הגלגל.

21 (1) ובעת המחברת הסתכל אל¹² עניני שבתאי וצדק. (2) וראה אי זה מהם יותר קרוב ממקום גבהותו או ממקום שפלותו כנגד גלגלם¹³ הגדול שמוצקו רחוק ממוצק הארץ. (3) והסתכל גם¹⁴ איזה מהם קרוב אל מקום גבהות גלגל¹⁵ הקטן, ואם שניהם ישרים בהליכתם או שבים אחורנית, ואי זה מהם רחבו צפוני או דרומי,¹⁶ וכמה רחבו,¹⁷ והסתכל לאיזה מהם יש שלטון בבית. (4) והנה, אם מצאתי כי שבתאי הוא קרוב אל גבהותו יותר מצדק, או רחבו צפוני וצדק דרומי, או הוא בחשב האפודה, או מרחב שבתאי צפוני יותר רב¹⁸ ממרחב צדק והוא צפוני, או שבתאי בחשב האפודה¹⁹ ומרחב²⁰

¹ קירוב] בשמאר; סט קרוב. ² שנרצה] בסמארט; מ שתרצה. ³ וממנו] בסמארט; ש ממנו. ⁴ נוכל*] סטרמשא; ב חסר. ⁵ לדעת] במאר; שסט לדקדק ולדעת. ⁶ הם] בסמשאר; ט חסר. ⁷ שיקרו] במשארט; ס חסר. ⁸ אלא] בסמארט; מ חסר. ⁹ המאורות] בסמשאט; ר חסר. ¹⁰ מחברת*] סטרמשא; ב חסר. ¹¹ אחר*] ס; בשמארט חסר. ¹² אל] בסמארט; ש חסר. ¹³ גלגלם] בסמארט; מ גלגלו; ר גלגל. ¹⁴ והסתכל גם] בסארט; מ וגם הסתכל; ש < כן. ¹⁵ גלגלו] סט; בשמא גלגלם; ר גלגל. ¹⁶ דרומי] בסמשאר; ט חסר. ¹⁷ רחבו] בסמשארט; א רחבם. ¹⁸ רב] בשמארט; סר חסר. ¹⁹ או מרחב שבתאי צפוני יותר ממרחב צדק והוא צפוני או שבתאי בחשב האפודה] בסמשארט; ר חסר. ²⁰ ומרחב] בסמשארט; ט ומדת.

always observe the moment of the luminaries' conjunction or opposition, whichever occurs last¹ before the Sun enters Aries, for we can be precise about this without approximation, in any place we wish, and from it we can know all the judgments of the world.² (3) This is correct because the two luminaries signify worldly affairs more than all the ⟨five⟩ planets, since they are the rulers; and all the Ancients agree with this.

19 (1) Ptolemy said: Observe whether a solar or lunar eclipse has taken place, and from them you can know all the events that will take place that year.¹ (2) He relied only on the sign of the ascendant at the moment of the luminaries' conjunction (in the case of a solar eclipse) and on the sign of the ascendant at the moment of the luminaries' opposition (in the case of a lunar eclipse), as I shall explain.²

20 (1) In a great conjunction, then, observe the sign of the ascendant at the moment of the luminaries' conjunction or opposition, whichever of them occurs last¹ before the Sun enters Aries. (2) Also observe the sign of the ascendant at the moment of the luminaries' conjunction or opposition before the Sun enters the quadrant where the great conjunction² will occur. (3) Also observe the sign of the ascendant at the moment of the luminaries' conjunction or opposition, whichever takes place ⟨last⟩ before the great conjunction, during the month when the conjunction takes place. (4) Now, if the conjunction takes place in Aries, there is no need to observe another sign of the ascendant; only one ⟨is necessary⟩. (5) But if ⟨it takes place⟩ in any of the other quadrants, sometimes it is necessary to observe another sign ⟨of the ascendant⟩ together with the first and sometimes it is necessary to observe two ⟨more⟩. (6) This happens when the conjunction does not take place in the first sign of the quadrant.³

21 (1) At the time of the conjunction observe the characteristics of Saturn and Jupiter. (2) Find out which of them is closer to apogee or perigee on their great circle, whose center¹ is different from the center of the Earth.² (3) Also observe which of them is closer to apogee on its epicycle, whether both are direct in their motion or retrograde, whether their latitude is southern or northern and how many ⟨degrees⟩ is its latitude, and observe which of them has lordship in its place. (4) So if you find that Saturn is closer to apogee than Jupiter, or that its latitude is northern whereas Jupiter's is southern, or that it is on the ecliptic, or that Saturn's northern latitude is greater than Jupiter's northern latitude,

צדק דרומי, או שניהם דרומיים ומרחב שבתאי פחות ממרחב צדק, גם שבתאי במקום שיש שם¹ שלטון, אז יורה כי העם הקדמון השוכן | באי זה מקום שישוכן לא ינוצח ולא יסע ממקומו. (5) ובעבור תולדת שבתאי ירבו בעולם שנאה וקנאה ואיבה ותחרות ורעב² ומיני תחלואים. (6) ואם היה³ כל זה הכח שהזכרנו לשבתאי לצדק,⁴ אז⁵ יורה על עם חדש שיתגבר על העם הקדמון⁶ ותסב המלוכה מאומה לאומה.

22 (1) וכפי מבט מאדים כך יהיה שפיכות דמים. (2) ואם היה מזרחי אז יפלו חללים הרבה,⁷ ואם מערבי יהיה הפחד והטלטול יותר מן ההרג. (3) ואם יביט נגה אליו איזה מבט שיהיה יחסר מרעתו. (4) והסתכל לעולם ביום המחברת איך יביטו הכוכבים אליהם, כי הוא עיקר גדול.⁸ (5) כי אם יביט מאדים מבט נכח או רביעית, אז יהפך העולם ברוב המלחמות.¹⁰ (6) ואם נגה, ירבה¹¹ המשגל והזנות עם שובע בלא מלחמה. (7) ואם הלבנה תהיה במקום טוב, כל האדם יהיו בשמחה, והפך הדבר אם היתה עם אחד המזיקים.

23 (1) אמרו חכמי פרס: לעולם הסתכל אל החלק הנקרא אל¹² פרדאר, והם חוזרים חלילה בכל שבעים וחמש שנה.¹³ (2) וככה תחלתם: השמש תשמש¹⁴ בתחלה עשר שנים, תתבודד¹⁵ היא לשמש בשביעית חלקה, ובשאר השביעיות ישתתפו הכוכבים עמה כאשר הם במערכת ח'נ'כ'ל' ש'צ'ם. (3) ואחר כן תשמש הלבנה תשע שנים, ותתבודד בשביעית מחלקה,¹⁶ ובשאר¹⁷ ישתתפו¹⁸ עמה. (4) ואחר כן ראש התלי שלש שנים. (5) ואחר כן צדק שתיים עשרה. (6) ואחר כן כוכב חמה שלש עשרה. (7) ואחר כן שבתאי אחת עשרה. (8) ואחר כן הזנב שתיים שנים.¹⁹ (9) ואחר כן מאדים שבע שנים.²⁰ (10) ואחר כן נגה שמנה שנים. (11) וטעם מספר אלה השנים לא ידעתי, רק אדע טעם זה המערכת למה היא כך:²¹ כי החלו לתת אלה החלקים | כפי חשבון מזל טלה, כי¹⁴⁵ מי שיש כבודו בתחלה²² הוא ישמש בתחלה. (12) וטעם שנות נגה וצדק ידוע: כי ככה מספר שנותיהם הקטנות, כי לסוף זה המספר ישובו קרוב אל מעלתם.

¹שם] בשמרט; א לו שם; ס לו. ²ואיבה ותחרות ורעב] בשמרט; א חסר. ³היה] בסמארט; ש היתה. ⁴לצדק] בשמרט; א ולצדק. ⁵אז] בסמרט; א חסר. ⁶הקדמון] בשמרט; א הקדמונים. ⁷הרבה] בסמארט; מ רבים. ⁸עיקר גדול] בסמרט; א העיקר הגדול. ⁹כי אם] בסמארט; ר ואם. ¹⁰המלחמות] בסמרט; א המלחמה. ¹¹ירבה] בסמארט; ש < בעולם. ¹²אל] בסמארט; ר חסר. ¹³שנה] בסמארט; ש חסר. ¹⁴תשמש] ברמש; סאט חסר. ¹⁵תתבודד] בשמארט; ס ותתבודד. ¹⁶מחלקה] בסאט; שמר חלקה. ¹⁷ובשאר] בסמארט; ש ושאר. ¹⁸ישתתפו] בשמארט; ס > השביעית. ¹⁹שתיים שנים] בסמארט; ר שנתים. ²⁰ואח"כ הזנב שני שנים. ואח"כ מאדים שבע שנים] בשמרט; א חסר. ²¹כך] בסמארט; ר חסר. ²²בתחלה] בשמרט; א חסר.

or that Saturn is on the ecliptic whereas Jupiter's latitude is southern, or that both are southern but Saturn's latitude is less than Jupiter's, or that Saturn is in a place where it has lordship, then it [Saturn] portends that an ancient nation, regardless of where it resides, will not be defeated and will not go into exile.³ (5) Due to Saturn's nature,⁴ hate, jealousy, enmity, contention, hunger, and various illnesses will increase in the world. (6) But if Jupiter has all the power we have allotted to Saturn, it portends that a new people will overcome the ancient people and that royal authority will pass from one nation to another.

22 (1) Bloodshed will ensue in accordance with Mars' aspect. (2) If it is oriental there will be many fatalities, and if it is occidental there will be more fear and flight than killing. (3) If Venus aspects it [Mars] in any aspect, [Mars'] unfortunate influence will decrease. (4) Always observe the planets' aspects to them [to Saturn and Jupiter], on the day of the conjunction, because this is a fundamental principle. (5) For if Mars is in opposition or quartile, the world will be disturbed by many wars. (6) And if Venus, sexual intercourse and promiscuity, along with plenty, and without war. (7) If the Moon is in a fortunate location, everyone will be happy, and the opposite (will happen) if it is with one of the malefics.¹

23 (1) The Persian scientists said: always look at the period, which is called the *fardār*. These (periods) repeat every 75 years. (2) They begin as follows: first the Sun rules for 10 years—it [the Sun] rules by itself for one-seventh of its period [*fardār*]—and in the other sevenths the other planets share its power, in the sequence S[un], V[enus], M[ercury], M[oon], S[aturn], J[upiter], M[ars]. (3) Next the Moon rules for nine years, and it (rules) alone for one-seventh of its period, and in the other (sevenths the other planets) share its power. (4) Next, the Head of the Dragon (rules for) three years. (5) Next, Jupiter for 12 (years). (6) Next, Mercury for 13 (years). (7) Next, Saturn for 11 (years). (8) Next, the Tail (of the Dragon) for two years. (9) Next, Mars for seven years. (10) Next, Venus for eight years. (11) I do not know the reason for the number of years (of each planet's period), but I do know the reason for this sequence: they began to assign the periods counting from the sign of Aries, because the first in the order of exaltations is the first to rule.¹ (12) The reason for the years (of the periods) of Venus and Jupiter is known: these are the number of their least years, because at the end of this number (of years) they return to their (first) degree² [i.e. they complete their cycles].

24 (1) ואם תרצה לדעת זאת השנה, שהיא שנת תתק"ח, מי הוא הממונה כפי חשבון הפרסיים, הנה היא¹ הרביעית מחלק מאדים. (2) וכל אחד מתבודד בשביעית מחלקו, וישתתפו האחרים עמו בשאר השביעיות. (3) ואם טען טוען: הנה ראוי להיות כל שבעים וחמש שנה השניות דומות לראשונות, כי המשרתים והמשתתפים הם שוים, הנה² התשובה. (4) דע³ כי לא יתכן מדרך החשבון שיימצא מזל צומח וערך הכוכבים אליו וערך זה אל זה שוה לעולם אילו⁴ היה העולם עומד לעולם.⁵ (5) וזה הדבר תוכל להתבונן, כי הנה שבתאי יש לו תמונות רבות⁶ משונות מפאת השמש, גם מפאת כל המשרתים,⁷ גם מפאת הכוכבים העליונים והם נוסעים בכל שבעים שנה מעלה אחת, והנה לא יהיה לו הערך שיהיה לו בתחלה⁸ אל אחד העליונים אלא אחר כ"ה אלף שנים. (6) ואין צורך להאריך בזה, כי כבר הזכיר⁹ בעל ספר יצירה: שתי אבנים בונות שני בתים, ושלוש בונות ששה בתים, וארבעה בונות ארבעה ועשרים בתים¹⁰, ומן עשרה¹¹ ואילך צא וחשוב מה שאין הפה יכול לדבר ואין האזן יכולה לשמוע¹² (ספר יצירה פרק ד מאמר י"ח). (7) על כן, לא יתכן מולד אדם שידמה למולד אחר כמוהו. (8) כי אין הגלגל עומד על מתכונת אחת, רק כל רגע תתחדש מתכונת שלא היתה כמוה ולא תהיה,¹³ וחכמי המספר ידעו זה.

25 (1) אמר מאשא אללה:¹⁴ אם ידעת מזל המדינה, הסתכל בתקופת שנת¹⁵ המחברת איך מבט הכוכבים לאותו המזל, ואיך בעל המזל, וכאשר תראה כן תדין. (2) כי | אם¹⁴⁶ היה מאדים או שבתאי במבט נכח או רביעית אל המדינה, ואין כוכב טוב¹⁶ מביט אל המזל, ובעל המזל נשרף מהשמש, או הוא באחת יתירות המזל,¹⁷ והוא עם שבתאי או מאדים או במבט נכח או רביעית עמהם, יורה על רעה גדולה שתבא למדינה, ויותר קשה אם היה המזיק במזל המדינה. (3) והנה אם מצאת בעל מזל המדינה בבית השמיני כנגד מזל המדינה, או בבית שנים העשר או בית הששי, אז ימותו ויפלו ביד אויביהם. (4) ואם היה¹⁸ כוכב טוב במזל¹⁹ הצומח עם כוכב מזיק, הסתכל לאי זה מהם יותר כח מפאת עלותו בגלגלו ומפאת חשב האפודה, כאשר פירשתי.²⁰ (5) וכאשר תראה כן תדין.²¹

¹ היא] בס; שמארט < השנה. ² הנה] בסמארט; מ חסר. ³ דע] בסמארט; ט חסר. ⁴ אילון] בסמרט; מ לו. ⁵ אילו היה העולם עומד לעולם] בסמשט; א חסר. ⁶ רבות] בסמרט; א הרבה. ⁷ גם מפאת כל המשרתים] בסמשט; ר חסר. ⁸ בתחלה] בסמארט; מ > כבר. ⁹ הזכיר] בסמארט; ט הזכירו. ¹⁰ בתים] בר; סמשט; א חסר. ¹¹ עשר] בסמשט; א שבעה. ¹² ואין האזן יכול לשמוע] בסמרט; א חסר. ¹³ כמוה ולא תהיה] בסמרט; א חסר. ¹⁴ מאשא אללה] בט; בסאר מאשא אלה; ש מאשאלה; מ מאשללה. ¹⁵ שנת] בסמשט; ט שנה; ר חסר. ¹⁶ טוב] בסמארט; מ חמה. ¹⁷ המזל] בסמארט; ט מזל המדינה. ¹⁸ היה] בסמרט; א חסר. ¹⁹ במזל] בסמרט; ש מזל; מר ממזל. ²⁰ כאשר פירשתי] בסמשט; ר חסר. ²¹ וכאשר תראה כן תדין] בסמרט; א חסר.

24 (1) If you wish to know in this year, which is the year ⟨4⟩908, which ⟨planet⟩ is the lord ⟨of the *fardār*⟩ according to the reckoning of the Persians, it is the fourth ⟨year⟩ of the period of Mars.¹ (2) Each one ⟨rules⟩ alone for one-seventh of its period, and the others share its power with it in the remaining sevenths.² (3) If someone argues that every cycle of seventy-five years is the same as the previous ones, because the planets ⟨that rule alone⟩ and those that share their power are ⟨always⟩ the same, the answer is as follows. (4) Know that it is arithmetically impossible that the sign of the ascendant and the ⟨spatial⟩ relationship of the planets to it and of the planets among themselves will always be the same, even were the world to last forever. (5) You may observe this phenomenon in the case of Saturn, which has many strange configurations vis-à-vis the Sun, vis-à-vis the planets, and also vis-à-vis the upper stars, which move one degree every 70 years, so that only after 25,000 years³ will it [Saturn] have the same relationship to them as it had originally. (6) There is no need to amplify further, for, as the author of *Sefer Yeṣirah* stated, “two stones produce two houses, three produce six houses, four produce 24 houses, and beyond ten go and calculate what the mouth cannot utter nor the ear hear.” (7) Therefore, it is not possible for the nativity of one person to be the same as that of another. (8) For the orb never remains in the same pattern, and at every moment there emerges a new pattern, whose like has never existed and never will; and the mathematicians know that.⁴

25 (1) Māshā'allāh¹ said: If you know the sign of the city,² at the revolution of the year of the conjunction find the aspects of the planets to this sign as well as the lord of the sign, and pronounce judgment according to what you observe. (2) For if Mars or Saturn is in opposition or quartile to the ⟨sign of the⟩ city, and if no benefic ⟨planet⟩ aspects the sign ⟨of the city⟩, and the lord of the sign ⟨of the city⟩ is burnt by the Sun,³ or if it is in one of the cardines of the sign ⟨of the city⟩, and it is with Saturn or Mars or in opposition or quartile to them—this signifies that a great misfortune will befall the city, particularly ill-fated if a malefic ⟨planet⟩ is in the sign of the city. (3) So if you find the lord of the sign of the city in the eighth place with respect to the sign of the city, or in the twelfth place or in the sixth place—they [i.e., the inhabitants of the city] will die or fall into the hand of their foes. (4) But if a benefic planet is in the sign of the ascendant together with a malefic planet, determine which of them has more power on account of its rise on its orb and on account of the ecliptic, as I have explained.³ (5) Pronounce judgment according to what you have observed.⁴

26 (1) ודע כי נגה יסיר נזק מאדים במחברת או במבט עד שלא יראה נזק מאדים כי אם במחשבות ובדברים. (2) ואין לנגה כח להסיר נזק שבתאי; רק צדק בין במחברת בין במבט יסיר נזק שבתאי. (3) וזה שאמרנו על מנת שלא יהיה נגה או צדק¹ תחת אור השמש כי אם היו כך לא יועילו. (4) ובטלמיוס אמר כי לא יוכל צדק להסיר נזק מאדים, אע"פ שהוא עליון ממנו, כי אין לצדק עם שבתאי ערך נכבד כערך² נגה.

27 (1) והשמר לא תשכח להסתכל בכל שלשים שנה אל מחברת שבתאי עם מאדים במזל סרטן, שהוא מזל העולם.

28 (1) והסתכל בכל מדינה ומדינה איך יעמדו הכוכבים כנגד מזלה.

29 (1) אמר בטלמיוס: אם יתכן³ להיות קדרות השמש איזה שנה שתהיה, נסתכל אל רגע הקדרות וכפי המזל הצומח ככה נדין. (2) והנה אם קדרה השמש⁴ כולה או יהיה הדין גמור, וכפי קדרותה⁵ ככה נתן מן הדין. (3) ונכון הדבר, ⁶ | כי רגע הקדרות הוא רגע⁷ מחברת שני המאורות באמת, ואין ככה רגע⁸ שאר המחברות. (4) וככה נדין: נסתכל אל מקום⁹ המחברת. (5) אם היה¹⁰ באחד¹¹ הבתים שהם על צורת בן אדם,¹² ויש כוכבים טובים מביטים אל השמש והלבנה בהתחברם והם¹³ במזל על צורת בן אדם, יורה על בריאות בגופות¹⁴ בני האדם ושלום והשקט ביניהם. (6) ואם היו מזיקים עם המאורות או¹⁵ מביטים אליהם, או הדבר בהפך: חלאים¹⁶ והרג רב יהיה בעולם. (7) ואם היתה המחברת במזלות המים ומזיקים מביטים אליהם,¹⁷ יהיו רעות לכל מי¹⁸ שתולדתו מן המים ולפרשי ימים.¹⁹ (8) וככה תדין אם היה בטלה על בהמה דקה, ולשור²⁰ בגסה, ואריה על חית השדה.

30 (1) אמר בטלמיוס: אם רצינו לדעת הזמן שיראה בו רוב הדבר²¹ שיורה עליו וישוב מיד הלוך וחסור, נסתכל אל מקום קדרות השמש או הלבנה ונראה באי בית יהיה

¹ צדק] בשמארט; ס שמש. ² כערך] במרט; סא בערך. ³ יתכן] בטט; מר נתקן; שא נתכן. ⁴ השמש] בשמארט; ש חסר. ⁵ בקדרותה] בסמשר; ט הקדרות; א קדרות הכוכב. ⁶ ונכון הדבר] בסמשרט; א חסר. ⁷ רגע] בשמארט; מ חסר. ⁸ רגע] בט; סמשאר רגעי. ⁹ אל מקום] בסמשרט; א חסר. ¹⁰ היה] בסמשרט; א חסר. ¹¹ באחד] בסמשרט; א חסר. ¹² בן אדם] בשמ; סארט האדם. ¹³ והם] בסמשרט; א ואם הם. ¹⁴ בגופות] בסמשרט; א הגוף. ¹⁵ או] בשמר; סאט חסר. ¹⁶ חלאים] בסשרט; מ כי יורה על חליים. ¹⁷ או] הדבר בהפך... מביטים אליהם] בסמשרט; א חסר. ¹⁸ לכל מי] בסשרט; מא למי. ¹⁹ ולפרשי ימים] ב; ששאט ולפורשי ימים; ר ולפרשי ימים; מ ולחונים בחוף. ²⁰ ולשור] בסמשאט; ר ובשור. ²¹ רוב הדבר] בסמשאט; ר חסר.

26 (1) Know that Venus removes Mars' harm in conjunction or aspect so that Mars' harm is felt only in thoughts and words. (2) But Venus has no power to remove Saturn's harm; only Jupiter, either in conjunction or in aspect, removes Saturn's harm.¹ (3) What we have said ⟨applies⟩ on condition that Venus or Jupiter is not under the rays of the Sun,² because if they are they will not be beneficial. (4) Ptolemy said that Jupiter cannot remove Mars' harm, even if it [Jupiter] is above it [Mars], because the ratio of Jupiter to Saturn is not as noble as ⟨the ratio of Jupiter⟩ to Venus.³

27 (1) Be careful that you do not forget to observe the conjunction of Saturn and Mars in Cancer, which is the sign of the world, every 30 years.¹

28 (1) For every city, too, observe the configuration of the planets with respect to its sign.

29 (1) Ptolemy said:¹ If in some year a solar eclipse² takes place, we should observe the moment of the eclipse and pronounce judgment according to the sign of the ascendant.³ (2) If the Sun is totally occulted the judgment is total and we should pronounce judgment in accordance with ⟨the extent of⟩ its occultation.⁴ (3) This is correct, because the moment of the ⟨solar⟩ eclipse is the moment of the true conjunction of the two luminaries, but this does not apply to the instants of the other conjunctions. (4) We pronounce judgment in the following manner: we observe the place of the conjunction. (5) If it takes place in one of the signs with a human shape,⁵ and if benefic planets aspect the Sun and the Moon when they [the Sun and the Moon] are in conjunction and in a sign with a human shape—this signifies bodily health for human beings as well as peace and tranquility among them. (6) But the opposite applies if malefic ⟨planets⟩ are with the luminaries or aspect them: there will be diseases and massacres in the world. (7) If the conjunction takes place in the watery signs and malefic ⟨planets⟩ aspect them, misfortune will befall anyone of a watery nature and seafarers. (8) Likewise, pronounce judgment regarding small cattle if ⟨the conjunction takes place⟩ in Aries, regarding large cattle ⟨if it takes place⟩ in Taurus, and regarding wild animals ⟨if it takes place⟩ in Leo.⁶

30 (1) Ptolemy said: If we wish to know the time when what is portended is felt most strongly and from which it immediately abates, we should look at the place of the solar or lunar eclipse and find out in which of the

מן הששה בתים שהם למעלה מן הארץ. (2) כי אם היה בתחלת הבית הראשון יהיה זה בתחלת השנה, ואם במזל השוקע בסוף השנה, ואם בתחלת הבית העשירי בחצי השנה. (3) וזה הכלל: תתן¹ לכל בית שני חדשים ותחל מהמעלה הצומחת למעלה² אחרנית. (4) זאת דעת בטלמיוס, והחכמים הקדמונים וגם האחרונים ל³ הסכימו עמו, כי בקדרות השמש נקח לכל שעה ישרה שנה תמימה,⁴ וכפי חלקי השעה כך נקח מהשנה. וככה יהיה מתחלת הקדרות⁵ עד סופו כפי השעות, בין טוב בין זולתו. (5) והדבר הרב יראה בזמן האמצעי, שהוא רגע המחברת באמת, הוא הנלקח⁶ מהלוחות, לא⁷ | 147א המחברת שהוא נלקח כנגד מחברת העין. (6) ובקדרות הלבנה יתנו לכל שעה ישרה חדש, ודעתי נוטה עמהם.

31 (1) ודע כי כוכב חמה, אם היה בבית אחד המזיקים ועם המזיקים,⁸ והוא קרוב אל המחברת בעת קדרות השמש או יביט אל הנכח⁹ בעת קדרות הלבנה, אין מזיק כמוהו. (2) והכוכבים הטובים במבט הנכח בקדרות¹⁰ הלבנה יועילו מן המחברת בעת¹¹ קדרות השמש, והמזיקים בנכח יזיקו יותר ממה שיוזיקו במחברת לפי שכשהם במחברת הם גשרפים מן השמש.

32 (1) אמר דורוניוס¹² המלך כי מצא בספר הסודות של חנוך שצוה שיסתכל אדם לעולם בתקופת שנת המחברת שבתאי וצדק במחברת הגדולה או האמצעית או הקטנה אל מקום¹³ המשרתים בתחלת הכנס השמש בטלה, ויראה באיזה מזל יפול כח שנים העשר מן הכוכב, המזיק או הטוב. (2) ודמיון זה מצאנו שבתאי במזל שור על ארבע עשרה¹⁴ מעלות. (3) והנה נתן לכל ב¹⁵ מעלות וחצי מזל אחד. (4) והנה עלו בידינו חמשה מזלות, גשאררו לנו מעלה וחצי. (5) ולכל¹⁶ מעלה נתן שתיים עשרה מעלות,¹⁷ והנה יצא המספר¹⁸ לשמנה עשרה מעלות ממזל מאזנים. (6) והנה, כי¹⁹ שבתאי הוא מזיק,²⁰ יורה כי רע יבא לכל מדינה שהיא מזלה מ²¹ מעלות ממאזנים ומעלה יארע לה נזק, כי אם היתה המדינה פחותה מאלו המעלות לא יארע לה נזק.²² (7) ודע

¹תתן] בסמשר; ט נתן; א חסר. ²למעלה] בסמארט; ש ולמעלה. ³לון] ב; סמשארט לא. ⁴ישרה שנה תמימה] בסמארט; ש שנה ישרה תמימה. ⁵הקדרות] ב; ר הקדרות שיוורה עליו; ששט שיוורה עליו; א הזמן שיוורה עליו. ⁶הנלקח] בסמשרט; א נלקח. ⁷לא] סשאט; מ על. ⁸ועם המזיקים] בסשרט; מא חסר. ⁹בעת קדרות השמש או יביט אל הנכח] בסמשארט; ט חסר. ¹⁰או יביט אל הנכח ... הנכח בקדרות] בסמשרט; א חסר. ¹¹בעת] בסמשרט; א עת; ט עד. ¹²דורוניוס] בשמ; סארט דורוניאוס. ¹³מקום] בסמשרט; א חסר. ¹⁴ארבע עשרה] בסמשרט; א י"ב. ¹⁵ב] בסאט; שמר שתיים עשרה. ¹⁶ולכל] בסמשארט; ר לכל. ¹⁷שתיים עשרה מעלות] בסמארט; ש שנים מעלות עשרה. ¹⁸המספר] בסמשרט; א < שלמים. ¹⁹כי] בסשארט; מ > בעבור. ²⁰מזיק] בסמשארט; ר חסר. ²¹מ] בסמשרט; א משנים עשר. ²²כי אם היתה המדינה פחותה מאלו המעלות לא יארע לה נזק] בסשארט; מ חסר.

six places that are above the horizon it took place. (2) If it took place at the beginning of the first place it will happen at the beginning of the year, if ⟨it took place⟩ at the setting sign ⟨it will happen⟩ at the end of the year, and if at the beginning of the tenth place in the middle of the year. (3) This is the general rule: assign two months to each sign, beginning from the degree of the ascendant until the last degree.¹ (4) This is the opinion of Ptolemy—with whom the ancient and modern scientists agree; namely, that when there is a solar eclipse we should assign a whole year to every equal hour² and the corresponding part of a year to every part of the hour. Thus ⟨the event⟩ whether good or otherwise ⟨will take place at a time in the year⟩ corresponding to the hours from the beginning of the eclipse to its end.³ (5) The strongest effect will be felt at the midpoint ⟨of the eclipse⟩, which is the moment of the true conjunction ⟨of the luminaries⟩, as taken from the ⟨astronomical⟩ tables, not the observed conjunction.⁴ (6) As for a lunar eclipse, they assign a month to every equal hour, and I tend to agree with them.⁵

31 (1) Know that Mercury—if it is in the place of one of the malefics and together with the malefics, and ⟨if⟩ it [Mercury] is close to ⟨the place of⟩ the conjunction during a solar eclipse or is in opposition during a lunar eclipse—none is as malefic as it [Mercury] is. (2) The benefic planets are more beneficent when they are in opposition during a lunar eclipse than when they are in conjunction during a solar eclipse, but the malefic ⟨planets⟩ are more harmful when they are in opposition than when they are in conjunction, because when they are in conjunction they are burnt by the Sun.¹

32 (1) Dorotheus the king¹ said that he found in the *Book of Secrets*² by Enoch³ that he enjoined that at the revolution of the year in which a Saturn-Jupiter conjunction takes place, whether a great, a middle, or a small conjunction, one should always observe the location of the planets when the Sun first enters Aries, and find the sign in which the power of the dodecatemoria⁴ occurs, whether from the malefic or the benefic planet. (2) As an illustration, suppose that we find that Saturn is at Taurus 14°. (3) We assign one sign to every 2½ degrees. (4) This gives us five signs and a remainder of 1½ degrees. (5) To each degree ⟨of the remainder⟩ we assign 12°; the result is Libra 18°. (6) Therefore, because Saturn is malefic, it signifies that misfortune will befall any city whose sign is past Libra 18°, but if the ⟨sign of a⟩ city is ⟨located at a place⟩ less than these degrees no harm will happen to it.⁵ (7) Know that the power of the

כי כח שנים העשר יותר חזק במחברת הגדולה מן האמצעית, וכן האמצעית מן הקטנה, והקטנה יותר מתקופת כל שנה. (8) ואם היה כח שנים העשר לכוכב טוב יבא טוב למדינה.

33 (1) ואם התחברו שנים כחות במזל מדינה, למזיק ולכוכב טוב,¹ הסתכל איזה | 147ב מהם הוא התקיף וכחו יראה יותר מהאחר. (2) וההוה מהם תחת אור השמש אין כח ל² וההוה בבית³ נופל כנגד מזל המדינה גם אין כח לו. (3) גם כן, ההוה בבית קלונו או שנאתו, או הוא שב אחרנית, יש לך להסתכל בכל שנה,⁴ ואף כי בשנת המחברת, שכל מה שיורה שם הוא יותר⁵ תקיף.

34 (1) והנה,⁶ אם מצאת בעל מזל המדינה בבית השביעי, יורה כי מלחמות יהיו עליה ואף כי אם יביט מאדים.⁷ (2) ואם היה מהכוכבים העליונים בעל המזל אל תדין דין רע⁸ על⁹ המדינה, אלא שתהיה במצור ובמצוק ולא יותר. (3) רק אם היה שב לאחור¹⁰ אז יחלש כחו, ויותר רע אם¹¹ היה תחת אור השרפה. (4) ואם היה בעל הבית השביעי במזל הצומח, דון כי הם ינצחו האויבים, ואף¹² כי אם היה מהכוכבים השפלים. (5) ואם היה בין בעל מזל המדינה ובין בעל הבית השביעי¹³ ממנו, הסתכל אם הם במחברת או יש ביניהם מבט. (6) והסתכל מי הוא יותר תקיף כאשר הזכרתי בספר המבחרים, וככה תדין. (7) וכפי המבטים תדין, כי אם היה ביניהם מבט איבה, שהוא מבט רביעית, או נכה, יתחדשו מלחמות ביניהם;¹⁴ ואם מבט אהבה, יהיה ביניהם שלום.

35 (1) ואם אחד המזיקים באחת יתדות המדינה, הוא¹⁵ סימן רע למדינה, וככה תדין. (2) אם היה במזל הצומח, יורה על רעות¹⁶ לאנשי המדינה בגופם. (3) ואם בבית

¹טוב] בסמארט; מ חסר. ²וההוה מהם תחת אור השמש אין כח לו] בסמארט; א חסר. ³בבית] בסמארט; ר כנגד בית. ⁴שנה] בשמארט; ס חסר. ⁵יותר] בסמארט; א חסר. ⁶והנה] בסמארט; א חסר. ⁷ביט מאדים] בסמארט; ר נח. ⁸אל תדין דין רע] בסמארט; מ תדין רע. ⁹על] בסמארט; א חסר. ¹⁰לאחור] בסמארט; מ אחרנית. ¹¹אם] בסמארט; א ואם. ¹²ואף] בשמארט; ס ואם. ¹³השביעי] בסמארט; ט העשירי. ¹⁴איבה שהוא ... מלחמות ביניהם] בסמארט; א חסר. ¹⁵הוא] בשמארט; ס היא. ¹⁶על רעות] בסמארט; א חסר.

dodecatemoria is stronger in a great than in a middle conjunction, and ⟨stronger⟩ in a middle than in a small ⟨conjunction⟩, and ⟨stronger⟩ in a small ⟨conjunction⟩ than at the revolution of any year.⁶ (8) If the power of the dodecatemoria belongs to a benefic planet, good fortune will come to the city.⁷

33 (1) If two powers, belonging to a malefic and to a benefic planet, are assigned jointly to the sign of a city, find out which of them is stronger and its power will be felt more than ⟨the power of⟩ the other.¹ (2) If one of them is under the rays of the Sun, it has no power;² and if one is in a place falling ⟨from the cardines⟩³ with respect to the sign of a city it has no power either. (3) So too, you should observe every year, and particularly in the year of a conjunction, whether one of them is in its house of its dejection⁴ or detriment,⁵ or if it is retrograde, since whatever it portends will be stronger.

34 (1) So if you find the lord of the sign of a city in the seventh place, it signifies that it will be afflicted by wars, particularly if Mars aspects ⟨it⟩. (2) If the lord of the sign ⟨of a city⟩ is one of the upper planets, do not pronounce an evil judgment on the city, but only that it will be in siege and in distress [Deut. 28:53, 55], and nothing more.¹ (3) But if it is retrograde its power will be weakened, and this is particularly unfortunate if it is under the rays of burning.² (4) If the lord of the seventh place is in the sign of the ascendant, judge that they [the inhabitants of the city] will be victorious over their enemies, particularly if it [the lord of the seventh place] is one of the lower planets. (5) If it [the lord of the seventh place] is between the lord of the sign of a city and the lord of the seventh place from it [i.e., from the sign of the city], find out whether they [the lord of the sign of the city and the lord of the seventh place] are in conjunction or whether they aspect one another. (6) Also find out which of them is the stronger, as I mentioned in the *Book of Elections*,³ and pronounce judgment accordingly. (7) Pronounce judgment according to the aspects, because if they [the lord of the sign of the city and the lord of the seventh place] are in an aspect of antagonism, namely, the aspect of quartile, or of opposition, wars will break out between them; and if in an aspect of love, there will be peace between them.

35 (1) If one of the malefics is in one of the cardines of the ⟨sign of the⟩ city,¹ this is an unfortunate indication for the city; pronounce your judgment accordingly. (2) If it is in the sign of the ascendant, it indicates

העשירי, יורה על רע שיקרה למלכה. (4) ואם בבית השביעי, יורה על רע¹ שתהיה לאנשי המדינה, גם לנלחמים עליה. (5) ואם בבית הרביעי, יורה על השחתת שדותיה וכרמיה. (6) ואם היה כוכב טוב² באחת היתדות דון לטוב. (7) ואם היו ביתדות מזיקים וטובים, ראה אי זה מקום הוא התקיף,³ וכחו הוא יראה יותר.⁴

36 (1) וכלל⁵ אמר חנוך הקדמון כי שבתאי יורה על הזקנים ועובדי האדמה, וצדק⁶ על הדיינין ועובדי השם, ומאדים על השרים ואנשי המלחמה, והשמש על המלכים, ונגה על הנשים ועל הסריסים, וכוכב חמה על החכמים והסופרים והנערים, והלבנה על כל האדם. (2) וכפי שיהיה⁷ בתקופת השנה תקיף או חלש ככה יהיה אותו שיוורה עליו.⁸

37 (1) אמר⁹ חנוך המצרי¹⁰ כי¹¹ כוכב צדק עם מזל טלה יורו על ארץ עראק¹² ומלכות פרם, ושבתאי עם מאזנים יורו על ארץ אדום, וכוכב חמה עם גדי על ארץ הודו, ונגה עם עקרב על ארץ אל ערב, ומאדים עם אריה על ארץ ברגאן,¹³ ושמש עם דלי ארץ כנען ויון ומצרים, והלבנה עם בתולה¹⁴ ארץ כורסאן.¹⁵ (2) וכפי הכוכב וכחו¹⁶ וכפי המזל בתקופת השנה¹⁷ כך¹⁸ יהיו דברי כל אחד ואחד.

38 (1) מזלות המדינות:¹⁹ לא ידענו מהם רק מעטים.²⁰ (2) בנדאד²¹ מזלה כ"א מעלות²² מסרטן. (3) מצרים מזלה ה' משור. (4) אל²³ מהדיאה²⁴ מזלה ג' מאריה. (5) זוילה²⁵ ט"ו²⁶ מבתולה. (6) טוניס²⁷ ד' מבתולה. (7) פלירמו²⁸ מעלה אחת מאריה. (8) רומה²⁹ ט"ו מאריה. (9) פישא³⁰ ג' מעלות מדלי. (10) בדרש דיגם.³¹ (11) גרבונה דלי.³² (12) סרגוסה³³ ו' מטלה. (13) אל מריה³⁴ כ' ממאזנים. (14) בלנסיה³⁵ ו' מעקרב. (15) קורדובה³⁷ כ"ב מתאומים. (16) שבליה³⁸ ז' מדגים. (17) גרנדא³⁹ ו' מסרטן. (18) אולסינא⁴⁰ ז' משור. (19) מדינת סלאם⁴² ו' מגדי. (20) בויה⁴³ ז'

¹שיקרה למלכה. ואם בבית הז' יורה על רע] בסמארט; ש חסר. ²טוב] שר; בסמארט חסר. ³התקיף] בשמר; סאט תקיף. ⁴יותר] בסמשא; ר ביותר. ⁵וכלל] בסמשרט; א חסר. ⁶צדק] בשמר; סאט < יורה. ⁷שיהיה] בסמשרט; א > מה. ⁸אווו שיוורה עליו] בסמשרט; א חסר. ⁹אמר] בסמשרט; א חסר. ¹⁰המצרי] בסמרט; ש מצרי; א אל מצרי. ¹¹כי] בסמארט; ש חסר. ¹²עראק*] ששארט; מ אראק; ב ארק. ¹³ברגאן] בסמשרט; א ברטנייאה. ¹⁴בתולה] בסמארט; ש < על מה שיוורה למלכה. ואם בבית השביעי יורה. ¹⁵כורסאן] בסמשרט; א כרסאן. ¹⁶הכוכב וכחו] בסמשרט; א הכוכבים וכחם. ¹⁷וכפי המזל בתקופת השנה] בסמשאט; ר חסר. ¹⁸כך] בשמאר; ס ט כן. ¹⁹המדינות] בסמשרט; אר המדינה. ²⁰מהם רק מעטים] בסמשרט; א רק מעט; ט מהם. ²¹בנדאד*] סמשרט; טב בנדר. ²²מעלות*] סט; בשמר מעלה; א חסר. ²³אל] בסמשאט; ר חסר. ²⁴מהדיאה*] סמשרט; א מהדיה; ב מהדעה. ²⁵זוילה] בא; שמש חוילה; ר זוילה. ²⁶ט"ו] בסמארט; ש > מזלה. ²⁷טוניס] בש; סמרט טונס; א תונס. ²⁸פלירמו] בשמ; סארט פלרמו. ²⁹רומה] בשמא; סרט רומא. ³⁰פישא] בסמשרט; אט פיוא. ³¹בדרש דיגם] בסמארט; מ חסר. ³²גרבונה דלי] ב; סטרמשא חסר. ³³סרגוסה] בסמר; ש סרגושא; א סרקושטה; ט שרגושטה. ³⁴אל מריה] בסמט; שא אל מריאה; ר אל מריא. ³⁵בלנסיה] בסרט; ש בלנסיה; מ ולנסיה; א בלינסיה. ³⁶ו' בסמארט; מ כ"ה. ³⁷קורדובה] בסמט; שא קורטובה; ר קורטובה. ³⁸שבליה] בס; ט שיבליה; שם שבליאה; א שבליא; ר שבלייא. ³⁹גרנדא] בסרט; מ גרנאטה; ש גירונדה; א גרנה. ⁴⁰אולסינא] בסרט; שם אולסינה; א אולסינא. ⁴¹ז' בסשר; מ ז'ז; א ס'א; ט ש. ⁴²סלאם*] סמשא; ר ט סאלם; ב סענם. ⁴³בויה*] סאט; ש בויה; מ בויה; ר סנייה.

misfortune for the inhabitants of the city in their bodies. (3) If ⟨it is⟩ in the tenth place, this indicates evil for its king. (4) If it is in the seventh place, this indicates misfortune both for the inhabitants of the city and for those who wage war against it. (5) If it is in the fourth place, this indicates the devastation of its fields and vineyards. (6) If a benefic planet is in one of the cardines, pronounce a favorable judgment.² (7) If malefic and benefic ⟨planets⟩ are in the cardines, find out which place is the strongest; its power will be felt more.

36 (1) The ancient Enoch stated a rule: Saturn gives an indication about the elderly and farmers, Jupiter about judges and clerics, Mars about noblemen and warriors, the Sun about kings, Venus about women and eunuchs, Mercury about scholars, scribes, and adolescents, and the Moon about everyone.¹ (2) Their judgment is in accordance with whether the planet ⟨that governs them⟩ is strong or weak at the revolution of the year.²

37 (1) Enoch the Egyptian said that the planet Jupiter with the sign of Aries bears a portent for the land of Iraq and the kingdom of Persia; Saturn with Libra, for the land of Edom; Mercury with Capricorn, for India; Venus with Scorpio, for Arabia; Mars with Leo, for Barghan; the Sun with Aquarius, for the land of Canaan, Greece, and Egypt; and the Moon with Virgo, for Khorasan.¹ (2) The indications of each of them [planets and signs] are according to the planet and its power as well as the sign at the revolution of the year.

38 (1) Signs of the cities: we know only a few of them. (2) Baghdad's sign is Cancer 21°. (3) Egypt's sign is Taurus 5°. (4) Al Mahdiyya's sign is Leo 3°. (5) Zawilā, Virgo 15°. (6) Tunis, Virgo 4°. (7) Palermo, Leo 1°. (8) Rome, Leo 15°. (9) Pisa, Aquarius 3°. (10) Béziers, Pisces. (11) Narbonne, Aquarius. (12) Saragossa, Aries 6°. (13) Almeria, Libra 20°. (14) Valencia, Scorpio 6°. (15) Cordoba, Gemini 22°. (16) Seville, Pisces 7°. (17) Granada, Cancer 10°. (18) Ulcena [Lucena], Taurus 7°. (19)

מתאומים. (21) ומדינת¹ וושקא² וי³ משור. 4 (22) וקביץ שתיים⁵ מדגים. (23) ואל⁶ קרואן⁷ ט' מסרטן. (24) ככה נמצאו אלה כתובים בספר.

39 (1) הנה יש לך להסתכל בכל מחברת, בין גדולה בין אמצעית בין קטנה,⁸ אל מקום⁹ מאדים. כיו¹⁰ אם היה עם שבתאי או צדק בתקופת¹¹ השנה,¹² או מבט נכח או מבט | רביעית עמהם, אזי יחדשו מלחמות בעולם.¹³ (2) ויהיה זה בהגיע מזל המחברת¹⁴⁸ אל מקום מאדים. (3) ואתן לך דמיון: נאמר כי בתקופת השנה היה צדק בעשר מעלות משור, ושבתאי בשלש עשרה, ומאדים בטלה על שש ועשרים מעלות, והמחברת היתה על י'ד משור. (4) ואתן¹⁴ לכל מזל שנה, והנה בשנת¹⁵ י"ב יגיע המזל אל מקום מאדים. (5) וכבר אמרנו כי היה על כ"ו מעלות מטלה,¹⁶ והנה תחלת השנה יחל ב"ד¹⁷ מטלה. (6) ונבקש מה ערך י"ב אל שלשים,¹⁸ והנו¹⁹ שתי²⁰ חמשות. (7) והנה בשתי חמשות שנת י"ב למחברת שבתאי וצדק הקטנה יהיה הרג רב בכל מדינה שמזלה טלה, או אחד²¹ יתדותיו. (8) גם יש לנו להסתכל בתקופת השנה לראות מקום הכוכבים ואיך יביטו אל מזל טלה שהוא בית הסוף. (9) וככה נדין אם הם כוכבים טובים או רעים.

40 (1) כל²² חכמי המזלות אמרו כי מזלות²³ האש והרוח יורו על יוקר החטה²⁴ ורעב שיהיה בעולם, ויותר במזלות שיתחברו שם. (2) ומזלות העפר והמים יורו על שובע גדול וזול²⁵. (3) גם יש להסתכל בתקופת²⁶ כל שנה כי²⁷ אם היו שניהם שבתאי וצדק במזלות קרים²⁸ יורו על יוקר, והפך הדבר אם היו במזלות האחרים.

41 (1) אמר מאשא אללה:²⁹ לעולם³⁰ נסתכל בתחלת השנה אל מקום הלבנה ברגע הפרדה ממחברת השמש או מנכחה, אי זה מהם יהיה בתחלה קודם הכנס השמש במזל טלה. (2) והנה, אם תתחבר עם כוכב רע או³¹ יביט³² אליה מבט רע, יורה על רע בעולם; ואם טוב, תורה על טוב. (3) ושבתאי יורה על תחלואים ושנאת חנם

¹ ומדינת* [בסשארט; ר מדינת; מ חסר. ² וושקא] במט; ס וושרף; ש וושקה; ר וושקא אשכא; א וישף. ³ *מ; א ז; בסשרט חסר. ⁴ משור* מ; ששט שור; ר חסר. ⁵ שתיים] בסמשארט; ר ד'. ⁶ ואל] בסמשארט; ר חסר. ⁷ קרואן] בסמשארט; ש קראן. ⁸ בין גדולה בין אמצעית בין קטנה] בסשרט; מ בין קטנה בין גדולה בין אמצעית; א בין גדולה בין אמצעית. ⁹ אל מקום] בסמשארט; ש מין. ¹⁰ כי] בסמשארט; ר חסר. ¹¹ בתקופת] בסמשארט; ארט בתקופה. ¹² השנה* מ; בסמשארט חסר. ¹³ מלחמות בעולם] בסמשארט; מ נח. ¹⁴ ואתן] בסמשארט; מ ונתן. ¹⁵ בשנת] בסמשארט; א ראינו. ¹⁶ מטלה] בסמשארט; א חסר. ¹⁷ ב"ד] בסמשארט; מ על י"ד. ¹⁸ מה ערך י"ב אל שלשים] בסמשארט; א חסר. ¹⁹ והנו] בסמשארט; ש והיו. ²⁰ שתי] בסמשארט; מ שבתי. ²¹ אחד] בסמשארט; ש מ אחת. ²² כל] בסמשארט; מ וכל. ²³ מזלות] בסמשארט; ש חסר. ²⁴ החטה] במר; סשארט יוקר. ²⁵ זול] במרט; סשארט חסר. ²⁶ בתקופת] בסמשארט; מ בתקופות. ²⁷ כי] בסמשארט; א חסר. ²⁸ קרים* [תוקן עפ"י הקשר הדברים; ראה להלן, § 48:2; בסטרמשא יקרים. ²⁹ מאשא אללה] באט; סר מאשא אלה; ש מאשאלה; מאשאללה. ³⁰ לעולם] בסמשארט; א חסר. ³¹ או] בסמשארט; א חסר. ³² יביט* [סמאר; בשט חסר.

Madinat Sa'lam, Capricorn 6°. (20) Boujje, Gemini 7°. (21) Madinat Washqa, Taurus 10°. (22) Gabes, Pisces 2°. (23) Kairouan, Cancer 15°. (24) All of these were found in a book.¹

39 (1) So you should observe the place of Mars at any conjunction (of Saturn and Jupiter), whether great, middle, or small. For if it [Mars] is with Saturn or Jupiter at the revolution of the year, or (if it is in) opposition or quartile to them, wars will break out in the world. (2) This will occur when the (terminal) sign of the conjunction (of Saturn and Jupiter) reaches the place of Mars. (3) I (now) give you an illustration. Let us suppose that at the revolution of the year Jupiter is at Taurus 10°, Saturn at (Taurus) 13°, Mars at Aries 26°, and that the conjunction (of Saturn and Jupiter) occurs at Taurus 14°. (4) I assign one year to each sign; hence in the twelfth year the (terminal) sign (of the conjunction of Saturn and Jupiter) reaches the place of Mars. (5) We already said that it was at Aries 26°, hence the beginning of the year occurs at Aries 14°. (6) We calculate the ratio of 12 to 30, which is $\frac{2}{5}$. (7) Therefore, at $\frac{2}{5}$ of the twelfth year after the small conjunction of Saturn and Jupiter there will be great bloodshed in every city whose sign is Aries, or (in every city where Aries is in) one of its cardines. (8) Also, at the revolution of the year we should observe the place of the planets and their aspects to Aries, which (in the previous illustration) is the terminal house.¹ (9) We should pronounce judgment according to whether they are benefic or malefic planets.²

40 (1) All the astrologers said that the fiery and airy signs signify a high price of wheat and famine in the world, and particularly the signs where they [Saturn and Jupiter] conjoin. (2) But the earthy and watery signs signify great plenty and low prices.¹ (3) You should also look at the revolution of any year, for if both Saturn and Jupiter are in cold signs (then)—they signify high prices, and the opposite if they are in the other signs.²

41 (1) Māshā'allāh said: At the beginning of the year we should always observe the place of the Moon at the moment it separates from conjunction with the Sun or from opposition (with it), whichever happens last¹ before the Sun enters Aries. (2) Now if it conjoins a malefic planet or the latter is in an unfortunate aspect to it—it portends misfortune for the world; but in a fortunate aspect—this portends good fortune. (3)

וקטטות¹ וחרבן מקומות וטביעת ספינות. (4) וצדק יורה על שלום ורוב תבואה והשקט ובטחון.² | (5) ומאדים על מלחמות³ ומכות ותנועות ממקום למקום. (6) ונגה יורה א149 שיתגבר בעולם התאוה והתענוגים, ואף כי בכל⁴ מקום שיש לו שלטון עליו או יהיה המזל ששם נגה מזל המדינה. (7) וככב חמה יורה על דרישת חכמה⁵ והצלחת הסופרים והחכמים גם התגרים.

42 (1) אמר מאשא אללה:⁶ נסתכל לעולם⁷ בכל מחברת גדולה או אמצעית או קטנה,⁸ גם בתקופת כל שנה,⁹ אל המזל הצומח ברגע מחברת המאורות או נכחם, ההווה בכל מדינה ומדינה¹⁰ טרם הכנס השמש במזל טלה, כי הוא עיקר גדול. (2) והסתכל אל הממונה על¹¹ המזל הצומח ברגע המחברת או הנכח, והממונה הוא שיהיה לו שלטון במקום על מנת שיביט אליו. (3) והנה, אם מצאנו הממונה ביתד הראשון או העשירי, יורה על יוקר גדול בחטה באותה המדינה, ויותר קשה אם היה מוסיף בהליכתו, והטעם שילך יותר ממהלכו השובה, כי אם היה הולך¹² פחות ממהלכו השובה או חוזר אחורנית ימעט היוקר יום יום. (4) וככה הדין אם יתן הכח לכוכב שהוא באחת היתדות הנוכרות. (5) ואם היה באחת היתדות¹³ האחרות הדבר יהיה אמצעי, וככה בסמוכים ובנופלים יהיה בזול. (6) ואם היה הממונה נשרף מהשמש יארע לתבואה¹⁴ נזק. (7) ואם היה באחת היתדות אזי יהיה הנזק רב,¹⁵ ואם בנופלים יהיה מעט. (8) וככה תעשה¹⁶ שנה בשנה גם חדש בחדש.¹⁷

43 (1) אמר מאשא אללה:¹⁸ מקום המחברת יורה על שמן זית, כי כן נסה.¹⁹ (2) והנה יש לך להסתכל אל הממונה²⁰ אל מקום המחברת, וכאשר תראה כן תדין, כאשר דנת בממונה על התבואה.²¹ (3) ודע כי²² אם היה הממונה בבית כבודו יתיקר²³ הדבר, ופחות ממנו אם היה בביתו. (4) ואם | היה בבית קלונו יהיה זול עד די, ואם בבית²⁴ א149 שנאתו גם יהיה זול²⁵ ולא כראשון.

1 ושנאת חנם וקטטות] בסמשרט; א חסר. 2 ובטחון*] שט; במר ובטח; א חסר. 3 מלחמות] בסמשאר; ט > מחלוקת. 4 בכל] בסמארט; ש חסר. 5 חכמה] בסמשרט; א החכמים. 6 מאשא אללה] באט; סר מאשא אלה; ש מאשאלה; מ מאשאללה. 7 לעולם] בסמשרט; א חסר. 8 או קטנה] בסמשרט; א חסר. 9 שנה] בסמשרט; א השנה. 10 ומדינה] בסמשארט; ר חסר. 11 על] בסמארט; שר אל. 12 הולך] בסמארט; מ חסר. 13 ואם היה באחת היתדות] בסמשט; אר חסר. 14 כאן כ"י ש נפסק. 15 רב] ב (מעל השורה); מ יותר; בסמארט חסר. 16 וככה תעשה] בסמרט; א חסר. 17 בחדש] במארט; ס חדש; ר וחדש. 18 מאשא אללה] באט; סר מאשא אלה; מ מאשאללה. 19 כי כן נסה] בסמרט; א חסר. 20 אל הממונה] בסמרט; א חסר. 21 כאשר דנת בממונה על התבואה] בסמרט; א חסר. 22 כי] בסמרט; א חסר. 23 יתיקר] בסמרט; א ותיקר. 24 בבית] בסמארט; ר > היה. 25 גם יהיה זול] בא; סט יהיה זול גם כן; מ ש; ר יהיה זול.

Saturn portends diseases, baseless hatred, disputes, the destruction of places, and the sinking of ships. (4) Jupiter portends peace, abundant grain, tranquility, and security. (5) Mars ⟨portends⟩ wars, plagues, and migration from one place to another. (6) Venus indicates that pleasure and delight will increase in the world, particularly ⟨when Venus is⟩ in any place over which it has lordship or when Venus is in a sign that is ⟨also⟩ the sign of the city. (7) Mercury signifies the quest for wisdom and success for scribes, scientists, and merchants.²

42 (1) Māshā'allāh said: at any conjunction, whether great or middle or small, and also at the revolution of any year, we should always observe the sign of the ascendant at the moment of the conjunction or opposition of the luminaries, the last that occurs in any city before the Sun enters Aries, because this is a fundamental principle.¹ (2) Find the lord of the sign of the ascendant at the moment of the conjunction or opposition, for the lord has lordship over this place on condition that it [the lord] aspects it² [the sign of the ascendant]. (3) Now if we find the lord in the first or the tenth cardo, it portends a very high price for wheat in this city, and even higher if it [the lord] increases its motion, meaning that it moves more than its mean motion;³ but if it moves less than its mean motion or is retrograde, the price will decrease every day. (4) The same judgment applies if it [the lord] gives its power to a planet that is in one of the cardines mentioned. (5) But if it [the lord] is in one of the other cardines it [the price] will be moderate; and the price will fall ⟨if the lord is⟩ in the ⟨places⟩ succedent and falling ⟨from the cardines⟩.⁴ (6) If the lord is burnt by the Sun, the grain will be damaged. (7) If it [the lord] is in one of the cardines the damage will be extensive, and if ⟨it is⟩ in the ⟨places⟩ falling ⟨from the cardines⟩ ⟨the damage⟩ will be small. (8) Do this every year and every month.

43 (1) Māshā'allāh said that the place of the conjunction gives an indication about olive oil, because he verified this by experience. (2) So you should observe the lord of the location of the conjunction and pronounce judgment according to what you observe,¹ just as you did for the lord of the grain.² (3) Know that if the lord is in the house of its exaltation, the price will rise, but less so if it is in its ⟨planetary⟩ place. (4) But if it is in the house of its dejection it will be very cheap, and if in the house of its detriment it will also be cheap but not as cheap as in the previous case.³

44 (1) אמר¹ יעקב אל כנדי בספר התקופה שלו:² הסתכל, קודם הכנס השמש במזל טלה, במחברת המאורות³ או נכחם, ההווה מהם בתחלה. (2) ואם מצאת המזל הצומח ממזלות המים, יורה על גשם שירד באותה המחברת או אותו הנכח, ואף כי אם היתה מקום⁴ המחברת או הנכח באחת יתדות הצומח בעת ההיא על פי רחב המדינה שאתה מתקן לה המאורות. (3) ואם היה מקום המחברת או הנכח באחד הבתים הנופלים, דון⁵ כי גשם לא ירד בכל אותו החדש ורוב אותה השנה. (4) ואם המזל הצומח ממזלות המים ובעל המזל⁶ יביט אליו גם, זאת עדות שלמה על רדת המטר, ואם היה שם הממונה בצומח אז יהיה יותר ויותר. (5) ואם היה הממונה עם המאורות, אז יהיה מטר רב מאוד. (6) ואם תרצה לדעת היום שירד בו המטר, הסתכל אל היום שתגיע⁷ הלבנה אל המעלה הצומחת, אז יהיה המטר.

45 (1) ואני אברהם אומר כי⁸ זה הדבר הוא נכון אם יהיה המזל הצומח באחת היתדות מזל המדינה,⁹ או שיסתכל אליו, אי זה מבט שיהיה,¹⁰ כי אם לא היה¹¹ כן יהיו עננים ולא ירד מטר. (2) וככה אמר אפלטון בספר הגשם שלו, והוא דבר¹² מנוסה.

46 (1) ודע כי הכוכבים החוזרים לאחור יורו על מטר, ואף כי השפלים שהם למטה מהשמש, ואף כי אם היו בין שפלים או עליונים במזל נקבה. (2) ויותר עדות ברורה אם¹³ היה המזל מן הקרים, בין שיהיה ממזלות העפר או ממזלות המים. (3) ומזל דלי יורה¹⁴ על המים בעבור הכוכבים הנקראים שפך שיש שם. (4) גם מזל אריה יורה על המים בעבור צורת | הספינה שיש שם.

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47 (1) אמר אבן צארק¹⁵: לעולם בעל הבית השביעי מן הכוכב העליון הוא מפתח לו. (2) והנה מפתחות שבתאי המאורות, כי בתיהם לנכח בתיו. על כן, אם תתחבר הלבנה או תתן הכח לשבתאי בכל מחברת או נכח שיש לה עם השמש, דע כי באותו החדש ירד מטר. (3) ותוכל לדעת היום שירד בו, שתספור המעלות הישרות שיש בין

¹אמר] בסמרט; א ואמר. ²שלו] בסמרט; א שם. ³במזל טלה, במחברת המאורות⁴ מ; א במזל טלה, רגע המחברת; בר במזל במחברת; ט במזל מחברת; ס בטלה מזל מחברת. ⁴מקום] בסארט; מ חסר. ⁵דון] ברט; סמא דין. ⁶השנה. ואם המזל הצומח ממזלות המים ובעל המזל] בסמרט; א חסר. ⁷שתגיע] בסטאר; מ < בו. ⁸אמר כי] בסמאר; ט האומר. ⁹המדינה] במ; ר < או נכח; סא חסר. ¹⁰כי זה הדבר הוא נכון אם יהיה המזל הצומח באחת היתדות מזל המדינה או שיסתכל אליו אי זה מבט שיהיה] במר; סאט חסר. ¹¹היה] בסארט; מ יהיה. ¹²דבר] בסמרט; א חסר. ¹³אם] בסמאר; ט > כי. ¹⁴יורה] בסמרט; א חסר. ¹⁵צארק⁴] סמאר; ט סארק; ב אט'רק.

44 (1) Ya‘qub al-Kindi¹ said in his *Book of the Revolution*: Observe the conjunction or opposition of the luminaries before the Sun enters Aries, whichever occurs last.² (2) If you find that the sign of the ascendant is a watery one, it indicates that there will be rain at this conjunction or opposition, particularly if the place of the conjunction or opposition is in one of the cardines of the ascendant at this time, according to the latitude of the city for which you calculate the luminaries. (3) But if the place of conjunction or opposition happens to be in one of the places falling (from the cardines), judge that it will not rain during the entire month and the larger part of the year. (4) If the sign of the ascendant is a watery one and the lord of the sign is in an aspect to it [the ascendant] as well, this is an absolute indication that rain will fall; if the lord of the ascendant is there, there will be even more (rain). (5) And if the lord (of the ascendant) is with the luminaries, then rain will be extremely abundant. (6) If you wish to know what day it will rain, find the day when the Moon reaches the degree of the ascendant—then it will rain.³

45 (1) But I, Abraham, say that this is correct on condition that the sign of the ascendant is in one of the cardines of the sign of the city, or (if) it [the sign of the ascendant] aspects it [the sign of the city], regardless of the aspect; otherwise there will be clouds but it will not rain. (2) Plato said this in his *Book on Rain*, and this is something that has been verified by experience.¹

46 (1) Know that the retrograde planets signify rain, particularly the lower planets that are beneath the Sun, and even more so if they are in a feminine sign, regardless of whether they are lower or upper planets.¹ (2) The indication is even clearer if the sign is a cold one, regardless of whether they are earthy or watery signs. (3) Aquarius signifies water on account of the stars called “flow of water” which are there. (4) Leo, too, signifies water because the shape of a ship is in it.²

47 (1) Ibn Šariq¹ said: the lord of the seventh place (counting) from the (house of an) upper planet is always its key.² (2) Thus the luminaries are Saturn’s keys, because their houses [Cancer, Leo] are opposite its [Saturn’s] houses [Capricorn, Aquarius]. Therefore, know that if the Moon conjoins or gives its power to Saturn in any conjunction or opposition that it has with the Sun—it will rain during that month.³ (3) To find out

מקום המחברת או הנכח אל מקום מבט שבתאי השלם,¹ וכשישלים מספר אותם הימים, שתתן לכל מעלה יום אחד, אז ירד המטר. (4) ויותר עדות ברורה אם יתכן² שתהיה הלבנה באותו היום על אחת³ מפתחות שלה.

48 (1) ואלה הם השנים עשר מפתחות של⁴ הלבנה. (2) האחד, רגע המחברת, שהיא עם השמש חלק בחלק. (3) והשנים, שתהיה רחוקה מהשמש במעלות ישרות י"ב מעלות. (4) והשלישי, שתהיה רחוקה⁵ חמש וארבעים מעלות, שהוא שמינית הגלגל. (5) והרביעי, שתהיה רחוקה צ' מעלות, שהוא רביעי⁶ הגלגל. (6) והחמישי, שתהיה רחוקה מהשמש קל"ה מעלות, שהם שלש שמיניות⁷ הגלגל. (7) והששי, שתהיה רחוקה מהשמש קס"ח מעלות; והכלל שתהיה בינה ובין נכח השמש י"ב מעלות. (8) והשביעי, נכח השמש⁸. (9) והשמיני, שתהיה רחוקה מהשמש קצ"ב מעלות; והטעם שיהיה מרחקה מנכח השמש י"ב מעלות.⁹ (10) והתשיעי, שתהיה רחוקה מהשמש רכ"ה מעלות;¹⁰ והטעם שיהיה מרחקה מהשמש חמש¹¹ שמיניות הגלגל. (11) והעשירי, שיהיה מרחקה מהשמש ר"ע מעלות; והטעם שיהיה מרחקה מהשמש¹² רביעית הגלגל. (12) ומפתח האחד עשר,¹³ שתהיה¹⁴ | רחוקה מהשמש שט"ו מעלות; והטעם שיהיה מרחקה מהשמש¹⁵ חצי רביעית הגלגל, שהוא השמינית. (13) ושתים עשר, שתהיה רחוקה מהשמש שמ"ח מעלות; והטעם שיהיה מרחקה מהשמש¹⁶ י"ב מעלות לפניה. (14) ואלה המפתחות ניסום הקדמונים והאחרונים.

49 (1) ולעולם הסתכל: אם היה כוכב¹⁷ חוזר¹⁸ אחרנית בבית הראשון, יורה על גשם. (2) כי כח הכוכב ההוא בבית הראשון יחשב¹⁹ ככח²⁰ בעל הבית.

50 (1) ובעל הבית השביעי לצדק הוא כוכב חמה, ושניהם יורו על הרוחות. (2) והנה הסתכל בכל חדש וחדש אם היה בעל הצומח צדק או כוכב חמה²¹ ויביט זה אל זה, ואף²² כי אם היו ביתדות מאחד מזלות הצומח, אז יורו על רוחות רבות שיתחדשו בעולם. (3) וכל זה אם היו באחת יתדות מזלות המדינה או יביטו אל המזל.

¹ מבט שבתאי השלם] בסאט; מ שבתי כלומר מבטו השלם; ר שבתי השלם. ² ברורה אם יתכן] בסמרט; א חסר. ³ אחת] בסמאט; ר חסר. ⁴ של] בסארט; מ חסר. ⁵ רחוקה] בסטאר; מ < מהשמש. ⁶ רביעי] בסארט; מ רביעיית. ⁷ שמיניות*] מר; בסאט רביעיות. ⁸ והשביעי נכח השמש] בסמא; ר והשביעי בהיותה רחוקה מהשמש ק"פ מעלות שתהיה נכח השמש; ט חסר. ⁹ והטעם שיהיה מרחקה מנכח השמש י"ב מעלות] בסמאט; רא חסר. ¹⁰ והתשיעי שתהיה רחוקה מהשמש רכ"ה מעלות] בסמרט; א חסר. ¹¹ חמש*] ר; בסמאט שלש. ¹² מהשמש*] סמאטר; ב חסר. ¹³ ומפתח האחד] במארט; ס עשר והי"א. ¹⁴ שתהיה] בסמאט; ר שהיא. ¹⁵ מעלות; והטעם שיהיה מרחקה מהשמש*] סמאטר; ב חסר. ¹⁶ מהשמש*] סמאט; בר חסר. ¹⁷ כוכב] בסארט; מ הכוכב; ר כוכב אחד. ¹⁸ חוזר] בסמאט; ר חסר. ¹⁹ יחשב] בסארט; מ חסר. ²⁰ ככח] בסמרט; א נוכח. ²¹ ושניהם יורו על הרוחות. והנה הסתכל בכל חדש וחדש אם היה בעל הצומח צדק או כוכב חמה] בסארט; מ חסר. ²² ואף] בסמרט; א ואם.

what day it will rain, count the equal degrees between the place of the conjunction or opposition (of Moon and Sun) and the place of the complete aspect⁴ of Saturn. If you assign one day to each degree, it will rain when that number of days has passed. (4) The testimony (that it will rain) is clearer if the Moon happens to be in one of its keys on this day.⁵

48 (1) These are the twelve keys of the Moon. (2) The first is the moment of conjunction, when it is in full conjunction with the Sun. (3) The second (is the moment) when its distance from the Sun is 12 equal degrees. (4) The third, when its distance (from the sun) is 45° , which is $\frac{1}{8}$ of a circle. (5) The fourth, when the distance is 90° , which is $\frac{1}{4}$ of a circle. (6) The fifth, when its distance from the Sun is 135° , which is $\frac{3}{8}$ of a circle. (7) The sixth, when its distance is 168° ; that is, in general, when there are 12° between it and opposition to the Sun. (8) The seventh, opposition to the Sun. (9) The eighth, when its distance from the Sun is 192° , meaning that it is 12° from opposition to the Sun. (10) The ninth, when its distance from the Sun is 225° , meaning that its distance from the Sun is $\frac{5}{8}$ of a circle. (11) The tenth, when its distance from the Sun is 270° , meaning that its distance from the Sun is $\frac{1}{4}$ of a circle. (12) The eleventh key, when its distance from the Sun is 315° , meaning that it is half of a quarter of a circle from the Sun, or $\frac{1}{8}$. (13) The twelfth, when its distance from the Sun is 348° ; meaning that it is 12° ahead of the Sun. (14) These keys have been verified by experience by the ancients and by the moderns.¹

49 (1) Note always that if a retrograde planet is in the first place—it signifies rain.¹ (2) Because the power of a planet in the first place is equivalent to the power of the lord of the place.

50 (1) The lord of the seventh place (counting) from (the place of) Jupiter is Mercury, and both indicate wind. (2) So every month find out whether Jupiter or Mercury is lord of the ascendant and whether they aspect each other, and especially whether they are in the cardines of one of the signs of the ascendant; in that case they portend many winds in the world. (3) This is true if they are in one of the cardines of the signs of the city or if they aspect the sign.¹

51 (1) ואם היה נגה או מאדים בעל המזל הצומח ויביט זה אל זה, ואף כי אם היו באחת יתדות הצומח, הנה יורו על גשם בברקים וקולות ולפידים, ויותר¹ אם היה² ביניהם מבט³ רביעית או איבה.⁴ (2) ואם אחד מהם יהיה במזל עפר, אז יורה על הברד.

52 (1) ויש לך להסתכל לעולם אל שבתאי בתקופות.⁵ (2) כי אם היה באחד ממזלות העפר, ולא היה כוכב טוב⁶ מביט אליו, והיתה הלבנה⁷ במבט⁸ רביעית או נכח עמו, אז יורה על⁹ רעש גדול¹⁰ בכל מדינה ששבתאי במזלה או שיהיה באחת מיתדות מזל המדינה.

53 (1) ולעולם הסתכל אל מאדים בתחלת השנה. (2) כי אם היה מזרחי מן השמש ויש לו שלטון על המזל העולה בתקופת השנה, אי זה שלטון שיהיה, והוא באחת מיתדות הצומח, אז יורה על מלחמות ושפיכות דמים, ויותר אם היה במזל שהוא | על צורת¹¹ אדם. (3) ואם היה באחד מזלות האש, יורה על שריפה שתהיה במדינה. (4) ואם יביט בעל מזל¹² המדינה אל המזל,¹³ או יביט מזל טוב במקומו, או ינצלו אנשי המדינה, ואם לאו לא. (5) ואם היה מערבי מן השמש, והוא במזל על צורת בן אדם, יורה על מלחמות; רק הפחדים יהיו¹⁴ יותר משפיכות הדמים.¹⁵ (6) ומזלות¹⁶ העפר יורו על הריסות.¹⁷ (7) ואם היה בתחילת השנה בבית נופל או חוזר אחרנית, הארץ תשקוט ממלחמות.

54 (1) ולעולם הסתכל אל מקום הלבנה, כי היא תורה על כל האדם. (2) כי¹⁸ אם היה בתחלת השנה¹⁹ עם כוכב טוב או מבט טוב עמו,²⁰ תורה על בריאות הגופות.²¹ (3) ואם היתה עם שבתאי, או במבט נכח או רביעית עמו, ושבתאי באחד מזלות המומים,²² שהם טלה ושור וסרטן ועקרב וגדי ודגים, תורה על תחלואים קשים ומיני קדחת ושעול.

55 (1) ואם היה שבתאי באחד ממזלות²³ המים, תהיה רעה גדולה לעוברי הים, ואף כי אם היה במזל סרטן. (2) והכלל שיעשה נזק לכל מי שהולך במים, ושיגברו מימי הנהרות וישחיתו הזרע, או²⁴ יבא גשם גדול שיזיק. (3) ומאדים במזלות המים יורה²⁵ על אבני הברד המשחיתים. (4) ואם היה שבתאי או מאדים בבתולה או גדי או מזלות הרוח,

¹ בברקים וקולות ולפידים ויותר] בסמרט; א וברקים. ² היה] בסמאט; ר היו. ³ מבט] בסמר; א חסר. ⁴ או איבה] בסמרט; א חסר. ⁵ בתקופות] בר; סאט בתקופה; מ בתקופת השנה. ⁶ טוב] בסמאט; ר חסר. ⁷ ולא היה כוכב טוב מביט אליו והיתה הלבנה] בסמרט; א חסר. ⁸ במבט] ב [תקן מעל לשורה]; סמרט במזל; א חסר. ⁹ על] בסמאט; ר חסר. ¹⁰ רעש גדול] בסארט; מ רעם גדולה. ¹¹ בן] בסרט; א בני; מ חסר. ¹² מזל] בסארט; מ בית. ¹³ המזל] בסמרט; א < הצומח. ¹⁴ הפחדים יהיו*] סמאטר; ב נח. ¹⁵ הדמים] בסמאט; ר דמים. ¹⁶ ומזלות] בסארט; מ ומזל. ¹⁷ הריסות] בסמרט; א מריבות. ¹⁸ כי] בסמרט; א חסר. ¹⁹ בתחלת השנה*] מ; בס בתחלת; רט בתחלה; א חסר. ²⁰ עמו] בסמרט; א חסר. ²¹ הגופות] במר; סאט הגוף. ²² המומים] בסמאט; ר הממונים. ²³ ממזלות*] מ; בסארט מזלות. ²⁴ או] ב; ס גם; מארט אם. ²⁵ יורה] בסמרט; א יורו.

51 (1) If Venus or Mars is the lord of the ascendant and they aspect each other, particularly if they are in one of the cardines of the ascendant, they signify rain with thunder and lightning [Ex. 20:15 (18)], even more so if they aspect each other in (an aspect of) quartile or antagonism. (2) If one of them is in an earthy sign—in that case it signifies hail.¹

52 (1) You should always look at Saturn at the (beginning of the) seasons.¹ (2) If it is in one of the earthy signs and no benefic planet aspects it, but the Moon aspects it in quartile or opposition—in that case it signifies a great earthquake in any city that has Saturn in its sign or in one of the cardines of its sign.

53 (1) Always look at Mars at the beginning of the year.¹ (2) If it is oriental of the Sun and has lordship over the sign of the ascendant at the revolution of the year, regardless of the type of lordship, and it is in one of the cardines of the ascendant—in that case it portends wars and bloodshed, particularly if it is in a sign with a human shape. (3) If it [Mars] is in a fiery sign, it signifies that a fire will break out in the city. (4) If the lord of the sign of the city aspects the sign (of the city), or if it [the lord of the sign] aspects a benefic sign instead of it [the sign of the city], then the inhabitants of the city will survive; but otherwise not. (5) If it [Mars] is occidental of the Sun and it is in a sign with a human shape, it portends wars; but the terror will exceed the bloodshed. (6) The earthy signs signify destruction. (7) But if it [Mars] is in a place falling (from the cardines) at the beginning of the year, or if it is retrograde, the land will have rest from war [Josh. 11:23].

54 (1) Always observe the place of the Moon, because it gives an indication about everyone. (2) If at the beginning of the year it is with a benefic planet or in a fortunate aspect to it, it signifies physical health. (3) If it is with Saturn or in opposition or quartile to it, and if Saturn is in one of the deformed signs, which are Aries, Taurus, Cancer, Scorpio, Capricorn, and Pisces, it signifies grave diseases, various fevers, and coughing.¹

55 (1) If Saturn is in one of the watery signs, a great misfortune will befall travelers by sea, particularly if it is in the sign of Cancer. (2) In general, this means that it will cause harm to anyone who travels by water, and that the rivers will overflow their banks and destroy the seeds, or that a great ruinous rain will come. (3) Mars in the watery signs indicates destructive hailstones. (4) If Saturn or Mars is in Virgo or Capricorn or in the airy

יורה על רע שיבא לעולם מפאת ארבה¹ או צלצל במקומות שהם מוכנים להיותם שם. (5) ואם היה מאדים או שבתאי במזלות שהם על צורת האדם, יורו² על קטטות ומריבות ומלחמות. (6) ואם היו מזרחיים, או יראה מה שיורה³ עליהם יותר. ואם יביט זה אל זה מבט רביעית או נכח ואין גנה או⁴ צדק⁵ מביט, או יורה על רע גדול ותוכל לדעת המקום | שיהיה שם.

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56 (1) אמר חנוך הראשון כי כוכב צדק עם מזל סרטן יורו על הארץ הנקראת⁷ אל עראק. (2) וכבר הזכיר אבו מעשר כי מזל אל עראק גבול צדק במזל סרטן, שהוא כ'א מעלות מהמזל. (3) ודבר מנוסה הוא⁸ כי כל כוכב מזיק שיהיה⁹ במעלה הזאת, או¹⁰ יביט אליה מבט נכח או רביעית בתחלת תקופת השנה, יזיק למקום הנזכר. (4) והפך זה אם היה שם כוכב טוב או יביט אליו. (5) וכבר¹¹ נסו וזה¹² פעמים אין קץ להם.¹³ (6) ושבתאי עם מאזנים לארץ רומה,¹⁴ והיא מלכות אדום.¹⁵ (7) וכוכב חמה עם מזל גדי לאנשי הודו, הנקראים אל הַנְדִי.¹⁶ (8) על כן אמר אבו מעשר כי כוכב חמה יורה על נפשותם, על כן הם¹⁷ חמכים מחוכמים, ומזל גדי יורה על גופותם, על כן אינם לבנים. (9) ונגה עם עקרב לארץ אל חגאז, ששם מכה. (10) על כן אמר אבו מעשר כי כל שנה שיהיה מזל עקרב במבט כוכב מזיק ימות מלך קדרים והמולך על מלכות ישמעאל.¹⁸ (11) והזכיר מאשר נסה דמיונות רבים.¹⁹ (12) ומאדים עם מזל אריה ארץ ברגאן. (13) והשמש עם מזל דלי ארץ ישראל וארץ יון ומצרים. (14) והלבנה עם מזל בתולה ארץ אל צין²⁰ וכראסאן. (15) וטעם זה כי אותו הכוכב ממונה עליהם, ומהמזלות המזל הנזכר, וכאשר יהיו שניהם בתקופת השנה, ואף כי בתקופת שנת²¹ המחברת, ככה תדין משוב עד²² רע.

57 (1) ולדעת שנת הבצורת אמר מאשא אללה:²³ שים מקום המחברת הגדולה,²⁴ גם האמצעית גם הקטנה, עקר. (2) וכל²⁵ שנה שיגיע בית הסוף אל מקום מאדים או שבתאי, אם²⁶ היה מתגבר על צדק²⁷ כאשר הזכרתי בתחלה, יורה על שנת בצורת בכל מדינה שיגיע²⁸ בית הסוף אליה. (3) וטעם בית הסוף שתתן | לכל שנה מזל אחד, ותחל ממזל

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¹ ארבה] בסמאט; ר רעש. ² יורו] בסמאט; ר יורה. ³ או יראה מה שיורה] בסמט; ר או יראה מה שיורו; א יורו שינרו. ⁴ [או] בסמאר; ט חסר. ⁵ [צדק] במט; סאר < או. ⁶ [מביט] בסמאט; ר מבט. ⁷ [הנקראת] בסמרט; א חסר. ⁸ ודבר מנוסה הוא] בסמרט; א חסר. ⁹ [שיהיה] בסמרט; א שיורה. ¹⁰ [או] בסמרט; א אם. ¹¹ [וכבר] בסמרט; א חסר. ¹² [זה] בסמאט; ר חסר. ¹³ [אין קץ להם] בסמרט; א חסר. ¹⁴ [רומה] בסא; ט רומא; מ רומי. ¹⁵ [ושבתאי עם מאזנים לארץ רומה, והיא מלכות אדום] בסמאט; ר חסר. ¹⁶ [הַנְדִי] בסארט; מ הַנְדִי. ¹⁷ [על כן הם] בסמרט; א עליהם. ¹⁸ [ישמעאל] בסמט; ר ישמעאלים; א חסר. ¹⁹ [דמיונות רבים] בסמרט; א חסר. ²⁰ [צין] בסאט; מר סין. ²¹ [שנת] בסמאט; ר שנות. ²² [עד] בסמאט; בר או. ²³ [מאשא אללה] באט; ר מאשא אלה; ס משא אללה; מ מאשהללה. ²⁴ [ולדעת שנת הבצורת אמר משא אללה שים מקום המחברת הגדולה] בסמרט; א [ש]. ²⁵ [עקר וכל] בסרט; מ עקר לכל; א ועיקר כל. ²⁶ [אם] בסמרט; א גם. ²⁷ [צדק] בסמרט; א חסר. ²⁸ [שיגיע] בסמאט; ר חסר.

signs, it signifies that misfortune will befall the world because of locusts or beetles in the places where they are usually found. (5) If Mars or Saturn is in the signs with a human shape, they signify disputes, quarrels, and wars. (6) If they are oriental, their influence will be felt more strongly. If they aspect each other in quartile or opposition but neither Venus nor Jupiter is aspecting ⟨them⟩, it signifies great misfortune and you can find out the place where it [misfortune] will occur.¹

56 (1) Enoch the First said that Jupiter with the sign of Cancer gives an indication about Iraq. (2) Abū Ma'shar mentioned that the sign of Iraq is the term¹ of Jupiter in the sign of Cancer, which is at 21° of the sign. (3) It has been verified by experience that any malefic planet that is in this degree or that aspects it in opposition or quartile at the beginning of the revolution of the year will harm the place in question. (4) But the contrary happens if a benefic planet is there or it [the planet] aspects it² [the degree]. (5) This has been verified by experience innumerable times. (6) Saturn with Libra ⟨governs⟩ the land of Rome, which is the kingdom of Edom. (7) Mercury with the sign of Capricorn ⟨governs⟩ the inhabitants of India, who are called al-Hind. (8) Therefore Abū Ma'shar said that Mercury governs their souls, so they are clever and smart, and Capricorn ⟨governs⟩ their bodies, so they are not white. (9) Venus with Scorpio ⟨governs⟩ Ḥejaz, where Mecca is. (10) Therefore Abū Ma'shar said that in any year that Scorpio aspects a malefic planet the king of the Arabs will die as well as the ruler of the kingdom of the Muslims.³ (11) He mentioned many illustrations based on what he verified by experience. (12) Mars with Leo ⟨governs⟩ the land of Barghan. (13) The Sun with Aquarius ⟨governs⟩ the land of Israel and Greece and Egypt. (14) The Moon with Virgo ⟨governs⟩ the land of al-Chin [China] and Khorasan.⁴ (15) This means that they are governed by this planet and, among the signs, by the aforementioned sign; you should pronounce judgment, whether good or bad, in accordance with the situation of both [the planet and the sign] at the revolution of the year, and particularly at the revolution of the year of the conjunction ⟨of Saturn and Jupiter⟩.⁵

57 (1) As for knowledge of a year of drought, Mashā'allāh said: Take the place of the great conjunction, or of the middle or small, as a root [i.e., your starting point]. (2) Any year that the terminal house reaches the place of Mars or Saturn, if it [Mars] is stronger than Jupiter, as I mentioned above,¹ it signifies a year of drought in every city that [i.e. every city whose sign] the terminal house reaches. (3) The terminal

המחברת, ממעלת המחברת עד שלשים מעלות, ושוה הוא¹ שיהיה זה המספר במזל אחד או בשני מזלות, והעיקר שתחשוב במעלות ישרות. (4) וכל שנה שתגיע אל נגה או כוכב חמה אם היה בממסך טוב, או אל צדק אם היה מתגבר ומנצח את שבתאי בתחלת המחברת, יורה על שובע, ואף כי בכל מדינה שמזלה אחת יתדות בית הסוף.

58 (1) ויאמר אל אנדרווגר² הישראלי: לעולם נסתכל³ אל המחברת הגדולה, שהיא מחברת שבתאי וצדק, ונתן לכל מעלה ישרה שנה אחת. (2) ונחל ממקום המחברת, ולא נחוש באי זה זמן מהשנה יהיה. (3) ואחר שלש מאות וששים שנה, ⁴ שהמספר⁵ כמעלות הגלגל, נשוב⁶ להסתכל כאשר בראשונה.

59 (1) אמר אבו מעשר כי היום אנחנו במעלה שביעית ממזל מאזונים, כי לפי דעת חכמי הודו יתנו לכל מעלה אלף שנים.

60 (1) אמר יעקב אל כנדי: הסתכל אל מחברת המאורות או נכחם,⁷ ההווה מהם קודם הכנס השמש במזל טלה, ואל תחוש לדברי האומרים שנסתכל לעולם בהכנס השמש⁸ אל תחלת⁹ מעלה עשרים¹⁰ ממזל עקרב, כי מאז יחלו מימי הבארות להוסיף. (2) והנה אם היה נגה בתחלת השנה מזרחי, הנה תהיה חצי השנה הראשון¹¹ טוב מהאחרון, ואם הוא מערבי הפך¹² הדבר. (3) והנכון¹³ מה שאמרתי, כי אם היה אחד הכוכבים הטובים מביטים¹⁴ אל מקום המחברת או הנכח, אז יהיה¹⁵ לאחד מהם שלטון רב במקום. ואין כוכב¹⁶ מזיק הנה לאות על שנה טובה, ואף¹⁷ כי אם היה הכוכב הטוב באחת¹⁸ יתדות המזל העולה, שהוא הצומח, ברגע המחברת או הנכח¹⁹ כפי אורך כל מדינה ומדינה, וכפי תקון הבתים | שהם היתדות, כי ישתנו בעבור רחב כל מדינה¹⁵² ומדינה. (4) ואם הדבר הפוך, כי מזיקים מביטים, או הם באחת יתדות הצומח, ואין

¹ ושוה הוא] בסמרט; א ושנת הסוס. ² אנדרווגר] בסמרט; אר אנדרווגאר. ³ נסתכל*] סארט; במ הסתכל. ⁴ שלש מאות וששים שנה] בסמרט; א רקס. ⁵ שהמספר] בסמרט; א מהמספר. ⁶ נשוב*] סארט; ב תשוב; מ נחוש. ⁷ נכחם] בסמאט; ר חסר. ⁸ השמש] ברט; סמא שמש. ⁹ תחלת] בסמאט; ר תחת. ¹⁰ עשרים] בסמרט; א פי שתיים. ¹¹ הראשון] בסמט; ר חסר. ¹² הפך*] סמר; בט הפוך. ¹³ והנכון] בסמרט; א חסר. ¹⁴ מביטים] במר; סאט חסר. ¹⁵ אז יהיה] בסמאט; ר חסר. ¹⁶ כוכב] בסמאט; ר נגה. ¹⁷ ואף] במרט; סא ואם. ¹⁸ באחת] בסארט; מ באחד. ¹⁹ או הנכח] בסמרט; א חסר.

house² means that you assign one sign to each year, beginning with the sign of the conjunction, from the degree of the conjunction up to 30°, regardless of whether this number ⟨of degrees⟩ is in one or two signs [i.e., whether all 30° are contained in one sign or stretch over two]; but the main thing is to calculate in equal degrees. (4) Any year that it [the terminal house] reaches Venus or Mercury, if it is in a good complexion, or ⟨when the terminal house reaches⟩ Jupiter and the latter is stronger than and is victorious over Saturn at the beginning of the conjunction—this signifies plenty, particularly in any city whose sign is in one of the cardines of the terminal house.^{3,4}

58 (1) Al-Andruzagar the Jew¹ said: We should always look at the great conjunction, which is the conjunction of Saturn and Jupiter, and assign one year to each equal degree. (2) We should start from the place of the conjunction and pay no attention to the part of the year ⟨in which it takes place⟩. (3) After 360 years, which is the number of degrees in a circle, we should again regard ⟨this moment⟩ as if it were the beginning ⟨of a new cycle⟩.²

59 (1) Abū Ma'shar said that today we are at Libra 7°, because in the opinion of the Indian scientists one thousand years are assigned to each degree.¹

60 (1) Ya'qub al-Kindī said: Observe the conjunction or opposition of the luminaries, whichever occurs ⟨last⟩ before the Sun enters Aries, and ignore those who say that we should always observe when the Sun enters the beginning of the 20th degree of Scorpio, because that is when the water of the wells begins to increase. (2) So if Venus was oriental at the beginning of the year, the first half of the year will be better than the second, and the contrary if it was occidental.¹ (3) What I just said is correct, for if one of the benefic planets aspects the place of the conjunction or opposition, one of them will have a great lordship in this place. If there is no malefic planet ⟨there⟩, a fortunate year is indicated, especially if the benefic planet is in one of the cardines of the rising sign [i.e., of the horoscopic chart], which is the ascendant, at the moment of conjunction or opposition, in accordance with the longitude of each and every city, and in accordance with the rectification of the places that are the cardines, because they change according to the latitude of each city. (4) But in the contrary case—when malefic planets are aspecting ⟨the ascendant⟩, or they are in one of the cardines of the ascendant,

כוכב טוב מביט, הנה שנה רעה. (5) ואם יביטו טובים¹ ומזיקים², הסתכל למי שיש לו כח רב,³ הוא השליט. (6) ודע כי הכוכב העליון, אם הוא מזרחי וכוכב אחר עליון מערבי, הנה⁴ הכח הגדול למזרחי. (7) ואם מהשפלים הדבר הפוך, כי כחם בפאת מערב. וההווה תחת אור השמש אין לו כח כלל, וככה החזור אחורנית.

61 (1) אמר אבו מעשר כי נסה פעמים רבות, כי אם היה מאדים בתחלת השנה באחד בתי שבתאי, יורה על בצורת. (2) ואם היה באחד מבתי, יורה על רוב מטר,⁵ ובשאר⁶ המקומות אמצעי. (3) ולא ידעתי טעם זה, גם נסיתיו אני ולא עלה בידי. (4) על כן הזכרתי⁷ לך, שאם מצאת ספרו אל תסמוך עליו. (5) ולא דבר בדברי הגשם יותר מזה.

62 (1) אמרו חכמי הודו כי מחנות הלבנה כ"ח, והנה יעלה לכל מזל ב' מחנות ושלישית מחנה. (2) והנה יהיה מתחלת טלה, שתחלתו לפי דעת חכמי הצורות משמנה⁸ מעלות קודם קרני טלה, והם⁹ בזמן הזה על כ"ב מעלות מתחלת טלה, שהוא קו הצדק, שהוא כפי מחלוקת המחשבת לא כפי הצורה. כי צורת טלה קטנה והיא פחותה מרביעית מזל. (3) והנה אם רצית לדעת¹⁰ מחנות הלבנה גרע ממקום הלבנה המתוקן בדרך לוחות אל בתאני שמנה מעלות, או תמצא חפצך. (4) והנה מטלה, שהיא הצורה¹¹, עד י"ג מעלות גם נ"א חלקים היא המחנה הראשונה, הנקראת אל נטה. (5) וכבר חקקתים¹² לך כל המחנות בצורותם¹³ ושמותם¹⁴ בלשון קדר ופירושם.

63 (1) אמרו חכמי הודו כי | עשר מחנות הם לחות ויורו על גשם ומטר. (2) ואלה¹⁵ שמותם בלשון קדר: אל דבראן, אל דראע, אל גבהה,¹⁵ אל צרפה, אל גפר, אל אכליל, אל שולה,¹⁶ אל בלדה,¹⁷ אל פרג אל מוכר. (3) ואמרו כי בהראות אור¹⁸ הלבנה בתחילת¹⁹ החדש, אם היתה באחת מחנות הגשם ויביט אליה כוכב חוזר אחורנית, ואף

¹טובים] בסמאט; ר > כוכבים. ²ומזיקים] בסמרט; א מאדים. ³כח רב] בסמרט; א רוחב. ⁴הנה] בסמאט; ר חסר; כאן כ"י א נפסק. ⁵רוב מטר] בסרט; מ מטר לרוב. ⁶ובשאר] בסרט; מ ואם בשאר. ⁷הזכרתי*] סרט; מ הזכרתיים; ב הזכרתי. ⁸משמונה] במר; ס ח'; ט ושמונה. ⁹והם] בסרט; מ ואם. ¹⁰לדעת] במר; ט למצוא; ס חסר. ¹¹הצורה] בסמט; ר < הראשונה. ¹²חקקתים] בסט; מר חקקתי. ¹³בצורותם] בסמרט; ט בצורות. ¹⁴ושמותם*] סמר; ט ובשמותם. ¹⁵גבהה*] סטרמ; ב גבה. ¹⁶שולה*] סמט; בר שולא. ¹⁷בלדה] בסמט; ר בלדא. ¹⁸אור] בסרט; מ חסר. ¹⁹בתחילת] בסמט; ר > בתחלה.

and no benefic ⟨planet⟩ aspects them—it will be an unfortunate year. (5) If benefic and malefic ⟨planets⟩ are aspecting ⟨the ascendant⟩, find out which of them has more power—this is the ruler. (6) Know that if one upper planet is oriental and another upper planet is occidental—the oriental ⟨planet⟩ has the greater power. (7) But the opposite applies for the lower ⟨planets⟩, because their power is in the west. But one that is under the rays of the Sun has no power at all, and the same applies for a retrograde ⟨planet⟩.²

61 (1) Abū Maʿshar said that many times he had verified by experience that if Mars is in one of Saturn's houses at the beginning of the year it signifies drought. (2) But if it is in one of its ⟨own⟩ houses, it signifies abundant rain; and in the other houses [i.e., in one of the houses of the other planets], ⟨rain will be⟩ moderate.¹ (3) I do not know the reason for that; I too tried to verify it by experience but was unsuccessful. (4) This is why I have told you this, so that you will not trust his book if you find it.² (5) He said nothing else about rain.³

62 (1) The scientists of India said that the Moon has 28 mansions, so that there are two-and-a-third mansions in each sign. (2) They [the Indians] started [the mansions] from the beginning of the [sign of] Aries, whose start, according to the scholars of the images,¹ is 8° before the horns of the [constellation] Aries, although today they [the horns of Aries] are 22° from the beginning of the sign of Aries, which [the beginning of the sign of Aries] is in the equator, for that [the sign of Aries] is a mental construct and has nothing to do with the asterism. (The constellation of Aries is small and covers less than a quarter of the sign.) (3) So to find the mansions of the Moon, subtract 8° from the place of Moon as corrected² according to the method of al-Battānī's tables—then you will attain your objective. (4) Thus the first mansion, which is called *al-naṭḥ* [the butting], stretches from the constellation of Aries to 13° 51'.³ (5) I have already drawn the shapes of all the mansions for you, along with their names in Arabic and their translation ⟨into Hebrew⟩.⁴

63 (1) The scientists of India said that 10 mansions are moist and signify rain. (2) These are their names in Arabic: *al-dabar'an*, *al-dir'a*, *al-jabha*, *al-ṣarfha*, *al-gaḥar*, *al-ikhliḥ*, *al-shawla*, *al-balda*, *al-farḡ al-mukhar*.¹ (3) They said that when the Moon's light becomes visible at the beginning of the month, if it is in one of the mansions of rain and a retrograde planet aspects it—particularly if it is in a feminine sign, and especially if

כי אם היה במזל נקבה, ויותר אם היה באחד מזלות המים, או יורה על גשם. (4) וזה הסתכל בכל חדש וחדש¹ בתחלת החדש, ויותר תחלת החדש ההווה² קודם הכנס השמש במזל טלה, גם במזל סרטן, גם במזל מאזניים, גם במזל גדי. (5) והכלל באחד המזלות המתהפכים, והטעם שיתהפך הזמן בהכנס השמש שם. (6) כי מתחלת טלה עד ראש סרטן הזמן חם ולח. (7) ואחר כן יתהפך הזמן שתשוב הלחה יבושת, ויהיה הזמן מתחלת סרטן עד סוף בתולה חם ויבש. (8) ואחר כך יתהפך הזמן³ לסור החום ובוא⁴ הקור תחתיו, ויהיה הזמן קר ויבש כי התולדת האחת תעמוד כאשר היתה. (9) ובהכנס השמש במזל גדי, תסור היבושת וישאר הקור כאשר היה ויהיה הזמן קר ולח. ככה תמיד. (10) והמחנות היבשות אל בטין, אל הנעה, אל טרף, אל קלב, סעד⁵ אל אכביה,⁶ אל פרג אל מקדם.⁷ (11) ושאר המחנות ממוסכות.

64 (1) והנה כלל אדבר לך:⁸ יש לך להסתכל לעולם אל המאה ועשרים מחברות⁹ שהם מחברות הכוכבים המשרתים עם המאורות. (2) ואחר שידעת בספר ראשית החכמה ממסך כל כוכב, ככה¹⁰ תדין.

65 (1) וכל דבר שיוורה עליו הכוכב, אם היה חזק מפאת השמש, ומפאת המעלה הצומחת, גם מפאת שלטונו במקומו, יתיקר כל דבר שיוורה עליו. (2) והפך זה אם היה בבית קלונו, או בבית שנאתו, ויותר אם היה נשרף מהשמש או חוזר אחורנית. (3) וכפי מבט הכוכבים הטובים והרעים ככה תדין.

66 (1) גם אנכי נסיתי פעמים רבות, כי השמש תורה על הנוצרים, ושבתאי על הפלשתים,¹¹ ומאדים על הקדרים, ונגה על ישמעאלים. (2) וכפי כחו בתחלת השנה ככה תדין.

67 (1) וכבר אמרתי כי שבתאי יורה על הזקנים והעבדים, וצדק על בעלי העושר והדיינים, ומאדים על אנשי המלחמה, והשמש על המלכים, ונגה על הנשים ועל הסריסים, וככב חמה על הקטנים והחכמים והסופרים, והלבנה על כל אדם.¹²

¹ יחדש] בסרט; מ חסר. ² ההווה] בסרט; מ ההוא. ³ שתשוב הלח יבושת ויהיה הזמן מתחלת סרטן עד סוף בתולה חם ויבש ואח'כ יתהפך הזמן] בסרט; מ חסר. ⁴ ובוא] במר; סט ובא. ⁵ סעד] בסרט; מ > אל. ⁶ אכביה] בר; סמט ארביה. ⁷ אל פרג אל מקדם] במ; סט אל פרכל מקדם; ר אל פרג אל מרדם. ⁸ לך] במרט; ס אדבר. ⁹ מחברות] בסרט; מ המחברות. ¹⁰ ככה] במרט; ס חמה. ¹¹ הפלשתים] בסמר; ס פשתים. ¹² אדם*] פמט; בר האדם.

it is in one of the watery signs—it portends rain.² (4) You should observe this every month at the beginning of the month, and particularly at the beginning of the month before the Sun enters Aries, also (before the Sun enters) Cancer, as well as Libra, and also Capricorn. (5) That is, in general, (before the Sun enters) one of the tropical signs, (“tropical”) meaning that the weather changes when the Sun enters them. (6) For from the beginning of Aries until the beginning of Cancer the weather is hot and moist. (7) Then the weather changes when moistness turns again into dryness, and the weather (when the Sun passes) from the beginning of Cancer to the end of Virgo is hot and dry. (8) Then the weather changes when heat departs and cold replaces it, and the weather becomes cold and dry because one nature³ [i.e., dryness] continues as before. (9) When the Sun enters Capricorn, dryness departs but cold remains and the weather becomes cold and moist. It is always like this.⁴ (10) The dry mansions are *al-butayn*, *al-han’aha*, *al-ṭarf*, *al-qalb*, *sa’d al-akhbyiha*, *al-fargh al-muqaddam*.⁵ (11) The other mansions are temperate.⁶

64 (1) I now give you a rule: always look at the 120 conjunctions, that is, the conjunctions of the planets and the luminaries.¹ (2) Pronounce judgment according to what you know from the *Book of the Beginning of Wisdom* about the complexion of every planet.²

65 (1) If a planet is powerful by reason of the Sun, and by reason of the degree of the ascendant, or by reason of its rulership in its location—everything that is signified by this planet will become more expensive. (2) The contrary applies if it [the planet] is in the house of its dejection, or in the house of its detriment, and particularly if it is burnt by the Sun or is retrograde. (3) You should pronounce judgment in accordance with the aspects of the benefic and malefic planets.¹

66 (1) I have also verified many times by experience that the Sun gives an indication about the Christians, Saturn about the Philistines, Mars about the Arabs, Venus about the Muslims.¹ (2) Pronounce judgment in accordance with its [the planet’s] power at the beginning of the year.

67 (1) I have already said that Saturn gives an indication about the elderly and slaves, Jupiter about the wealthy and judges, Mars about warriors, the Sun about kings, Venus about women and eunuchs, Mercury about adolescents, scholars, and scribes, and the Moon about everyone.¹

68 (1) וכל שנה שתמצא הלבנה על מבט נכח עם השמש או מבט רביעית תורה על קשר על¹ המלך בכל מדינה ששם הלבנה, והטעם שהיא במזלה.

69 (1) אמר אל אנדרווגר: הסתכל בעל² המזל הצומח בתחלת תקופת השנה, והטעם מי הוא שליט על המעלה הצומחת. (2) ואם הם³ שנים שליטים או שלשה, קח המביט מהם ועליו תסמוך. (3) ואם רבים יביטו⁴ קח מי שיש לו יותר⁵ שלטון במעלה הצומחת.

70 (1) ועשה כדרך שאתה עושה במולד. (2) שאם היה השליט⁶ במזל הצומח יורה על שמחה ובריאות גוף לאנשי המקום, ואם⁷ היה⁸ שם נשרף יורה על תחלואים ומות ודבר. (3) ואם בשני והוא במקום טוב יורה על ריוח לכל אנשי המקום, ואם הוא נשרף מהשמש יורה כי שלטונם יזיקם בממונם. (4) ואם בשלישי ירבו עוברי דרכים. (5) ואם ברביעי ירבו הזרעים ואם היה⁹ מושחת תדין הפך הדבר. (6) ואם בחמישי ירבו בניהם, ואם היה שם¹⁰ אחד המזיקים ימותו הנערים הקטנים. | (7) ועל זה הדרך תדין בשאר^{154א} הבתים. (8) ולעולם תסתכל על המבטים, כי עליהם כל המשפטים.

נשלם¹¹ ספר משפטי העולם ובו נשלמו ספרי הדינים כלם.¹² והודות לשם המבין כל נעלם.¹³

¹ [על] בסמט; ר חסר. ² [בעל] ברט; פמ על. ³ [הם] בסמט; ר היו. ⁴ רבים יביטו] בסרט; מ נש. ⁵ יותר] במרט; ס חסר. ⁶ במעלה הצומחת ועשה כדרך שאתה עושה במולד שאם היה השליט] בסמט; ר חסר. ⁷ ואם^{*} מר; בסט < בשני. ⁸ היה^{*} מרסט; ב > ואם. ⁹ היה] בסרט; מ חסר. ¹⁰ [שם] במרט; ס חסר. ¹¹ נשלם] במרט; ס > תם. ¹² נשלם ספר משפטי העולם ובו נשלמו ספרי הדינים כלם] בסמר; ט נשלם ספר העולם. ¹³ והודות לשם המבין כל עולם] בסמ; רט חסר.

68 (1) Every year in which you find the Moon in opposition to the Sun or in quartile, it portends a conspiracy against the king in every city where the Moon is, meaning that it is in its sign [the sign of the city].

69 (1) Al-Andruzagar said: “Look at the lord of the sign of the ascendant at the beginning of the revolution of the year, meaning the ruler of the degree of the ascendant.” (2) But if there are two or three rulers, take the one among them that is in aspect and rely on it. (3) And if many ⟨planets⟩ are in aspect, take the one that has more lordship in the degree of the ascendant.

70 (1) Proceed as you do for a nativity. (2) If the ruler is in the sign of the ascendant, it signifies joy and physical health to the inhabitants of the place; but if it is burnt there, it signifies diseases, death, and pestilence. (3) If it is in the second ⟨place⟩ and it is in a fortunate location, it signifies profit for all the inhabitants of the place; but if it is burnt by the Sun it signifies that their government will harm their wealth. (4) If it is in the third ⟨place⟩, there will be many wayfarers. (5) If ⟨it is⟩ in the fourth ⟨place⟩ the seeds will increase, but if it [the lord] is afflicted you should pronounce the opposite judgment. (6) If ⟨it is⟩ in the fifth ⟨place⟩ there will be many children, but if one of the malefics is there little children will die. (7) Pronounce judgment in a similar way regarding the remaining places. (8) Always look at the aspects, because they are the basis of all judgments.¹

This completes the *Book of the Judgments of the World*,² which is the last of all the books of judgments.³ Thanks to God, Who Fathoms All Mysteries.

PART TWO

NOTES TO THE FIRST VERSION
OF THE BOOK OF THE WORLD

[4] **1–2: If you come ... the zodiac.** This refers to one of the initial sections of the *Book of Religions and Dynasties*, where Abū Ma‘shar writes that he applied the mean motion of the planets for the calculation of the period between two successive conjunctions of Saturn and Jupiter. See *On Great Conjunctions*, 2000, I, § 1.1:16–18, pp. 11–19: “The years between the conjunctions of the two may increase or decrease in the beginning of Aries, in the triplicities, or in each sign. The reason is as follows: If Saturn and Jupiter conjoin by mean (motion) at the beginning of a certain sign ...”

[5] **4: Tables of the scientists ... on experience.** See below, § 11:3 and note.

[6] **3–4: Nor should you ... on experience.** See also below, § 11:3, where a similar account is given of the disagreement between the astronomical tables of the Indian scientists, on the one hand, and of the scientists who rely on experience, on the other. One of Ibn Ezra’s main criticisms of the Indian scientists seems to be that they ignore the slow steady motion of the fixed stars with respect to the equinoxes, to such an extent that a correction is required to harmonize the tables. See *Ṭe’amim* I, § 2.6:2, pp. 36–37; § 2.12:6,8,13,14, pp. 51–53; *Ṭe’amim* II, § 5.1:11, pp. 218–219; § 8.7:1–4, pp. 254–255; *‘Olam* II, § 45:4; *Liber de Rationibus Tabularum*, 1947, p. 82.

§ 2

[1] **1: There are 120 conjunctions (of the seven planets).** Corresponds to *‘Olam* II, § 2:1, and notably to the long commentary on Ex. 33:21 (§ 2:1–5, quoted below, pp. 272–275). The 120 conjunctions of the seven planets are the total sum of the combinations (involving at least two planets) of seven planets when the order in which the planets are taken is insignificant and no planet may appear more than once in any particular combination. Ibn Ezra’s lengthy explanations in *‘Olam* I (§ 2:1–4; § 3:1–3; § 4:1–7; § 5:1–20) are his own original attempt to provide a mathematical supercommentary on the Aḥmad Ibn Yūsuf’s tenth-century commentary on the fiftieth aphorism of *Sefer ha-Peri* (Book of the Fruit). *Sefer ha-Peri*, later known as the *Centiloquium* in Latin Europe, was a compendium of the *Tetrabiblos* in 100 aphorisms, attributed during the Middle Ages to Ptolemy. *Sefer ha-Peri*, BNF 1055, f. 60a: “הפירוש: הק”כ מחברות הוא מה שיגיע מחבורי הכוכבים שניים ושלישיים ורביעיים וחמשיים וששיים

“... וזה מספרם וצורותיהם. ושבעיים.” (Explanation: the 120 is the total sum of the combinations of two, three, four, five, six, and seven planets. These are their numbers and forms. ...”). Aḥmad Ibn Yūsuf’s commentary goes on to take up the individual cases of each of the combinations of two, three, four, five, six, and seven planets. Ibn Ezra begins by providing a formula to calculate any sum of consecutive integers (*Olam I* § 2:2); next he applies this formula to calculate the number of double (*Olam I* § 3:1–2), triple (*Olam I* § 4:1–8), and quadruple conjunctions (*Olam I* § 5:1–20). When it comes to the more complicated problem of finding the number of quintuple (*Olam I* § 6:1–3) and sextuple conjunctions (*Olam I* § 6:4–6), he jettisons the formula and resorts to an ad hoc solution. The pattern of the 120 planetary conjunctions appears repeatedly in Ibn Ezra’s biblical exegesis; he usually highlights its cosmological connotations but does not explain how this number is obtained. See long comm. on Ex. 3:15; long comm. on Daniel 10:21; long comm. on Gen. 1:14; comm. on Eccles. 1:3. But see also the long comm. on Ex. 33:21 (§ 2:1–5, below, pp. 272–275), which is a remarkable exception to this rule.

[2]_{2–4}: **You can calculate ... number 210.** As a first step (§ 2:2), Ibn Ezra offers a formula for finding the various combinations of the planets: $\Sigma[1 \dots n] = n \cdot (\frac{1}{2} + \frac{1}{2})$. Next, as is his wont, he offers an example (§ 2:3–4), which he introduces by the characteristic keyword דמיון, *lit.* “resemblance.” In *Sefer ha-Mispar* (Book of Number), a textbook of basic arithmetic, written in all likelihood in Lucca in 1142–1145 (Sela/Freudenthal, 2006, 19, pp. 30–31), Ibn Ezra begins the third chapter, on addition, with the same formula and acknowledges that he borrowed it from other mathematicians (*Mispar*, 1895, pp. 24–25: כִּי הַחֲשׁוֹן כִּי: “כתוב בספרי חכמי החשבון כי: הרוצה לדעת כמה המחובר מן המספרים שיערכו על הסדר עד סוף מספר ידוע, יכפול אותו על חציו בתוספת חצי אחד והעולה הוא המחובר.” [“It is written in the books of the mathematicians that anyone who wishes to know the result of adding the ⟨whole⟩ numbers arranged in ⟨ascending⟩ order up to a certain number, should multiply this number by half its value plus one-half; this yields the result”]). In the next paragraph, though, Ibn Ezra credits himself with another formula for the same problem: $\Sigma[1 \dots n] = (n^2 + n) / 2$ (*Mispar*, 1895, p. 25: ;מצאתי דרך אחרת; “אמר אברהם המחבר: מוצאתי דרך אחרת; תוסיף על מרובע סוף החשבון השרש שהוא בעצמו וראה כמה המחובר, וחצי המחובר” [“Abraham, the author, said: I have found another method; add to the square of the last number this number itself and take the sum; the ⟨final⟩ result is half of this sum.”]).

§ 6

[1]7: **All these conjunctions ... divisible by seven.** Also in his long commentary on Ex. 33:21, Ibn Ezra calls attention to the special properties of the number 7 as related to the various subgroups of planets, which he mentions in different order than in 'Olam I. He begins with the conjunction of the seven planets, which is intimately associated with the creation of the world; next he continues with the conjunctions of 2 and 5 planets, and then of 3 and 4 planets, to highlight that pairs of subgroups of planets that add up to 7 (2 and 5 planets, 3 and 4 planets) support the same amount of combinations: there are 21 conjunctions of both 2 planets and 5 planets, and 35 conjunctions of both 3 planets and 4 planets. See long commentary on Ex. 33:21 (§ 2:1–5, below, pp. 272–275).

§ 7–10

[1]1: **The great conjunction ... small conjunction.** This passage ('Olam I, § 7:1–4, § 8:1–4, § 9:1–6, § 10:1), which corresponds closely to 'Olam II, § 3:1–4, presents the well-known standard form of the theory of conjunctionalism. For its formulation, at least in 'Olam I, Ibn Ezra seems to have depended on the opening section of Abū Ma'shar's *Book of Religions and Dynasties* (*On Great Conjunctions*, 2000, I, § 1.1:12,13,15, on p. 11; see also pp. 582–587), given that Abū Ma'shar's *Book on the Conjunction of the Planets* is mentioned a few lines earlier in connection with Ibn Ezra's disapproval of its author's method for finding the various periods of Saturn-Jupiter conjunctions ('Olam I, § 1:1–2 and notes). In the rest of 'Olam I, however, it is not Abū Ma'shar but Māshā'allāh (§ 25, § 42, § 43, § 58), Dorotheus, and Al-Andruzagar (§ 58) who are Ibn Ezra's sources for the Saturn-Jupiter conjunctions; in 'Olam II Abū Ma'shar's name is never mentioned. Moreover, in contrast to Abū Ma'shar's *Book of Religions and Dynasties*, where the Saturn-Jupiter conjunctions function as the foremost astrological doctrine throughout the entire work, conjunctionalism plays a relatively modest role, quantitatively, in 'Olam I (§ 7–10; § 11; § 20–22; § 25; § 32; § 39; § 40; § 42; § 43; § 57; § 58) and particularly in 'Olam II (§ 3; § 5; § 11; § 14; § 16; § 21; § 27). This suggests that, besides Abū Ma'shar, Ibn Ezra drew on a variety of other sources for the applications of the theory of conjunctionalism.

Ibn Ezra also incorporates an account of the tripartite Saturn-Jupiter conjunctions in a biblical commentary (long comm. on Ex. 33:21 [§ 3:3–

4, below, pp. 274–275]); in the final chapter of *Reshit Ḥokhmah* I, where the three types of Saturn-Jupiter conjunctions are presented as “directions” (see quotation in *Reshit Ḥokhmah*, ch. X, § 3:1–3 [below, pp. 266–269]), and in *Ṭe’amim* I, § 10.9:3–4, pp. 106–107, which expands on the latter passage. In other parts of his astrological and exegetical oeuvre, Ibn Ezra touches on the Saturn-Jupiter conjunctions sporadically, usually without distinguishing between the three types and using vague epithets such as “the great conjunction” or “the conjunction of the two upper planets.” This is the case when Ibn Ezra interprets various episodes of Jewish history, notably events recorded in the books of Exodus, Esther, and Daniel (*Moladot*, introduction, § 2:2 [below, pp. 282–283]; *Nativitatibus*, 1484, sig. c1b; *Nativitatum*, Erfurt, f. 53b; long comm. on Ex. 6:7, 32:1; long comm. on Ex. 33:21 [§ 6:3–4, below, pp. 278–279]; long comm. on Esther 3:7; long comm. on Dan. 10:21), or to give an account of the establishment of the monotheistic religions (*Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 78; *‘Olam* II, § 14:1, § 14:6–7; *Ṭe’amim* I, § 4.6:2, pp. 78–79), or to explain the fate of states and cities (*Moladot*, introduction, § 4:1–2 [below, pp. 286–287]; *She’elot* I, BNF 1056, f. 66b).

§ 10

[1]2: **Revolution of the year**, Hebrew **תְּקוּפַת הַשָּׁנָה**. This Hebrew phrase appears twice in the Bible (Ex. 34:22; 2 Chron. 24:23), where it denotes the beginning or completion of an annual cycle. Ibn Ezra borrowed it to translate the Arabic *taḥāwīl as-sinnīn* (Latin: *revolutio annorum*) and used it most often to denote the moment of the beginning of the annual solar cycle. Only in three cases does he refer explicitly to the beginning of the interval (*‘Olam* I, § 56:3; § 69:1; *‘Olam* II, § 5:1); generally he resorts to an abbreviated form that omits the beginning and speaks of the complete interval (תְּקוּפַת הַשָּׁנָה, “revolution of the year”). Note, however, that as a rule the context makes it clear that he is referring to the beginning of the interval in question. Ibn Ezra uses תְּקוּפַת הַשָּׁנָה, “revolution of the year,” in the two versions of *Sefer ha-‘Olam* in a highly versatile and ambiguous manner. The following meanings are noticeable:

- (a) The beginning of the solar revolution, conceived according to Ptolemaic lines (*Almagest*, 1984, III:1, p. 132), namely, as the interval from one equinox to the next of the same kind, or as the interval

between two consecutive arrivals of the Sun in Aries. See ‘*Olam* I, § 12:2; § 13:9; § 18:1.

- (b) A special horoscope cast every year, when the Sun enters Aries, to forecast world affairs during the next year. This timing evokes the creation of the world, which, according to Indian cosmological theories well known to Ibn Ezra (*Ibn al-Muthannâ’s Commentary*, 1967, on pp. 152, 299; *Liber de Rationibus Tabularum*, 1947, p. 88), occurred when all the planets met in conjunction in the head of Aries. See ‘*Olam* I, § 36:2; § 37:2; § 53:2; § 56:3; § 69:1; ‘*Olam* II, § 28:2. The significance of this annual horoscope is repeatedly contrasted by Ibn Ezra with that of the horoscopes cast in the years when a Saturn-Jupiter conjunction occur. See ‘*Olam* I, § 32:7; § 42:1; § 56:15; ‘*Olam* II, § 11:1; § 11:4. In ‘*Olam* I and ‘*Olam* II Ibn Ezra does not employ the alternative expression תְּקוּפַת הָעוֹלָם, “revolution of the world,” found in other parts of his astrological corpus (*Te’amim* I, § 2.11:3, pp. 50–51; *Moladot*, introduction, § 5:1–2 [below, pp. 286–287]).
- (c) A special horoscope cast when the Sun enters Aries in years of Saturn-Jupiter conjunctions. Here Ibn Ezra employs the expression תְּקוּפַת שְׁנַת הַמַּחְבֵּרֶת, “revolution of the year of the conjunction.” See ‘*Olam* I, § 10:2; § 25:1; § 32:1; § 39:1,2,8; § 40:1; § 56:15; ‘*Olam* II, § 5:1;
- (d) A special horoscope cast when the Sun enters Aries, Cancer, Libra or Capricorn (‘*Olam* II, § 5:7). Here Ibn Ezra also employs the term תְּקוּפַת הַרְבִּיעִי (‘*Olam* II, § 5:7) or תְּקוּפוֹת (‘*Olam* II, § 41:11; § 50:11; ‘*Olam* I, § 52:1).
- (e) A special horoscope cast on every anniversary of the native, when the Sun arrives at the same point in the zodiac where it was at the time of birth. In this case Ibn Ezra employs the expression תְּקוּפַת הַמּוֹלֵד, “anniversary of the nativity” (in ‘*Olam* II, § 23:1).

[2] **2: A great conjunction ... portents and wonders.** Corresponds to *On Great Conjunctions*, 2000, II, § 1.3:3, p. 23: “Dicamusque quia, quando mutantur coniunctiones a triplicitate in triplicitate et fuerit aliquis planetarum trium superiorum in nono vel in tercio ab ascendente eiusdem coniunctionis significantis apparitione eorum, et maxime Saturnus, significabit hoc nativitates prophetarum.” See also Māshā’allāh, *Book on Eclipses*, § 9:3, § 10:7 (below, pp. 254–257). Ibn Ezra expands on the role of the Saturn-Jupiter conjunctions in portending the birth of prophets in ‘*Olam* II, § 14:1–7 (see notes there).

§ 11

^[1]**1: Many think ... upper planets.** This is the start of a long digression (§ 11–§ 18) that, in order to justify the statement that it is impossible to determine the sign of the ascendant at the hour of the conjunction of the upper planets, presents the difficulties involved in finding out several factors: (a) the ascendant in any place at the revolution of the year (§ 12:2–3); (b) the length of the solar year (§ 13:2); (c) the time when the Sun enters the head of Aries (§ 14:1); and (d) the obliquity of the ecliptic (§ 14:2). This is accompanied by an eclectic exposition of the achievements of Hindu, Egyptian, Persian, Greek, and Arabic scientists in a variety of astronomical issues (§ 12–§ 14, § 17), plus an account of Ibn Ezra’s own attempts to determine when the Sun enters Aries (§ 15–§ 16). In § 18 Ibn Ezra offers the results of his enquiry and brings the digression to an end. This digression has no parallel in *‘Olam II*.

^[2]**2: But this is impossible.** Saadia Gaon makes a similar statement in the introduction to his commentary on Daniel, while presenting the three types of Saturn-Jupiter conjunctions. “Since they have not succeeded in determining the ascendant at the very moment of their conjunction, they took the easy way and determined the ascendant of the (whole) year in which the conjunction occurs” (Ben-Shammai, 2004, p. 72). Saadia’s approach to the problem—taking the ascendant of the year in which the conjunction occurs—is not the same as Ibn Ezra’s proposed solution. See, below, § 18:1–3.

^[3]**3: Scientists who rely on experience.** This category of scientists, whose designation emphasizes their reliance on observation, is repeatedly mentioned in Ibn Ezra’s work—astrological and non-astrological, scientific and nonscientific—generally with approbation. They are usually described as astrologers (*Mivḥarim I*, Munich 202, f. 109b; *Ṭe’amim I*, § 2.5:5, pp. 44–45, § 2.13:6, pp. 52–53), notably in his biblical exegesis (long comm. on Ex. 20:13, second comm. on Gen. 1:9), but sometimes as astronomers (*Ṭe’amim I*, § 2.2:15, pp. 38–39), compilers of astronomical tables (*‘Olam I*, § 11.3,4; *Ṭe’amim I*, § 2.12:14, pp. 52–53), or calendarists (*‘Iggeret ha-Shabbat*, 1894/5, p. 68). In *Liber rationibus tabularum* and in the Latin book on the astrolabe written with Ibn Ezra’s active collaboration, Arabophone astronomers and astrologers who flourished in various places and eras are referred to as *magistri probationum*, which is the Latin

counterpart of the Hebrew חכמי הנסיון, and their astronomical tables are designated *tabulae probationum* (*Liber de Rationibus Tabularum*, 1947, pp. 76, 77, 78, 80, 86 *et passim*; *Astrolabio*, 1940, p. 23). They include notable scientists such as al-Marwādhī, Ibn Yūnus, Banū Sākir, Azarchiel the Spaniard, Thābit b. Qurra, al-Nayrizī, al-Battānī, and Yahyā b. Abī Mansūr.

§ 12

[1]2–3: **Ptolemy said ... after me.** This ostensible quotation from Ptolemy, which has no clear basis in the *Tetrabiblos*, is completed in § 18. See note there.

§ 13

[1]1: **I, Abraham, will explain Ptolemy's meaning to you.** After introducing himself as Ptolemy's commentator, Ibn Ezra launches a discussion of the length of the solar year, which is continued of and on in subsequent sections (§ 13:7–9; § 17:1; § 17:9–11). As the following notes show, this discussion bears striking similarities to *Liber de Rationibus Tabularum* (1947, pp. 74–82). Other discussions of the length of the solar year can be found in *Yggeret ha-Shabbat* (1894/5, pp. 64–65), *Tbbur* (1874, p. 8a), *Moladot* (BNF 1056, f. 58b–59a), comm. on Lev. 25:9, *Te'amim* I, § 2.12:4–5 (pp. 50–51 and notes on pp. 135–136), *Responsa* (1847, pp. 1–2), and *Nehoshet* III (Pinsker 26, right col., ff. 58b–59a). Due to his eclectic and skeptical approach, Ibn Ezra usually provides extensive information about the scientific contributions of individual scholars, presenting these discussions in the form of a confrontation among Greek, Arabic, Persian, Indian, and Jewish methodologies. As in *Liber de Rationibus Tabularum* (1947, pp. 74–82) and *Te'amim* I, § 2.12:3–11 (pp. 50–51), in *Olam* I, § 12–§ 17, Ibn Ezra interweaves his account of the length of the year with discussions about related astronomical issues, such as the imprecision of astronomical instruments (§ 13:3–6), the determination of when the Sun enters the head of Aries (§ 14:1; § 15:1–7; § 16:1–2), the determination of the Sun's altitude (§ 14:2–3; § 14:10), the determination of terrestrial latitude (§ 14:4), the obliquity of the ecliptic (§ 14:5–9), the solar apogee (§ 17:2–7), and the motion of the fixed stars (§ 17:7).

For the above reasons we think it appropriate to define the solar year as the time from one equinox or solstice to the next of the same kind, as determined by observations taken at the greatest possible interval.”

[4]3–6: **The instruments ... not stand (upright)**. Ibn Ezra offers a similar report about the Banū Shākir brothers in *Liber de Rationibus Tabularum* (1947, p. 81): “Nam invenimus quod duos fratres Beni Sequir duo astrolabia composuerant quorum utriusque dyiameter novem palmorum faciebat. Hi distinxerant gradus quadrantis altitudinis solis per minuta et ipsa minuta per 5. Et cum isti duo simul, sole intrante arietis caput, sumerunt altitudinem solis, inventa est inter duo astrolabia differentia duorum minorum.” This section seems to echo a similar statement by Ptolemy about the pitfalls of using astronomical instruments to determine the ascendant: “Difficulty often arises with regard to the first and most important fact, that is, the fraction of the hour of the birth; for in general only observation by means of horoscopic astrolabes at the time of birth can for scientific observers give the minute of the hour, while practically all other horoscopic instruments on which the majority of the more careful practitioners rely are frequently capable of error, the solar instruments by the occasional shifting of their positions or of their gnomons, and the water clocks by stoppages and irregularities in the flow of the water from different causes and by mere chance” (*Tetrabiblos*, 1980, III:2, pp. 229–231).

[5]8: **For Hipparchus ... fraction was**. See *Tetrabiblos*, 1980, III:1, pp. 136–137. Ibn Ezra voices a similar opinion in *Ṭe’amim* I, § 2.12:4, pp. 50–51. In other places he states that Hipparchus’ value was 365 days minus a quarter of a day: “Et dixit Abracax additionem fractionis in anno solari minorem esse parte 4a diei” (*Liber de Rationibus Tabularum*, 1947, p. 75; see also *Moladot*, BNF 1056, f. 58b–59a).

[6]9: **He was followed ... as follows**. Ptolemy’s value for the length of the solar year is given in § 17:1. See note there.

§ 14

[1]5–9: **For the Indian scientists ... is 23°33’**. In Latin, “Nam indi dicunt 24 graduum integrorum declinationem solis esse, sed Abrachix et Ptholomeus dixerunt 23 graduum 51 minorum, secundum horum sen-

tentiam arcus declinationis sic se habebit ad totum circulum ut 11 ad 83. Omnes vero alii magistri probationum dixerunt declinationem esse 23 graduum et 35 minutorum, exceptis Abnebimezor et Azarchel qui dixerunt eam esse 23 graduum et 33 minutorum” (*Liber de Rationibus Tabularum*, 1947, p. 77). For Ptolemy’s and Hipparchus’ values for the obliquity, see *Almagest*, 1984, I:12, p. 63. Elsewhere Ibn Ezra presents the values offered by the Arabophone scientists, on the one hand, and by the Indian scientists, on the other. For instance, in his comm. on Amos 5:8 he endorses a value of “23 degrees, plus half a degree, plus the half of the sixth of a degree,” that is, $23^{\circ} 35'$ (see Sela, 2003, pp. 257–273); but in the long comm. on Daniel 8:9 he uses 24° and in *’Iggeret ha-Shabbat* (1894/5, p. 63) he has “two-fifths of the sixth of the circle,” or, again, 24° . The provenance of and rationale for the latter value are explained in *Liber de Rationibus Tabularum* (1947, p. 92): “Indi vero dixerunt declinationem solis esse 24 graduum ut Iacob Abentaric transtulit ex ore Chenche indorum peritissimi ... Quomodo et in omni astrolabio 24 graduum sumuntur quia parvitas fractionum que sunt super distinctioni plenarie repugnant.” This is almost certainly why in all his astrolabe manuals Ibn Ezra uses a value of 24° for the obliquity of the ecliptic: *Neḥoshet* I (BNF 1061, ff. 150b, 151a, 156a, 163b), *Neḥoshet* II (Mant. 10, f. 36b), *Neḥoshet* III (Pinsker 26, right col., ff. 59a, 60a); and *Astrolabio* (1940, p. 11).

§ 15

[¹]₁: A location whose latitude is $42^{\circ}30'$. This latitude corresponds to a place near Béziers, where Ibn Ezra composed *’Olam* I. See Matthew, 1996, p. 232.

§ 16

[¹]_{1–2}: When there is ... no alternative. Here Ibn Ezra emulates Ptolemy’s method for determining the length of the solar year: “The longer the time between the observations compared, the greater the accuracy of the determination of the period of revolution. ... This same error, when distributed over a smaller number of years, makes the inaccuracy in the yearly motion [comparatively] greater (and [hence increases] the error accumulated over a longer period of time), but when distributed

over a larger number of years makes the inaccuracy [comparatively] less” (*Almagest*, 1984, III:1, p. 137).

§ 17

[1] **1: Ptolemy, comparing ... 280 years.** Corresponds to *Almagest*, 1984, III:1, pp. 137–138. A similar value is given in Ibn Ezra’s parallel discussions of the length of the solar year; e.g., “Ptholomeus valet 300^{ma} pars unius diei, et erit anni revolucio secundum eum 88 graduum et 48 minutorum” (*Liber de Rationibus Tabularum*, 1947, p. 75). For the interval of 280 years between Ptolemy and Hipparchus, see *Liber de Rationibus Tabularum*, 1947, pp. 77–78 (quoted below, note on § 17:2–6). For other references to Ptolemy’s value, see above, note on § 13:2. The discussion of the length of the solar year is resumed below, § 17:8–9.

[2] **5: So I am astonished ... Ptolemy’s tables.** As pointed out by José Maria Millás Vallicrosa (Vallicrosa, 1949, pp. 247–248; *Heshbon Mahalhot ha-Kokhavim*, 1959, p. 109), this is a reference to Abraham Bar Ḥiyya’s duality vis-à-vis Ptolemy: on the one hand, Bar Ḥiyya endorsed Ptolemy’s opinions regarding the obliquity of the ecliptic, the length of the solar year and the precession of the equinoxes; on the other, Bar Ḥiyya followed generally al-Battāni’s astronomical tables although ostensibly he tried to correlate his astronomical tables with Ptolemy’s.

[3] **2–6: Ptolemy <also> said ... Gemini 22°.** Corresponds to *Liber de Rationibus Tabularum*, 1947, pp. 77–78: “Similiter discordia fuit de alto loco solis nam Ptholomeus dixit se altum locum solis invenisse in 6to gradu geminorum, et quoniam Abracax eundem locum solis altum in eodem gradu 280 annis invenerat ante, affirmat Ptholomeus locum altum solis motus nullius esse. Indi vero asserunt, anno 1154 ab incarnatione Domini, quo hanc edicionem fecimus, in 17° gradu et 54 minutorum signi geminorum eum esse. Omnes autem magistri probationum qui plusquam 30 et in diversis temporibus fuerunt, concordant in hoc quod in eodem anno proterierat 17 gradum et aliquod minuta et concordant etiam quod eius motus sit quantus fixe motus”. See also comm. on Ps. 46:3. Ibn Ezra and Abraham Bar Ḥiyya touched on this topic in the context of their concern that the inconstancy of the Sun’s apogee heralds an alteration in the size of the climatic bands, a radical change in the weather, and the approach of the end of the world. See Sela, 1999, pp. 249–252.

[4] 7: **Uppermost orb.** Here the uppermost orb is identical with the eighth orb of the fixed stars, although elsewhere Ibn Ezra identifies it with the ninth starless orb. See also *'Olam II*, § 1:2 and note.

[5] 7: **Ptolemy also said ... half degrees.** Following Ptolemy (*Almagest*, 1984, III:1, p. 132, quoted above, note on § 13:2), the motion of the orb of the fixed stars in a direction counter to the daily motion is usually invoked in debates about the length of the solar year to refute the approach that would define the Sun's annual revolution by its return to one of the fixed stars. Corresponds to *Liber de Rationibus Tabularum*, 1947, p. 78: "In motu vero fixarum discordaverunt ... antiqui vero et Ptholomeus dicunt quod 100 annis unum gradum pretereunt. Albateni vero probavit quod 66 annis uno gradu moventur; Azofi vero 70 annis uno gradu". For similar accounts of this controversy, see *Ṭe'amim I*, § 2.12:9–10 (pp. 50–51) and *'Iggeret ha-Shabbat* (1894/5, p. 65). Ibn Ezra usually endorses al-Šūfi's value of precession (see *Ṭe'amim I*, § 2.12:10, pp. 50–51 and note on pp. 137–138). For an account of these theories, see: *Šurat ha-'Areš*, 1546, pp. 196–200; Dreyer, 1953, pp. 202–206; Evans, 1998, pp. 248, 259–262.

[6] 8–9: **Now some ... is $\frac{1}{131}$.** This passage, which resumes the discussion of the length of the solar year (see above, § 17:1) and offers an abbreviated account of the values proposed by the Arab scientists who used Ptolemy's method, corresponds to *Liber de Rationibus Tabularum* (1947, pp. 76–77): "Philosophi sarracenorum geometrie periti discipline secundum rationes Ptholomei et per instrumenta Ptholomei multa de celestibus probaverunt ... plurimi horum asserunt id quod deest quarte unius diei esse 106^{am} partem diei, et erit secundum hos revolutio anni 86 graduum et 36 minutorum, et reliqui horum dixerunt id quod deest quarte esse 130^{am} diei partem." Similar values are given in Ibn Ezra's other accounts of the controversy about the length of the solar year. See especially *Moladot* (BNF 1056, f. 58b–59a), *'Iggeret ha-Shabbat* (1894/5, pp. 64–65), *Tbbur* (1874, p. 8a), comm. on Lev. 25:9, and *Ṭe'amim I*, § 2.12:4–5 (pp. 50–51).

[7] 10–12: **Now we can trust ... al-Šūfi's value.** Corresponds to *Liber de Rationibus Tabularum*, (1947, pp. 86–87), where Ibn Ezra endorses the mean motion of the Sun as proposed by al-Šūfi (903–986), who was closely followed by al-Zarqāli (ca. 1029–ca. 1090), and states that his own astronomical tables are based on al-Šūfi's and al-Zarqāli's, completed in 1089: "et quoniam minuta in quibus erraverunt in suis annis Albateni et

Almarodoci agregata sibi in diebus Azarchel fecerunt diem integrum, et inveni annum quem per singulos 40 annos probavit Azofi quem similiter post eum probaverunt Abencine et Abeniunut, et Acerchel, post Azophi 300 annis, et invenit non aliter quam Azophi etiam in uno minuto. Proinde omnium aliorum tabulis omissis, tabulas medii cursus solis secundum Azofi composui, et Azarchelis probatio fuit in anno 482 ab heligera, quod interpretatur bellum, quod est principium noticie saracenorum, et in eodem anno fuerint completi 1089 anni Christi.”

§ 18

[1]2: Last, Hebrew **בתחלה**, *lit. first*. Here and elsewhere (*Olam* I, § 20:1; § 41:1; § 44:1; *Olam* II, § 28:2) Ibn Ezra uses **בתחלה** or **תחלה**, literally “[at] first,” for “most recent[ly]” or “last.” This is because in these cases he conceives of time as flowing back from the moment when the Sun enters Aries until the moment of the most recent conjunction or opposition of the luminaries.

[2]2: This is why Ptolemy said ... judgments of the world. This section concludes the long digression of § 12–§ 17. Its thrust is that when astrologers want to determine the ascendant for some event—the beginning of the revolution of the year (§ 18:1–3), a solar or lunar eclipse (§ 19:1–2), or some Saturn-Jupiter conjunction (§ 20:1–6)—the time of the last conjunction or opposition of the luminaries before the event is to be preferred over the time of the event itself. Ptolemy, who is Ibn Ezra’s main source, expresses this idea in a number of places in *Tetrabiblos* (although not in the precise form as it is presented by Ibn Ezra):

- (a) In the first chapter of the second book of *Tetrabiblos*, on general astrology, Ptolemy states that one of the astronomical phenomena to be observed when astrologers want to make predictions about general conditions “such as wars, famines, pestilences, earthquakes, deluges, and the like” are “the ecliptical conjunctions of the sun and moon”; that is, those full and new moons in which the luminaries eclipse each other (*Tetrabiblos*, 1980, II:1, pp. 119–121).
- (b) When Ptolemy tries to find out the most appropriate beginning of the year, he writes: “It seems more proper and natural to me, however, to employ the four starting-points for investigations which

deal with the year, observing the syzygies of the sun and moon at new and full moon which most nearly precede them, and among these in particular the conjunctions at which eclipses take place, so that from the starting point in Aries we may conjecture what the spring will be like, from that in Cancer the summer, from that in Libra the autumn, and from that in Capricorn the winter” (*Tetrabiblos*, 1980, II:10, pp. 197–199; cf. *On Great Conjunctions*, 2000, I, § 1.1:19, p. 19).

- (c) When Ptolemy deals with the beginning of months he writes: “The second mode of procedure is based on the month. In this it will be necessary for us to examine in the same way the new moons or full moons that take place, in the several signs” (*Tetrabiblos*, 1980, II:12, p. 209; cf. *On Great Conjunctions*, 2000, I, § 1.1:20, p. 19).
- (d) When considering the difficulty of determining the ascendant at the hour of birth, Ptolemy writes: “Difficulty often arises with regard to the first and most important fact, that is, the fraction of the hour of the birth. ... We must, then, take the syzygy most recently preceding the birth, whether it be a new moon or a full moon” (*Tetrabiblos*, 1980, III:2, pp. 229–231).

As for the role of the scientists of India and of Dorotheus, the current passage (§ 18:2) corresponds closely to ‘*Olam* II, § 24:1, and to ‘*Olam* I, § 41:1, where the advice that one “always observe the conjunction of the luminaries or their opposition, whichever occurs (last) before the Sun enters into the sign of Aries” is ascribed to Dorotheus the king and to Māshā’allāh. As for Māshā’allāh, in *Te’amim* I, § 2.18:2 (pp. 58–59) and in *Reshit Ḥokhmah* (1939, IX, lxvii:14) Ibn Ezra makes him from India, probably because Māshā’allāh was well acquainted with the work of Indian scientists such as Kanaka (Pingree, 1997, pp. 51–62), who visited the courts of al-Manṣūr and Hārūn al-Rashīd. Thus, according to Ibn Ezra, Māshā’allāh may be subsumed under the category of the “scientists of India.”

§ 19

[¹]: **Ptolemy said ... that year.** This refers to Ptolemy’s assertion (*Tetrabiblos*, 1980, II:6, p. 167) that the event predicted by a solar or lunar eclipse will take place within the year following the eclipse. Corresponds to ‘*Olam* II, § 9:2–9 and ‘*Olam* I, § 30:1–3. See notes there.

[2]²: **He relied ... shall explain.** This is explained in the chapter on solar and lunar eclipses, which begins in §29:1. Cf.: “The second and chronological heading, whereby we should learn the times of the events signified and the length of their duration, we shall consider as follows. Inasmuch as the eclipses which take place at the same time are not completed in the same number of ordinary hours in every locality, and since the same solar eclipses do not everywhere have the same degree of obscuration or the same time of duration, we shall first set down for the hour of the eclipse, in each of the related localities, and for the altitude of the pole, centres, as in a nativity” (*Tetrabiblos*, 1980, II:6, pp. 165–167; see also III:2, pp. 229–231, quoted above, note on §13:3–6).

§ 20

[1]¹ **Last, Hebrew בתהלה**, *lit. first*. See above, note on ‘*Olam* I, §18:2.

[2]²: **Great conjunction.** This term does not refer, as in §7:1, to another meeting of Saturn and Jupiter in the head of Aries after a period of 960 years, but indifferently to any of the so-called small, middle, or great Saturn-Jupiter conjunctions (see above, §7–§10). For a similar use of the term, see below, §58:1.

[3]^{1–6}: **In a great conjunction ... the quadrant.** Corresponds to ‘*Olam* II, §5:1–9. See note there.

§ 21

[1]²: **Center, Hebrew מוצק**, *lit. solid, stable, or strong*. Ibn Ezra used the peculiar neologism *muṣaq* throughout his work rather than the standard *merkaz*, which derives from the Arabic *markaz* and was freely employed by his contemporaries. In his commentaries on Job 38:16 and 38, Ibn Ezra glosses *muṣaq* as meaning the center of a circle; in his commentary on Job 37:10 he asserts that it refers to the earth, which stands as a point in the center of the orbs. See Sela, 2003, pp. 113–116.

[2]²: **Great circle, whose center is different from the center of the Earth** גלגל הגדול שמוצקו רחוק ממוצק הארץ. This phrase, denoting the eccentric

circle, is very close in meaning and main elements to the expression גלגל המוצק הנקרא גלגל המרכז, “great circle that is called the circle of the center,” used in ‘*Olam* II, § 50:1. For an explanation of its main elements, see note there.

[3]4: **That its latitude ... go into exile.** For Saturn’s greater power when its ecliptical latitude is northern, or when it is in the ecliptic, see ‘*Olam* II, § 40:4.

[4]5: **Nature, Hebrew תולדה.** See ‘*Olam* II, § 3:2 and note.

§ 22

[1]1–7: **Bloodshed will ensue ... the malefics.** This summarizes the astrological qualities of Mars, Venus, and the Moon, as listed in *Reshit Ḥokhmah* (1939, IV, xlvi:1–xlvi:13; xlvi:8–xlvi:7; l:13–li:8) and *Ṭe’amim* I, § 4.4:1–6, § 4.6:1–4, § 4.8:1–8 (pp. 75–81).

§ 23

[1]1–11: **The Persian scientists ... first to rule.** Corresponds closely to ‘*Olam* II, § 30:1–11. See also *Epitome* (1548, Lib. I, cap. x, sig. H1r–H1v), *On Great Conjunctions* (2000, I, § 8.2:12–24, pp. 503–511), and *Reshit Ḥokhmah* (ch. X, § 2:8; below, pp. 266–267). The allocation of parts of the *fardār* to the planets and the two lunar nodes, in the order of their exaltations, is often found in introductions to astrology, in the sections on the qualities of the various planets: Sun 10 years, Moon 9, Head of the Dragon 3, Jupiter 12, Mercury 13, Saturn 11, Tail of the Dragon 2, Mars 7, Venus 8. See *Reshit Ḥokhmah* (1939, IV, xliv:16–17 *et passim*), *Ṭe’amim* I, § 4.2:11 (pp. 74–75 *et passim*), *Ṭe’amim* II, § 5.1:13 (pp. 218–219), Al-Qabīṣī (2004, II:5, p. 65 *et passim*), *Kitāb al-Taḥfīm* (1934, § 395, p. 239; §§ 438–439, p. 255), *Kitāb al-Madḥal* (1996, VII:8, v, p. 310), *Abbreviation* (1994, VII:2, p. 81), and *Epitome* (1548, sig. D1r *et passim*). The *fardār* is also applied in nativities, where the period of 75 years, which corresponds to the natural span of human life, is distributed into nine ages ruled by the seven planets and the lunar nodes. The parts of the *fardār* are allocated to the planets as in general astrology; but the count begins from the Sun by day and from the Moon by night,

while the order of rulerships corresponds to the order of the planets' spheres and not of their exaltations. See: *Moladot* (BNF 1056, ff. 59b–60a), *Tequfah* (JNUL 8°3916, f. 58b), Al-Qabīṣī (2004, IV:20, pp. 133–135), Andarzaghār (1991, p. 342 *et passim*), *De iudiciis astrorum* (1551, VI:4, pp. 266–277), *Epitome* (1548, Lib. II, cap. xxi, sig. N4r–O2r).

[2]**12: The reason ... (first) degree.** The same explanation is given in *Te'amim* II, § 5.4:12 (pp. 228–229) and § 5.6:7 (pp. 230–231).

§ 24

[1]**1: If you wish ... period of Mars.** Corresponds to 'Olam II, § 31:1–3. Although here Ibn Ezra employs the Hebrew calendar to specify the year of composition, AM 4908 (1147/8 CE), he is not reckoning from the biblical creation of the world when he states that this same year is the fourth year in a part of a *farḏār*ship ruled by Mars. If he were, the year $4908 = 1147/8$ would be the eleventh year in a *farḏār*ship ruled by Jupiter ($4908 = 65 \cdot 75 + 33$). By contrast, in 'Olam II (§ 32:1) he does reckon from the biblical creation and holds $4902 = 1141/2$ to be the third year in a *farḏār*ship ruled by Jupiter. In 'Olam I, however, Ibn Ezra employs the “reckoning of the Persians” and probably follows Abū Ma'shar's *Book of Religions and Dynasties*, according to which “one turns to the complete years of Yazdigird and one always begin by subtracting 18 from them” (*On Great Conjunctions*, 2000, I, § 8.2:12, p. 503). This means that one subtracts 18 from 651, the year of the death of Yazdegerd III (the last king of the Sassanian dynasty), to begin the reckoning from 632, the year of that king's accession. This yields the result claimed by Ibn Ezra, namely, that AM 4908 is the fourth year in the part of a *farḏār*ship ruled by Mars ($1147/8 - 632 = 515 = 6 \cdot 75 + 65$).

[2]**2: Each one ... remaining sevenths.** Corresponds to 'Olam II, § 33:1–2. See note there.

[3]**5: The upper stars ... 25,000 years.** This refers to the motion of the fixed stars, which, according to Ibn Ezra was propounded by the Ancients and Ptolemy. Usually, though, Ibn Ezra endorses a motion of one degree in 70 years, which is al-Šūfi's version. See especially *Te'amim* I, § 2.12:8–10 (pp. 50–51 and notes on pp. 137–138).

[4]3–8: **If someone argues ... mathematicians know that.** Ibn Ezra presents the same idea, with the support of the same quote from *Sefer Yeṣirah*, in his comm. on Ecclesiastes 1:3: “ואם השמש אחד, ישתנו מעשיו כפי השתנות המאה ועשרים מחברות השבעה והשתנות תהלוכות כולם, עם נוע גובה גלגל המוצק היוצא. על כן לא תמצא מתפונת מלאכת השמים נמשלת למתפונת אחרת רגע אחד, “Although there is one Sun, its effects change according to the 120 conjunctions of the seven (planets) and to the changes of the processions of all (the planets), as the apogee of the eccentric circle moves. Therefore you will not find a configuration of the celestial system that is the same as another configuration for even a moment; about this *Sefer Yeṣirah* remarks that two stones produce two houses (and so on) up to nine”). See also Ibn Ezra’s commentary on Deut. 5:26.

§ 25

[1]1: **Māshā’allāh.** One of the early Abbasid astrologers who introduced Sassanian astrology to the Arabs, Māshā’allāh was a Jew from Basra. According to Ibn al-Nadīm (died 995 or 998) in his *Fihrist*, Māshā’allāh’s name was Mīshā, meaning Yitrho (Jethro), and he lived from the reign of al-Manṣūr (754–775) to that of al-Ma’mūn (813–833) (*Fihrist*, 1970, II, p. 650). Only a few of his numerous works survive in Arabic; more are extant in Latin, Hebrew, and Persian. Several of his works address historical and meteorological astrology: (a) *On Conjunctions and Religions and Sects* (*Fīl-Qirānāt wa-l-adyān wa-l-mīlal*), which combines Zoroastrian millenarianism with conjunctionalism and survives in an epitome by Ibn Ibintā (text in E.S. Kennedy and D. Pingree, *Astrological History of Māshā’allāh*, 1971); (b) *On the Accession of the Caliphs and the Knowledge of the Accession of Each King* (*Fī Qiyām al-khulafā’ wa-ma’rifat qiyām kull malik*), which, after a theoretical introduction, contains horoscopes of the first regnal year of each caliph down to Hārūn al-Rashīd (text in *ibid.* on pp. 129–143; also in K. Yamamoto and Ch. Burnett, *On Great Conjunctions*, 2000, pp. 545–553); (c) *Book of Rains and Winds* (*Kitāb al-amṭār wa-l-riyāh*), on weather forecasting (text in G. Levi della Vida, *Book of Rains*, 1933).

[2]1: **Sign of the city:** For a definition of the term, see ‘*Olam* II, § 15:1 and note.

[3]²: **Burnt by the Sun**, Hebrew **נשרף מהשמש**. For this condition of a planet with respect to the Sun, see *Olam II*, § 17:1–17 and note.

[4]⁴: **But if a benefic ... I have explained**. Refers to § 21:1–5 above.

[5]^{1–5}: **Māshā'allāh said ... have observed**. Corresponds to *Olam II*, § 20:1–7.

§ 26

[1]^{1–2}: **Know that ... Saturn's harm**. Corresponds to *Reshit Hokhmah* (1939, VIII, lxiii:11–13): **אם יביט צדק אל המזויק יהפך תולדתו לטוב, ונגה לא יוכל להפך תולדת שבתאי כי אם בעזרת צדק, וצדק יסיר נוק שבתאי, ונגה יסיר נוק מאדים יותר מצדק.** (“If Jupiter aspects a malefic, it changes its nature for good, but Venus can not change Saturn's nature without the assistance of Jupiter, and Jupiter removes Saturn's harm but Venus removes Mars' harm more than Jupiter.”).

[2]³: **Under the rays of the Sun**, Hebrew **תחת אור השמש**. For this condition of the planets with respect to the Sun, see *Olam II*, § 17:1–17 and note.

[3]⁴: **Ptolemy said ... to Venus**. This statement is based on the Pythagorean theory, here ascribed to Ptolemy, that assigns to each of the seven planets (as well as the fixed stars) numbers that correspond to the musical tones produced by the rotation of their orbs. Ibn Ezra ascribes this theory explicitly to Ptolemy in both versions of *Sefer ha-Ṭe'amim*, where he also explains that a planet is considered to be benefic if its number has a “noble” or harmonious ratio to the number of other planet. See *Ṭe'amim I*, § 4.1:1–4 (pp. 68–71) and *Ṭe'amim II*, § 5.5:6–7 (pp. 230–231). The same numbers recorded by Ibn Ezra appear in the *Canobic Inscription*, an early work by Ptolemy, predating the *Almagest* and containing a list of parameters of his mathematical astronomy (Swerdlow 2004, pp. 166–167), as well as in the *Epistle on Music of the Ikhwān al-Ṣafā'* (*Epistle on Music*, 1978, on pp. 34–35, 38, 45–46).

§ 27

[¹]₁: **Be careful ... 30 years.** Corresponds to ‘*Olam* II, §4:1. Al-Kindī (*Epistle on the Rule of the Arabs and its Duration = On Great Conjunctions*, 2000, I, App. III, [4]–[11, [17]–[35], pp. 529–533, 535–541) and Abū Ma’shar’s (*Book of Religions and Dynasties = ibid.*, I, §2.8:3–6, pp. 123–131) offer two parallel accounts of the conjunctions of the two malefics in Cancer and their sway over Islamic history. In his *Book on Eclipses*, Māshā’allāh labels applies the designation “middle conjunction” to conjunctions of Saturn and Mars but ignored them in the sign of Cancer (Māshā’allāh, *Book on Eclipses*, §11:1–4; below, pp. 256–257). Ibn Ezra, who has been credited with the Hebrew translation of this treatise (see below, pp. 236–238), neither refers to these conjunctions in this sense nor uses Māshā’allāh’s terminology.

§ 29

[¹]₁: **Ptolemy said.** This is the start of a chapter on solar and lunar eclipses (§29–§31) that corresponds to ‘*Olam* II, §6–§10. Ibn Ezra follows in broad strokes Ptolemy’s approach in *Tetrabiblos* (1980, II:4–8, pp. 161–191), as will be shown in the following notes. For Ptolemy’s astrological theory of solar and lunar eclipses, see above, p. 15.

[²]₁: **Eclipse, Hebrew קדרות**. Ibn Ezra uses this biblical neologism (Joel 4:15; Isa. 3:7 *et passim*) for both solar and lunar eclipses. See Glossary, s.vv. “lunar eclipse,” “solar eclipse”.

[³]₁: **Ptolemy said ... sign of the ascendant.** This resumes the discussion begun in ‘*Olam* I, §19:1–2, and echoes *Tetrabiblos*: “We shall first set down for the hour of the eclipse, in each of the related localities, and for the altitude of the pole, centres, as in a nativity” (1980, II:6, p. 165).

[⁴]₂: **If the Sun ... its occultation.** Corresponds to ‘*Olam* II, §6:2. See Māshā’allāh, *Book on Eclipses*, §5:1 and §7:1 (below, pp. 248–251). Depends on *Tetrabiblos*, 1980, II:7, p. 177: “To the question, how large a portion of the class involved will the event affect, the answer is supplied by the extent of the obscuration of the eclipses”. The astrological factors that determine the classes of events are examined below (§29:4–8 and note).

[5] **5: Sign with a human shape.** This is a reference to Gemini, Virgo, Libra, and half of Sagittarius and Aquarius; Ibn Ezra frequently refers to this category of zodiacal signs. See, *inter alia*, *Mishpeṭei ha-Mazzalot* (Schoenberg 57, f. 69), *Ṭe'amim* I, § 1.4:7 (pp. 32–33), *Ṭe'amim* II, § 2.3:9–10 (pp. 188–191 and note on p. 277), *'Olam* I, § 53.1,5 and § 55.5. This category is also mentioned in *Kitāb al-Tafhīm* (1934, § 352, pp. 212–213), *Epitome* (1548, iii–xi, sig. B2v–C1v), Al-Qabiṣī (2004, I:24, p. 33), and *Kitāb al-Madḥal* (1996, VI:11, v, p. 250). In the two last they are also called “rational.”

[6] **4–8: We pronounce judgment ... in Leo.** This passage paraphrases *Tetrabiblos*, which examines the astrological factors that determine the classes of events predicted by solar and lunar eclipses: “The third heading is that of generic classification, whereby one must determine what classes the event will affect. This is ascertained from the special nature and form of the zodiacal signs in which happen to be the places of the eclipses and in which are the heavenly bodies, planets and fixed stars alike, that govern both the sign of the eclipse and that of the angle preceding the eclipse. ... Let us also consider the forms of the signs of the zodiac in which the eclipse and the dominating stars as well happened to be ... Constellations of human form, both in the zodiac and among the fixed stars, cause the event to concern the human race. Of the other terrestrial signs, the four-footed are concerned with the four-footed dumb animals, and the signs formed like creeping things with serpents and the like. Again, the animal signs have significance for the wild animals and those which injure the human race; the tame signs concern the useful and domesticated animals, and those which help to gain prosperity, in consistency with their several forms; for example, horses, oxen, sheep, and the like. ... And of these, in the constellations pertaining to the sea, such as Cancer, Capricorn, and the Dolphin, they influence the creatures of the sea and the sailing of fleets” (*Tetrabiblos*, 1980, II:7, pp. 171–173). Analogous instructions, regarding the determination of the classes of events in accordance with the sign or category of signs in which the eclipse takes place, are provided by Māshā'allāh, *Book on Eclipses*, § 5:2–4 (lunar eclipses) and § 7:3–6 (solar eclipses) (below, pp. 248–253).

§ 30

^[1]**1–3: Ptolemy said ... last degree.** Corresponds to ‘*Olam* II, § 8:4, where a similar assertion is made by “other” astrologers, and especially to ‘*Olam* II, § 9:2–9, where Ptolemy’s *Tetrabiblos* is explicitly cited apropos of lunar eclipses. See note there. There is a confusion, however, between the current passage, where Ibn Ezra uses the expression “what is portended is felt most strongly” (רוב הדבר שיורה עליו) and refers to the beginning of the event, and ‘*Olam* I, § 30:5, where Ibn Ezra also speaks of the “the strongest effect” (הדבר הרב), although he refers to the climax of the event. This stems, in all likelihood, from the fact that Ptolemy, on whom the parallel accounts in ‘*Olam* I and ‘*Olam* II are based, refers to the nature of “beginnings” in close proximity to the nature of “the more important intensifications of the events.”

^[2]**4: Equal hour, Hebrew שעה ישרה.** One equal hour is $\frac{1}{24}$ of a day and is the duration measured by the passage of 15° of the equator past the horizon. The equal hour—generally contrasted to the “crooked” or seasonal hour (Heb. שעות מעוותות), which is $\frac{1}{12}$ of the actual length of daylight or nighttime at a given season—is also called the “equinoctial hour,” because at equinox the equal hour and seasonal hour coincide.

^[3]**4: This is the opinion of Ptolemy ... eclipse to its end.** Corresponds to ‘*Olam* II, § 8:1, where the authority of King Ptolemy is invoked, and to ‘*Olam* II, § 10:1, where the same statement is ascribed to the Ancients. These parallel accounts depend on *Tetrabiblos*: “If it is a solar eclipse, we shall understand that the predicted event lasts as many years as the equinoctial hours which we discover” (1980, II:6, p. 167). The same instructions are given in the 24th aphorism of the *Centiloquium*. See *Sefer ha-Peri* (BNF 1055, f. 56b): כלל הקדרות מהזמן ... אמר בטלמיוס: “24th aphorism. Ptolemy said ... as for the duration of any eclipse, for every hour (we assign) a year, if it is a solar eclipse, and a month if it is a lunar eclipse.”)

^[4]**5: The strongest effect ... observed conjunction.** This refers to the moment during the eclipse that indicates the greatest intensity or climax of the predicted event. Corresponds to ‘*Olam* II, § 8:2–3, which refers to the moment when the greatest misfortune will occur. Although the same statement is ascribed to Ptolemy, in both ‘*Olam* I (§ 30:5) and ‘*Olam* II

(§ 8:2–3), there is nothing like it in the *Tetrabiblos*. Ptolemy's opinion as found there is presented in 'Olam II, § 8:4, but referred to "other" scientists. See note there.

[⁵6: **As for a lunar ... agree with them.** Corresponds to 'Olam II, § 9:1 and reflects Ptolemy's opinion in *Tetrabiblos*: "If it is a solar eclipse, we shall understand that the predicted event lasts as many years as the equinoctial hours which we discover, and if a lunar eclipse, as many months" (1980, II:6, p. 167). Analogous instructions are given in the 24th aphorism of the *Centiloquium*. See *Sefer ha-Peri* (BNF 1055, f. 56b; above note on § 30:4).

§ 31

[¹1–2: **Know that Mercury ... burnt by the Sun.** Corresponds to 'Olam II, § 7:1–3, 6. See notes there.

§ 32

[¹1: **Dorotheus the king.** This astrologer, who is to be identified with Dorotheus of Sidon, author of the well-known *Pentabiblos* (*Carmen astrologicum*, 1976), is granted royal status by Ibn Ezra in various places in his astrological work. See especially the introduction to the second version of *Sefer ha-She'elot*, where both Dorotheus and Ptolemy are made kings: "ראשי חכמי המזלות היו שנים האחד תלמי והשני דורוניוס ושניהם היו מלכים" ("There have been two leading astrologers: one of them Ptolemy and the other Dorotheus, and both of them were kings") (*She'elot* II, BNF 1058, f. 1b). See also *Te'amim* I, § 2.18:2 (pp. 58–59) and the Latin translation of the now-lost third Hebrew version of *Sefer ha-She'elot* (*Interrogacionum*, Erfurt, ff. 19b, 22b). Here and elsewhere Ibn Ezra refers to Dorotheus as Doronius, a misnomer produced by a mispointing of the Arabic text. "Doronius" as an explicit appellation for Dorotheus of Sidon, is found in an early twelfth-century Iberian setting in the *Liber Aristotilis De ducentis LVque Indorum voluminibus universalim questionum tam genethlium quam circularium summam continens* (The Book of Aristotle containing the totality of the questions, both genethliological and revolutionary, from the 250 volumes of the Indians), an astrological treatise by Hugo of Santalla and dedicated to Michael, the bishop of Tarazona from 1119 to 1151. Hugo of Santalla ascribes 13 works of astrology to Doronius,

eight of which (divided into 89 chapters) deal with “praeterita quam future,” a designation that seems to indicate the historical astrology of the revolutions of the years of the word and the planetary conjunctions. See *Liber Aristotilis*, 1997, 4, 15.

[2]¹: **Book of Secrets.** This work is also mentioned in *Mivḥarim* I (Munich 202, f. 112a), where Ibn Ezra remarks that “there are many thing in the *Book of Secrets* by Enoch but I do not understand their meaning” (“כי דברים רבים יש בספר הסודות של חנוך ולא ידענו טעמם”), as well as in *Moladot* (BNF 1056, f. 56b), where he draws on information provided by Sahl Ibn Bishr the Jew. This work appears to be the same as *Kitāb asrār kalām Hurmus al-muthallath bi-al-ḥikma* (Book of the secrets of the words of Hermes who is tripled in wisdom) (MS Paris, BNF Arabe 2487, ff. 32–38). See Pingree, 1997, p. 43; Sezgin, 1976, p. 55. This book is not identical with the so-called “*Book of Secrets* of Enoch” or the apocryphal 2 Enoch.

[3]¹: **Enoch.** For this legendary figure, see above, pp. 12–13. Ibn Ezra mentions Enoch’s astrological and astronomical work, usually in an approving tone, throughout his scientific oeuvre, but the triple Enoch—whom he inherited from his Arabic sources, notably Abū Ma‘shar—is particularly prominent in ‘*Olam* I (§ 36:1–2, § 37:1–2 and § 56:1–15). Based on the position that Enoch is supposed to have given for the star Cor Leonis (*Te’amim* I, § 1.2:3, pp. 30–31), Ibn Ezra believed that Enoch lived 1,700 years before his own time. See Sela, 2003, pp. 184–185.

[4]¹: **Power of the dodecatemoria, Hebrew כַּח שְׁנַיִם הָעֶשֶׂר.** This doctrine divides each of the zodiacal signs into twelfths (Arab. *ithna ashriyât*, Heb. שְׁנַיִם הָעֶשֶׂר, Latin *duodecatemorion*) by two methods:

- (a) The first divides the sign into twelfths of 2.5°; the lord of the first twelfth is the lord of the whole sign, and the lords of the subsequent twelfths those of the subsequent signs. This is the method applied in ‘*Olam* I (§ 32:1–8) and ‘*Olam* II (§ 21:1–2) and usually referred to in Arabic introductions to astrology (*Kitāb al-Madḥal*, 1996, V:18, v, pp. 204–205; *Kitāb al-Tafhīm*, 1934, § 456, pp. 267–269; Al-Qabīṣī, 2004, IV:15, p. 129; *Abbreviation*, 1994, p. 59), in Latin introductions to astrology or works on general astrology (*Epitome*, 1548, Lib. I, cap. ix, sig. G4v–H1r; *Tractatus pluviarum*, ed. Burnett, 66–67, p. 248), and Ibn Ezra’s own introductions to astrology

(*Reshit Hokhmah*, 1939, II, x:28–xi:2 *et passim*; *Ṭe'amim* I, § 2.11:2, pp. 50–51 [see notes on pp. 134–135]; *Ṭe'amim* II, § 2.9:7–8, pp. 202–203; and *Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 71).

- (b) The second method assigns the successive degrees of a certain sign successively and recurrently to the 12 signs, whose lords are the lords of the signs of the corresponding twelfths. This method is ascribed to Enoch or Hermes in *Kitāb al-Madḥal* (1996, V:18, v, pp. 204–205), and in *Reshit Hokhmah* (1939, II, xi:2–5): “ר'ק חנוך והקדמונים חלקו כח שנים עשר על דרך אחרת, כי הם אמרו כי המעלה הראשונה על תולדת המזל בעצמו, והמעלה השנית על תולדת המזל שהוא שני לו, והנה “But Enoch and the Ancients divided the power of the dodecatemoria by another method, because they said that the first degree (of the sign) is assigned to the nature of the sign itself, the next degree to the nature of the sign that is adjacent to it, and thus the 13th degree and the 25th degree are again assigned to the sign itself”).

In *Mishpeṭei ha-Mazzalot* and in both versions of *Ṭe'amim* Ibn Ezra underscores the significance of the dodecatemoria in predictions related to world astrology: “השנים עשר ... וצורך גדול יש לדעת זה למשפטי העולם” (“Dodecatemoria ... there is a great need to know this for the judgments of the world”) (*Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 71); “ויש לו כח” “גדול בתקופת העולם” (“It [the dodecatemoria] has a great power in the revolution of the world”) (*Ṭe'amim* I, § 2.11:2, pp. 50–51); “כח שנים עשר.” אמרו כי בכל מזל כח השנים עשר מזלות, וככה נסו, ויש לו כח במשפטי העולם. (“They said that, in each sign, (each of) the twelve signs has power, and they tested them in this manner, and it has power in the (astrological) judgments of the world”) (*Ṭe'amim* II, § 2.9:7, pp. 202–203).

[5] 2–6: **As an illustration ... happen to it.** As stated above (§32:1), the objective of this example (דמיון) is to “find the sign in which the power of the dodecatemoria occurs, whether from the malefic or the benefic planet.” More precisely, starting from a given location of Saturn (Taurus 14°), the example offers a prediction about some city by determining whether the place where Saturn’s power of the dodecatemoria falls coincides with the position of this city’s sign. Since Saturn is a malefic, such a coincidence will signify misfortune for this city. The solution is based on the premise that each degree of a twelfth is assigned 12 degrees of the whole sign, so that each twelfth of a sign, or segment of 2.5°, is assigned a whole sign, beginning with the sign of Taurus, which is

where the planet is. Since Saturn is at Taurus 14° , the example considers the zodiacal interval between Taurus 0° and Taurus 14° , and finds it to be equivalent to 5 twelfths plus $1\frac{1}{2}^\circ$, that is, 5 signs and 18° . Consequently, since the counting is started from the beginning of Taurus, Saturn's power of the dodecatemoria falls at Libra 18° . In other words: because $5 \cdot 2.5 = 12$, we count five signs (Taurus, Gemini, Cancer, Leo, and Virgo), bringing us to Libra. Now each degree of the remainder is taken to be 12 degrees of the sign; because $1.5 \cdot 12 = 18$, Saturn's power of the dodecatemoria falls at Libra 18° . Ibn Ezra offers a similar "illustration" in *Mishpeṭei ha-Mazzalot*, but instead of the location of a planet, he provides the ascendant of a horoscopic diagram: "דמיון: היה המזל הצומח תאומים י"ד מעלות גם י' חלקים ראשונים, והנה עברו חמשה חלקים לשנים העשר שהם חמשה מזלות. ונתחיל לספור מתאומים, והנה עבר המספר מזל מאזנים ונשאר לנו מעלה אחת ושתי שלישיות מעלה, והנה מאה ראשונים. חלקנום "על ה' עלו כ', והנה כח השנים עשר הוא במעלת עשרים ממזל עקרב." ("Example: the sign of the ascendant is Gemini $14^\circ 10'$, so that 5 parts of the dodecatemoria have passed (the head of Gemini), which are equivalent to 5 signs. We begin counting from Gemini, and the result passes the sign of Libra and we have a remainder of $1\frac{1}{3}^\circ$, namely, $100'$. We divide them by 5 and the result is 20; hence, the power of the dodecatemoria is in Scorpio 20° ") (*Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 71).

[6]7: **Know that ... any year.** For an analogous hierarchical arrangement of the three types of Saturn-Jupiter conjunctions together with the revolution of the year according to the lengths of their periods, see 'Olam II, §11:1–4.

[7]1–8: **Dorotheus the king ... the city.** Corresponds to 'Olam II, §21:1–2, which offers a briefer account of the application of the doctrine of the dodecatemoria in predictions related to the fate of states or cities. The same approach to the dodecatemoria can be found in *Tractatus pluviarum* (ed. Burnett, 66–67, p. 248), which draws on "wise Indians": "Indi gnari considerant partem que dicitur duodecima, hoc est ut dones ab exordio signi 2 gradus et semis ipsi signo ... ex hoc potest sciri signum ad quod pertingit .12a. pars planete fortunate vel infortunati, et notatur sic bonum vel malum quod habebunt civitates illius signi." Cf. *Epitome*, 1548, Lib. I, cap. vii, sig. G4v–H1r. In addition to the dodecatemoria, various other doctrines are invoked here to determine the timing of the observation and the details of the prediction: the revolution of the year,

the three types of Saturn-Jupiter conjunctions, the zodiacal sign of the city, and the doctrine of malefic and benefic planets (see *Reshit Hokhmah*, 1939, VIII, lxiv:32–lxv:1).

§ 33

[1] **1: If two powers ... the other.** In this passage, the phrase “two powers ... assigned jointly to the sign of a city” probably refers to the astrological “powers” that two (or more) planets may hold in a certain zodiacal location (in their current passage through the sign of the city), so that it is necessary to determine which of them is “stronger” there. These “powers” probably correspond to the precedence of the planets’ dignities (house, exaltation, triplicity, term, decans) in this specific zodiacal location, as explained in ‘*Olam II*, § 16:2–3. See note there.

[2] **2: Under the rays of the Sun, it has no power.** For this condition of the planets with respect to the Sun, not least apropos of having “no power,” see ‘*Olam II*, § 7:3, § 17:1 and particularly § 17:13 and note.

[3] **2: Place falling (from the cardines), Hebrew בית נפל.** This term designates the second, fifth, eighth, and eleventh places of a horoscopic diagram whose ascendant is the sign of the city.

[4] **3: House of its dejection, Hebrew בית קלונו, lit. house of its dishonor** (Arab. *hubūt*; Lat. *casus*). A calque invented by Ibn Ezra, because *qalon* is the antonym of *kavod*, whose literal sense is “honor” but which also denotes the astrological concept of exaltation. See ‘*Olam II*, § 16:1 and note. This is because a planet is said to be in its house of dejection if it is in the house opposite its exaltation. See Glossary, s.v. “house of dejection.”

[5] **3: House of its detriment, Hebrew בית שנאתו, lit. house of its hate.** Another neologism (Arab. *wabāl*, Lat. *Detrimentum*). This designates the opposite of the planetary house or the seventh sign from the planetary house of each planet. See Glossary, s.v. “house of detriment.”

§ 34

[¹]_{1–2}: **So if you ... nothing more.** Corresponds to a passage in the recently discovered third version of *Sefer ha-Mivḥarim*. “ואם ידעת מזל המקור שרצה הבוחר ללכת אליו ולהביאו במצור או לשלוט, השמר שלא תבחר מזל המקום, ואם היתה השביעי, הוא יותר טוב אם היה בית אחד העליונים” (“If you know the sign of the place [i.e., the city] that the querent wants to go lay siege to or conquer, be careful not to choose the sign of the place; if it is the seventh [sign] [counting from the sign of the city], it is more auspicious if it [the 7th sign] is the house of one of the upper planets.”) (*Mivḥarim* III, Archivio di Stato, 368.3).

[²]₃: **Under the rays of burning, Hebrew תחת אור השרפה.** To be “under the rays of burning” or in the “domain of burning” (גבול השרפה; see ‘*Olam* II, § 17:4) or simply “burnt by the Sun” (גשרפים; see ‘*Olam* I, § 25:2, § 31:2, § 42:6, § 65:2, § 70:1; ‘*Olam* II, § 20:3,7, § 23:3) is one of the conditions of the planets with respect to the Sun, as explained in *Reshit Hokhmah* (1939, VI, liv:19–lvi:9), *Mishpetei ha-Mazzalot* (Schoenberg 57, ff. 74, 75–76), and ‘*Olam* II (§ 17:1–17; see note there). Thus, Saturn and Jupiter are said to be “burnt by the Sun” if they are between 16′ and 6° away from the Sun; Mars, if between 16′ and 10°; and Venus and Mercury, if between 16′ and 7°. When a planet is “burnt” it is without power. See ‘*Olam* II, § 20:7.

[³]₆: **As I mentioned in the *Book of Elections*.** All three versions of Ibn Ezra’s *Sefer ha-Mivḥarim* (Book of Elections), deal with choosing the best time to start a war (among other topics) in their seventh “place” (corresponding to the seventh horoscopic place, which indicates strife and war). One of the methods presented there is to examine the location and condition of the lord of the seventh place vis-à-vis the location and condition of the lord of the sign of the ascendant. Such a procedure corresponds to the contents of the current passage (§ 34:1–6), which compares the location and condition of the lord of the seventh place (§ 34:4–5) to the location and condition of the lord of the sign of the city (§ 34:1–3). See *Mivḥarim* I (Munich 202, ff. 112b–113a), *Mivḥarim* II (BNF 1058, ff. 11b–12b), *Mivḥarim* III (Archivio di Stato, 368.3), and *Eleccionum* (Erfurt, f. 44b). But the only one of these accounts that is entirely focused on this procedure and also discusses how to determine the strongest of the two involved planets is that in *Mivḥarim* I.

§ 35

[1]¹: **Cardines of the ⟨sign of the⟩ city**, Heb. **יתדות המדינה**. This expression denotes the cardines of a horoscope whose ascendant is the sign of the city or the cardines of a horoscope cast at the anniversary of the foundation of the city. See Glossary s.v. “cardines of the of the city.”

[2]^{1–6}: **If one of the malefics ... favorable judgment**. The contents of this passage are summarized in *Mivḥarim* I: **’ואם היה אחד המזיקים באחד היתדות ’שני המחנות יהיו נזוקים. ואם היה שם אחד מן הכוכבים הטובים יכנסו ביניהם אנשים ’טובים ויתקנו הדבר.** (“If one of the malefics is in one of the cardines, both armies will be battered; but if one of the benefic planets is there [in one of the cardines], good people will mediate between them and set things right [i.e., reconcile them].”) (Munich 202, f. 113a).

§ 36

[1]¹: **The ancient Enoch ... about everyone**. Corresponds to ‘*Olam* I, § 67:1 and ‘*Olam* II, § 51:1, where Enoch is not mentioned. This brief exposition of the planets’ indications seems to be extracted from the fourth chapter of *Reshit Ḥokhmah* I: the order of presentation of the planets follows the order of their orbs, as it does there (*Reshit Ḥokhmah*, 1939, IV, xlii:22–li:viii), and virtually the same planetary indications are to be found in that chapter of *Reshit Ḥokhmah* I. Cf. also *Epitome*, 1548, Lib. I, cap. iv, sig. Gv.

[2]²: **Their judgment ... the year**. Corresponds to ‘*Olam* I, § 56:15. See note there. See also ‘*Olam* II, § 53:1.

§ 37

[1]¹: **Enoch, the Egyptian ... for Khorasan**. With the exception of the assignment of a different zodiacal sign to Iraq, this list is virtually identical with that in § 56:1–14. This is quite puzzling, but presumably the main reason for this apparently superfluous repetition is that whereas ‘*Olam* I, § 37 invokes the authority of Enoch the Egyptian, ‘*Olam* I, § 56 invokes the authority of Enoch the First. These two lists correspond closely to similar lists in Abū Ma’shar’s *Book of Religions and Dynasties* (§ 2.8:3)

and Al-Kindī's *Epistle on the Rule of the Arabs and its Duration* (*On Great Conjunctions*, 2000, I, § 2.8:3, p. 123; App. III [5], p. 529); neither Enoch the Egyptian nor Enoch the First are mentioned. With regard to Edom and Arabia, the two lists in 'Olam I correspond to another list attributed to Dorotheus in 'Olam II, § 13:1. See Appendix G.

§ 38

[¹1–24: **Signs of the cities ... found in a book.** Corresponds to 'Olam II, § 15:2–5. See note there and Appendix F.

§ 39

[¹8: **Terminal house, Heb. בית הסוף.** See below, § 57:3 and note.

[²1–9: **So you should observe ... malefic planets.** This section includes an example to show how four astrological factors are combined to establish the timing, quality, and place of a prediction that affects the fate of a city: (a) the “terminal house” (see below, § 57:3 and note), (b) the “conjunction of Saturn and Jupiter” (see above, § 7–§ 10), (c) the “sign of the city” (see 'Olam II, § 51:1 and note), and (d) the doctrine of malefic and benefic planets (see 'Olam II, § 21:1 and note). The example begins with Jupiter at Taurus 10° and Saturn at Taurus 13° and ends with a Saturn-Jupiter conjunction at Taurus 14°. Although no year is specified, J. North (2003, 131) writes that such a conjunction took place on June 3, 1146. Here the terminal house moves from the place of a Saturn-Jupiter conjunction to the place of Mars (§ 39:2). The time of the prediction is established on the basis of the speed of this particular type of terminal house, namely one sign per year (§ 39:4). Hence, given that the terminal house moves from Taurus 14° (the place of the Saturn-Jupiter conjunction) to Aries 26° (the place of Mars), i.e. 11 signs plus $\frac{2}{5}$ of a sign, the prediction applies to “ $\frac{2}{5}$ of the twelfth year after the small conjunction of Saturn and Jupiter” (§ 39:7). The quality of the prediction (“great bloodshed”) results from the nature of the relevant planet (§ 39:9), Mars, a malefic that usually signifies murderous deeds. The prediction affects a city whose sign (the ascendant when the city was founded) coincides with the place where the terminal house reaches the relevant planet. There is a reference to this section of 'Olam I in the recently discovered third version of *Sefer*

ha-Mivḥarim (*Mivḥarim* III, Archivio di Stato, 368.3). See Appendix B, example 2.

§ 40

[1]**1–2: All the astrologers ... low prices.** Corresponds to ‘*Olam* II, § 27:1–2.

[2]**3: You should also look ... other signs.** Corresponds to ‘*Olam* I, § 46:2

§ 41

[1]**1 Last, Hebrew בַּתְּחִלָּה, lit. first.** See above, note on ‘*Olam* I, § 18:2.

[2]**1–7: Māshā’allāh said ... scientists, and merchants.** Corresponds to ‘*Olam* II, § 24:1–3, where a similar statement is ascribed to Dorotheus—perhaps because Ibn Ezra views Māshā’allāh’s astrological work as closely connected to Dorotheus’: “You should rely only on what Dorotheus the king and Māshā’allāh, who was from India, said about ⟨astrological⟩ decrees” (*Te’amim* I, § 2.18:2, pp. 58–59). The indications associated here with Saturn, Jupiter, Mars, Venus and Mercury are commonplace in introductions to astrology.

§ 42

[1]**1: Māshā’allāh said ... fundamental principle.** Corresponds to ‘*Olam* II, § 5:1–3, where Māshā’allāh is not mentioned.

[2]**2: Find the lord ... aspects it.** This refers to the lord of the month. For a definition of this term and how it affects the weather, see ‘*Olam* II, § 41:1–9 and note.

[3]**3: Increases its motion ... mean motion.** The same concept and same explanation are offered in ‘*Olam* II, § 25:6 (see note there) and § 54:6, but using a different Hebrew nomenclature. See Glossary, s.v. “increase its number.” A method for finding whether a planet increases or decreases its motion is offered in ‘*Olam* II, § 26:1–3.

[4]²⁻⁵: Find the lord ... falling ⟨from the cardines⟩. Corresponds to ‘*Olam* II, § 25:1-7.

§ 43

[1]¹⁻²: Māshā’allāh said ... you observe. Corresponds to ‘*Olam* II, § 29:1-2, where a similar statement is ascribed to Māshā’allāh’s *Book of the World*.

[2]²: Just as you did for the lord of the grain. Refers to ‘*Olam* I, § 42:6, above. See also ‘*Olam* I, § 41:4.

[3]³⁻⁴: Know that if the lord ... previous case. Corresponds to § 65:1-2, below. See also ‘*Olam* II, § 53:1-2.

§ 44

[1]¹⁻⁶: Ya‘qub al-Kindī. Al-Kindī, known as the “philosopher of the Arabs,” wrote about the Greek philosophy that was then being introduced to the Muslim world. Although he criticized the inconsistent views of astrologers, Al-Kindī wrote extensively concerning all branches of contemporary astrology (see Burnett, 1993). Ibn Ezra, for his part, frequently quotes from Al-Kindī’s astrological oeuvre, usually without specifying the title, in his introductions to astrology (*Te’amim* I, § 1.4:2, pp. 32-33; § 2.13:9, pp. 53-53; § 3.1:2, pp. 58-59; § 10.1:5, pp. 96-97; *Te’amim* II, § 2.1:6, pp. 184-185; *Te’amim* II, § 4.8:1, pp. 212-213; § 4.8:1, pp. 212-213; § 8.5:2, pp. 252-253), and in his works on nativities (*Moladot*, BNF 1056, ff. 53a, 54a, 55a, 55b, 56b, 57b); interrogations (*She’elot* I, BNF 1056, ff. 62b, 64b, 65a), elections (*Mivḥarim* I, Munich 202, ff 109b, 114a; *Mivḥarim* II, BNF 1058, ff. 10a), and general astrology (‘*Olam* I, § 44:1-6, § 60:1-2).

[2]¹ Last, Hebrew בתהלה, lit. first. See above, note on ‘*Olam* I, § 18:2.

[3]¹⁻⁶: Ya‘qub al-Kindī said ... it will rain. This passage incorporates a quotation from the unknown *Book of the Revolution* by Al-Kindī. Although Fuat Sezgin does not mention any such work by Al-Kindī, a text said to come from al-Kindī’s *Revolution of the Year* is part of a work “on

rains” found in MS Teheran, Majlis-i Shūrā-i Milli 6452, ff. 104v–106v (Al-Kindī, 2000, pp. 37, 46–47, 421–423). The book is also mentioned in a fragment of an anthology of English translations or abstracts of Latin works written in the last two decades of the fifteenth century (MS London, Library of the Royal College of Physicians 384; quoted in North, 2003, p. 131) as a text translated into Latin from Hebrew by Henry Bate or (more possibly) as a text referred to in Bate’s Latin translation (1281) of Ibn Ezra’s *‘Olam I*: “I have wryten these thingis of the boke of domes of revolucions of the yeris of the world, the whiche Jacob the sone of Ysaak Alkyndy compiled, of the booke that was translate out of Ebrew into Latyne be Henry Bate.”

§ 45

[1]^{1–2}: **But I, Abraham ... verified by experience.** Al-Kindī, too, mentions Plato (as well as Empedocles) as the author of a book on weather forecasting, entitled (in a Hebrew translation) *Pe‘iluyiot* (Activities) and paraphrases a fragment thereof whose subject corresponds to the contents of the statement that Ibn Ezra uses to buttress his support for Al-Kindī’s statement above (§ 45:1–2). See Al-Kindī, *Letter I*, 5:2–4 (Al-Kindī, 2000, p. 185): “The subject of moistures and rain in general in region of the earth has already been discussed in the fourth chapter. But in which place, town and city this will really happen, will take more effort <to explain>. Plato and Empedocles have studied this and it is taken from the *Pe‘iluyiot*.”

§ 46

[1]¹: **Know that the retrograde ... upper planets.** Corresponds to *‘Olam II*, § 46:1. For rain forecasting related to retrograde planets in feminine signs, see also below § 63:3, and note.

[2]^{2–4}: **The indication ... ship is in it.** For the indications of cold signs, see above, *‘Olam I*, § 40:3. For the indication of rain of the watery signs and of Aquarius and Leo, see *‘Olam II*, § 37:3. Regarding these constellations and their connection to rain, see *Te‘amim II*, § 2.3:20, pp. 190–191: “Rain. There is a constellation in Leo called ‘Ship,’ so it indicates water; so too Aquarius, on account of the water. The reason is that when it begins

to rain (and the Moon? is) in any of these (constellations), it will be abundant and very strong; and this has been verified by experience.” For the stars in Aquarius called “flow of water,” see *Reshit Hokhmah*, 1939, II, xxxviii:2–3, and *Almagest*, 1984, VIII:1, pp. 377–378 (stars 23–42, “flow of water,” in Aquarius). For an asterism in the shape of a ship in Leo, see *Reshit Hokhmah*, 1939, II, xx:6, 11, 14, 18.

§ 47

[1]₁: **Ibn Šariq**. This Ibn Šariq, mentioned only here in Ibn Ezra’s Hebrew works, may plausibly be identified with Ya‘qūb ibn Ṭāriq, one of the earliest Arabophone astronomers and astrologers (late eighth century) involved in the transmission of Indian science to the Muslim world (see *Fihrist*, 1970, II, p. 659). This profile of Ya‘qūb ibn Ṭāriq tallies closely with the parallel account in ‘*Olam* II, §36:1–2, where the doctrine of “opening of the door” is ascribed to “the Indian scientists.” According to *Liber de Rationibus Tabularum*, ascribed to Ibn Ezra, Jacob Abentariq was responsible for the translation of the astronomical work of Chenche, a prominent Indian scientist mentioned in various parts of Ibn Ezra’s scientific work: “Indi vero dixerunt declinationem solis esse 24 graduum ut Jacob Abentariq transtulit ex ore Chenche indorum peritissimi” (*Liber de Rationibus Tabularum*, 1947, p. 92). This coincides with what Ibn Ezra wrote in the introduction to his translation of Ibn al-Muthannā’s *Commentary on the Astronomical Tables of al-Khwārizmī*: “Kanka was brought to the king [Al-Šafāḥ the first Abbasid caliph], and he taught the Arabs the basis of numbers, i.e. the nine numerals. Then from this scholar, with the Jew as an Arabic-Indian interpreter, a scholar named Jacob b. Sarah translated a book containing the tables of the seven planets, all the procedures for the earth, the rising times of the zodiac signs, the declination and the ascending degree of the ecliptic, the arrangement of the astrological houses, knowledge of the upper stars, and eclipses of the luminaries” (*Ibn al-Muthannā’s Commentary*, 1967, p. 148). The name Jacob b. Sarah has been recognized as a corruption of Ya‘qūb ibn Ṭāriq. See *Ibn al-Muthannā’s Commentary*, 1967, p. 243; Pingree, 1968, pp. 97–125; Al-Kindī, 2000, “Introduction,” pp. 48–49.

[2]₁: **The lord of the seventh ... always its key**. Corresponds to ‘*Olam* II, §36:1–2. See note there. Although these two accounts are analogous, it seems that Ibn Ezra had different sources for them. Whereas in ‘*Olam*

II, § 36:1–3 the discussion focuses on the “opening of the door” (פתיחת השער) and ascribes this doctrine collectively to the “Indian scientists,” in *Olam* I, § 47:1 Ibn Ezra writes of a planet that is the “key” (מפתח) to another and ascribes this doctrine to Ibn Šariq.

[3]²: **Thus the luminaries ... during that month.** Corresponds to *Olam* II, § 36:3–4. Other instances of a planet being a “key” to another, or of “opening of the door,” are in § 50:1–3 (Mercury-Jupiter) and § 51:1–2 (Mars-Venus).

[4]³: **Complete aspect.** For this concept, see *Te'amim* I, § 7.2:1–4, pp. 88–91 and notes on p. 168: “ואם שני הכוכבים הם במבט נכח והם שניהם בחשב האפודה, הנה המבט הוא שלם כי יש ביניהם מאה ושמנים מעלות שוות. ואם רחב שניהם בפאה אחת שוה, בין שיהיו שמאליים או דרומיים, אין זה מבט נכח שלם, וטעם זה כי יש ביניהם חסרון ממאה ושמנים מעלות כפי מרחב שניהם. ואם רחב האחד שמאלי והשני דרומי ומרחב שניהם שוה, הנה זה מבט נכח שלם כי כפי שירד זה עלה זה. ואם אין המרחב שוה לא יהיה מבט שלם, ויהיה החסרון כפי תוספת האחד על השני, ואם האחד בחשב האפודה והשני שמאלי או דרומי לא יהיה מבט שלם, ויהיה החסרון מן המבט כפי המרחב.” (“If the two planets are in opposition and both are in the zodiac, then the aspect is complete because there are 180 equal degrees between them. If their (ecliptical) latitude is the same, whether northern or southern [i.e., both are northern or southern], it is not full opposition, because there are less than 180 degrees of latitude between them. If the latitude of one of them is northern and of the other is southern and their latitude is the same, this is full opposition, because one has descended as the other has ascended. But if the latitude is not the same then the aspect [of opposition] is not full, and the deficit is equal to the excess of the one over the other; if one is in the zodiac and the other is northern or southern, the aspect [of opposition] is not full and the deficit from the aspect [i.e., from full opposition] is equal to the latitude.”).

[5]^{3–4}: **To find out what day ... keys on this day.** A similar connection between the procedure for knowing the day when it will rain (§ 47:3) and the “keys of the Moon” (§ 47:4, § 48:1–14; see note there) is established in *Apertio Portarum* and *Tractatus pluviarum*: “Volens itaque scire diem pluvie, considera diem coniunctionis Solis et Lune, similiter et tempus. Et vide quot gradus sint inter Lunam et proximum planetam pluvialem, et pro unoquoque gradu accipe secundum signorum velocitatem. Et vide portas Lune et quis planeta aspiciet Lunam et quis iunctus” (*Apertio Portarum*, 13–15 [Al-Kindī, 2000, pp. 387, 390]; “Volens scire diem

pluvie, considera tempus coniunctionis Solis et Lune vel oppositionis, et considera quot gradus sunt inter Lunam et proximum planetam qui pluviam significat; pro gradu quoque diem accipe ... Et considera portas Lune” (*Tractatus pluviarum*, 23–24 [ed. Burnett, pp. 242–243, 257]). A similar procedure for knowing when it will rain only (§47:3), without the connection to the “keys of the Moon,” is recorded in ‘*Olam* II, §38:3–4. The “opening of the door,” mentioned above at §47:1–2, and the “keys of Moon,” mentioned in §47:11 and later described in detail at §48:1–14, are linked in ‘Umar b. al-Farrukhān al-Ṭabarī’s *Kitāb mukhtaṣar al-masā’il* (Al-Kindī, 2000, pp. 18, 447), in *Forty Chapters*, 675–677 (Al-Kindī, 2000, p. 401), and in ‘Alī ibn abī-l-Rijāl’s *Kitāb al-Bāri* (*De iudiciis astrorum*, 1551, VIII:29, pp. 396–397). Notice that Ibn Ezra uses the same term, מפתחות ‘keys,’ for both the “opening of the door” and the “keys of Moon” (in ‘*Olam* II he employs a more literal rendering for the first of these, פתיחת השער ‘opening of the door’). This is an additional connection between the “opening of the door” and the “keys of Moon”.

§48

[¹]_{1–14}: **These are the twelve keys ... by the moderns.** Corresponds to ‘*Olam* II, §18:1–13. See note there. Ibn Ezra defines the keys of the Moon as 12 points in its orbit that play a role in rain forecasting (§47:4): conjunction and opposition with the Sun (1 and 7), 12° ahead or behind conjunction or opposition with the Sun (2, 6, 8 and 12), 90° from the Sun (4 and 10), and 45° from the Sun (3, 5, 9 and 11). The keys of the Moon are discussed in a number of Arabic and Latin sources, where they usually receive a similar treatment but are designated in three main ways

- (a) An early source is ‘Umar b. al-Farrukhān al-Ṭabarī (late eighth century), who calls them “basis” or “foundation” (ateciz) in *Kitāb mukhtaṣar al-masā’il* (Al-Kindī, 2000, pp. 18, 447–448); under a similar name, *athazir*, derived from *ta’sīs*, they appear in ‘Alī ibn abī-l-Rijāl, *Kitāb al-Bāri* (*De iudiciis astrorum*, 1551, VIII:29, 396–397). Al-Bīrūnī calls them *fāsīsāt*, namely, “phases” (*Kitāb al-Tafhīm*, 1934, §254, p. 153).
- (b) In the Hebrew and Latin translations of Al-Kindī the “keys” are rendered as מרכזים or *centra* ‘centers’ (*Letter* I, 13–26: “Sufficient One,” Al-Kindī, 2000, pp. 179–180). Arabic *markaz* and Latin *centra* are found in Abū Ma’shar’s *Book of Religions and Dynasties* and its

Latin translation (*On Great Conjunctions*, 2000, I, § 8.1:12, p. 481). Note that Al-Kindī differs from Ibn Ezra in that his keys also include the points at 60° and 120° , which correspond to the aspect of trine.

- (c) A number of Latin sources and translations use Latin words meaning “doors”: *ianuae* (*Epitome totius astrologiae*, ascribed to John of Seville [*Epitome*, 1548, Lib. I, cap. iii, sig. F2v–F3r]; cf. ‘*Olam* II, § 18:1–13, § 19:1–13 and notes there); or *portae Lune* (*Apertio Portarum*, 15 [Al-Kindī, 2000, pp. 387, 390] and *Tractatus pluviarum*, 23–24 [ed. Burnett, pp. 242–243, 257]). These Latin renderings seem to be somewhat related to Ibn Ezra’s מפתחות ‘keys’. In addition to the fact that “keys” and “doors” are complementary terms, מפתחות derives from the same root (פתח) as the Hebrew words for “key” (מפתח) as well as for “opening, entrance” (פתח).

For the astronomical aspects of the 12 “keys of the Moon,” however, Ibn Ezra seems to have been drawing on Abū Ma’shar’s *Kitāb al-Madḥal*. This follows from the following concatenation of sources: the current section in ‘*Olam* I, § 48:1–14, is the passage which is referred to in *Ṭe’amim* I, § 6.3:6, pp. 86–87 (“I shall explain the keys of the Moon in the *Book of the World*”). In turn, this brief statement in *Ṭe’amim* I is Ibn Ezra’s brief commentary on a section of *Reshit Ḥokhmah* I (*Reshit Ḥokhmah*, 1939, VI, lvi:9–24) that begins והלבנה יש לה מהשמש ששה עשר דרכים (“the Moon has 16 conditions with respect to the Sun”). Finally, this section of *Reshit Ḥokhmah* is a paraphrase of *Kitāb al-Madḥal*: “Luna quoque dicitur se habere a Sole XVI modis” (*Kitāb al-Madḥal* 1996, VII:2, v, pp. 280–281). In this section of the sixth chapter of *Reshit Ḥokhmah* I, Ibn Ezra, like Abū Ma’shar in *Kitāb al-Madḥal*, lists 16 conditions of the Moon with respect to the Sun. These include the 12 “keys of the Moon,” along with the two points where the Moon is 16’ ahead or behind conjunction with the Sun and the two points where the Moon is 6° ahead or behind conjunction with the Sun. Between these points the Moon (as well as other planets) is said to be “under the rays” of the Sun or “burnt” by the Sun (see ‘*Olam* II, § 17:1–17 and note). Ibn Ezra’s account differs from Abū Ma’shar’s in two main points: (a) Ibn Ezra explains how the Moon’s power is gradually increased or diminished when it arrives at each of the points; (b) At the end of this section Ibn Ezra clearly departs from Abū Ma’shar’s account: וידע כי בהסירך פעמים שהיא תחת האור ופעמים תחת השריפה, אז ישארו שנים עשר דרכים; ואלה יקראו מפתחות הלבנה וצורך גדול יש אליהם לדעת דברי הגשמים. (“Know that when you deduct ⟨from the 16 conditions⟩ the two ⟨conditions⟩ where ⟨the Moon⟩ is under the rays ⟨of the Sun⟩ and the

two ⟨conditions where the Moon is⟩ burnt, 12 conditions are left. These are called the keys of the Moon, and there is a great need for them to forecast rain.”). Abū Ma‘shar offers a subset of 8 of these 16 conditions in *Abbreviation*, 1994, II:27–31, pp. 37–39.

§ 49

^[1]₁: **Note always that ... it signifies rain.** For retrograde planets as indicating rain, see: § 46:1 above; § 63:3 below and note; ‘*Olam* II, § 36:7,8, § 46:1; *Tractatus pluviarum*, ed. Burnett, 13 and 31, pp. 241, 244; Al-Kindī, *Forty Chapters*, 670 (Al-Kindī, 2000, p. 402).

§ 50

^[1]_{1–3}: **The lord ... aspect the sign.** Corresponds to ‘*Olam* II, § 36:3, 5. This section resumes the discussion in § 47:1–4: because “the lord of the seventh place ⟨counting⟩ from ⟨the house of⟩ Jupiter is Mercury” this is another instance of one planet as a “key” to another, or of “opening of the door.” For Jupiter and Mercury as portending rain with winds, according to the opinion of the Indian scientists, see ‘*Olam* II, § 37:2. For the lord of the month, namely, the lord of the degree of the ascendant at the moment of the conjunction or opposition of the luminaries, see ‘*Olam* II, § 41:1–9 and note.

§ 51

^[1]_{1–2}: **If Venus or Mars ... signifies hail.** Corresponds to ‘*Olam* II, § 36:3, 6. Like the previous section and § 47:1–4, this is part of the discussion of a planet as a “key” to another or of the “opening of the door.” For Mars as portending rain “with lightning and fire descending from the sky,” see ‘*Olam* II, § 37:1; for Mars as portending hail, see ‘*Olam* I, § 55:3.

§ 52

^[1]₁: **You should ... ⟨beginning of the⟩ seasons.** See *On Great Conjunctions*, 2000, I, § V.1, pp. 223–239.

§ 53

[1]1: **Always look ... the year.** See *ibid.*, I, § V.III, pp. 257–271.

§ 54

[1]1–3: **Always observe ... and coughing.** Corresponds to ‘*Olam* II, § 51:1.

§ 55

[1]1–6: **If Saturn ... will occur.** For the indications of Saturn and Mars, the malefic planets, in the diverse categories of zodiacal signs, see: Māshā’-allāh, *Book on Eclipses*, § 6:1–9 (below, pp. 248–251); Abū Ma’shar, *On Great Conjunctions*, 2000, I, § 5.1:5–18, pp. 225–239, § 5.3:3–15, pp. 257–269. For Saturn, see *Mivḥarim* II, BNF 1058, ff. 12b–13a.

§ 56

[1]2: **Term:** The parallel terms—Heb. גְּבוּלִים, Gr. *horia*, Arab. *hudūd*, Lat. *finēs*—refer to unequal divisions of the zodiacal signs. A planet, except the Sun and the Moon, is associated with each of them as “lord of the term” (see *Ṭe’amim* II, § 6.8:2,3, pp. 242–243). Introductions to astrology usually provide lists of the terms in each sign; in some cases they also refer to various methods. The most common are the terms of the Chaldeans or Babylonians, of the Hindus, of the Egyptians, and of Ptolemy. See: *Tetrabiblos*, 1980, I:21–22, pp. 91–107; *Kitāb al-Tafhīm*, 1934, § 453, pp. 265–266; *Kitāb al-Madhāl*, 1996, V:8, v, pp. 196–200; *Abbreviation*, 1994, p. 89; Al-Qabīṣī, 2004, I:19, pp. 27–29; *Reshit Ḥokhmah*, 1939, II, x:23–27 *et passim*; *Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 70; *Ṭe’amim* I, § 2.9:1–2, pp. 48–49; *Ṭe’amim* II, § 2.9:1–2, pp. 202–203.

[2]2–4: **Abū Ma’shar mentioned ... aspects it.** This is a reference to Abū Ma’shar’s *Book of Religions and Dynasties*: “The indication of Cancer with Jupiter is for Iraq, because Jupiter is predominant over ⟨the degrees of⟩ the sign indicating Iraq, i.e. from its 19th to 26th degree. For the extent of these degrees of the sign of Cancer is the term of Jupiter indicating Iraq. When the benefics are situated in this position or aspect it from

trine or sextile, this indicates the good condition of the people of Iraq. ... The presence of the malefics in it and their aspecting it from quartile or opposition indicate calamity, the change of rule, and bloodshed” (*On Great Conjunctions*, 2000, I, § 2.8:3, p. 123).

[³10: **Therefore Abū Ma‘shar ... kingdom of the Muslims.** I have not found this in Abū Ma‘shar’s *Book of Religions and Dynasties*, but similar information may be found in *On Great Conjunctions*, 2000, I, § 2.8:15, p. 133; § 2.8:32, pp. 149–151.

[⁴1–14: **Enoch the First ... the land of al-Chin [China] and Khorasan.** This list of the assignments of geographical places to pairs comprising one planet and one zodiacal sign, ascribed to “Enoch the First,” is virtually identical with another list ascribed to “Enoch the Egyptian” in § 37:1 (see notes there). Note too that although he explicitly invokes the authority of “Enoch the First,” Ibn Ezra seems to be indebted to Abū Ma‘shar as well: (a) the current list corresponds closely to one in Abū Ma‘shar’s *Book of Religions and Dynasties* § 2.8:3 (*On Great Conjunctions*, 2000, I, § 2.8:3, p. 123; App. III [5], p. 529 [see, Appendix G]); (b) the current list is interspersed with references to Abū Ma‘shar, notably a paraphrase from a section of the *Book of Religions and Dynasties* (see above, § 56:2–4 and note).

[⁵15: **This means ... conjunction (of Saturn and Jupiter).** Corresponds to § 37:2, which also appends the assignments of places to planets and zodiacal signs (§ 37:1) and mentions the beginning of the revolution of the year as the time for taking the indications of the planet and the sign. Note, however, that the current passage goes further and mentions the revolution of the year of the conjunction of Saturn and Jupiter. This strongly suggests that the astrological doctrine underpinning these lists is the *dawr*, namely, a period of 360 years under the rulership of a planet and a sign, which begins when the conjunction of Saturn and Jupiter shifts from one triplicity to another. Ibn Ezra refers to the *dawr* (but without using that name) in § 58:1–3 below.

§ 57

[¹2: **As I mentioned above.** See above § 21:1–6.

[2]3: **Terminal house**, Heb. **בית הסוף**. This term, which is applied in world astrology as well as in nativities, derives from two related concepts developed by Ptolemy and later by Greek and Arabic astrologers. The first is “prorogation,” which denotes a procedure for determining the length of the native’s life by extending an arc of the zodiac between “prorogatory places” and “destructive places” (*Tetrabiblos*, 1980, III:10, pp. 271–307; *Carmen astrologicum*, 1976, III, pp. 235–245; see also *Mishpeṭei ha-Mazzalot*, Schoenberg 57, ff. 83–84). The second is the “chronocrator” or “lord of [the] time”; according to Ptolemy, it is found by counting round the zodiac from each of the prorogatory places, “one year to each sign,” to determine the lord of the years, “twenty-eight days to a sign” for the lord of the months, and “two and a third days to a sign” for the lord of the days (*Tetrabiblos*, 1980, IV:10, p. 453). Combining elements of these two concepts, the “terminal house” functions as an imaginary clock hand or pointer that is set in motion at some zodiacal place, moves around the zodiac at a given rate, and reaches another zodiacal place.

To denote this concept Ibn Ezra coined two similar terms: **בית הסוף**, terminal house, and **מזל הסוף**, terminal sign. A few years earlier, Abraham Bar Ḥiyya had used the term **הקפה**, rotation (*Megilat haMegaleh*, 1924, 122, 123 *et passim*). The same concept is rendered as *signum finis* in *Liber de Rationibus Tabularum*, a Latin work ascribed to Ibn Ezra and written in all likelihood with his active cooperation. See *Liber de Rationibus Tabularum*, 1947, p. 85.

The concept is broadly used and explained in Ibn Ezra works on nativities, where he employs these two terms unsystematically. See especially: *Tequfah* (JNUL 8°3916, ff. 57b, 58a, 59a, 59b); *Moladot* (BNF 1056, ff. 60a, 60b, 61a; quoted below, pp. 214–215); *Ṭe’amim* II, §6.4:1–3 (pp. 238–239) and §8.5:1–5 (pp. 252–253); and *Reshit Hokhmah* (1939, X, lxxvi:21–23). Al-Qabīṣī, in his *Introduction to Astrology*, defines the “terminal house” or *intihā*’ as follows: “As for the years of the nativities, knowledge of this is that you consider the complete solar years which have passed for the native and take a sign for each year, and you begin with the ascendant of the nativity in the order of the signs, and the sign which is next to the sign where the counting is exhausted is the sign of the *intihā*” (Al-Qabīṣī, 2004, IV:8, pp. 117–119).

In ‘*Olam* I and ‘*Olam* II the term is applied in two different ways. In ‘*Olam* II (§22:1–3) the use of the “terminal house” is correlated with nativities: the “terminal house” is set in motion from the “ascendant” of certain city, the “sign of the city,” and moves one degree in one year,

as in the procedure of prorogation. In *‘Olam I* (§ 39:1–9 and § 57:1–4) the “terminal house” is set in motion from the place of a Saturn-Jupiter conjunction and moves one sign in one year; the predictions are based on whether the “terminal house” meets a benefic or a malefic planet and whether the sign of the city is located in a fortunate or unfortunate place. A similar procedure is also mentioned in *Mivḥarim III* (Archivio di Stato, 368.3) and explained in *Reshit Hokhmah* (1939, X, lxxvi:13–21; quoted in *Reshit Hokhmah*, ch. X, § 3:1–3 [below, pp. 266–269]), although the generic term נִדְהוּיִם ‘directions’ is employed there. The “terminal house” or *dawr* is used extensively in Abū Ma‘shar’s *Book of Religions and Dynasties* (*On Great Conjunctions*, 2000, I, § 1.1:27, p. 25; § 1.1:29, p. 27; § 1.1:35, p. 29 *et passim*) and clearly explained by Al-Bīrūnī: “The degrees at which the Saturn and Jupiter meet in conjunction, together with the ascendant of that time, and the ascendant of the year of the conjunction all move in the direction of the succession of signs through a whole sign in a complete solar year. The point arrived at is called *intihā*” (*Kitāb al-Tafhīm*, 1934, § 517, p. 320).

[3]4: **Cardines of the terminal house.** The cardines are the four main points of the horoscopic chart and would seem to have nothing to do with the concept of “terminal house.” Hence to understand this rather confusing expression we should probably consider that any degree reached by the “terminal house” as it travels around the zodiac may be seen as the ascendant of a horoscopic chart and its corresponding cardines. Note, however, that this sort of construct is usually with respect to the “sign of the city,” as in § 39:7 above: “in every city whose sign is Aries, or (in every city where Aries is) one of its cardines.”

[4]1–3: **As for knowledge ... terminal house.** The work by Māshā’allāh on which Ibn Ezra draws here is not the *Book on Eclipses*, whose translation has been traditionally ascribed to him. For the subject-matter of this section, see *On Great Conjunctions*, 2000, I, § 8.1:11–12, p. 481. All four astrological concepts and procedures applied in this section—the “terminal house,” the conjunctions of Saturn and Jupiter, the “sign of the city,” and the doctrine of malefic and benefic planets—play similar roles in § 39:1–9 above (see notes there). But the present section focuses on weather forecasting (drought and plenty), incorporates a definition of the “terminal sign,” and, instead of restricting the discussion to Mars, includes the malefic planets (Mars and Saturn) and the benefic planets (Venus, Mercury, Jupiter).

§ 58

[¹]**1: Al-Andruzagar, the Jew.** The Arabs associated Andarzagar ibn Sād-ān Farruh with Persian astrology, although he himself is post-Sassanian. He was known as the author of a text referred to as *Kitāb al-mawālīd* (Book of the Nativities), which included a major section on anniversary horoscopes. See: Andarzagar, 1991, pp. 294–295; Sezgin, 1976, 80–81; Al-Qabiṣī, 2004, I:57–68, pp. 51–55. In his astrological treatises Ibn Ezra frequently quotes Al-Andruzagar’s work; the present section makes clear that he also wrote about general astrology making use of Persian methods thereof. Ibn Ezra usually mentions Al-Andruzagar and his work on nativities approvingly, appending the cognomen “the Jew” to his name. For example, in relation to the lords of the triplicities, he praises “Andruzagar ben Sadi Faruk the Jew, who surpassed all astrologers of his generation, and the Arab scientists who lived later agree with him” (*Ṭe’amim* I, § 3.6:19, pp. 68–69). See also: *Moladot* (BNF 1056, ff. 48b, 51a, 52a, 54a, 55a, 56a), *Nativitatibus* (1484, ff. a3a, b2b *et passim*), *Nativitatum* (Erfurt, f. 63b), *Mivḥarim* I (Munich 202, f. 109a), and *Astrolabio* (1940, p. 25).

[²]**1–3: We should ... beginning (of a new cycle).** This refers to the *dawr* ‘revolution/rotation/period’, a method employed to predict the fate of dynasties and religions and described in Abū Ma’shar’s *Book of Religions and Dynasties* as follows: “One observes when the conjunction (of Saturn and Jupiter) shifts from one triplicity to another. If the conjunction indicates a change of religions and dynasties, that moment is made the starting point of the period whose length is equivalent to the number of the degrees of the sphere [i.e., 360 years long], and the lord of the *dawr* is made the planet to which the number from the lord of the *dawr* of the conjunction indicating the flood or the conjunction occurring at the beginning of Aries, which is taken as the starting point in arranging these times, has arrived” (*On Great Conjunctions*, 2000, I, § 1.1:25, p. 21). A similar definition is given in *Kitāb al-Taḥīm* (1934, § 518, pp. 321–322). “We should assign to each equal degree one year” means that the starting point of the *dawr* functions as an imaginary clock hand or pointer that is set in motion at the degree of the great conjunction of Saturn-Jupiter and moves around the zodiac at the rate of one degree in one year, until it completes 360 years. Abū Ma’shar also reports that the ruler of the *dawr* at the time of the Flood (2226 years after the creation of Adam) was Saturn with the sign of

Cancer, which means that each of these cycles of 360 years is ruled by a planet and a sign (*On Great Conjunctions*, 2000, I, §1.1:26, p. 23). Note that in *Kitāb al-Ulūf* Abū Ma‘shar mentions another period of 360 years, the so-called “mighty fardar,” but the latter is not connected to the Saturn-Jupiter conjunctions (*Kitāb al-Ulūf*, 1968, pp. 60–61). The “mighty fardar” is mentioned in *Reshit Ḥokhmah*, ch. X, §3:4. See note there.

§ 59

[¹]₁: **Abū Ma‘shar said ... each degree.** This corresponds to Abū Ma‘shar’s astronomical system based on the assumption that a series of mean Grand Conjunctions of the planets take place at Aries 0° at equal intervals of time. The mean longitudes of the planets for any given date can be determined by how many revolutions each mean planet makes between successive Grand Conjunctions and how much time has elapsed since the last Grand Conjunction. This approach to the problem of determining mean longitudes was well known in India (see Pingree, 1963, pp. 238–240). Abū Ma‘shar adopts a cycle of 360,000 years in *Kitāb al-Ulūf* (1968, pp. 27–33), as Al-Bīrūnī acknowledges: “We have stated before that according to Abū Ma‘shar the years of the universe are 360,000, the deluge being in the middle of these. This statement occurs in his book called ‘The Book of Thousands,’ where the degrees of the zodiac are each made equal to a thousand years, so that the fraction belonging to a year is $3 \frac{3}{5}$ seconds. This is the great division” (*Kitāb al-Tafhīm*, 1934, §517, p. 320). Elsewhere Al-Bīrūnī notes that this system is derived from an Indian source (*India*, 1888, I, p. 325). Note that this astronomical system, which plays a key role in Abū Ma‘shar’s *Kitāb al-Ulūf*, is not used in his *Book of Religions and Dynasties*, to which Ibn Ezra refers in other parts of ‘*Olam* I.

§ 60

[¹]_{1–2}: **Ya‘qub al-Kindī said ... it was occidental.** Corresponds to ‘*Olam* II, §49:1–3, where the injunction to observe when the Sun enters the beginning of the 20th degree of Scorpio is attributed to the scientists of Persia (see note there). According to Al-Kindī: “Another method for ⟨calculating⟩ the indication of rain in a general sense: When the Sun

is in 20° Scorpio, observe the application of the Moon; when it applies to Venus and Mercury, it indicates increased rainfall at the beginning of the year. When at that moment Venus and Mercury are in the east and in one of the signs of water and rain, it indicates increased rainfall at the beginning of the year. When Venus and Mercury are in the west in one of the signs of rain, it indicates that most of the rains will fall at the end of the year” (*Letter II*, 118–120, “On the causes attributed to the higher bodies which indicate the origin of rains” [Al-Kindī, 2000, p. 257]; see also *Letter II*, 130–140 [ibid., p. 259] and Al-Kindī (from the treatise) on the revolution of the year: on rains 85.2 [ibid., p. 432]). A similar method of forecasting rain by observing the Sun when it enters Scorpio 20° is manifest in ‘Alī ibn abī-l-Rijāl, *De iudiciis astrorum* (1551, VIII:27, p. 395, VIII:30, p. 397), and in ‘Umar b. al-Farrukhān al-Ṭabarī, *Kitāb mukhtaṣar al-masā’il* (82:L26, 85:2 [Al-Kindī, 2000, pp. 445, 448]).

[2]^{3–8}: **What I just said ... retrograde** ⟨planet⟩. This passage continues the quote from Al-Kindī.

§ 61

[1]^{1–2}: **Abū Ma’shar said ...** ⟨rain will be⟩ moderate. Here Ibn Ezra quotes Abū Ma’shar’s *Book of Religions and Dynasties*: “As for rain, if Mars is in the houses of Saturn at the revolution of the world-year, it indicates the lack of rain. If it is in ⟨one of⟩ its own houses, it indicates its abundance. If it is in ⟨one of⟩ the houses of the other planets, it indicates its middling amount” (*On Great Conjunctions*, 2000, I, § 8.1:13, p. 483).

[2]⁴: **This is why ... you find it.** See above, § 1:1.

[3]⁵: **He said nothing else about rain.** At first sight, Ibn Ezra’s statement appears to be inaccurate, since there are many references to rain in Abū Ma’shar’s *Book of Religions and Dynasties* (e.g., *On Great Conjunctions*, 2000, I, § II.8:15, 18, 22, 26, 28, pp. 133, 135, 137, 143, 143, 145). However, given that the overwhelming majority of these loci deal with a great variety of other astrological significations in addition to rain, perhaps Ibn Ezra means that this is the only section in Abū Ma’shar’s book that focuses exclusively on forecasting rain.

§ 62

[1]2: **Scholars of the images.** These scientists are identical with the “masters of the talismans” mentioned in Abū Ma‘shar’s *Book of Religions and Dynasties*: “The masters of the talismans have mentioned that the sphere has a movement of 8 degrees within which it advances and retreats, and that its accession and recession in each degree occur in every 80 years” (*On Great Conjunctions*, 2000, I, § 2.8:36, p. 155). They also figure in Al-Bitrūjī’s *On the Principles of Astronomy*, where they take part in the controversy about trepidation (*On the Principles of Astronomy*, 1971, I, pp. 23, 29), and as the ancient *apotelesmatikoi*, mentioned by Theon of Alexandria (*Small Commentary on the Handy Tables of Ptolemy*). See *On Great Conjunctions*, 2000, I, pp. 155, 573, 580. Ibn Ezra refers to this category of scientists under several slightly different names—scholars of the images (חכמי הצורות), masters of the images (בעלי הצורות; אנשי הצורות), astrologers who are experts on judgments and images (חכמי המזלות בעלי המשפטים והצורות), *doctores ymaginum*, *magistri ymaginum*. They are involved in clearly astronomical matters, notably the theory of trepidation (the accession and recession of the fixed stars, as mentioned by Abū Ma‘shar): “Antiqui omnes et Hermes et indi et doctores ymaginum omnes in hoc consentiunt, quod in circulo firmamenti duo motus sunt, ascendendi in septentrionem et descendendi in austrum; inter hos tamen est aliqua discordia, nam magistri ymaginum dicunt eos motus esse polorum, indi vero duorum circulorum qui sunt in capite arietis et libre; omnes tamen in proximo dicti in hoc consentiunt quod gradus horum motuum sunt 8” (*Liber de Rationibus Tabularum*, 1947, p. 77); “כי אנשי הצורות אומרים כי סדני הגלגל יעלו וירדו” (“For the masters of the images said that the poles of the orb ascend and descend”) (*Ibbur*, 1874, p. 10a). See also *Ṭe‘amim* II, § 2.3:10, pp. 190–191, § 5.6:4, pp. 230–231, § 5.7:8, pp. 232–233; comm. on Ex. 20:3 and 20:5 (long comm.); *Liber de Rationibus Tabularum*, 1947, pp. 78, 81. In *Ṭe‘amim* II the activities of the scholars of the images are strongly condemned because they resemble idolatry, and their involvement in the making of idols or talismans is implied because they are said to have established by empirical means the association between the planets and the metals under their charge: “זוה” אמת רק כנגד הצורות ואין צורך לשמש שלהם, רק למי שיתעסק בחכמת הצורות, והיא “אסורה בתורת השם כי היא כדמות עבודה זרה” (“This is true only with respect to the images ⟨of the constellations⟩; there is no need for their ⟨opinion with regard to the motion of the⟩ Sun, except for those who deal in the science of the images ⟨of the stars⟩, which is forbidden by the law of God,

because it resembles idolatry”) (*Ṭe’amim* II, § 8.3:2, pp. 250–251); ... נוּגָה” “והנחושת בחלקו כי כן נסו בעלי הצורות” (“Venus ... Copper is in its portion, as was found through experience by the experts in the images”) (*Ṭe’amim* II, § 5.6:4, pp. 230–231); “כוכב חמה ... ועלה בחלקו הכסף החי כאשר נסו חכמי” “הצורות” (“Mercury ... quicksilver is in its portion, as has been verified by experience by the scholars of the images”) (*Ṭe’amim* II, § 5.7:8, pp. 232–233). For a detailed characterization, see *Ṭe’amim*, 2007, pp. 276–277. Given that Ibn Ezra endorses a steady motion of one degree in 70 years for the fixed stars (*Ṭe’amim* I, § 2.12:10, pp. 50–51; cf. above, § 17:7), and that he reports that the horns of Aries have moved 14° with respect to the vernal equinox from the time of the scholars of the images to his own times, the implication is that Ibn Ezra believed that “the scholars of the images” were active 980 years ($14 \cdot 70$) before the middle of the twelfth century.

[2]³: **Corrected Hebrew מתוקן**. The astronomical concept of “correction,” Heb. תְּקוּן, is explained in Ibn Ezra’s translation of Ibn al-Muthannâ’s *Commentary on the Astronomical Tables of al-Khwârizmî*: “התקון שני מה” “שיש בין שני התנועות, התנועה האמצעית ותנועה הנכונה.” (“The correction is the difference between the mean motion and the true motion”) (*Ibn al-Muthannâ’s Commentary*, 1967, p. 296 [Heb.], p. 156 [Eng.]). This means that to find the true position of a planet, one first computes its mean position and then “corrects” it by some amount, according to a procedure that has to be specified.

[3]^{1–4}: **The scientists of India ... to $13^\circ 51'$** . For a general exposition of the 28 mansions of the Moon, see above, pp. 24–25. This passage has 4 distinct parts, as follows.

(i, § 62:1) Ibn Ezra presents the opinion of the scientists of India, namely, that the 28 lunar mansions are evenly distributed along the zodiacal signs, so that there are $2\frac{1}{3}$ mansions in each sign. This opinion is couched in similar terms in various other works, including *Neḥoshet* I (BNF 1061, f. 156b), *Neḥoshet* II (Mant. 10, ff. 46a–46b), *Eleccionum* (Erfurt, f. 42a), and Al-Kindî’s *Letter* II, 84 (Al-Kindî, 2000, p. 253). According to Al-Bîrûnî, the Hindus, although they recognize 27 mansions, begin their reckoning from the vernal equinox (*Kitāb al-Taḥfīm*, 1934, § 164, p. 81).

(ii, § 62:2) Ibn Ezra criticizes the opinion of the Indian scientists and points out that the positions of the mansions should be taken with respect to the asterisms of the zodiacal constellations (which move with respect

to the equinoxes on account of the motion of the fixed stars) and not with respect to the zodiacal signs, which are a merely mental construct. A similar criticism, although leveled this time at the Arabic scientists, is voiced in *Neḥoshet* II, Mant. 10, ff. 46a–46b: “הדבר הקשה הוא שלא הבינו” “הקדרים כי אלה המחנות אינם חלקים שוים כי יש מחנה גדול גם מחנה קטון” (“The (most) serious thing is that the Arabians did not understand that these mansions are not divided in equal parts, for there are large mansions, and also small mansions.”). To clinch his argument, Ibn Ezra points out that the signs differ from the constellations in two main respects: (a) whereas the zodiacal signs are taken to be all equal in size (30°), the zodiacal constellations are congruent with the sizes of the corresponding asterisms, which have various sizes. (b) whereas the signs’ ecliptical longitude is always the same because the beginning of Aries is taken to coincide (according to a mental construct) with the vernal equinox, the ecliptical longitudes of the zodiacal constellations always move away from the equinoxes on account of the slow motion of the fixed stars (as in the case of the horns of Aries). Similar arguments, emphasizing the difference between zodiacal signs and constellations, are put forward in *Ṭe’amim* I, § 1.2:1–3, pp. 28–31 and *Liber de Rationibus Tabularum*, 1947, p. 84. On similar grounds, Ibn Ezra finds fault with the Indian version of the exaltations, and with the Indian doctrines of the bright and dark degrees and of the pits. See *Ṭe’amim* I, § 2.6:2, pp. 46–47 and *Ṭe’amim* II, § 6.7:1–6, pp. 254–255.

(iii, § 62:3) To bear out the idea expressed in the previous passage, Ibn Ezra presents the value to be subtracted from the mean motion of the Moon as recorded in astronomical tables compiled according to the Indian methodology, which he attributes here to al-Battānī, namely, 8° . A similar methodology is adopted in *Ṭe’amim* I, § 2.12:14, pp. 52–53, where we learn that this reckoning corresponds to the year (5)908, namely, 1148–1149: “והנה בעל המזלות חייב להוציא המעלה הצומחת ומקומות המשרתים: 1148–1149: כפי חשבון לוחות חכמי הנסיון, רק אם רצה לדין מדרך הצורות והמעלות המאירות והחשוכות גם הבורות, כי טעמם כוכבים חשוכים מאד כאילו אדם נפל בבור, יש לו” (“So the expert in the zodiacal signs can find out the degree of the ascendant and the positions of the planets according to the reckoning of the tables of the scholars who rely on experience. But if he wants to pass (astrological) judgment by the method of the shapes [i.e., the zodiacal constellations], the bright and dark degrees, and the pits (so-called because they are very dark stars, as if a man had fallen into a pit), this year, which is the year (5)908, he

should subtract eight whole degrees.”). Similar instructions are given in *Liber de Rationibus Tabularum*, 1947, p. 89: “Et si vis operari in iudiciis Ymaginum secundum tabulas indorum minue a medio cuiusque planete cursu eorum gradum unum, vel si in eisdem iudiciis ymaginum vis operari secundum tabulas meas minue a medio cursu cuiusque planete 8 gradus.” Notice that ‘*Olam* II, § 1:2 states that the value to be subtracted from the mean motion of the Sun is 9° .

(iv, § 62:4) Ibn Ezra brings into focus the size of one of the lunar mansions to substantiate the aforementioned criticism: the size of the first lunar mansion, al-naḥḥ, is reduced to only $5^\circ 51'$, namely $13^\circ 51'$ minus 8° (the beginning of Aries' asterism), instead of the customary size of $12^\circ 51'$, which is the result of dividing 360° by 28, as reported in *Neḥoshet* II, Mant. 10, ff. 46a.

[4]5: I have already drawn ... ⟨into Hebrew⟩. This reference is probably to *Keli ha-Neḥoshet* II: *מהנות הלבנה ... ואלה שמותם בלשון קדר, גם הם מתורגמים גם אכתוב צורתם.* (“Mansions of the Moon ... These are their names in Arabic, and they are also translated into the Holy Tongue, and I will also write down their shapes for you.”) (*Neḥoshet* II, Mant. 10, ff. 46a). By contrast, in *Keli ha-Neḥoshet* I (*Neḥoshet* I, BNF 1061, f. 156b) Ibn Ezra promises to provide their Arabic names and Hebrew translations, but not their shapes. This is attested by an examination of five manuscripts of *Keli ha-Neḥoshet* II and four manuscripts of *Keli ha-Neḥoshet* I: whereas all these manuscripts of *Keli ha-Neḥoshet* II contain the Arabic names, Hebrew translations, a brief description of the number and size of the stars of each mansion, as well as a graphic representation of the corresponding asterism, only one of the manuscripts of *Keli ha-Neḥoshet* I that I examined includes a graphic representation of the asterisms. *Keli ha-Neḥoshet* II was written in Mantua in 1146: this year is recorded in the list of stars of the rete (*Neḥoshet* II, Mant. 10, f. 39a); latitude 45° , the latitude of Mantua, is given as the place for an astronomical observation of the lunar mansions (*ibid.*, f. 46a).

§ 63

[1]1–2: The scientists of India ... *al-mukhar*. Corresponds to ‘*Olam* II, § 44:1, except for the mansions *al-shwla* and *al-balda*, which are replaced there by *al-zub’anha* and *sa’d al-dhabiḥ*. There is also discrepancy of

terminology and of substance: whereas ‘*Olam I* calls this group of mansions “moist and signifying rain,” ‘*Olam II* labels them “mansions of rain” and then mentions three “mansions of moistness” that are different from the “mansions of rain” (§44:3; see note there). The list of “moist mansions” in ‘*Olam I* corresponds in part to those in Al-Kindī’s *Letter II*, 89 (Al-Kindī, 2000, p. 254) and *Tractatus pluviarum* (ed. Burnett, 97, p. 254). Notice that only nine mansions are named, even though their total number is given as 10. By contrast, *Tractatus pluviarum* lists 11 mansions that indicate rain.

[2]3: **They said ... it portends rain.** The reference to the observation of the Moon at the beginning of the month corresponds to ‘*Olam II*, §45:1; the reference to the role played by the feminine signs, to ‘*Olam II*, §37:4. For rain forecasting related to retrograde planets in feminine signs, see above, §46:1, and *Tractatus pluviarum* (ed. Burnett, 34, p. 244). For retrograde planets indicating rain see above, §49:1 (in the first place); ‘*Olam II*, §36:7 (Sun and Venus), §36:8 (Saturn), and §46:1 (Venus and Mercury). See also *Tractatus pluviarum* (ed. Burnett, 13 and 31, pp. 241, 244), and Al-Kindī, *Forty Chapters*, 670 (Al-Kindī, 2000, p. 402).

[3]8: **Nature, Hebrew תולדת.** Here the neologism תולדת (see ‘*Olam II*, §3:2 and note) denotes any of the four qualities (hot and cold, wet and dry) that, according to Aristotle, characterize physical bodies. For this usage, cf. “דע כי אין למשרתים תולדת חום ולא קור ולא לחה ולא יובש, רק יולידו אלה” “הארבעה תולדות בעולם השפל” (“Know that the planets ⟨themselves⟩ do not have a nature that is hot or cold or moist or dry, but they generate these four natures in the lower world”) (*Te’amim II*, §8.7:8, pp. 254–255).

[4]5–9: **That is, in general ... always like this.** *Te’amim II* offers a similar account of the tropical signs and of how weather changes when the Sun enters them: “המתהפכים. בעבור שישתנה הזמן בהכנס השמש במזל טלה, והנה, שתסור הלחות ותהיה אחר שהיה האויר קר ולח יהיה חם, נקרא מתהפך. וככה סרטן, שתסור הלחות ותהיה במקומה היבשות, וככה מאזנים, יסור החום ויתהפך אל הקור, וככה בגדי, שתסור היבשות ותהפך הלחות.” (“Tropical ⟨signs⟩. Because the weather changes when the Sun enters Aries, hence, inasmuch as after the air was cold and moist it turns hot, ⟨Aries⟩ is called tropical. Similarly with Cancer, since moistness departs and is replaced by dryness, and similarly with Libra, since heat departs and is transformed into cold, and similarly with Capricorn, since dryness departs and is transformed into moistness”) (*Te’amim II*, §2.3:1–2, pp. 188–189; see also note there, pp. 273–274).

[5] **10: The dry mansions are ... *al-muqaddam*.** Corresponds to ‘*Olam* II, § 44:2, except for *al-fargh al-muqaddam*, which is replaced there by *al-fargh al-awwal*. It also corresponds to the list of dry mansions in Al-Kindī’s *Letter* II, 90 (Al-Kindī, 2000, p. 254), except for *al-han’aha*, which is replaced there by *al-han’aha*, and in *Tractatus pluviarum* (ed. Burnett, 98, p. 254).

[6] **11: The other mansions are temperate.** These mansions are briefly alluded to in ‘*Olam* II, § 37:4, as “intermediate.” Cf. “Eleven mansions are moderate, neither moist nor dry” (Al-Kindī’s *Letter* II, 92 [Al-Kindī, 2000, p. 254]). This corresponds closely to *Tractatus pluviarum* (ed. Burnett, 99, p. 254), where the names of the temperate mansions are given in Latin translation.

§ 64

[1] **1: I now give ... the luminaries.** See above, § 2:1–4 to § 6:1–7 and notes.

[2] **2: Pronounce judgment ... every planet.** The reference is to the fourth chapter of *Reshit Hokhmah* I, which is headed by the following rubric: “בממסך שבעת המשרתים וכחם וכל אשר יורו עליו” (“On the mixtures of the seven planets, their powers and everything signified by them”). See *Reshit Hokhmah*, 1939, IV, xlii:22–li:8.

§ 65

[1] **1–3: If a planet ... malefic planets.** Corresponds to ‘*Olam* I, § 43:3–4 and ‘*Olam* II, § 53:1–2. Regarding the knowledge of when a planet is powerful, corresponds to ‘*Olam* II, § 54:2–5.

§ 66

[1] **1: I have also verified ... about the Muslims.** Corresponds loosely to ‘*Olam* II, § 14:1–6. See notes there.

§ 67

[¹1: **I have already said ... about everyone.** The initial cross-reference points to § 36:1–2 above (see note there), where similar statements are attributed to the “ancient Enoch.” Besides the fact that Enoch is ignored here, there is a discrepancy in the information given in the two places regarding the upper planets’ indications: Saturn gives an indication about the elderly and farmers in § 36:1–2, but about the elderly and slaves here; Jupiter about judges and clerics in § 36:1–2, but about the wealthy and judges here; Mars about noblemen and warriors in § 36:1–2, but about warriors only here. It is also surprising that the cross-reference is accompanied by an apparently redundant repetition of the same information. This suggests that a source other than the “ancient Enoch” is being followed in the current passage. See also ‘*Olam* II, § 51:1, where similar statements about the planets are offered but the “ancient Enoch” is not mentioned.

§ 70

[¹8: **Judgments, Hebrew משפטים.** For this neologism, see ‘*Olam* II, § 2:1 and note.

[²]: ***Book of the Judgments of the World*, Hebrew ספר משפטי העולם.** The only case where Ibn Ezra himself uses this name to designate any of the versions of *Sefer ha-‘Olam* is in the recently discovered fragment of the third version of *Sefer ha-Mivḥarim*. See Appendix B, example 2.

[³]: **The last of all the books of judgments.** This is a reference to the fact that ‘*Olam* I is the last component of the astrological encyclopedia rapidly composed in Béziers between June and November of 1148. See above, p. 41.

PART THREE

**SECOND VERSION OF THE BOOK OF THE WORLD
BY ABRAHAM IBN EZRA**

HEBREW TEXT AND ENGLISH TRANSLATION

בשם אלהי עולם אחל ספר העולם¹

1 (1) ברוך² השם האחד,³ שהוא הכל ומאתו הכל, ומשרתיו הקרובים⁴ אליו הם⁵ נמשלים לכל. (2) על כן אמרו הקדמונים כי הכללים⁶ עומדים תמיד בעבור צורות⁷ הגלגל העליון. (3) ובעבור זה אמרו⁸ חכמי המזלות כי השלשה הכוכבים העליונים, והטעם שהם למעלה מהשמש, ישרתו בדברי הכל.

2 (1) וידענו כי מחברות השבעה המשרתים הם מאה ועשרים, ולכל מחברת דין⁹ ומשפט.

3 (1) רק¹⁰ המחברת הגדולה היא השורש, והיא¹¹ מחברת שבתאי¹² עם צדק בתחלת מזל טלה¹³, וזה יהיה באלף שנים, או זמן קרוב מהנוכח. (2) וככה דרכם: בכל עשרים שנה יתחברו בבית שלישות אחת¹⁴, והטעם שהמזלות השלשה¹⁵ הם מתולדת אחת, ולעולם תהיה מחברתם כנגד המחברת שעברה במזל התשיעי. (3) ככה שתיים עשרה פעמים או שלש עשרה. ואחר כן יתחברו במזלות שהם¹⁶ מתולדת העפר¹⁷, כי בתחלה התחברו במזל¹⁸ האש. והנה, אם היה¹⁹ מספר מחברתם שתיים עשרה, הנה יהיה תחלת המחברת במזל עפר במזל שור, ואם שלש עשרה, תהיה המחברת במזל גדי. גם²⁰ שם יעמדו²¹ קרוב ממתאים וארבעים שנה. וזאת המחברת שהיא משלישות לשלישות²² תקרא המחברת האמצעית. ואחרי כן יתחברו במזלות הרוח, ואחרי כן במזלות המים. והנה יתחברו בכל שלישות שתיים עשרה פעמים או שלש עשרה. (4) ומחברתם בשלישות אחת תקרא המחברת הקטנה.

4 (1) ומחברת שבתאי עם מאדים במזל סרטן היא בכל שלשים שנה.

¹ בשם אלהי עולם אחל ספר העולם*] רת; אקמ ספר העולם; כ חסר; פ והנה החכם אבן עזרא כתב בענין המחברות ענינים אין ראוי להניחם. וא' עפ' שקצתם ראויים להכתב בספר משפטי הכוכבים, הסכמו להביאם בשער הזה כדי שלא יחסר הספר מדברי המחברים תחלת דבר. ² ברוך] פמקא; רכ יבורך; ת יתברך. ³ האחד*] רכ; פמתקא המיוחד. ⁴ הקרובים] פרתכ; מא חסר. ⁵ הכללים] פרכמקא; ת הגלגלים. ⁶ צורות] פתכמקא; ר צורת. ⁷ אמרו] פמקא; רתכ > גם. ⁸ דין] פרתכא; מ חסר. ⁹ רק] פכמקא; רת חסר. ¹⁰ והיא] פרכמקא; ת והם. ¹¹ שבתאי] פכקתא; רמ שבת. ¹² בתחלת מזל טלה] פמרתכא; ק חסר. ¹³ שלישות אחת] פמקא; רת שלישות; כ ג'. ¹⁴ השלשה] פרתמקא; כ חסר. ¹⁵ במזלות שהם] פמקא; רת במזל שהוא; כ שהוא. ¹⁶ מתולדת העפר] פמא; רת תולדת עפר; קכ מתולדת עפר. ¹⁷ במזל] פרתמקא; כ במזלות. ¹⁸ היה] פרכמקא; ת יהיה. ¹⁹ גם] פמרתכא; ק חסר. ²⁰ שם יעמדו] פמא; רתכ יעמדו; ק יעמדו. ²¹ משלישות לשלישות] פמקא; רת מן שלישות אל שלישות; כ מן השלישות אל השלישות.

In the name of God of the world,
I commence the *Book of the World*.

1 (1) Blessed be the One God, Who is all and from Whom all derives, and His close servants¹ bear a resemblance to all.² (2) Therefore the Ancients said that the species³ persist forever on account of the constellations of the uppermost orb.⁴ (3) For this reason the astrologers said that the three upper planets, namely, those that are above the Sun, govern general affairs.

2 (1) We know that there are 120 conjunctions of the seven planets, and each conjunction has its ⟨own⟩ judgment¹ and verdict.²

3 (1) But the great conjunction—the conjunction of Saturn with Jupiter at the beginning of Aries, which happens once every thousand years or close to that—is the root. (2) This is how it works: every 20 years they conjoin in the house of one triplicity, meaning that the three signs have the same nature;¹ their conjunction always takes place in the ninth sign after ⟨the sign of⟩ the previous conjunction. (3) ⟨They continue⟩ in this manner 12 or 13 times, after which they conjoin in the signs of earthy nature (the first time they conjoined in the fiery signs). Now if they conjoin 12 times ⟨in the same triplicity⟩, then the first conjunction in an earthy sign takes place in Taurus; but if ⟨they conjoin⟩ 13 times, the conjunction takes place in Capricorn. They remain there [in the second triplicity], too, for approximately 240 years. A conjunction ⟨that shifts⟩ from one triplicity to another triplicity is called a “middle conjunction.” Afterwards they conjoin in the airy signs, and thereafter in the watery signs. So they conjoin 12 or 13 times in each triplicity. (4) Their conjunction in one triplicity is called a “small conjunction.”²

4 (1) A conjunction of Saturn and Mars in Cancer takes place every 30 years.¹

5 (1) וטרם שאדבר על אלה המחברות, אומר כלל¹. (2) כיש לך² להסתכל בתחלת תקופת השנה שתהיה שם המחברת הקטנה או האמצעית או הגדולה³, או מחברת שבתאי עם מאדים בסרטן, אל המחברת העקרית שהיא מחברת שני המאורות, אם היתה קודם הכנס השמש במזל טלה, או נכח המאורות.⁴ (3) ודע המזל העולה בחצי הארץ שהוא תחת הקו השווה, גם המזל העולה בכל מדינה ומדינה, ומקום הכוכבים. (4) ואם המחברת העקרית תהיה קודם הכנס השמש במזל טלה, או הנכח⁵, ובאותן החמשה עשרה יום⁶ | יתחברו הכוכבים⁷ העליונים, הגה כל⁸ הדין על המזל העולה א88 ברגע המחברת או הנכח. (5) ואם יהיה בחדש אחר⁹, או אחרי נכח¹⁰ יש לך לשתף המזל העולה בשעת מחברת המאורות או נכחם, הקרוב אל יום המחברת העליונים. (6) והכלל: המחברת¹¹ או הנכח שעבר, איזה מהם שיהיה. (7) ואם מחברת העליונים תהיה ברביע אחר¹² מן הגלגל, שהוא מסרטן עד מאזנים, או מאזנים עד גדי, או מגדי עד טלה, יש לך לשתף¹³ עם בעל תקופת השנה, שהוא הפקיד¹⁴ על המזל העולה טרם תקופת השנה, בין במחברת בין בנכח, במעלה הצומחת במחברת או נכח טרם תקופת הרביעי¹⁵. (8) והנה, תשים חצי¹⁶ הדין לבעל תקופת השנה, ושתי שלישות החצי לבעל המזל ההווה¹⁷ טרם תקופת רביעית השנה¹⁸, ולהוה בחדש¹⁹ או בחציו²⁰ טרם מחברת העליונים, הששית. (9) ואם²¹ מחברת של²² העליונים ברביעית הראשונה, תן²³ שתי שלישות הכח לבעל התקופה, והוא בעל המזל העולה²⁴ בשעת המחברת או הנכח²⁵.

¹ כלל] פרכמקא; ת חסר. ² לך] פתכמקא; ר חסר. ³ הקטנה או האמצעית או הגדולה] פמקא; רתכ הגדולה או האמצעית או הקטנה. ⁴ נכח המאורות] פכמקא; ר הנכח. ⁵ ודע המזל העולה בחצי הארץ שהוא תחת הקו השווה, גם מזל העולה בכל מדינה ומדינה, ומקום הכוכבים. ואם המחברת העקרית תהיה קודם הכנס השמש במזל טלה, או הנכח] פתכמקא; ר חסר. ⁶ החמשה עשרה יום] פרתמקא; כ כ' המשרתים. ⁷ הכוכבים] פרתכ; מקא חסר. ⁸ כל*] רתכ; פמקא על. ⁹ בחדש אחר] ראכ; פמק בחדש אחד; ת בחוס אדר. ¹⁰ ואם יהיה בחדש אחד או אחרי נכח] פרתמקא; כ חסר. ¹¹ מחברת המאורות או נכחם הקרוב אל יום המחברת העליונים. והכלל המחברת*] רתכמקא; פ המחברת. ¹² אחר] פמקא; רתכ האחר. ¹³ לשתף] פמרתקא; כ להשתתף. ¹⁴ שהוא הפקיד] פמרתקא; א שהפקיד. ¹⁵ הרביעי] פמקא; רתכ הרביעית. ¹⁶ חצי] פמרתקא; ק חסר. ¹⁷ ההווה*] רתכמקא; פ שהוא. ¹⁸ השנה] פרתמקא; כ חסר. ¹⁹ בחדש] פתכמקא; ר בחדשו. ²⁰ בחציו*] רתכמא; פ בחצי; ק חצי. ²¹ ואם*] רתכמקא; פ הם. ²² של] פתכ; רמקא חסר. ²³ תן] פמרתקא; ק הן. ²⁴ העולה*] רתכמקא; פ הצומח. ²⁵ או הנכח] פרתכ; מקא והנכח.

5 (1) Before I discuss these conjunctions, I give a general rule. (2) At the beginning of the revolution of the year in which there is a small, middle, or great conjunction, or a conjunction of Saturn and Mars in Cancer, you should look at the main conjunction, which is the conjunction of the two luminaries, if it takes place before the Sun enters Aries, or at the opposition of the luminaries (, if *it* takes place before the Sun enters Aries). (3) Find the sign of the ascendant at the middle of the earth, which is under the (celestial) equator, as well as the sign of the ascendant in every city and the location of the planets. (4) If the main conjunction [i.e., that of the luminaries], or the opposition (of the luminaries) takes place before the Sun enters Aries, and (if) the upper planets conjoin during these fifteen days,¹ then the judgment depends entirely on the sign of the ascendant at the moment of the (luminaries') conjunction or opposition.² (5) If it [the conjunction of the upper planets] takes place in another month (of the year), or after the opposition (of the luminaries), include (in the judgment) the sign of the ascendant at the hour of the luminaries' conjunction or opposition, whichever is closer to the day of the conjunction of the upper planets.³ (6) This means, in general, the previous conjunction or opposition of the luminaries, whichever (of them) is (closer to the day of the conjunction of the upper planets). (7) If the conjunction of the upper planets takes place in another quadrant of the orb, namely from Cancer to Libra, or from Libra to Capricorn, or from Capricorn to Aries, include (other signifiers in the judgment) together with the lord of the revolution of the (season of the) year, which is ruler of the sign of the ascendant before the revolution of the (season of the) year, either in the conjunction or opposition (of the luminaries), (that is,) in the degree of the ascendant at the conjunction or opposition (of the luminaries) before the revolution of the season (of the year).⁴ (8) So, take half of the judgment from the lord of the revolution of the year, and one-third from the lord of the sign that is (ascending) before the revolution of the season of the year, and one-sixth from (the lord of the sign that is ascending) at (the beginning of) the month or in the middle (of the month) before the conjunction of the upper planets.⁵ (9) If the conjunction of the upper planets takes place in the first quarter (of the year), assign two-thirds of the power to the lord of the revolution (of season of the year), namely, the lord of the sign of the ascendant at the hour of the conjunction or opposition (of the luminaries).⁶

6 (1) ויש לך להסתכל בכל שנה ושנה אם תקדר הלבנה או השמש, כי למחברת¹ קדרות השמש כח גדול על דברים שיתחדשו בעולם². (2) ואם תקדר השמש כולה, אז יהיו דברים גדולים³, ואם הקדרות מעט יהיו מעטים.

7 (1) וככה תעשה: הסתכל בקדרות השמש אם⁴ שבתאי או מאדים או ככב חמה הוא⁵ בממסך עם אלה⁶ או עם אחד מהם, במחברת או במבט. (2) ואם היה בבית אחד מהם הדבר⁷ יותר קשה. (3) רק אם היה תחת אור השמש, אין לאל ידו להטיב או להרע⁸. (4) ואם היו הנזכרים בממסך עם המאורות, בין בגוף בין באורם, במחברת או במבט, אז יקרה דבר רע⁹ לכל מדינה ששם הקדרות, והטעם המדינה שמזלה מקום הקדרות. (5) ותוכל לדעת מאי זה¹⁰ יבא לה הרע מהמדינות ששם הכוכב המזיק השמש, כפי תולדת הכוכב ותולדת המזל והצורה ההיא¹¹ עמו מצורות הגלגל שהם באפודה¹² או חוץ ממנה. (6) ואם היה¹³ צדק או נה עם המחברת, או כוכב חמה אם הוא בממסך טוב עם המאורות, אז תתחדשנה טובות למדינה שהקדרות במזלה. (7) ואם באחד היתדות גם הוא רע. (8) כ¹⁴ אם היה¹⁵ ביתד הרביעי, ושם¹⁶ כוכב מזיק, יזיק לשדות וכרמים, ואם הוא שבתאי, והוא בבית עפר, תרעש הארץ. (9) ואם הבית העשירי¹⁷ יזיק שלטון המדינה. (10) ואם ביתד השביעי יבא נזק למדינה מפאת האויבים והמלחמות ושבוש בין בני¹⁸ המדינה.

8 (1) ויאמר¹⁹ תלמי המלך²⁰ שקדרות²¹ השמש תורה על זמן ארוך, כי יתן לכל שעה ישרה מתחלת זמן הקדרות עד²² סופו שנה תמימה. (2) והסתכל מה ערך זמן אמצעית הקדרות, ושם תהיה הרעה גדולה²³, ואחרי כן²⁴ תחסר. | (3) וזה הערך תקחנו מערך 88ב

¹למחברת [פרכמקא; ת המחברת. ²בעולם] פרכמקא; ת לעולם. ³גדולים] פרכמקא; ת רבים. ⁴אם] פרתמקא; כ חסר. ⁵הוא] פמקא; רתכ > אם. ⁶אלה] פרתמקא; כ כלה. ⁷הדבר] פמקא; רתכ > יהיה. ⁸להטיב או להרע] פתמקא; ר להטיב. ⁹רע] פרתמקא; כ הרע. ¹⁰מאי זה] פמקא; רתכ < צד. ¹¹היא] פמקא; רתכ ההווה. ¹²באפודה] פרכמקא; ת באפוד. ¹³היה] פתמקא; ר יהיה. ¹⁴כי] פרכמקא; ת חסר. ¹⁵היה] פרכמקא; ת הוא. ¹⁶ושם] פמרתכא; ק והוא. ¹⁷יזיק לשדות וכרמים ... הבית העשירי] פתמקא; ר חסר. ¹⁸בני] פמקא; רתכ אנשי. ¹⁹ויאמר] פרכמקא; תכ ואמר. ²⁰המלך] פרתמקא; כ חסר. ²¹שקדרות] פמקא; רתכ כי קדרות. ²²עד] פרתמקא; כ ועד. ²³גדולה] פמקא; רתכ הגדולה. ²⁴ואחרי כן] פמקא; ר ואחר כן; ת ואח"כ; כ ואחר כך.

6 (1) Every year determine whether a lunar or solar eclipse will take place, because the conjunction of the solar eclipse has great power over events that take place in the world. (2) If the occultation of the Sun is total, major events will occur, but if the occultation is slight they will be minor.¹

7 (1) Proceed as follows: find out whether, at the solar eclipse, Saturn or Mars or Mercury is in a complexion with the (two) others or with one of them, either in conjunction or in aspect. (2) If (one of these planets) is in the house of another, the outcome is harsher. (3) But if it is under the rays of the Sun it is incapable of working either good or evil.^{1,2} (4) If these (planets) are in a complexion with the luminaries, whether with (their) body or with their light, in conjunction or in aspect, misfortune will befall any city where the eclipse occurs, meaning any city whose sign is the place of the eclipse. (5) You can know which (city) will inflict misfortune upon it [the city where the eclipse occurs], (if you find out) the cities (in whose signs) there is a planet that is afflicting the Sun [i.e., in unfavorable aspect to it], in accordance with the nature of the planet and with the nature of the sign (of the city) and of the constellation, of all the constellations of the orb, both inside and outside the zodiac, that is together with it.³ (6) If Jupiter or Venus is with [i.e., in the same place as] the conjunction (of the solar eclipse), or if (during the conjunction) Mercury is in a fortunate complexion with the luminaries, then good things will happen to the city in whose sign the eclipse takes place.⁴ (7) But if (they are) in one of the cardines it signifies misfortune. (8) For if it [any of these three planets] is in the fourth cardo, and there is (also) a malefic planet there, fields and vineyards will be damaged; and if it [the malefic planet] is Saturn and it is in an earthy house, there will be an earthquake. (9) If it [any of these four planets] is in the tenth place, the government of the city will be affected. (10) If it is in the seventh (place), harm will befall the city by enemies, wars, and domestic unrest.⁵

8 (1) King Ptolemy¹ said that a solar eclipse signifies (an event that will last) a long time, for he allots a complete year to each equal hour from the beginning of the eclipse until its end.² (2) Find the time that (corresponds to) the middle of the eclipse; that is when the greatest misfortune will occur; it will diminish after that. (3) Take this proportion of the (duration) from beginning to the end, that is, half of it³ [the duration].

הראשית אל האחרית,¹ והנה הוא חציו.² (4) ואחרים אומרים,³ כי אם היה הקדרות והשמש ברביע המזרחי הדרומי,⁴ יתחדש⁵ מה שיורה טוב או רע בזמן קרוב, ואם במערבי יתאחר הזמן.

9 (1) ויאמר⁶ תלמי המלך⁷ שנתן⁸ לכל שעה ישרה בקדרות הלבנה⁹ חדש ימים, והרע¹⁰ גדול¹¹ בחצי הזמן שהוא רגע¹² הנכח¹³. (2) ויאמר¹⁴ בספר הארבעה¹⁵ ראשים¹⁶ כי לא יעמוד טוב או רע שיורה¹⁷ עליו קדרות הלבנה, כי אם עד¹⁸ שנה תמימה. (3) והנה תשים המאה ושמונים מעלות שהן למעלה בשעת הקדרות שיהיו לשנה תמימה. (4) והסתכל כמה הלבנה רחוקה מהמעלה הצומחת בשעת רגע הנכח¹⁹ בקדרות²⁰. (5) וכפי המרחק ככה יעבור מהשנה. (6) ויתחדש טוב או רע במדינות ששם הקדרות, והטעם במזלה או באחד יתדותיה, אל ערך כל השנה. (7) וככה תעשה: ערוך המרחק ממקום הלבנה אל המעלה הצומחת, והטעם שלא תסתכל כמשפט, רק תקח לעולם כאלו²¹ להפוך²² המעלות, ומה שיהיו ערוך אותם על ק"פ, והעולה חלק על שס"ה.²³ (8) והעולה הם ימים²⁴ ותחלתם מרגע הקדרות.

10 (1) ויאמרו²⁵ הקדמונים שנתן לכל שעה ישרה בקדרות השמש שנה תמימה, וכחלקי השעה ככה נקח מחלקי שנה, וזה דבר קל להוציאו בערכין.

11 (1) הכללים: הסתכל לכל מחברת גדולה או אמצעית או קטנה, גם בתקופת כל שנה, אל דברי הכללים. (2) רק יש לך²⁶ לדעת כי הטוב והרע שיורה עליו דבר המחברת הגדולה יהיה כלל²⁷ ויעמד עד²⁸ מחברת גדולה אחרת שתיביא מערכת אחרת שתרחיק הראשונה או תשחיתנה, כאשר אפרש²⁹. (3) והנה זה יורה על כלל גוי גוי³⁰, והאמצעית על מלכי גוי וגוי, והקטנה על תוספת או מגרעת³¹ במלכות, ובתום העשרים שנה אין כח למחברת כלל. (4) ותקופת השנה תורה על דברים יבאו כמו³² מקרה, ויסורו מהרה בכח תקופת שנה אחרת.

¹האחרית* [תקא; פרמ אחרית. ²חציו*] רתכ; פמקא חסר. ³אומרים] פמקא; רתכ אמרו. ⁴המזרחי הדרומי*] רתכ; פמקא המזרחית דרומית. ⁵יתחדש*] רתכמקא; פ ותחדש. ⁶ויאמר] פרמקא; תכ ואמר. ⁷המלך] פרתק; כמא חסר. [שנתן] פמקא; רתכ כי נתן. ⁹בקדרות הלבנה] פרכמקא; ת מתחלת זמן קדרות הלבנה ועד סופו. ¹⁰והרע] פרתמקא; כ וקבע. ¹¹גדול] פמקא; רתכ הגדול. ¹²רגע] פרתכ; מקא חסר. ¹³הנכח] פרתמק; כ הנגוד. ¹⁴ויאמר] פתמקא; רכ ואמר. ¹⁵הארבעה] פתכמקא; ר ארבעה. ¹⁶ראשים] פרתמקא; כ מאמרות. ¹⁷שיורה] פרכמקא; ת שיעלה. ¹⁸עד] פרמקא; תכ חסר. ¹⁹הנכח] פרתמקא; כ הנגוד. ²⁰בקדרות] פמקא; רתכ < הלבנה. ²¹כאלו] פמקרתכ; א כמשפט. ²²להפוך] פרת; כמקא להפך. ²³שס"ה] פתכמקא; ר שס"ה ימים. ²⁴הם ימים] פמקרתכ; א ס' הם. ²⁵ויאמרו] פרכמקא; ת ויאמרו. ²⁶לך] פרכמקא; ת חסר. ²⁷כלל*] רתכמקא; פ הכלל. ²⁸עד*] רתכ; פמקא על. ²⁹אפרש] פרתמקא; כ < בע"ה. ³⁰כלל גוי גוי] פרכמקא; ת כל גוי. ³¹תוספת או מגרעת] פרכמקא; ת התוספת או המגרעת. ³²כמו] פרתמקא; כ חסר.

(4) Others said that if the eclipse takes place in the southeastern quadrant, the events it portends, whether good or bad, will happen soon, but if ⟨the eclipse is⟩ in the ⟨south⟩western ⟨quadrant⟩ they will come later.⁴

9 (1) King Ptolemy said that we should allot one month to each hour of a lunar eclipse and that the greatest misfortune ⟨occurs⟩ at the midpoint of the duration ⟨of the eclipse⟩, which is the moment of the ⟨luminaries'⟩ opposition.¹ (2) He said in *Tetrabiblos*² that any good fortune or misfortune signified by a lunar eclipse will persist for a full year at most. (3) Take 180 degrees above ⟨the earth⟩ at the time of the eclipse as corresponding to a full year. (4) Find the distance of the Moon from the degree of the ascendant at the moment of opposition in the ⟨lunar⟩ eclipse. (5) The time that will elapse from the ⟨beginning of the⟩ year is proportionate to this distance. (6) Good fortune or misfortune will take place in cities where an eclipse takes place, meaning ⟨that the eclipse takes place⟩ in its sign [i.e., in the sign of the city] or in one of its cardines [i.e., the cardines of a horoscope whose ascendant is the sign of the city] ⟨at a time⟩ proportional to the whole year. (7) Proceed as follows: calculate the distance between the Moon and the degree of the ascendant, meaning that you should not consider according to the rule but should always take, as it were, ⟨the distance⟩ opposite the degree ⟨obtained by this reckoning⟩, and multiply the result by 180 and divide it by 360. (8) The result is the ⟨number of⟩ days after the eclipse.³

10 (1) The Ancients said that we should assign a full year to each equal hour of a solar eclipse and fractions of a year to fractions of an hour; this is easy to calculate by means of proportions.¹

11 (1) General affairs: inquire into general affairs from any great or middle or small conjunction, or from the revolution of every year.¹ (2) But you should know that the good fortune or misfortune signified by a great conjunction is universal and persists until the next great conjunction, which brings a new configuration that removes or cancels the previous one, as I shall explain. (3) Now this ⟨great conjunction⟩ gives an indication about every nation, and the middle ⟨conjunction⟩ about the kings of every nation, and the small ⟨conjunction⟩ about an increase or decrease in the kingdom; and the power of this conjunction vanishes completely after twenty years. (4) The revolution of the year signifies events that come as if by chance, and they wane quickly because of the strength of the revolution of a new year.²

12 (1) וכל¹ הקדמונים הסכימה דעתם כי מזל גדי עם ככב חמה² בחלקי הודו, וטלה וצדק בחלק בבל, ושור ומאדים בחלק שור,³ ותאומים ונגה בחלק⁴ מצרים, וסרטן ומאדים בחלק ירושלים, והנכון שהוא למזל אריה עם שבתאי, ואריה ומאדים לארץ צין,⁵ בתולה ומאדים לספרד.

13 (1) ויאמר⁶ דורוניוס⁷ שמאזנים⁸ ושבתאי לארץ אדום, ועקרב עם נגה לארץ קדר, וקשת עם מאדים לספרד. (2) וזה שאמר על⁹ מאזנים ועקרב הוא אמת כנגד המקומות.

14 (1) רק דבר מנוסה הוא שאריה ושמשי לאדום, ובו הייתה המחברת טרם שילד האיש שחושבים שהוא אלוה.¹⁰ (2) ומזל דלי הוא מזל ישראל, ודע כי חכמינו אמרו אין מזל לישראל. (3) והוא האמת,¹¹ כי כל זמן שהם דבקים בשם¹² אין מזל שולט בהם¹³ | להרע או להטיב.¹⁴ (4) והדבק¹⁵ בשם הוא להכירו¹⁶ ולעשות מצותיו, וזה^{א89} טעם אשר חלק י"י אלהיך לכל העמים,¹⁷ ואחריו כתוב¹⁸: ואתכם לקח י"י. (5) וכאשר אין ישראל על הדרך הישרה המזל ישלוט בהם, או הם נחשבים¹⁹ ככל העמים. (6) והמחברת ההוה טרם קום²⁰ נביא הישמעאלים לפי דברם היתה²¹ במזל עקרב²². (7) ושמעתי מפי אדם אחד²³ שחכמי²⁴ המזלות אומרים שמזל גדי²⁵ הוא מזל מצרים.

15 (1) ודע כי מה²⁶ שאמרתי מזל מדינה זה פירושו²⁷ המזל שהוא²⁸ עולה בעת הוסדה. (2) ויש מדינות ידועות כמו: (3) קורטובה²⁹, מזלה עשרים ושבע מעלות ממזל תאומים. (4) גרנטא,³⁰ סרטן. (5) אלמריאה,³¹ מאזנים. (6) ולינסיאה,³² עקרב. (7) אשביליאה,³³ גיים לפי דעת חכמי ספרד ולפי דעתי מזל דלי.³⁴ (8) מאליקא,³⁵

¹וכל] פקמא; רתכ כל. ²ככב חמה] פקרתמא; כ כוכב. ³שור] פרתמא; כ צור; כ הקדרים. ⁴בחלק] פרתמא; ק מחלק. ⁵וסרטן ומאדים בחלק ירושלים, והנכון שהוא למזל אריה עם שבתאי. ואריה ומאדים לארץ צין] פתמא; קר חסר. ⁶ויאמר] פקרתמא; ת אמר; כ ואמר. ⁷דורוניוס] פמרתמא; כ דוריאנוס. ⁸שמאזנים] פקרתמא; תכ כי מאזנים. ⁹וזה שאמר על] פקרתמא; ר ויש מי שאומר. ¹⁰טרם שילד האיש שחושבים שהוא אלוה] *מרא; ק שילד לאיש שחושבים שהוא אלוה; פ טרם שילד (בהמשך לאקונה); ת לאקונה; כ טרם שילד אותו האיש. ¹¹האמת] פקמא; ר אמת. ¹²דבקים בשם] פקמא; ר בשם דבקים. ¹³אין מזל שולט בהם] פקמא; ר אין בדלי שולט שום מזל; כ חסר. ¹⁴להרע או להטיב] פקרתמא; ת להרע; כ חסר. ¹⁵והדבק] פרתמא; קכ חסר. ¹⁶להכירו] *קרתמא; פ בהכירו; כ חסר. ¹⁷להרע או להטיב, והדבק בשם הוא בהכירו ולעשות מצותיו, וזה טעם אשר חלק י"י אלהיך לכל העמים] פקרתמא; כ חסר. ¹⁸ואחריו כתוב] פקרתמא; כ כאומר. ¹⁹אז הם נחשבים] פקא; רת כי או יחשבו; מ כי או הם נחשבים; כ חסר. ²⁰ההוה טרם קום] פקמא; ת שהיתה קודם; ר חסר. ²¹היתה] *תמא; פק היה; ר חסר. ²²המחברת ההוה טרם קום נביא הישמעאלים לפי דברם היתה במזל עקרב] פקרתמא; ר חסר. ²³שמעתי מפי אדם אחד] פקא; ת ושמעתי מפי אדם; מ ושמעתי מפי חכם אחד; כ ושמעתי; ר חסר. ²⁴שחכמי] פקרתמא; ר וחכמי. ²⁵גדי] *ר; ת גם; א טלה; פקמ חסר. ²⁶מה] פקמא; רתכ זה. ²⁷זה פירושו] פקמא; ר ככה פירושו; ת כך פירושו; כ ר"ל. ²⁸שהוא] פמא; ק שהיה; רתכ שהיה. ²⁹קורטובה] פתא; קרמ קרטבה; כ קרטובה. ³⁰גרנטא] פמ; קרת גראנטא; א גראנטה; כ גרנטה. ³¹אלמריאה] פקתמא; רא אל מריא. ³²ולינסיאה] פמ; ק וולינסיא; א וולנסיאה; ר בלנסיאה; ת בלינסיאה; כ ולנסיאה. ³³אשביליאה] פקמא; ר שיבליה; ת אישביליאה; כ אשבליה. ³⁴לפי דעת חכמי ספרד ולפי דעתי מזל דלי] פמרתמא; א חסר. ³⁵מאליקא; ר מלקא; ת מלקא; כ מאליקה; א חסר.

12 (1) All the Ancients agreed that the sign of Capricorn with Mercury governs India, and Aries and Jupiter govern Babylonia, and Taurus and Mars govern Shur (Gen. 16:7, Ex. 15:22 *et passim*), and Gemini and Venus govern Egypt, and Cancer and Mars govern Jerusalem (but the correct datum is Leo with Saturn), and Leo and Mars govern the land of Şin [China], and Virgo and Mars (govern) Spain.¹

13 (1) Dorotheus said that Libra and Saturn (govern) Edom, Scorpio with Venus the land of Kedar, and Sagittarius with Mars (governs) Spain.¹ (2) What he said about Libra and Scorpio is true with respect to those places.

14 (1) But it has been proven by experience that Leo and the Sun (govern) Edom, and it was there [in Leo] that the conjunction (of Saturn and Jupiter) before the birth of the man whom they deem to be God took place.¹ (2) Aquarius is the zodiacal sign of Israel,² but know that our sages said that “there is no *mazzal*³ for Israel”⁴ (Shabbat 156a, Nedarim 32a). (3) This is true, because as long as they cleave to God no zodiacal sign exerts any influence on them, whether for good or for evil. (4) Cleaving to God means knowing Him and observing His commandments. And this is the meaning of “which the Lord thy God has allotted unto all the peoples” (Deut. 4:19), and after that it is written: “the Lord has taken you” (v. 20). (5) But when Israel is not on the straight path the zodiacal sign dominates them, and then they are regarded the same as all the other nations.⁵ (6) The conjunction (of Saturn and Jupiter) that took place before the emergence of the Muslims’ prophet, according to their opinion, occurred in the sign of Scorpio.⁶ (7) I have heard from someone that the astrologers say that Capricorn is the sign of Egypt.

15 (1) Know that when I referred to the sign of a city I meant the sign that was the ascendant when it was founded.¹ (2) There are cities (whose signs) are known: (3) Cordoba’s sign is Gemini 27°. (4) Granada, Cancer. (5) Almeria, Libra. (6) Valencia, Scorpio. (7) Seville, Pisces according to the scientists of Spain, but in my opinion it is Aquarius. (8) Malaga’s sign

מזל דלי¹. (9) בטליוס² מזל שור. (10) וורונה, מזל שור³. (11) מדינת סלאם⁴, מזל דלי⁵. (12) סרקוסטא⁶, מזל טלה⁷. (13) מרשיליה⁸, מזל⁹ אריה. (14) טוליטולה, מזל¹⁰ בתולה. (15) מנטואה¹¹, מזל מאזנים¹². (16) גושקא¹³, מזל שור. (17) בוגיאה¹⁴, אומרים כי מזלה¹⁵ תאומים עשר מעלות. (18) אפריקאה¹⁶, דגים שתי מעלות¹⁷. (19) אל מדיאה¹⁸, אריה שש מעלות¹⁹. (20) זוילא²⁰, בתולה. (21) קבאס²¹, דגים עשר²² מעלות. (22) אטאבלס²³, שהיא²⁴ על שם אלבר²⁵, עקרב, והם אומרים כי לב עקרב תחלת מזלה²⁶. (23) רומא²⁷, מזל²⁸ אריה. (24) פיזא²⁹, אומרים דגים, ולפי מה³⁰ שניסיתי היא למזל דלי שלש מעלות. (25) לוקא³¹, לפי מה³² שניסיתי פעמים מזלה³³ סרטן, רק בגבול צדק³⁴.

16 (1) והנה אתן לך כלל: הסתכל בשנת³⁵ מחברת³⁶ השנים העליונים בתחלת בתי השלישיות³⁷ אי זה מזל³⁸ הוא העולה ומי הוא³⁹ הממונה עליו. (2) וככה תוכל לדעתו, שתחשוב מספר כל כח שיש למשרת בו, ומי שיש לו מספר רב הוא המנצה, והוא יקרא⁴⁰ הפקיד. (3) בעל הבית ממיני⁴¹ הכח חמשה⁴²; ובעל הכבוד ארבעה; ובעל הגבול שלשה⁴³; ובעל השלישיות שנים; ובעל הפנים אחד. (4) ההוה בבית הראשון יש לו מחלקי הכח⁴⁴ שנים עשר⁴⁵; ובית⁴⁶ העשירי אחד עשר כח; ובית עשתי עשר, עשרה⁴⁷; ובית⁴⁸ השביעי, תשעה⁴⁹; וברביעי, שמונה⁵⁰; ובחמישי, שבעה⁵¹; ובתשיעי, ששה; ובששי, חמישה⁵²; ובשני, ארבעה⁵³; ובשמיני, שלשה; ובשנים עשר, שנים; ובששי, אחד.

¹מזל דלי] פקמ; כ דלי; ת גדי; א חסר. ²בטליוס] פקמ; ת בטליוס; א בליוס. ³וורונה מזל שור*] ר; ת וורונה מזל שור; פקמא חסר. ⁴סלאם] פמרתכ; קרתמ סלאס; א סלם. ⁵דלי] פקמא; ת גדי. ⁶סרקוסטא] פקמא; ר סרקוסטה; ת סרקוסטא. ⁷בטליוס מזל שור; וורונה מזל שור; מדינת סלאם מזל דלי; סרקוסטא מזל טלה] פקרתמא; כ חסר. ⁸מרשיליה] פ; א מרשיליה; מ מרשיליה; ק מרשיליה; ר מראסיה; ת מרסיה; כ מורסיה. ⁹מזל] פרתמא; קכ חסר. ¹⁰מזל] פרתמא; קכ חסר. ¹¹מנטואה*] רמא; פ מנטואה; ק מאנטואה; ת חסר. ¹²מזל מאזנים] פקמא; ת חסר. ¹³גושקא] פמ; א אושקה; ק משקא; ר יושקא; ת חסר. ¹⁴בוגיאה] פקמא; ר בגיאה; ת בגיאה. ¹⁵כי מזלה] פרת; קמא חסר. ¹⁶אפריקאה] פמ; קר אפריקאה; א אפריקיה; ת חסר. ¹⁷דגים שתי מעלות] פקמ; ת חסר. ¹⁸אל מדיאה] פקמא; ר אל מהדיא; ת חסר. ¹⁹אריה שש מעלות] פקמא; ת חסר. ²⁰זוילא] פקמ; א אוילה; ר ודלה. ²¹קבאס] פקמ; א קאבס; רת קאבר. ²²עשר] פקמא; ר ו. ²³אטאבלס] פמא; קר אטרבלס; ת אטרבילס. ²⁴שהיא] פקמא; ת שהם. ²⁵אלבר] פקמא; רת אל ברבר. ²⁶מנטואה מזל מאזנים. גושקא מזל שור; בוגיאה אומרים כי מזלה תאומים עשר מעלות; אפריקאה דגים שתי מעלות; אלמריאה אריה שש מעלות; זוילא בתולה; קבאס דגים עשר מעלות; אטאבלס שהיא על שם אלבר עקרב, והם אומרים כי לב עקרב תחלת מזלה] פקרתמ; כ חסר. ²⁷רומא] פקמ; רתא רומה. ²⁸מזל] פמרתמא; כ חסר. ²⁹פיזא] פקת; מ פיסא; ר פיסה; כ פיזה; א פישא. ³⁰מה] פקמא; רתכ חסר. ³¹לוקא] פקמ; א לוקה; רת לוקא; כ לוכה. ³²מה] פקמא; ת חסר. ³³לפי מה שניסיתי פעמים מזלה] פמרתמא; כ חסר. ³⁴רק בגבול צדק] פמרתמא; כ חסר. ³⁵בשנת] פמרתמא; ת חסר. ³⁶מחברת] פמרתמא; ת במחברת. ³⁷השלישיות] פמק; רכא השלישיות; ת השלישית. ³⁸מזל] פמרתמא; ק חסר. ³⁹הוא] פמרתמא; ר חסר. ⁴⁰יקרא] פמרתמא; ק חסר. ⁴¹ממיני] פמרתמא; ק ממניני; כ חסר. ⁴²ממיני הכח חמשה] פמרתמא; כ חמשה כחות. ⁴³שלשה] פמרתמא; א ארבעה. ⁴⁴הכח] פמרא; ק השמש הכח. ⁴⁵מחלקי הכח שנים עשר] פמרתמא; כ ו'ב כחות. ⁴⁶ובית] פמרתמא; א ובעל. ⁴⁷עשרה] פמרתמא; כ < כחות. ⁴⁸ובית] פמרתמא; א ובית. ⁴⁹תשעה] פמרתמא; כ < כחות. ⁵⁰שמונה] פמרתמא; כ < כחות. ⁵¹שבעה] פמרתמא; כ < כחות. ⁵²חמישה*] פמרתמא; פ פ ארבעה. ⁵³ובשני ארבעה*] פמרתמא; פ חסר.

is Aquarius. (9) Batelius' (?) sign is Taurus. (10) Verona's sign is Taurus. (11) Madinat Sal'am's sign is Aquarius. (12) Saragossa's sign is Aries. (13) Marseilles' sign is Leo. (14) Toledo's sign is Virgo. (15) Mantua's sign is Libra. (16) Gushqa's (?) sign is Taurus. (17) Boujie, some say that its sign is Gemini 10°. (18) Ifriqiya, Pisces 2°. (19) Al Mahdiyya, Leo 6°. (20) Zawilā, Virgo. (21) Gabes, Pisces 10°. (22) 'At'ables (?), which is called 'Alber, Scorpio, and they say that the heart of Scorpio is the beginning of its sign. (23) Rome, Leo. (24) Pisa, some say Pisces, but according to what I have verified by experience its sign is Aquarius 6°. (25) Lucca, according to what I have verified by experience several times its sign is Cancer, but in Jupiter's term.²

16 (1) Now I give you a general rule: in a year ⟨when there is⟩ a conjunction of the two upper planets at the beginning of the houses of the triplicities, find the sign of the ascendant and its lord. (2) You can find it in this manner: calculate the number of ⟨portions of⟩ power that ⟨each⟩ planet has in it [in the sign of the ascendant]; the one that has the greatest number is victorious and is called the ruler. (3) The lord of the house has five of the various types of ⟨portions of⟩ power; the lord of exaltation¹ ⟨has⟩ four ⟨portions of power⟩; the lord of the term, three; the lord of the triplicity, two; the lord of the decan, one ⟨portion of power⟩.² (4) ⟨The planet⟩ that is in the first place has twelve portions of power; ⟨the planet that is⟩ in the tenth place ⟨has⟩ eleven ⟨portions of power⟩; in the eleventh place, ten; in the seventh place, nine; in the fourth, eight; in the fifth, seven; in the ninth, six; in the sixth, five; in the second, four; in the eighth, three; in the twelfth, two; in the sixth, one.³

17 (1) שתבאי צדק ומאדים, בצאתם מתחת¹ אור השמש והם מזרחיים, יש להם מחלקי הכח שנים עשר. (2) ועד שלשים מעלות רחוקים ממקום השמש, אחת עשרה. (3) ועד ששים, עשרה.² (4) ועד שבעים,³ תשע. (5) ועד המעמד הראשון, שמנה.⁴ (6) ובמעמד השני, שבעה. (7) ועד שיהיה⁵ רחוק מהשמש תשעים מעלות, שש. (8) ואם ששים, חמישה. (9) ובמעמד הראשון, ארבעה. (10) ובנכח השמש, שלשה. (11) ובהיותו רחוק מהשמש והוא מערבי שלשים מעלות, שתיים. (12) ואם חמש עשרה מעלות, אחת. (13) ובהיותו תחת השמש אין לו כח.⁶ (14) רק צדק ושבטאי, אחרי צאתם⁷ מגבול השרפה, והטעם שירחקו מהשמש שש מעלות והם מזרחיים, יחשב להם | כששה חלקי⁸ 89 הכח. (15) ואם⁹ בין השמש ומאדים עשר מעלות לא פחות מהם, ואם¹⁰ מזרחי,¹¹ יחשב¹² כנוכרים.¹³ (16) ודרך נגה וכוכב חמה¹⁴ כמספר חלקי הכח כמו העליונים. (17) רק אין ביניהם שני כי אם שיהיו¹⁵ אלה מערביים, כי בהיותם כך יש להם כח רב.

18 (1) מפתחות הלבנה שתיים עשרה. (2) האחת, כאשר¹⁶ תהיה רחוקה¹⁷ מהשמש והיא הולכת אליו שתיים עשרה מעלות. (3) והמפתח השני,¹⁸ בהיותם¹⁹ במחברת. (4) והשלישי, בהיות הלבנה רחוקה ממקום השמש²⁰ שתיים עשרה מעלות ישרות. (5) והרביעי, בהיותה רחוקה ארבעים וחמש.²¹ (6) והחמישי, ברחקה תשעים.²² (7) והששי, ברחקה מאה ושלשים וחמש.²³ (8) והשביעי, בהיותה רחוקה²⁴ קודם נכח השמש שתיים עשרה מעלות. (9) והשמיני, בהיותה נכח השמש. (10) והתשיעי, ברחקה מנכח השמש שתיים עשרה מעלות.²⁵ (11) והעשירי,²⁶ ברחקה מנכח השמש ארבעים וחמש מעלות.²⁷ (12) והאחד עשר,²⁸ ברחקה מנכח השמש תשעים²⁹ מעלות. (13) והשנים עשר, ברחקה מנכח השמש מאה ושלשים וחמש מעלות.

19 (1) חלקי כח הלבנה. (2) השמיני יש לו שנים עשר. (3) השביעי, אחד עשר. (4) התשעי, עשרה. (5) החמישי, תשעה. (6) העשירי, שמונה. (7) הששי, שבעה. (8) הרביעי, ששה. (9) השלישי, חמישה. (10) העשתי עשר, ארבעה. (11) השנים עשר, שלשה. (12) האחד, שנים. (13) המחברת, אחד.

¹מתחת] פמרתא; כ תחת. ²עשרה] פמרכ; קא חסר. ³שבעים] פמקא; רכ צ'. ⁴שמנה] פמרכ; קא חסר. ⁵שיהיה*] קרתכא; פמ שהיה. ⁶אין לו כח] פמקא; רתכ נח. ⁷צאתם] פמקא; רתכ שיצאו. ⁸חלקי] פמקתכא; ר חלקים. ⁹ואם*] רתכ; פמקא ואם אין. ¹⁰ואם] פמקתא; ר והם; כ והוא. ¹¹מזרחי] פמקא; רת מזרחיים. ¹²יחשב] פמקתא; ר < להם. ¹³כנוכרים] פמקתא; ר כמו הנוכרים. ¹⁴חמה] פמרתא; כ חסר. ¹⁵אם שיהיו*] רתכ; פמקא אם; א חסר. ¹⁶כאשר] פרתכ; מקא אשר. ¹⁷רחוקה] פמקתכא; ר חסר. ¹⁸המפתח השני] פמקא; ת והב; כ חסר. ¹⁹בהיותם] פמקא; רתכ בהיותה. ²⁰ממקום השמש] פמרתא; כ מהשמש. ²¹וחמש] פמקא; רתכ < מעלות. ²²תשעים] פמקא; רתכ < מעלות. ²³וחמש] פמקא; רתכ < מעלות. ²⁴רחוקה] פמרתא; ת חסר. ²⁵ברחקה מנכח השמש שתיים עשרה מעלות] פמרתא; פ מופיע בשוליים. ²⁶השמיני בהיותה נכח השמש. והתשיעי ברחקה מנכח השמש שתיים עשרה מעלות. והעשירי] פמרתא; כ חסר. ²⁷העשירי ברחקה מנכח השמש ארבעים וחמש מעלות] פמרתא; פ מופיע בשוליים. ²⁸האחד עשר] פמרתא; פ מופיע בשוליים. ²⁹תשעים] פמקתכא; ר ג.

17 (1) When Saturn, Jupiter and Mars are moving out from under the rays of the Sun and are oriental, they have twelve portions of power. (2) ⟨When⟩ they are within 30° of the location of the Sun, ⟨they have⟩ eleven ⟨portions of power⟩. (3) ⟨When⟩ they are within 60° ⟨of the Sun⟩ ⟨they have⟩ ten ⟨portions of power⟩. (4) Within 70° , nine. (5) Up to the first station, eight. (6) In the second station, seven. (7) Up to 90° from the Sun, six. (8) If 60° , five. (9) In the first station, four. (10) In opposition to the Sun, three. (11) When it is 30° from the Sun and occidental, two. (12) If 15° , one. (13) When it is under ⟨the rays of⟩ the Sun, it has no power. (14) But Jupiter and Saturn, after leaving the domain of burning, meaning 6° from the Sun and oriental, are assigned six of the portions of power. (15) If there are 10° between the Sun and Mars, but no less [i.e., at least 10° between them], and if it [Mars] is oriental, it [Mars] will be considered to be like the aforementioned [Saturn and Jupiter]. (16) The method for ⟨assigning powers to⟩ Venus and Mercury is the same as for ⟨assigning⟩ the number of portions of power to the upper planets. (17) There is no difference between them except when they [Venus and Mercury] are occidental, because when they are ⟨occidental⟩ they have great power.¹

18 (1) The moon has 12 keys. (2) The first, when it [the Moon] is 12° from the Sun and moving towards it [the Sun]. (3) The second key, when they are in conjunction. (4) The third, when the Moon is 12 equal degrees away from the Sun. (5) The fourth, when it is 45° away ⟨from the Sun⟩. (6) The fifth, when it is 90° ⟨from the Sun⟩. (7) The sixth, when it is 135° ⟨from the Sun⟩. (8) The seventh, when it is 12° before opposition to the Sun. (9) The eighth, when it is in opposition to the Sun. (10) The ninth, when it is 12° past opposition to the Sun. (11) The tenth, when it is 45° past opposition to the Sun. (12) The eleventh, when it is 90° past opposition to the Sun. (13) The twelfth, when it is 135° past opposition to the Sun.¹

19 (1) Portions of power ⟨of the keys⟩ of the Moon. (2) The eighth ⟨key⟩ has twelve ⟨portions of power⟩. (3) The seventh, eleven. (4) The ninth, ten. (5) The fifth, nine. (6) The tenth, eight. (7) The sixth, seven. (8) The fourth, six. (9) The third, five. (10) The eleventh, four. (11) The twelfth, three. (12) The first, two. (13) Conjunction, one.¹

20 (1) והנה אתן לך כלל: ¹הסתכל בכל ²מדינה שתהא ³בהתחברות העליונים בהשתנות הליכתם מתולדת אל תולדת עד ⁴מחברת שבתאי או מאדים או כוכב חמה. ⁵
 (2) ואם ⁶היה בממסך רע בעל ⁷המדינה, הוא רע לה כפי תולדת הכוכב וכפי הבתים שיש לו על המדינה ממשלת. ⁸ (3) וזה תוכל לדעת בדרך המולד ככה: תשים מזל המדינה, ואם הפקיד על ⁹מזל המדינה במקום רע, או עם ¹⁰שבתאי ומאדים, או נשרף מהשמש, יוסיף מכאוב על מכאוב עד שתחרב המדינה ויאבדו כל אנשיה. (4) אם היה מאדים, תאבד המדינה על ידי חרב ומלחמות. (5) ואם שבתאי בעבור דָּבָר ורעב ותחלואים. ¹¹ (6) ואם כוכב חמה ¹²בממסך רע, תאבד המדינה ¹³בעבור מריבות ואנשי ¹⁴איבה ושנאת חנם. (7) וכל ¹⁵מדינה ששם צדק או נה או הלבנה, אם איננה על ¹⁶ממסך רע הוא טוב לה ¹⁷בכל דבריה, רק אם יהיו נשרפים אין להם כח. ¹⁸

21 (1) ויש לך להסתכל אל מקום ¹⁹הכוכבים הטובים והרעים בתחלת שנת המחברת, ודע באי זה מזל הוא כח השנים עשר, כמו שפירשתי ²⁰בספר ראשית חכמה. ²¹ (2) ומזה תוכל לדעת כל טוב וכל רע שיקרה לכל מדינה ומדינה.

22 (1) ואם ידעת שנות המדינה הסתכל בית הסוף, כי בהגיע המזל העולה אל מקום כוכב טוב או רע שנה בשנה ²²יראה. (2) והקדמונים יתנו לכל מעלה ²³ישרה שנה אחת לדעת כל המקרה שיקרה ²⁴בכל שנה לאנשי המדינה.

23 (1) ומהבית העשירי שלה | יסתכלו בדברי ²⁵המלוכה; גם כך יתנו מעלה מעלה ²⁶אֶגו בכל ²⁷שנה, ²⁸גם ²⁹יסתכלו בית ³⁰הסוף בדרך תקופת המולד כאשר פרשתי בספר המולדות. ³¹ (2) וכל ³²שנה יש לך להסתכל: אם היה כוכב מזיק בבית העשירי, או על מבט רע ³³, יזיק מלך המדינה כפי תולדת הכוכב ותולדת מקומו ³⁴והבתים שיש לו ³⁵ממשלה עליהם. (3) וככה תעשה: שים ³⁶הבית העשירי כאלו הוא המזל הצומח; והנה, ³⁷

¹אתן לך כלל] פמקא; רתח חסר. ²בכל] פמקא; רתח כל. ³שתהא] פמקא; תכ שתהיה; ר שתיה. ⁴עד] פמקא; רכ עם; ת אם. ⁵חמה] פמרקתא; כ חסר. ⁶ואם] פמקא; רתכ אם. ⁷בעל] א; פמק מזל; רתכ במזל. ⁸ממשלת] פמרקתא; כ ממשלה. ⁹על] רתכ; פמקא חסר. ¹⁰עם] פמרקתא; כ חסר. ¹¹ותחלואים] פמק; רת ותחליים; כ ותחלואים; א וחלואים. ¹²חמה] פמרקתא; כ חסר. ¹³תאבד המדינה] פמקא; רתח חסר. ¹⁴ואנשי] פמ; קא ודברי; רת ודבר. ¹⁵וכל] פמרקתא; כ ועל. ¹⁶על] פמרקא; ת חסר. ¹⁷הוא טוב לה] פמקא; ר וככה קורה לה; ת ככה הוא טוב לה. ¹⁸כח] פמרקתא; כ < כלל. ¹⁹מקום] פמרקא; ת מקומות. ²⁰כמו שפירשתי] פמקא; רתכ כאשר פירשתי. ²¹בספר ראשית חכמה] פמרקא; ת בראשי' החכ'. ²²שנה בשנה] פמקא; רת שנה שנה; כ בכל שנה. ²³מעלה*] רתכ; פמקא שעה. ²⁴המקרה שיקרה] פמקא; רת המקרים שיקרו. ²⁵בדברי] פמק; רת לדברי; א בבית. ²⁶מעלה] פמרקתא; כ חסר. ²⁷בכל] פמרקתא; כ לכל. ²⁸שנה] פמרקתא; א < ושנה. ²⁹סתכלו בדברי המלוכה, גם כך יתנו מעלה מעלה בכל שנה, גם] פמרקא; ת חסר. ³⁰בית] פמרקא; ת בבית. ³¹המולדות] פמרקא; ת המולות. ³²וכל] פמרקא; ת לכל. ³³רע] פמרקתא; ק רק. ³⁴מקומו] פמרקא; ת המקום. ³⁵לוי*] רתכ; פמקא להם. ³⁶שים*] רתכ; פמקא < לו. ³⁷והנה] פמקא; רתכ וככה.

20 (1) Now I give you a general rule: for any city affected by a conjunction of the upper planets, observe the change in their [the upper planets'] motion from triplicity to triplicity¹ until a conjunction of Saturn or Mars or Mercury (takes place). (2) If the lord (of the sign) of the city is in an unfortunate complexion, it [the lord] signifies misfortune for it [the city] in accordance with the nature of the planet and the houses over which it [the planet] exercises rulership affecting the city. (3) You can find this through the method of nativities in the following manner: put the sign of the city (as the sign of the ascendant). If the ruler of the sign of the city is in an unfortunate place, or (if it is) with Saturn and Mars, or (if it is) burnt by the Sun, pain will be added to pain until the city is destroyed and all its inhabitants perish. (4) If it is Mars, the city will be destroyed by the sword and wars. (5) If it is Saturn, by pestilence, famine, and disease. (6) If Mercury is in an unfortunate complexion, the city will be destroyed by dissension, contentious people, and baseless hatred. (7) Any city (in whose sign) Jupiter, Venus, or the Moon is located, if it [the sign of the city] is not in an unfortunate complexion, signifies good fortune for all its undertakings, but if they [Jupiter, Venus or the Moon] are burnt they do not have power.²

21 (1) You should observe the place of the benefic and malefic (planets)¹ at the beginning of the year of the conjunction and find the sign with the power of the dodecatemoria, as I have explained in the *Book of the Beginning of Wisdom*.² (2) From this you can know all good or bad fortune that will befall any city.³

22 (1) If you know the age of the city observe the terminal house, because when the sign of the ascendant reaches the place of a benefic or malefic planet, year after year (good fortune or misfortune) is shown.¹ (2) The Ancients assigned one year to each equal degree (in order) to know every incident that befalls the inhabitants of the city each year.²

23 (1) They observe its tenth place¹ (to determine) the affairs of the kingdom; they also assign one degree to one year and observe the terminal house using the method of the anniversary of the nativity, as I have explained in the *Book of Nativities*.² (2) Every year you should observe: if a malefic (planet) is in the tenth place, or in an unfortunate aspect, the king of the city will be harmed according to the nature of the planet, the nature of its location, and the houses over which it has lordship. (3) Proceed in this manner: put the tenth place as if it were the sign of the

אם היה בעל¹ הבית העשירי נשרף² או בממסך רע, יקרה רע למלך, ואם היה באחד³ היתדות מן⁴ הבית העשירי, אז יהיה רע גמור שימות המלך או יוסר ממלכותו;⁵ ואם היה כוכב טוב⁶ בבית העשירי, או⁷ במבט⁸ טוב⁹ עמו ובעל הבית במקום טוב, אז יהיה טוב למלך.

24 (1) ויאמר דורוניוס¹⁰ המלך: ¹¹ הסתכל לעולם אל מחברת המאורות או נכחם, ההוה קודם הכנס השמש במזל טלה. ¹² (2) וראה מי יביט אל מקום המחברת מכוכבים רעים או טובים, ועם מי התחבר¹³ הלבנה או תתן כחה ממבט, אי זה מבט שיהיה, בהפרדה מהשמש. (3) כי אם היה¹⁴ שבתאי, יקרו תחלואים רעים¹⁵ לבני אדם¹⁶ כפי מקום מזל שבתאי, ואם מאדים, מלחמות ומריבות. (4) על כן אמרו רבים ומנוסה הוא, כי אם היה מאדים תחת אור¹⁷ השמש בתחלת השנה, והוא מערבי, ישפך¹⁸ דם הרבה בעבור צאת הלבנה מאור השמש והוא עם אור מאדים.

25 (1) ולעולם הסתכל אל בעל המזל הצומח בשעת¹⁹ המחברת או הנכה, או הפקיד שהוא ממונה על המקום. (2) אם לא יביט בעל הבית אל המעלה הצומחת, ואם אין הפקיד מביט, קח בעל הצומח מאי זה מקום שיהיה. (3) ואם היה הכוכב בבית העשירי יהיה יוקר בחטה, וככה ביתד הראשון, ובשביעי²⁰ וברביעי²¹ פחות מהם. (4) ואם היה באחד²² מהבתים²³ שהם אחר היתדות, לא יוקר ולא זול, ואם בנופלים יהיה זול. (5) ואם בבית כבודו²⁴ יהיה²⁵ יוקר, ואם בקלונו זול. (6) ואם הוא מוסיף בחשבונו, והטעם שילך יותר ממהלכו²⁶ האמצעי, ישתף²⁷ המאורות עמו, כי אם היו שלשתם מוסיפים, יהיה יוקר. (7) והפך הדבר אם יחסרו בהליכתן.²⁸

¹ בעל* [רתכ; פמקא חסר. ² נשרף] פמרקא; ת > נפסד. ³ באחד] פמא; קרתכ באחת. ⁴ מן] פמקא; רתכ של. ⁵ ממלכותו* [רת; כ מהמלכות; פר ממשלתו; מקא מלכותו. ⁶ טוב] פמרתכא; ק חסר. ⁷ או] פמרקא; ת אם. ⁸ במבט* [מקרתכא; פ מבט. ⁹ טוב] פמקא; רתכ חסר. ¹⁰ דורוניוס] פמרתא; כ דוריאנוס; ק דוריוס. ¹¹ המלך] פמרקא; כ חסר. ¹² במזל טלה] פמרא; קתכ בטלה. ¹³ התחבר] פמקרתכ; א תתחבר. ¹⁴ היה] פמרקא; ת חסר. ¹⁵ רעים] פמקרתכ; א חסר. ¹⁶ אדם] פמקרתכ; א < רעים. ¹⁷ אור* [רתכ; פמקא חסר. ¹⁸ ישפך] פמרקא; תכ > כי. ¹⁹ בשעת] פמקרתכ; א בעת. ²⁰ ובשביעי] פמרקא; כ > ובבית. ²¹ וברביעי] פמרקא; כ > ובבית. ²² היה באחד* [רתכ; פמקא באחת. ²³ מהבתים] פמרקא; תכ הבתים. ²⁴ כבודו] פמקרתכא; ר כבוד. ²⁵ היה] פמקא; רתכ חסר. ²⁶ ממהלכו] פמרקא; ק מהלכו. ²⁷ ישתף* [רקתכא; פמ ישתף. ²⁸ בהליכתן] פמרק; תכא בהליכתם.

ascendant; now if the lord of the tenth place is burnt or it is in an unfortunate complexion, evil will befall the king; and if it [the lord] is in one of the cardines of the tenth place, utter misfortune will ensue—the king will die or be dethroned; but if a benefic planet is in the tenth place or if it [the planet] is in a fortunate aspect to it [the tenth place] and the lord of the place is in a fortunate place, the king will be fortunate.³

24 (1) Dorotheus the king said: always observe the conjunction of the luminaries or their opposition, whichever occurs ⟨last⟩ before the Sun enters Aries. (2) Find out which of the benefic or malefic planets aspects the place of the conjunction, and with which planet the Moon conjoins or gives its power¹ through an aspect, no matter which aspect, when it moves away from the Sun. (3) If it is Saturn, human beings will be afflicted by terrible illnesses, in accordance with the place of Saturn; and if it is Mars, wars and dissension ⟨will occur⟩.² (4) Therefore many said, and it has been proven by experience, that if Mars is under the rays of the Sun at the beginning of the year and is occidental, much blood will be shed because the Moon moved away from the rays of the Sun and it [the Sun] is with the rays of Mars.

25 (1) Always observe the lord of the sign of the ascendant at the hour of conjunction or opposition or the ruler that is the lord of the location. (2) If the lord of the house does not aspect the degree of the ascendant and if the ruler does not aspect ⟨it⟩, take the lord of the ascendant from any place you wish. (3) If the planet is in the tenth place, wheat will be expensive, and likewise in the first cardo; but if ⟨it is⟩ in the seventh or fourth ⟨place⟩, it [the price] will be less ⟨than if it were in the tenth or first place⟩. (4) If it is in one of the places that are after the cardines [places 2, 5, 8 and 11], ⟨the price⟩ will neither increase nor decrease; and if ⟨it is⟩ in ⟨one of⟩ the ⟨places⟩ falling ⟨from the cardines⟩ [places 3, 6, 9 and 12] ⟨it will be⟩ cheap. (5) If ⟨it is⟩ in the house of its exaltation ⟨prices⟩ will rise, and if in ⟨the house of⟩ its dejection ⟨prices⟩ will fall. (6) If it increases its number,¹ meaning that it moves more than the mean motion, the luminaries will be included with it, for if ⟨all⟩ three increase ⟨their number⟩ prices will rise. (7) The opposite occurs if they decrease their motion.²

26 (1) והנה אתן לך דרך שתדע אם הכוכב מוסיף או גורע. (2) הסתכל: אם היה הכוכב רחוק מהשמש פחות משתעים מעלות לפניו ולאחריו והוא מהכוכבים העליונים,¹ הוא מוסיף. (3) והשמש, בזה² המספר ממקום³ גבהותו, הוא חסר, כי הוא הפך הכוכבים, וככה הלבנה.

27 (1) והסתכל לעולם כי צדק יעשה זול ושבטאי יוקר. (2) ואם שניהם במזלות האש הם⁴ סימן יוקר, ואם במזלות הרוח פחות מזה, ואם במזלות המים או העפר⁵ יורו על זול, ואם האחד בבית האש והשני בבית העפר⁶ יורה דבר⁷ בינוני⁸.

28 (1) | ודרך אחרת: הסתכל מי הוא הממונה בתחילת השנה. (2) וככה תעשה: 290 הסתכל⁹ כמה כח¹⁰ יש לכוכב במקום השמש, והטעם¹¹ בתחלת טלה, ובמקום¹² הלבנה בתקופת השנה, ובמקום מחברת¹³ המאורות או הנכח, ההוה בתחלה,¹⁴ ובמקום המעלה הצומחת בתקופת השנה, ובמקום הגורל הטוב, הוא הנלקח לעולם מהמרחק שיש בין השמש ובין הלבנה, ויחל לספור כמספר העולה¹⁵ מהמעלה הצומחת, ותולדת השנה תהיה כתולדת הממונה. (3) יש לך¹⁶ לערב עמו המזל שהוא בו, והרביעית¹⁷ מפאת השמש ומפאת מעלה הצומחת, והכוכבים המתחברים עמו או המביטים אליו. (4) ודע אם הוא מזרחי או מערבי, כי כפי כן יראה כחו בחצי הראשון מן השנה או בחצי האחרון.

29 (1) ואמר¹⁸ משאללה¹⁹ בספר העולם²⁰ כי מקום מחברת המאורות יורה על השמן, כי כן נסה פעמים רבות ועלתה²¹ בידו. (2) ובעל מקום המחברת או הנכח, והטעם הממונה המביט, אם יוסיף או יחסר בחשבוננו כן יהיה²² יוקר או זול לשמן הזית.

30 (1) אמרו חכמי פרס כי שנות אלפרדאר הם חמש ושבעים²³. (2) והנה השמש תשמש²⁴ בתחלה²⁵ עשר שנים,²⁶ ואחריו הלבנה תשע שנים. (3) וערך שנות אלפרדאר

¹מהכוכבים העליונים] פמקא; רתכ מהעליונים. ²בוה] פמקתכא; ר זהו. ³ממקום] רתכ; פמקא חסר. ⁴הם] פמק; תכא הוא; ר חסר. ⁵או העפר*] רתכ; פמקא והעפר. ⁶העפר] פמרקתא; כ עפר. ⁷יורה דבר] פמקא; רתכ הדבר. ⁸בינוני*] מקרתכא; פ בינונית. ⁹הסתכל] פמרקתא; כ חסר. ¹⁰כח] פמרקתא; כ חסר. ¹¹והטעם] פמרקתא; כ והנו. ¹²ובמקום] פמרקא; ת ומקום. ¹³מחברת] פמקתכא; ר מחברות. ¹⁴בתחלה] פמרקתא; כ בהתחלה. ¹⁵העולה*] רתכ; פמקא העולם. ¹⁶לך] פמרקתא; כ חסר. ¹⁷והרביעית] פמרקא; ת הרביעית. ¹⁸ואמר] פתכא; רמק ויאמר. ¹⁹משאללה] פמקא; רת מאשא אללה. ²⁰בספר העולם*] רתכ; פמקא חסר. ²¹ועלתה] פקרתכא; מ ועלה. ²²כן יהיה] רתכ; רתכ; א חסר. ²³ושבעים] רפמקתא; כ < שנים. ²⁴תשמש] פמק; ת ישמש; א חסר. ²⁵בתחלה] פתכ; רמקא בתחלת. ²⁶עשר שנים*] רתכ; פמקא שנים עשר.

26 (1) Now I will give you a method to know whether a planet is increasing or decreasing ⟨its motion⟩. (2) Observe: if the planet is less than 90° before or after the Sun and it is one of the upper planets, it increases ⟨its number⟩. (3) At this number ⟨of degrees⟩ from the place of its apogee the Sun decreases ⟨its number⟩, because it is the opposite of the planets; the same applies to the Moon.¹

27 (1) You will always observe that Jupiter produces low prices and Saturn high prices. (2) If both are in the fiery signs they portend high prices, and if in the airy signs less than that, and if in the watery or earthy signs they portend low prices, and if one of them is in a fiery sign and the other in an earthy sign, it portends moderate ⟨prices⟩.¹

28 (1) Another approach: determine the lord at the beginning of the year. (2) Proceed thus: find out how much power the planet has in the place of the Sun, meaning at the beginning of Aries,¹ and in the place of the Moon at the revolution of the year, and in the place of the luminaries' conjunction or opposition, whichever happens last² ⟨before the Sun enters Aries⟩, and in the place of the degree of the ascendant at the revolution of the year, and in the place of the lot of fortune, which is always cast from the distance between the Sun and the Moon. Count the number that results from the degree of the ascendant:³ the nature of the year is as the nature of the lord.⁴ (3) You should associate with it the sign in which it [the lord] is, and the quadrant with respect to the Sun and with respect to the degree of the ascendant, and the planets that conjoin with it or aspect it. (4) Find out whether it is oriental or occidental, because in keeping with that its power will be felt in the first half of the year or in the second half.

29 (1) Māshā'allāh said in the *Book of the World*¹ that the place of the luminaries' conjunction gives an indication about ⟨olive⟩ oil, because he tested it often by experience and his thesis was verified. (2) The lord of the conjunction or opposition—meaning the lord that aspects ⟨this place⟩—signifies high prices or low prices for olive oil to the same extent that its number increases or decreases.^{2,3}

30 (1) The Persian scientists said that the *fardār* lasts 75 years. (2) Now the Sun rules first for 10 years and then the Moon for nine years. (3) The relative duration [number of the years] of the period during which

הכוכב הזה, אשר הוא כנגד בתי כבודם מתחלת נגה.¹ (4) ואחרי² כן³ ראש התלי שלש שנים.⁴ (5) ואחרי כן צדק שתיים עשרה שנה. (6) ואחרי כן כוכב חמה שלש עשרה שנה. (7) ואחרי כן שבתאי אחת עשרה שנה. (8) ואחרי כן הזנב שנתים. (9) ואחרי כן מאדים שבע שנים. (10) ואחרי כן נגה ח'⁵ שנים. (11) ואלה ע"ה שנים⁶ חוזרים חלילה.

31 (1) ואם תרצה לדעת למי כח השנה⁷ חסר משנות העולם בשנת ארבעת אלפים ותתק"ב, שהיא תחלת מחזור רנ"ט,⁸ י"א שנה, (2) ישארו ד' תת"צא.⁹ (3) והוצא הנשאר ע"ה ע"ה¹⁰ או¹¹ תדע מי הוא הממונה.¹²

32 (1) {לפי שארבעה אלפים ותתצ"א הם ס"ה פעמים ע"ה ועוד י"ז שנה, חבר עמהם עוד עשתי עשרה שנה ויהיו כ"ז שנה על מספר נגה בשנת ד' תתק"ב. (2) והיה הממונה צדק והיתה שנה שלישית לשמושו לדעת חכמי פרס. (3) ובספר אחר מצאנו שמוש חמה עשר שנים¹³ ושמוש נגה שמנה, והממונה על שנת תתק"ח מאדים, והיא שנה רביעית לו. (4) ואם כך שנת תתק"ב היתה שנה י"א לשמוש שבתאי. (5) על כן אני אומר כי הנכון שהוא רצה לומר חסר¹⁴ בשנת ד' אלפים תתק"ב עשתי עשר שנה משמוש שבתאי והוצא¹⁵ הנשאר ע"ה ע"ה ותמצא מי הוא הממונה על השנה אם השנים שעברו או השנים ...¹⁶}

33 (1) ולעולם יתחלקו שנות הממונה על שבעה (2) וישמש¹⁷ הממונה לבדו השביעית הראשונה, ואשר אחריו בערך הגלגלים, והטעם שהוא תחתון, ישתתף בשביעית השנית¹⁸ עם הממונה, וככה כל המשרתים.¹⁹

¹ ויערך שנות אלפרדאר הכוכב הזה אשר הוא כנגד בתי כבודם מתחלת נגה] פמקא; רת חסר. ² ואחרי] פמ; רכת ואחר. ³ [כן] פמקתא; כ כך. ⁴ שלש שנים] פמרכ; ת ב. ⁵ ח' ⁶ ע"ה פמקא ש. ⁷ שנים] * רת; פמקא שנה שנה. ⁸ רנ"ט] פמקא; רת חסר. ⁹ ישארו ד' תת"צא] פמק; רת חסר. ¹⁰ ע"ה] פמקא; רת חסר. ¹¹ או] פמקת; א חסר. ¹² ואם תרצה לדעת למי כח השנה חסר משנות העולם בשנת ד' אלפים ותתק"ב, שהיא תחלת מחזור רנ"ט, י"א שנה, ישארו ד' תת"צא, והוצא הנשאר ע"ה ע"ה או תדע מי הוא הממונה] * קרמתכא; פ ואם תרצה לדעת למי כח השנה והממונה מי הוא בניסן משנת חמשת אלפים ושבע עשרה, שהוא תחלת מחזור רס"ה לתקופות, דע שכוכב צדק הוא הממונה והשנה ההיא היא ראשונה לכחו. ¹³ עשר שנים] * קמ; א י"ב; פרת חסר. ¹⁴ חסר] * קמ; פרת חסר. ¹⁵ והוצא] * קמ; א והוא; פרת חסר. ¹⁶ לפי שארבעה אלפים ותתצ"א הם ס"ה פעמים ע"ה ועוד י"ז שנה, חבר עמהם עוד עשתי עשרה שנה ויהיו כ"ז שנה על מספר נגה בשנת ד' תתק"ב. והיה הממונה צדק והיתה שנה שלישית לשמושו לדעת חכמי פרס. ובספר אחר מצאנו שמוש חמה עשר שנים ושמוש נגה שמנה, והממונה על שנת תתק"ח מאדים, והיא שנה רביעית לו, ואם כך שנת תתק"ב היתה שנה י"א לשמוש שבתאי. על כן אני אומר כי הנכון שהוא רצה לומר חסר בשנת ד' אלפים תתק"ב עשתי עשר שנה משמוש שבתאי ע"ה ע"ה ותמצא מי הוא הממונה על השנה אם השנים שעברו או השנים] * קמא; פרת חסר. ¹⁷ וישמש] * קמתכא; ר ומשמש; פ וישתמש. ¹⁸ השנית] פרמתכא; ק השני. ¹⁹ המשרתים] * קרמתכא; פ < טעם חילוק שנות הממונה על שבעה שאם נחלק שתיים עשרה שנה שמשמש צדק לשבעה חלקים, יהיה כל חלק שנה ושמונה חדשים ועשרים יום, ובשביעית הראשונה ישמש הוא לבדו, ובחלק השני ישתתף עמו להיות ממונה על השנה מאדים, ובחלק השלישי ישמש עמו השמש, וברביעי נגה, ובחמישי כותב, ובששי לבנה, ובשביעי שבתאי. ועל זה הדרך תחלק כל שנות הממונה על השנה לשבעה חלקים כפי מה שהם. והחלק הראשון תתן לממונה על השנה ובשאר החלקים שתף הכוכבים עמו חלק אחר חלק וכוכב אחר כוכב ומתחיל מן הכוכב שגלגלו תחת גלגל הממונה, וכלם על סדרם.

each planet in turn rules is proportional to how far the houses of their exaltation is from the beginning of Venus.¹ (4) Next the Head of the Dragon ⟨rules for⟩ three years. (5) Next Jupiter ⟨rules for⟩ 12 years. (6) Next Mercury ⟨rules for⟩ 13 years. (7) Next Saturn ⟨rules for⟩ 11 years. (8) Next the Tail of the Dragon ⟨rules for⟩ two years. (9) Next Mars ⟨rules for⟩ seven years. (10) Next Venus ⟨rules for⟩ eight years. (11) This ⟨cycle of⟩ 75 years repeats over and over.²

31 (1) If you want to know which ⟨planet⟩ has power this year, subtract 11 years from the years of the world in the year 4902, which is the beginning of the 259th ⟨Metonic⟩ cycle.¹ (2) The remainder is 4891. (3) From this remainder cast out 75s to find the lord ⟨of the *fardār*⟩.²

32 (1) {Because 4891 is 65 times 75 plus 16 years, add another 11 years and you find that the year 4902 is 27 years more than the number of ⟨the period of⟩ Venus [i.e., 27 years more than 4874, when Venus completed its rule in the previous *fardār*]. (2) So the lord ⟨of the *fardār*⟩ is Jupiter, and this is the third year of its rule according to the Persian scientists.¹ (3) But in another book we found that the Sun rules for 10 years and Venus for eight years and that the lord ⟨of the *fardār*⟩ in the year ⟨4⟩908 is Mars and that this is its fourth year. (4) If so, 4902 was the eleventh year of Saturn's rule. (5) Therefore I say that what he intended to say is that in the year 4902 you should subtract ⟨the⟩ 11 years ⟨of⟩ the ⟨period of the⟩ rule of Saturn, and cast out 75s from the remainder, to find out the lord of the year, if the previous years or the years ...². }

33 (1) The years of the lord ⟨of the *fardār*⟩ are always divided into seven ⟨parts⟩. (2) The lord rules alone in the first seventh, and the planet that follows it in the order of the orbs, meaning the one below it, shares power in the second seventh with the lord ⟨of the *fardār*⟩, and likewise all the ⟨other⟩ planets.¹

34 (1) והנה יש לך להסתכל כי בגעת השנים אל מנוי¹ שבתאי, יורה על רעב² 891 ותחלואים³ רעים, ויותר בשנים שישתתף עמו מאדים, כי אז יהיו⁴ מלחמות⁵ ומריבות וינוסו בני אדם ממקום למקום.⁶ (2) והשנים שיורה עליהם צדק יהיה להם⁷ שלום ושובע והשקט וְרוּחַ⁸ רב, ואף כי בשנים שישתתף עמו נה, והשנים שישתתף עמו⁹ שבתאי או מאדים יחסר¹⁰ מעט מטובתו¹¹.

35 (1) ויש לך להסתכל אל מקום הממונה בתחלת השנה,¹² כי אם היה מהכוכבים המזיקים והוא במסך טוב יורה על טוב כפי תולדת הכוכבים¹³ המביטים, והפך הדבר אם יהיה¹⁴ הככב מהטובים והיה במסך רע. (2) ודע כי בהתמנות כוכב על השנה, אם טוב אם¹⁵ רע, יותר יראה כל¹⁶ מה שיורה עליו בכל מדינה שיש לכוכב¹⁷ שלטון עליה¹⁸ ביום הוסדה משאר¹⁹ המקומות. (3) גם יראה במדינה ששם הממונה, והוא דבר מנוסה,²⁰ גם בכל מקום שהוא המזל אחד²¹ היתדות.²²

36 (1) גם²³ אנשי הודו אמרו:²⁴ כשתרצה²⁵ לדעת המטר, ²⁶ בכל חדש וחדש²⁷ הסתכל אל מקום המחברת גם לנכח המאורות, מי הוא בעל המזל הצומח. (2) ואם יש²⁸ מבט²⁹ לכוכב עם בעל הבית השביעי, אז יקרא פתיחת השער. (3) וככה הם שבתאי עם שמש³⁰ או לבנה, וצדק³¹ עם³² כוכב חמה,³³ ונגה עם מאדים. (4) ושבתאי יורה על ענן³⁴ כבד ועבים.³⁵ (5) וצדק על אויר וך גם רוח. (6) ומאדים על אויר וך וחום חזק. (7) וככה השמש ונגה על גשם ומטר,³⁶ ואם היה שב לאחור והוא תחת אור השמש, אז יורה על גשם גדול.³⁷ (8) וככה שבתאי, אם היה שב לאחור³⁸ והוא בבית נקבה, והטעם המזל ככתוב³⁹ בספר ראשית⁴⁰ החכמה.⁴¹ (9) גם נגה יורה על גשם בהיותו ישר והוא⁴² עם השמש.

¹מנוי* [רמתקא; פ מלוי. ²רעב] פמקא; רתכ הרעב. ³ותחלואים] פרמקא; ת וחלואים. ⁴יהיו] פמתקא; ר ירבו. ⁵מלחמות] פרמקא; ת המלחמות. ⁶ממקום למקום] פמתקא; ר אל מקום אחר. ⁷להם] פמקא; רת חסר. ⁸רווח] פרמתק; א והוא. ⁹עמו] פרמקא; ת בימי. ¹⁰יחסר] פרמקא; ת תחסר. ¹¹מטובתו] פרמקא; ת ממלאכתו. ¹²השנה] פמקרתכ; א השנים. ¹³הכוכבים] פרמתקא; ק הקרובים. ¹⁴יהיה] פרמת; קא היה. ¹⁵אם] רפמת; קא ואם. ¹⁶כל*] רמתקא; פ על. ¹⁷לכוכב] פמתק; א לה. ¹⁸עליה] פמתק; א חסר. ¹⁹משאר*] רמתקא; פ ומשאר. ²⁰מנוסה*] תכ; ר > בדוק; פמקא חסר. ²¹אחד*] תכ, ר באחד; פמקא חסר. ²²גם יראה במדינה ששם הממונה והוא דבר מנוסה גם בכל מקום שהוא המזל באחד היתדות*] רתכ; פמקא חסר. ²³גם] פמק; רתכ על כן. ²⁴אנשי הודו אמרו] פמקא; רתכ נח. ²⁵כשתרצה] פמקא; רתכ כאשר שתרצה. ²⁶המטר*] רתכ; פמקא המולד. ²⁷חדש וחדש*] רת; כ חדש; פמקא שנה ושנה; ראה עולם א' § 49:3. ²⁸ואם יש] פמתקא; ר ויש. ²⁹מבט] פרמתקא; כ מביט. ³⁰שמש] פמקא; רתכ השמש. ³¹וצדק] פרקא; תמ עם צדק. ³²עם] פרתקא; מ אם; ק או. ³³חמה] פרמתקא; כ חסר. ³⁴ענו*] רמתק; פא ענין. ³⁵יעבים*] רמתקא; כ ושחור; פ ועב. ³⁶ומטר] פרמקא; ת גדול. ³⁷ואם היה שב לאחור והוא תחת אור השמש אז יורה על גשם גדול] פרמקא; ת חסר. ³⁸והוא תחת אור השמש אז יורה על גשם גדול. וככה שבתאי אם היה שב לאחור] פרמקא; כ חסר. ³⁹ככתוב] פרמתכ; קא חסר. ⁴⁰ראשית] פמקרתכ; א בראשית. ⁴¹החכמה] פרמתקא; כ חכמה. ⁴²והוא] פרמתקא; כ וגם בהיותו.

34 (1) Note that when the years ⟨of the *fordār*⟩ reach the portion of Saturn, it portends famine and serious illnesses, particularly in the years when Mars shares its power with it [Saturn], because there will be wars and dissension then and people will flee from place to place.¹ (2) ⟨In⟩ the years ruled by Jupiter they will enjoy peace, plenty, tranquility, and great profit, particularly when Venus participates with it, but in the years when Saturn or Mars participates with it, [Jupiter's] fortunate influence will be reduced slightly.²

35 (1) You should observe the place of the lord ⟨of the *fordār*⟩ at the beginning of the year, because if it is one of the malefic planets and it is in a fortunate complexion, it signifies good fortune according to the nature of the aspecting planets, but the opposite is the case if it is one of the benefic planets in an unfortunate complexion. (2) Know that when a planet is assigned to govern the year, whether ⟨the planet is⟩ benefic or malefic, anything signified by it will be felt more in any city over which the planet ruled on the day of its foundation than in other places. (3) It will also be felt in the city ⟨whose sign is the sign⟩ where the lord ⟨of the *fordār*⟩ is located (this has been tested by experience), as well as in any place where ⟨the sign of the city⟩ is the sign of one of its cardines.¹

36 (1) The Indian scientists also said:¹ if you want to know about rain, observe the place of the conjunction and the opposition of the luminaries each month and ⟨determine⟩ which ⟨planet⟩ is the lord of the sign of the ascendant.² (2) If the planet aspects the lord of the seventh place ⟨after it⟩, then ⟨this⟩ is called an “opening of the door.”³ (3) This is also the case for Saturn with the Sun⁴ or with the Moon, for Jupiter with Mercury, and for Venus with Mars. (4) Saturn portends thick cloud and darkness. (5) Jupiter ⟨portends⟩ clear air and wind. (6) Mars ⟨portends⟩ clear air and extreme heat. (7) Likewise the Sun and Venus ⟨portend⟩ heavy rain; if it [Venus] is retrograde and under the rays of the Sun, it portends heavy rain. (8) Likewise Saturn, if it is retrograde and in a feminine house, meaning a ⟨feminine⟩ sign, as written in the *Book of the Beginning of Wisdom*.⁵ (9) Venus, too, portends rain when it is direct ⟨in its motion⟩ and with the Sun.

- 37 (1) ויאמרו¹ חכמי הודו כי לעולם נסתכל² בהכנס השמש במזל מאזנים: אם יהיה³ נגה מזרחי מהשמש הגשמים תהיינה⁴ בתחלת השנה, ותחלתה ממאזנים לא ממזל טלה, ואם⁵ מערבי הגשמים יהיו⁶ בסוף השנה. (2) וכוכב חמה⁷ יורה על רוח והלבנה תורה⁸ על⁹ גשם ומטר; ואם יורה נגה¹⁰ על גשם¹¹ ומטר ויביט אליו שבתאי, אז יבא עם ענן כבד וחשך¹² ואפלה,¹³ ואם ממאדים¹⁴ יבא עם ברקים¹⁵ ואש יורדת מן השמים, ואם צדק או כוכב חמה יהיה עם רוח. (3) ויש לך להסתכל גם כן¹⁶ במזלות המים,¹⁷ כי מזלות המים¹⁸ יורו על מים, וככה דלי¹⁹ ואריה. (4) ויש במחנות הלבנה מה²⁰ שהם יבשות או לחות או בינוניות כאשר²¹ אפרש לך. והמזל שהוא בחלק הנקבות יורה על גשם יותר²² מהזכר.
- 38 (1) והנה הסתכל בכל²³ חדש בהתחבר המאורות או יום²⁴ רגע הנכח²⁵ אם הלבנה²⁶ תתן הכח, והטעם שתהיה מחוברת²⁶ עם כוכב או תביט אליו. (2) דע²⁷ מה היא²⁸ תולדת הכוכב, וככה²⁹ יהיה חצי החדש ויותר. (3) ביום שיתחבר עם אותו הכוכב,³⁰ אם היה מביט³¹ אליו בתחלה, הוא יום הגשם, או האויר הצח אם³² יהיה³³ באחת היתדות, ויהיה היתד³⁴ באחת יתדות המדינה. (4) אז³⁵ ספור כמה מעלות יש בין הלבנה ובין הכוכב שתתן הכח לו³⁶ בצאתה מן הנכח או מן המחברת,³⁷ וככה הם מספר ימים. (5) ואם היה ביתדות,³⁸ והיתד מהמתהפכים, פעמים תהיינה שעות.
- 39 (1) והנה הבט לעולם אם³⁹ יש פתיחת שער⁴⁰ כאשר⁴¹ הזכרתי לך: שיביט⁴² או יתחבר בעל מזל הצומח ברגע המחברת או הנכח אל הכוכב⁴³ שהוא בעל הבית השביעי.⁴⁴ (2) וכבר אמרתי לך שהיתד⁴⁵ העליון הוא החזק, גם כן היתד הראשון, גם אלה השנים מקומות יורו על מהירות והיתד העליון יותר, ואף כיה⁴⁶ אם⁴⁷ היה באחד מהמזלות⁴⁸ המתהפכים. (3) ואשר יורה על איחור הרבה הוא היתד הרביעי יותר
- ¹ויאמרו] פמקא; תכ ואמרו; ר אמרו. ²נסתכל*] רמתקא; פ הסתכל. ³יהיה] פמקא; רתכ היה. ⁴הגשמים תהיינה] פכמתקא; ר נח. ⁵ואם] פרמתקא; כ < נגה. ⁶הגשמים יהיו] פמקא; תכ יהיו הגשמים; ר תהיינה הגשמים. ⁷חמה] פרמתקא; כ חסר. ⁸תורה] פמקא; רתכ חסר. ⁹על*] רתכ; פמקא חסר. ¹⁰נגה] פמתקא; רכ חסר. ¹¹גשם] פמקא; רתכ חסר. ¹²וחשך] פרמתקא; כ וחשך. ¹³ואפלה] פרמקא; ת וערפל; כ חסר. ¹⁴ממאדים] פמקא; רתכ מאדים. ¹⁵ברקים] פמקרתכ; א ברק. ¹⁶כן] פמקא; רתכ חסר. ¹⁷המים] פמקא; רתכ חסר. ¹⁸כי מזלות המים] פרמתקא; ק חסר. ¹⁹דלי] פמקא; רת > מזל. ²⁰מה] פרמתקא; ק חסר. ²¹כאשר*] רתכ; פמקא כמו. ²²יותר] פרמקא; תכ חסר. ²³בכל] פמקא; רתכ לכל. ²⁴או יום*] רתכ; פמק או עם; א וגם. ²⁵רגע הנכח*] ר; פמתקא הנכח והרגע. ²⁶מחוברת] פתקא; רמ מחברת. ²⁷דע] פתקא; רמ ודע. ²⁸מה היא] פמתקא; ר מהו. ²⁹וככה] רמתקא; פ וכמה. ³⁰וככה יהיה חצי החדש ויותר. ביום שיתחבר עם אותו הכוכב] פמקרתכ; א חסר. ³¹אם היה מביט] פרמקא; תכ המביט. ³²אם] פמתקא; ר > והנה [מעל לטקסט]. ³³יהיה] פמקרתכ; א היה. ³⁴היתד] פמקא; רתכ > אותו. ³⁵אז] פרמקא; ת או. ³⁶לן] פמקרתכ; א לה. ³⁷מן הנכח או מן המחברת] פמקא; ת מהמחברת או הנכח; ר המחברת או הנכח; כ מהמחברת או עם הנכח. ³⁸היה ביתדות] פרמקכ; א הם ביתדות; ת היתדות. ³⁹אם] פרמתקא; ק חסר. ⁴⁰שער*] רמתקא; פ השער. ⁴¹כאשר*] רמתקא; פ אשר. ⁴²שיביט*] רמתקא; פ או שיביט. ⁴³אל הכוכב*] רמתקא; פ לכוכב. ⁴⁴השביעי] פרמקא; ת חסר. ⁴⁵שהיתד] פמקא; רתכ כי היתד. ⁴⁶ואף כיה*] רתכ; פ אף כי; מקא אף. ⁴⁷אם] פרמתקא; כ הוא שם. ⁴⁸באחד מהמזלות] פמקא; רת מהמזלות; כ המזלות.

37 (1) The Indian scientists said that we should always observe ⟨the moment⟩ when the Sun enters Libra: if Venus is oriental of the Sun the rains will come at the beginning of the year, and its [the year's] beginning is in Libra rather than in Aries; but if ⟨Venus⟩ is occidental ⟨of the Sun⟩ the rains will come at the end of the year.¹ (2) Mercury portends wind and the Moon portends heavy rain; if Venus indicates rain and Saturn aspects it, it will come with thick clouds and darkness; if ⟨the aspect is⟩ from Mars, it [rain] will come with lightning and fire descending from the sky; and if ⟨the aspect is from⟩ Jupiter or Mercury ⟨rain will come⟩ with wind.² (3) You should also observe the watery signs, because the watery signs signify water, and this applies to Aquarius and Leo.³ (4) Some of the mansions of the Moon are dry, others are moist, and ⟨others are⟩ intermediate, as I shall explain. A feminine sign gives a stronger indication about rain than a masculine ⟨sign⟩.⁴

38 (1) Every month, when the luminaries are in conjunction or on the day of the moment of opposition, find out whether the Moon gives power ⟨to a planet⟩, meaning that it is in conjunction with a planet or aspects it. (2) Determine the nature of the planet; the half of the month and even more will be like it.¹ (3) The day when it [the Moon] conjoins this planet, if it [the Moon] had aspected it [the planet] first, is a rainy day, but ⟨a day of⟩ clear air if it [the Moon] is in one of the cardines, on condition that this cardo is one of the cardines of the city. (4) Then count the number of degrees between the Moon and the planet to which the Moon gives its power when it leaves opposition or conjunction; this ⟨is equal to⟩ the number of days.² (5) But if it [the Moon] is in one of the cardines, and the cardo is one of the tropical ⟨signs⟩, sometimes ⟨this⟩ is ⟨the number of⟩ hours.

39 (1) So always observe whether there is an “opening of the door,” as I have mentioned to you: ⟨namely, when⟩ the lord of the sign of the ascendant at the moment of conjunction or opposition aspects or conjoins a planet that is the lord of the seventh ⟨subsequent⟩ place.¹ (2) I have already informed you that the upper cardo is the strongest, and also the first cardo, and that these two places portend swiftness, but the upper cardo even more, and particularly if it is one of the tropical signs. (3) The cardo that portends extreme slowness is the fourth one, even more

מהיתר השביעי,¹ ואף כי² אם היה באחד³ מהמזלות⁴ העומדים. (4) ואם היה בעל המזל⁵ הצומח⁶ ברגע המחברת או הנכח באחת היתדות, יעמוד מה שורה עליו עד חצי החדש, ויותר אם היה במזל עומד, גם כן אם היה המזל הצומח אחד⁷ מהמזלות העומדים. (5) ורבים אומרים כי אם היה גם⁸ כן⁹ הממונה במחברת ככה, יעמוד האויר עד סוף כל¹⁰ החדש. (6) ולא כן בנכח, כי כח המחברת גדול מכח הנכח. (7) ואל תשכח להסתכל אל¹¹ מפתחות הלבנה.

40 (1) ויש¹² גורל המטר¹³, שתסתכל בכל יום בעת זרוח השמש כמה מעלות יש בין השמש ובין שבתאי, ותוסיף זה המספר על מקום מעלות הלבנה בבקר. (2) והסתכל אנה¹⁴ יגיע המספר, ושם הגורל, והדין כפי משפט תולדת בעל¹⁵ הבית. (3) ויש לך לדעת¹⁶: אם הכוכב ההוא¹⁷ במזלות הצפוניים, יש לו כח רב¹⁸ יותר¹⁹ מאשר יהיה בדרומיים.²⁰ (4) וככה, אם היה²¹ רחבו שמאלי, יש לו כח יותר²² מאשר היה²³ באפודת הגלגל, ולהיותו באפודה טוב²⁴ מהיות²⁵ רחבו דרומי.

41 (1) ודע שהאויר ישתנה כפי השתנות הממונה על החדש, והטעם הממונה²⁶ על המעלה הצומחת ברגע המחברת או הנכח. (2) שאם היה בביתו ויצא לבית קלונו או מקלונו לביתו, והכלל מן המקום שיש לו בו²⁷ כח רב אל הפך²⁸ הדבר והפך זה.²⁹ (3) או³⁰ שיצא מאחת מן היתדות³¹ או יכנס³² בהם. (4) או היה³³ ישר בהליכתו וישוב לאחור, או היה שב³⁴ לאחור בתחלה והתישר³⁵ בהליכתו.³⁶ (5) או ישתנה מרחב השמש. (6) או היה³⁷ | עם מחברת כוכב³⁸ ויפרד ממנו, גם ככה משפט המבט. (7) או יתחבר עמו³⁹ כוכב. (8) או יביט אליו כוכב⁴⁰ שלא היה מחובר עמו ברגע המחברת או הנכח, או לא⁴¹ היה מביט אליו. (9) גם כן⁴² ישתנה בצאתו ממזל למזל אפילו שאין לו כח בשניהם, גם כן מגבול אל גבול ומפנים אל פנים ומתשיעית אל תשיעית אחרת. (10) וכל מה שהזכרתי לא תדין עד שתביט בתחלה⁴³ מי הוא הממונה בתחילת השנה,

¹השביעי*] רתכ; פמקא חסר (לאקונה). ²ואף כי*] רתכ; פמקא אף כי. ³באחד] פמקא; רת באחת. ⁴מהמזלות] פמקרא; ר המזלות. ⁵המזל] פמקא; ת חסר. ⁶הצומח] פמתקא; ר צומח. ⁷אחד] פמקא; רתכ חסר. ⁸גם] פמקא; תכ חסר. ⁹כן] פמתקא; כ חסר. ¹⁰כל] פמתקא; ר חסר. ¹¹להסתכל אל] פמקא; ת מהסתכל. ¹²ויש] פמתקא; כ < שם. ¹³המטר*] רתכ; פמקא חסר. ¹⁴אנה] פמקא; ת אל מה. ¹⁵בעל*] רתכ; פמקא בכל. ¹⁶לדעת] פמתק; כ להסתכל; א לדעתם. ¹⁷ההוא] פמקא; רתכ ההוה. ¹⁸כח רב] פמתקא; כ להסתכל. ¹⁹יותר] פמא; ק ביותר; רתכ חסר. ²⁰בדרומיים*] רתקא; פמהדרומיים. ²¹היה] פמתקא; כ חסר. ²²יותר] פמקא; רתכ חסר. ²³היה] פמת; רקא יהיה. ²⁴טוב*] רתכ; פמקא טובה. ²⁵מהיות*] רתקא; פמהיותו. ²⁶הממונה] פמתקא; כ > כי. ²⁷בו] פמקא; תא חסר. ²⁸הפך] פרתכ; מקא ההפך. ²⁹והפך זה] רתכ; פמקא חסר. ³⁰או] פמקרתכ; א חסר. ³¹מאחת מן היתדות] פמק; רתכ מאחד היתדות; א מן היתדות. ³²או יכנס*] רמתמא; פ ויכנס; כ או תכנס. ³³היה] פרתכ; מקא יהיה. ³⁴שב*] רמתקא; פ חסר. ³⁵והתישר*] מתא; פרתכ תתישר. ³⁶בהליכתו] פמתקא; ר הליכתו. ³⁷היה] פמקרתכ; א > אם. ³⁸כוכב] פמקרתכ; א חסר. ³⁹עמו*] רתכ; פמא אליו. ⁴⁰ויפרד ממנו, גם ככה משפט המבט, או יתחבר עמו כוכב, או יביט אליו כוכב] פמתקא; ק חסר. ⁴¹או לא] פמתכא; ר שלא; ק אם לא. ⁴²גם כן] פמקא; ת עם כי. ⁴³בתחלה] פרתקא; מ בתחלת.

than the seventh cardo, particularly if it is in one of the fixed signs.² (4) If the lord of the sign of the ascendant at the moment of conjunction or opposition is in one of the cardines, what it portends will last for up to half a month, and even more if it is in a fixed sign, as well as if the sign of the ascendant is one of the fixed signs. (5) Many say that if the lord of the conjunction, too, is in the same place [in one of the cardines], the air will not change until the end of all the month. (6) But this is not the case in opposition, because the power of a conjunction is greater than the power of an opposition. (7) Do not forget to observe the keys of the Moon.³

40 (1) There is also the lot of rain, (which you may cast if) you observe, when the Sun rises every day, how many degrees there are between the Sun and Saturn, and add this number to the degrees of the place of the Moon in the morning. (2) Find where this number (of degrees) reaches; that is where the lot is. The (corresponding astrological) judgment is according to the judgment related to the nature of the lord of the house [the sign] (where this lot comes out).¹ (3) Know that if this planet [Saturn] is in one of the northern signs it has more power than if it is in the southern (signs).² (4) Likewise, if its (ecliptical) latitude is northern, it has more power than if it is on the ecliptic, and if it is on the ecliptic it is better than if it has a southern latitude.³

41 (1) Know that the air changes with the alterations of the lord of the month, meaning the lord of the degree of the ascendant at the moment of conjunction or opposition. (2) (These are the alterations of the lord of the month:) When it is in its house (of exaltation) and moves to the house of its dejection or (moves) from the (house of) its dejection to its house (of exaltation); that is, in general, from a place where it has great power to the opposite, and vice versa. (3) When it moves away from one of the cardines or enters them. (4) When it switches from direct motion to retrograde, or when it is initially retrograde and switches to direct motion. (5) When (its) ecliptical latitude changes. (6) When it is in conjunction with a planet and separates from it; this is also the rule concerning the aspect. (7) When a planet conjoins it. (8) When it is in aspect to a planet that was not in conjunction with it at the moment of conjunction or opposition (of the luminaries) or did not aspect it (then). (9) It [the lord of the month] also alters when it moves from one sign to another sign even if it has no power in either of them, as well as (when it shifts) from term to term, from decan¹ to decan, and from ninth-part² to ninth-part.³ (10) You should not pronounce any judgment

about anything I have just mentioned before you determine the lord at the beginning of the year, before the Sun enters Aries. (11) Assign half of (the power of) the judgment to the lord, namely, the ruler of the place of the degree of the ascendant at the beginning of the year;⁴ also look at the (beginning of the other) three seasons,⁵ and then at the (beginning of) each month.

42 (1) Know that when Saturn rises in its eccentric circle¹ in the days of heat it generates cold, and when it descends (the cold) diminishes. (2) Mars generates heat when it rises in its eccentric circle in the days of heat, and in the days of cold (it generates) moisture.² (3) When the Moon conjoins Saturn and it is in a house of cold [i.e., in a cold sign] it portends cold, and if it conjoins Mars in a house of heat³ [i.e., in a hot sign] it portends heat.

43 (1) Always note the lord at the beginning of the year,¹ because this is the most important thing. (2) For the weather changes when its latitude changes, as when after being northern it returns to the ecliptic and vice versa, and the same judgment applies when it is southern (and returns to the ecliptic and vice versa). (3) Likewise, if it increases its motion and then decreases it, or vice versa. (4) The Indian scientists said that the same happens if it enters the mansions of rain or leaves them.²

44 (1) These are the mansions of rain according to the reckoning of India: *al-dabar'an*, *al-dir'a*, *al-jabha*, *al-şarfha*, *al-gařar*, *al-zub'anha*, *al-ikhlił*, *sa'd al-dhabiğ*, *al-farğ al-mukhar*.¹ (2) Six mansions are dry: *al-butayn*, *al-han'aha*, *al-řarf*, *al-qalb*, *sa'd al-akhbyiha*, and *al-farğ al-awwal*.² (3) There are also mansions of moistness: *al-haq'aha*, *al-sim'ak*, *sa'd al-su'ud*.³

45 (1) They also judge that there will be rain in a month when the (first) visibility of the Moon at the beginning of that month occurs in one of the mansions that portend rain. (2) The same rule applies to Venus if it is the lord of the month.¹ (3) You can compute the mansions from the place of the Sun, according to what I have shown you in the *Book of the Astrolabe*.² (4) Simply subtract 9° from the place of the Sun as you find it in the *Book of (Astronomical) Tables* to obtain the place of the Sun according to (the reckoning of) India, which is with respect to the constellations, as I explained in the *Book of Reasons*.³

46 (1) ורבים אומרים¹ כי בהיות נגה או ככב חמה חוזר לאחור במזל עקרב או גדי או דלי יורה על הגשם, ואף כי אם היו שניהם כך או² יהיה פקידות החדש לאחד מהם.

47 (1) וחכמי פרס אומרים: אם תכנס הלבנה במזל סרטן והשעה לשמש, או תכנס במזל בתולה בשעת נגה, או במזל קשת³ בשעת הלבנה | בעצמה, או מזל תאומים בשעת²⁹² כוכב חמה, או מזל שור בשעת מאדים, או אריה ומאזנים בשעת צדק, יורה על מטר.

48 (1) וחכמי הודו אמרו כי לעולם נסתכל⁴ בהכנס הלבנה אל תחלת מזל, מי הוא בעל השעה. (2) והטעם שיתחלק כל⁵ יום או לילה⁶ על י"ב חלקים, יהיה היום או הלילה ארוך או קצר, והולכים על דרך⁷ כ"צ'נ"ש⁸ ח"לם בלילות, ח"לם כ"צ'נ"ש⁹ בימים. (3) ולעולם ישתנה האויר כפי תולדת הכוכב. (4) רק אל תדין על¹⁰ תולדתו לבדו, אם¹¹ הוא מתחבר¹² עם אחר¹³ או מביט אליו. (5) וככה יש¹⁴ להסתכל אם הוא במקום שיש לו כח רב, כמו ביתו או¹⁵ בית כבודו או גבולו, ויותר¹⁷ מזה אם באחת¹⁸ היתדות¹⁹ המזל העולה²⁰ ברגע המחברת או הנכח מאותו²¹ החדש, ויותר מזה אם הוא באחד היתדות²² בכל²³ מדינה ומדינה. (6) ואם היה במזל המדינה עצמה²⁴ אז יהיה לו כח רב. (7) ואם²⁶ לא יביט אל מזל המדינה, עדות אותו הכוכב בעל השעה פסולה, ²⁷ אל²⁸ תאמן²⁹ בה³⁰ כלל. (8) וזה הדרך אשר אמרו אנשי³¹ הודו הוא הנכון.

49 (1) ולעולם יסתכלו חכמי פרס בהכנס השמש בתחלת³² מעלת עשרים ממזל עקרב, ³³ כי מאותו הזמן³⁴ יחלו המים להתגבר במעיינות ובבורות, ³⁵ כאשר נסו הקדמונים. (2) ויביטו אל מקום נגה והלבנה³⁶ ובעל המזל העולה באותו רגע, ³⁷ ומאלה ידינו על כל שנה, ³⁸ והטעם עד שוב השמש אל מעלת³⁹ עשרים מעקרב. (3) ואם היה⁴⁰ נגה ולבנה מזרחיים כנגד השמש, והטעם שיעלו במזרח טרם⁴¹ זרוח⁴² השמש, ויורו על מטר רב יהיה בחצי הראשון, ואם מערביים יורו על החצי האחרון. (4) ואם ביתד הראשון⁴³ כנגד המעלה הצומחת באותו רגע יהיה בחצי הראשון, וככה

¹אומרים] פמקא; רתכ אמרו. ²או*] רמקא; פ אמ; ת אז. ³והשעה לשמש, או תכנס במזל בתולה בשעת נגה, או במזל קשת] פמקרתכ; א חסר. ⁴נסתכל] פמתקא; ר תסתכל. ⁵כל] פרמתק; כא בכל. ⁶או לילה] פרמקא; תכ וליילה. ⁷דרך] פרמקא; ת חסר. ⁸כ"צ'נ"ש] פמתקא; ר כ"ש'נ"צ. ⁹כ"צ'נ"ש] פמתקא; ר כ"ש'נ"צ. ¹⁰על] פמכא; ר עד; ק אל; ת חסר. ¹¹אם] פמתקא; ר > רק. ¹²מתחבר] פרמקא; תכ יתחבר. ¹³אחר] פמקא; רת כוכב אחר; כ כוכב אחד. ¹⁴יש] פרמקא; תכ < לך. ¹⁵ביתו או] פמתא; כ כביתו או; ק בית או; ר חסר. ¹⁶גבולו] פמתק; א בית גבולו; ר גבול. ¹⁷יותר] פמקא; ת יותר; ר יותר. ¹⁸באחת] פמא; כ הוא באחד; ר באחד; ת הוא באחת; ק היא בחאת. ¹⁹היתדות] פמקא; רתכ יתדות. ²⁰העולה] פרמקא; ת חסר. ²¹מאותו] פמקא; רתכ של אותו. ²²היתדות] פרמתכא; ק < המזל. ²³בכל] פמ; קא מכל; רתכ של כל. ²⁴המדינה עצמה] פמא; תק המדינה בעצמה; כ מדינה עצמה; ר מדינה ומדינה בעצמה. ²⁵רב] רתכ; פקא לרב; מ לרוב. ²⁶ואם] פמתקא; ר > ומביט. ²⁷פסולה] פרמתכא; ק חסר. ²⁸אל] פרמתכא; ק ואל. ²⁹תאמן] פמתקא; ר תאמן. ³⁰בה] פמקרתכ; א בו. ³¹אשר אמרו אנשי] פק; רתכ שאמרו חכמי; א שאמרו אנשי. ³²בתחלת] פמקא; רתכ אל תחלת. ³³ממזל עקרב] רתכ; פמק ממזל סרטן; א ממעלות ממזל סרטן. ³⁴הזמן*] רמתקא; פ המזל. ³⁵ובבורות] פמכא; רתכ ובבארות. ³⁶והלבנה] פמקא; רת ולבנה. ³⁷רגע] פמקא; רתכ הרגע. ³⁸שנה] פמקרתכ; א שעה ושעה. ³⁹מעלת] פמקא; רת תחלת; כ < מעלה. ⁴⁰היה] רפמתכא; ק הי. ⁴¹טרם] פמקא; רתכ קודם. ⁴²זרוח] פמקרתכ; א > עלות. ⁴³הראשון] פמקרתכ; א האחרון.

46 (1) Many say that Venus and Mercury portend rain when they are retrograde in Scorpio, Capricorn, or Aquarius, particularly if both ⟨of them⟩ are there or one of them holds the rulership of the month.¹

47 (1) The Persian scientists say: rain is indicated if the Moon enters Scorpio in an hour governed by the Sun, or if it enters Virgo in an hour governed by Venus, or Sagittarius in an hour governed by the Moon, or Libra in an hour governed by Mercury, or Taurus in an hour governed by Mars, or Leo or Libra in an hour governed by Jupiter.¹

48 (1) The Indian scientists said that we should always find out which ⟨planet⟩ is the lord of the hour when the Moon enters the beginning of a sign. (2) The reason is that every day and night is divided into 12 parts, regardless of whether the day or night is long or short, in the order M⟨ercury⟩, J⟨upiter⟩, V⟨enus⟩, S⟨aturn⟩, S⟨un⟩, M⟨oon⟩, M⟨ars⟩ for the nights, and S⟨un⟩, M⟨oon⟩, M⟨ars⟩, M⟨ercury⟩, J⟨upiter⟩, V⟨enus⟩, S⟨aturn⟩ for the days.^{1,2} (3) The air always changes in accordance with the nature of the planet. (4) But you should not pronounce judgment based only on its nature if it conjoins another ⟨planet⟩ or aspects it. (5) So one should observe whether it is in a place where it has great power, such as in its house or the house of its exaltation or its term, particularly if it is in one of the cardines of the sign of the ascendant at the moment of conjunction or opposition that month, and even more so if it is in one of the cardines of any of the cities. (6) If it is in the sign of the city itself it will have great power. (7) But if it does not aspect the sign of the city, the testimony of the planet that is the lord of the hour is invalid and you should not trust it at all. (8) This method, expounded by the Indians, is the correct one.³

49 (1) The Persian scientists always observe ⟨the moment⟩ when the Sun enters Scorpio 20°, because the water of springs and wells begins rising at that time, as the Ancients verified by experience. (2) They observe the place of Venus, of the Moon, and of the lord of the sign of the ascendant at this moment, and from them they pronounce judgment for the entire year, meaning until the Sun returns to Scorpio 20°. (3) If Venus and the Moon are oriental of the Sun, meaning that they rise in the east before sunrise, they portend heavy rain in the first half ⟨of the year⟩, but if ⟨they are⟩ occidental ⟨the rain will be⟩ in the second half ⟨of the year⟩.¹ (4) If ⟨they are⟩ in the first cardo with respect to the degree of the ascendant at this moment, it [rainfall] will happen in the first half ⟨of the year⟩, and

ביתד¹ העליון, ואם בשנים היתדות האחרים יהיה² בחצי האחרון.³ (5) ואם נגה מזרחי והלבנה מערבית, הדבר יהיה⁴ למי שיש לו כח רב במקומו ובמקום המעלה⁵ הצומחת. (6) ולעולם⁶ הסתכל המחברות⁷ והמבטים⁸ והמעלות שיש להם כח ככה⁹ המחברת,¹⁰ והמחנות¹¹ והמרחב, ולא תדין על פי עד אחד.

50 (1) ודע כי כל שנה שתהיה הלבנה עם ככב רע¹² במחברת או במבט בתחלת השנה, שהוא מראש מזל¹³ טלה, או במחברת או הנכח,¹⁴ אי זה מהם שיהיה קודם הכנס¹⁵ השמש במזל טלה, וככה¹⁶ בהכנס השמש בשאר התקופות ובמחברת או הנכח, שהוא קרוב קודם הכנס¹⁷ השמש אל שאר התקופות, יורה¹⁸ על החלאים¹⁹ כפי תולדת הכוכב, וכאשר הוא²⁰ ערכו מפאת השמש, כי תשתנה | תולדתו²¹ מעט²² מפאת הגלגל²³ הגדול²³ הנקרא גלגל המוצק.

51 (1) ודע כי הלבנה תורה בכל שנה על כל אדם,²⁴ ויותר על כל²⁵ מי שאין²⁶ לו שם, והשמש על המלכים, וצדק על חכמי התורות והדינים,²⁷ ומאדים על אנשי המלחמה, ונגה על הגשמים, וכוכב חמה²⁸ על החכמים בתולדת²⁹ ובחשבון והסופרים.³⁰ (2) ולמאדים שותפות בחכמת הרפואות, ולשמש בחכמת המזלות.

52 (1) ושבתאי יורה על הזקנים והקדמונים, וצדק על כל מי שהוא בין³¹ חמישים עד ששים, ומאדים מארבעים עד חמישים,³² והשמש משלשים עד ארבעים, ונגה מעשרים ועד שלשים, וככב חמה מעשר עד עשרים, והלבנה על הילדים הקטנים עד עשר שנים.

53 (1) והנה כל ככב שיהיה חזק בתחלת השנה, יתחזק כל³³ מה שיורה עליו, והפך זה אם היה להפך. (2) וככה יתיקר כל מה שיורה עליו, כמו הזהב לשמש והעופרת לשבתאי. (3) והנה הכלל: כל דבר שהוא חמוץ בין עקרים וכל³⁴ דבר קר בעולם יורה עליו שבתאי, וכל דבר מר יורה עליו מאדים, וכל דבר מתוק יורה עליו³⁵ צדק,

¹ ביתד* רתכ; פמקא היתד. ² יהיה* רמתקא; פ יהיו. ³ האחרון] פרמתקא; ק הראשון. ⁴ יהיה] פמקא; רכ < רב; ת < הרב. ⁵ ובמקום המעלה] פמקא; ר ומקום מעלה; תכ ומקום המעלה. ⁶ ולעולם] פרמתקא; מ ומעולם. ⁷ המחברות*] רמקא; פ המעברות; ת במחברות. ⁸ והמבטים] פרמקא; ת והבתים. ⁹ ככח] פרמקא; ת וכח. ¹⁰ והמבטים והמעלות שיש להם כח, ככה המחברת] פרמתקא; כ חסר. ¹¹ והמחנות] פמתקא; רכ חסר. ¹² רע] רתכ; פמקא חסר. ¹³ מזל] פמקא; רתכ חסר. ¹⁴ הנכח] פמקא; רתכ < הקרוב. ¹⁵ הכנס] פרתקא; כ בהכנס; מ שיכנס. ¹⁶ וככה*] רתקא; פמ > וככה בהכנס השמש במזל טלה. ¹⁷ השמש בשאר התקופות ובמחברת או הנכח, שהוא קרוב קודם הכנס] פרמתקא; כ חסר. ¹⁸ יורה] פמקא; רתכ > אז. ¹⁹ החלאים] פמ; תק חלאים; א חליים; רכ החליים. ²⁰ הוא] פמקרתכ; א היה. ²¹ תולדתו] פרמתקא; כ חסר. ²² מעט] פמקא; רתכ < גם כן. ²³ הגלגל הגדול] פמק; א גלגלו הגדול; רת הגלגל הגבול; כ הגלגל. ²⁴ אדם] פתכ; רמקא האדם. ²⁵ כל] פרמק; תא חסר. ²⁶ שאין] פרמתקא; ק שיש. ²⁷ חכמי התורות והדינים] פרמתק; א אנשי התורות והדינים; כ הדינים וחכמי התורות. ²⁸ וכוכב חמה] פרמתקא; כ וכותב. ²⁹ בתולדת] פרמקא; ת בתוספת. ³⁰ והסופרים*] רתקא; פמ ובסופרים. ³¹ בין] פרמתקא; כ מן. ³² חמישים] פמתקא; ר > עד. ³³ כל] פרמתקא; כ על. ³⁴ וכל*] רתקא; פמ לכל. ³⁵ עליו] פרמתקא; ק חסר.

likewise in the upper cardo; but if ⟨they are⟩ in the other two cardines it will happen in the second half ⟨of the year⟩. (5) If Venus is oriental and the Moon is occidental, it will happen according to the planet that has the greater power in its place and in the degree of the ascendant. (6) Always observe the conjunctions and the aspects, as well as the degrees that have the same power as a conjunction, and the mansions and the latitude, and do not pronounce judgment on the basis of one testimony only.

50 (1) Know that any year that the Moon conjoins or aspects a malefic planet at the start of the year (which is when ⟨the Sun enters⟩ the beginning of Aries,) or at the last conjunction or opposition [with the Sun] before the Sun enters Aries, and likewise at the moment when the Sun enters the other seasons or at the last conjunction or opposition [with the Moon] before the Sun enters the other seasons—it portends diseases according to the nature of the planet and its ratio to the Sun, since its [the Sun's] nature changes slightly on account of the great circle, which is also called “circle of the center”^{1,2} [i.e. the eccentric circle].

51 (1) Know that every year the Moon gives an indication about everyone, and particularly about those who are not renowned; the Sun ⟨gives an indication⟩ about kings, Jupiter about jurists, Mars about warriors, Venus about women, and Mercury about natural scientists, mathematicians, and scribes.¹ (2) Mars has a share in the science of medicine and the Sun in astrology.²

52 (1) Saturn gives indications about the elderly, Jupiter about those between fifty and sixty years old, Mars between forty and fifty, the Sun between thirty and forty, Venus between twenty and thirty, Mercury between ten and twenty, and the Moon about little children up to ten years.¹

53 (1) So if a planet is strong at the beginning of the year, everything it signifies will be strengthened; and vice versa.¹ (2) Accordingly, anything it signifies will become more expensive, such as gold in the case of the Sun and lead in the case of Saturn. (3) This means, in general, that Saturn indicates every sour substance and everything in the world that is cold, Mars indicates things that are bitter, Jupiter indicates things that are sweet, Venus things that are rich and fat, the Moon indicates things

וכל דשן ושמן יורה עליו נגה, וכל מלוח¹ יורה עליו הירח, וכוכב חמה יורה על² מטעמים³ משונים כמו הורד וכל מורכב משני טעמים,⁴ והשמש תורה על כל עיקר חם וטעם⁵ כמו חריף ויש בו מעט מתיקות.

54 (1) וככה תדע כח אחד מהמשרתים מחמשה פנים. (2) האחד אם היה⁶ מהעליונים, שיהיה עולה במזרח קודם⁷ השמש, ואם מהשפלים, שישקע⁸ אחר השמש והוא יצא⁹ מתחת אור השמש. (3) והשני¹⁰ מפאת הממסך, כי אם היה עם ממסך כוכב טוב או רע¹¹ במחברת או במבט¹² תשתנה תולדתו. (4) והשלישי בהיותו¹³ באחד¹⁴ היתדות כנגד המעלה הצומחת. (5) והרביעי בהיותו¹⁵ בביתו או בבית כבודו¹⁶ או גבולו או שלישותו או בבית דומה לתולדתו, אם¹⁷ חם¹⁸ במזל חם, אם¹⁹ קר²⁰ במזל קר, אם²¹ זכר במזל זכר ואם נקבה במזל נקבה. (6) והחמשי בהיות רחבו שמאלי ויהיה נוסף בחשבון, והטעם שילך יותר ממהלכו²² האמצעי. (7) ורבים אמרו כי אם היה הכוכב במקום גבהותו אז טוב,²³ ואחרים אמרו²⁴ הפך הדבר. (8) ולפי דעתי שהגבהות יורה על כל דבר²⁵ נכבד, רק יהיה מעט, ואם היה בשפלות יורה דבר²⁶ רב, ²⁷ רק²⁸ יהיה נבזה, ואם במרובעים יהיה אמצעי.²⁹

ונשלם ספר העולם³⁰. שבח לאל העולם³¹

¹מלוח] פמקא; רתכ > טעם. ²על] פתקא; רמ עליו. ³מטעמים] פתקא; רמ המטעמים. ⁴טעמים] פתקא; כ מטעמים. ⁵וטעם פמקא; רתכ וטעמו. ⁶היה] פמקרתכ; א היו. ⁷קודם] פמקא; תכ חסר. ⁸שישקע] פמתכא; ק וישקע. ⁹יצא] פמתקא; ר יוצא. ¹⁰והשני] פמקכ; א והשני; ת ואשר. ¹¹או רע] פמקרתכ; א חסר. ¹²במבט] פמ; רתקא מבט. ¹³בהיותו] פמקא; ת בהיות; ר חסר. ¹⁴באחד] פרת; מקא באחת; כ חסר. ¹⁵היתדות כנגד המעלה הצומחת. והרביעי בהיותו] פמתקא; כ חסר. ¹⁶או בבית כבודו] פמקרתכ; א חסר. ¹⁷אם] פמקא; רתכ < הוא. ¹⁸חם] פמתקא; כ חסר. ¹⁹אם] פמקא; ת או; כ חסר. ²⁰קר] פמאקא; ר > הוא; כ > או. ²¹אם] פמק; רתכא ואם. ²²ממהלכו*] רמתקא; פ מהלכו. ²³טוב] פמא; רתקכ לו. ²⁴אמרו*] רתכא; פמק אומרים. ²⁵דבר] פמתקא; ר חסר. ²⁶דבר] פמתקא; כ > על כל. ²⁷רב] פמתקא; ר רע. ²⁸רק*] רמתקא; פ חסר. ²⁹אמצעי] פמתקא; כ > הדבר. ³⁰ונשלם ספר העולם*] רמקכ; א תם ונשלם ספר העולם; ת תם; פ חסר. ³¹שבח לאל העולם*] ר; מא תהלה לאל עליון. ברוך הוא לעולם; ק תהלה לאל; כ תהלה לאל עולם; פת חסר.

that are salty, Mercury indicates exotic flavors like the rose and anything composed of two flavors, and the Sun indicates every substance that is hot and has a pungent flavor with a bit of sweetness.²

54 (1) You can know in this manner how the power of each planet derives from five factors. (2) First if it is one of the upper planets, when it rises in the east before the Sun; and if it is of the lower planets, when it sets after the Sun and moves away from under the rays of the Sun. (3) Second, the complexion, because its nature changes if it is in a complexion with a benefic or a malefic planet, in conjunction or in aspect. (4) Third, when it is in one of the cardines with respect to the degree of the ascendant. (5) Fourth, when it is in its house or in the house of its exaltation or in its term or in its triplicity or in a house [sign] (whose nature) is akin to its nature, (namely,) if it is hot in a hot sign and if it is cold in a cold sign, and if it is masculine in a masculine sign and if it is feminine in a feminine sign. (6) Fifth, when its (ecliptical) latitude is northern and it increases its number, meaning that it moves faster than its mean motion.¹ (7) Many said that if the planet is at its place of apogee it is good (for its power), but others said the opposite. (8) In my opinion, (if a planet is at) apogee it bears a portent for things that are respectable, but to a small extent, and if it is at perigee it bears a portent for (things that are) disreputable, but to a great extent; and if it is in the quadrants (it bears a portent for) things in the middle.²

The *Book of the World* is completed, praise to the God of the World.

PART FOUR

NOTES TO THE SECOND VERSION
OF THE BOOK OF THE WORLD

§ 1

[1]₁: **Servants, Heb. משרתים**. This neologism, which Ibn Ezra employed frequently all through his writings, both scientific and nonscientific work, denotes the seven planets, and is translated as such throughout this volume. See Glossary, s.v. “planet”; Sela, 2003, pp. 129–130. Ibn Ezra found the word in Psalms 103:21, where he glossed it as referring to the seven planets: “ברכו, צבאי—הם צבא השמים העליונים, ומשרתיו הם השבע’ שהם” “בשבע’ מעונות.” (“Bless, his hosts—these are the host of the higher heavens, and his servants are the seven which are in seven orbs”) (comm. on Ps. 103:21, 1525). The message conveyed by the primary sense is that the seven planets are not self-sufficient astrological agents but work as *servants* of God to *do his pleasure* (Ps. 103:21).

[2]₁: **His close ... to all**. Two ideas related to medieval Aristotelian binary cosmology, fully endorsed by Ibn Ezra (see *Ṭe’amim* I, § 1.5:7, pp. 34–35; *Ṭe’amim* II, § 2.1:1–2, pp. 184–185; long. comm. Ex. 33:21, § 4:1 and note), underlie this passage. On the one hand, that the planets are “His close servants” reflects the perception that the planets, part of the eternal and immutable superlunary region, are hierarchically superior to the creatures of the mutable sublunary region and closer than they are to the supernal divine domain. On the other hand, that the planets “bear a resemblance to all” refers to the analogy, invoked by Ibn Ezra in his biblical commentaries (i.e., long comm. on Ex. 3:13), between the irregular planetary motions (a planet is now swift, now slow; now stationary, now retrograde) and the mutable existence of the creatures in the sublunary domain.

[3]₂: **Species, Heb. כללים, lit. principles**. This is an unusual meaning for כללים. Sometimes, however, Ibn Ezra does employ this Hebrew word as a synonym for מינים, which clearly denotes the concept of species. For this meaning, and for the idea that the fixity of the species depends on the fixed stars, see the commentary on Ecclesiastes: “ומה שנעשה הוא שייעשה—על הכללים שהם שמורים, כמין אדם ומין סוס ומין כל חי ומין כל צמח. ותולדות אלה—מתנועות העליונים; ואם העליונים עומדים—יעמדו הכללים שהם” “בתבנית מערכות הצבאות.” (“That which has been done is that which shall be done—⟨this refers to⟩ the general entities that endure, like the species of the human being, the species of the horse, and the species of animal and the species of each plant. The nature ⟨of these species⟩ depends on the motions of the upper ⟨bodies⟩, and if the upper ⟨bodies⟩ abide,

the species will abide, for they have the pattern of the configurations of the (celestial) hosts [i.e., of the constellations of the eighth orb]” (comm. on Eccl. 1:7). The same idea that the fixity of the species depends on the fixed stars is presented in the long comm. on Ex. 33:21, § 1:1 (below, pp. 272–273). Cf.: *וְיִחַכְמֵי לֵב דְּמוּ הַמִּינִים שֶׁהֵם הַכְּלָלִים שֶׁהֵם הַשְּׂמֹרִים, כִּי הַפְּרָטִים אוֹבְדִים. דְּמוּ אוֹתָם הַמִּינִים הַכְּלָלִים הַעוֹמְדִים לְצַל עֵץ עַל מִים רְצִיִּם תָּמִיד.* (“The philosophers compared the species to general entities that endure, whereas individuals perish. They compared these enduring generic species to the shadow of a tree cast on water that is flowing constantly.”) (long comm. on Ex. 3:13; see also long comm. on Gen. 2:2).

[4]2: **Uppermost orb, Hebrew: גִּלְגַּל הָעֲלִיּוֹן**. Here, as well as in ‘*Olam I*, § 17:7, *Reshit Hokhmah*, 1939, X, lxxv:15, 18 and elsewhere, the uppermost orb is identical with the eighth orb of the fixed stars. However, in other parts of his oeuvre (notably the comm. on Amos 5:8, long comm. on Ex. 20:13, *Ṭe’amim II*, § 1.2:5 [pp. 184–185], *Reshit Hokhmah* [1939, IX, lxxv:3], and elsewhere), Ibn Ezra sets the uppermost orb above the orb of the zodiacal signs and the fixed stars and makes it identical with the ninth orb, which transmits the daily motion to all the orbs below it. This duality mirrors the problematic cosmological status of the ninth and uppermost orb: because it is starless, it lacks the basic *raison d’être* of the other orbs. In *Ṭe’amim II* Ibn Ezra regards the existence of the ninth “uppermost” orb as logically compelling because of the slow motion of the orb of the fixed stars (*Ṭe’amim II*, § 1.2:4–6, pp. 183–185 [and notes on pp. 264–266]; Sela 2003, pp. 224–233).

§ 2

[1]1: **Judgment, Hebrew משפט**. This Hebrew neologism is used by Ibn Ezra throughout his work and by later Jewish thinkers in medieval Hebrew literature in two main senses: (a) the various manifestations of astrological influence, as if they were divine decrees working through the agency of the heavenly bodies; (b) the rules by which the astrologer can determine astrological influences. Like the Latin *iudicia* (employed by Ibn Ezra in his Latin writings), *משפט* is derived from the Arabic *aḥkām al nuḥkūm* (lit. judgments of the stars). But Ibn Ezra also identified a source in Psalm 19: *משפטי’—ידוע כי משפטי חכמת המזלות כפי*

מערכת המשרתים בערכם אל השמש, ויש משפטים בערכים מכחישים אלה לאלה
 “(Judgments of [the Lord]—It is known that the *judgments* of astrology are accord-
 ing to the configuration of the planets in relation to the Sun; because
 some ⟨astrological⟩ *judgments* are mutually contradictory, the experts
 in ⟨astrological⟩ *judgments* make mistakes; therefore it is written that
 the *judgments of the Lord* are true and righteous altogether”) (comm.
 on Ps. 19:10, 1525). For the usage of this term, see Sela, 2003, pp. 116–
 123.

[2]₁: **We know ... and verdict.** Corresponds to ‘*Olam* I, §2:1. See note
 there.

§ 3

[1]₂: **Nature, Hebrew תולדת.** This biblical neologism (Gen. 2:4 *et passim*)
 is defined by Ibn Ezra in the long comm. on Exodus 23:25 as “a power
 (*koah*) that protects the body and which man receives from Heaven.” The
 widespread use of *toledet* all through Ibn Ezra’s writing contrasts sharply
 with the complete absence of *ṭeva*’, borrowed from its Arabic cognate
ṭiva’a and widely used by Ibn Ezra’s contemporaries, such as Abraham
 Bar Ḥiyya, Maimonides, Judah Ibn Tibbon, and Samuel Ibn Tibbon. A
 cursory analysis of its occurrences in ‘*Olam* I and ‘*Olam* II suggests that
 Ibn Ezra construed *toledet* as meaning principally the physical qualities
 of the planets and the zodiacal signs. See Glossary, s.v. “nature” and
 related phrases. In other parts of Ibn Ezra’s work this neologism means
 nature and its diverse phenomena, such as the four elements and their
 qualities, the quintessence, weather, etc. For Ibn Ezra’s motives and the
 uses and meanings he gave to the term *toledet*, see Sela, 2003, pp. 130–
 137.

[2]_{1–4}: **But the great conjunction ... “small conjunction”.** Corresponds
 closely to ‘*Olam* I, §7:1–4, §8:1–4, §9:1–6, §10:1–2, where the standard
 tripartite form of the theory of conjunctionalism is presented. An abbrevi-
 ated version of this account is found in an unexpected place: the long
 comm. on Ex. 33:21 (§3:3–4, below, pp. 274–275).

§ 4

[1]1: **A conjunction ... 30 years.** Corresponds to ‘*Olam* I, § 27:1. See note there.

§ 5

[1]4: **During these fifteen days.** Refers to the fifteen days between the arrival of the Sun at Aries and the previous conjunction or opposition of the luminaries, whichever of them occurs first before the Sun enters Aries.

[2]4: **If the main conjunction ... conjunction or opposition.** Corresponds to ‘*Olam* I, § 20:1 and § 42:1, where a similar statement is ascribed to Māshā’allāh.

[3]5: **If it ... the upper planets.** Corresponds to ‘*Olam* I, § 20:3

[4]7: **If the conjunction ... season ⟨of the year⟩.** Corresponds to ‘*Olam* I, § 20:2.

[5]8: **Take half ... upper planets.** Corresponds to § 41:11, below.

[6]1–9: **Before I discuss ... opposition ⟨of the luminaries⟩.** As in ‘*Olam* I, § 20:1–6, this section considers three cases in which a conjunction of the upper planets may take place: (a) during the fifteen days between the arrival of the Sun at Aries and the previous conjunction or opposition of the luminaries, whichever of them is the last to occur before the arrival of the Sun enters Aries (§ 5.2–4 cf. ‘*Olam* I, § 20:1); (b) at the beginning of the other three seasons of the year: from Cancer to Libra, from Libra to Capricorn, or from Capricorn to Aries (§ 5.7 cf. ‘*Olam* I, § 20:2); (c) at the beginning of the other months of the year or after the corresponding opposition of the luminaries (§ 5.5 cf. ‘*Olam* I, § 20:3). At § 5:8 these three cases are alluded again, when reference is made to a tripartite division of the power of the judgment: one half of the power of the judgment is assigned to the lord of the revolution of the year, which corresponds to case (a); one-third is assigned to the lord of the sign that is ⟨ascending⟩ before the revolution of the season of the year, which corresponds to case (b); and one-sixth is assigned to the lord of the sign that is ascending at

the beginning of the month or in the middle of the month, before the conjunction of the upper planets, which corresponds to case (c). Once more, a similar tripartite division of the power of the judgment is made below, at § 41:11. This section corresponds to *Epitome totius astrologiae*: “Sed quocunque anno futura est coniunctio, sic iudicabis de ea. Considera coniunctionem vel oppositionem luminarium proxime antecedentem Solis ingressum in Arietem, & quae praecedit quartam anni in qua est coniunctio planetarum, item quae praecedit ipsam planetarum coniunctionem proxime, & in omnibus his tribus vel coniunctionibus vel oppositionibus, considera quomodo se habeat signum ascendens, & eius dominus, & gradus in quo est coniunctio, vel oppositio, & secundum eorum statum bonum vel malum, iudicabis statum tuae terrae usque ad aliam consimilem coniunctionem” (*Epitome*, 1548, Lib. I, cap. ii, sig. F2r).

§ 6

^[1]**2: If the occultation ... will be minor.** This tallies Ptolemy’s opinion (*Tetrabiblos*, 1980, II:7, p. 177) and corresponds closely to ‘*Olam* I, § 29:2. See note there.

§ 7

^[1]**3: Under the rays ... good or evil.** For this condition of the planet with respect to the Sun, and its related power, see below § 17:1,13 and note.

^[2]**1–3: Proceed as follows ... good or evil.** This passage examines some of the astrological factors that, according to Ptolemy, determine the quality of events predicted by eclipses. Here attention is focused on the two malefic planets, Saturn and Mars, as well as on Mercury, which changes its nature according to the planets associated with it. Corresponds to ‘*Olam* I, § 31:1. After an interruption, the discussion is continued in § 7:6, where consideration is given to Jupiter and Venus, the benefic planets, and this corresponds to ‘*Olam* I, § 31:2. Cf.: “The fourth heading concerns the quality of the predicted event, that is, whether it is productive of good or the opposite, and of what sort is its effect in either direction, in accordance with the peculiar character of the species. This is

apprehended from the nature of the activity of the planets which rule the dominant places and from their combination both with one another and with the places in which they happen to be” (*Tetrabiblos*, 1980, II:8, p. 177).

[³]4–5: **If these ⟨planets⟩ ... together with it.** This passage, which also follows Ptolemy’s chapter on eclipses, examines some of the astrological factors that determine which geographical location is affected by a solar or lunar eclipse, and particularly the “city whose sign is the place of the eclipse”. After an interruption, the account is resumed a few lines later, at §7:7–10. Corresponds to *Tetrabiblos*, 1980, II:5, pp. 163–165: “We are to judge of the first portion of the inquiry, which is regional, in the following manner: In the eclipses of sun and moon as they occur, particularly those more easily observed, we shall examine the region of the zodiac in which they take place, and the countries in familiarity with its triangles, and in similar fashion ascertain which of the cities, either from their horoscope at the time of their founding and the position of the luminaries at the time, or from the mid-heaven of the nativity of their then rulers, are sympathetic to the zodiacal sign of the eclipse. And in whatsoever countries or cities we discover a familiarity of this kind, we must suppose that same event will occur which applies, generally speaking, to all of them, particularly to those which bear a relation to the actual zodiacal sign of the eclipse and to those of them in which the eclipse, since it look place above the earth, was visible.”

[⁴]6: **If Jupiter or Venus ... eclipse takes place.** This passage resumes the account of the quality of events predicted by eclipses, begun in §7:1–3. See note there. Corresponds to ‘*Olam* I, §31:1–2.

[⁵]7–10: **But if ⟨they are⟩ ... domestic unrest.** This passage resumes the account of the geographical locations affected by a solar or lunar eclipse, begun in §7:4–5. See note there.

§8

[¹]1: **King Ptolemy, Hebrew תלמי המלך.** Ibn Ezra probably inherited the mythical King Ptolemy from Abū Ma’shar’s *Kitāb al-Madḥal*: “Post Alexandrum Macedonem Grecie Reges Egypto cclxxv annis imperasse narrantur, quorum x, continuo succedentes omnes uno Ptholomei no-

mine vocati sunt. Ex quibus unus ex Philadelphia ortus in Egypto regnans astronomie Librum Almagesti ionica lingua scripsit. Eidem nonnulli et Astrologie Tractatum Quatuor Partium ...” (*Kitāb al-Madḥal*, 1996, IV:9, viii, p. 56 [translation of Hermann de Carinthie]). Ibn Ezra in turn created a new mythical King Ptolemy who sponsored the translation of the Septuagint. See long comm. on Ex. 33:21 (§1:3, and note, below, pp. 272–273). For King Ptolemy in Ibn Ezra’s work, see Sela, 2003, pp. 296–305. Notice that ‘*Olam* II, *Mishpeṭei ha-Mazzalot*, and *Ṭe’amim* II on the one hand, and *Reshit Ḥokhmah* I, ‘*Olam* I and *Ṭe’amim* I on the other, diverge with regard to the Hebrew name of Claudius Ptolemy: in the first group Ptolemy is designated by the biblical name *Talmai* (2 Sam. 3:3, 1 Chron. 3:2, *et passim*), in the second, by the Arabic *Batalmiyūs*.

[2]¹: **King Ptolemy said ... until its end.** Depends on *Tetrabiblos*, 1980, II:6, p. 167 and corresponds to ‘*Olam* I, §30:4. See note there. A similar statement is confusingly ascribed to the Ancients in ‘*Olam* II, §10:1. See note there.

[3]^{2–3}: **Find the time ... half of it.** Corresponds to ‘*Olam* I, §30:5, where Ptolemy’s authority is again invoked. However, Ptolemy’s opinion about the moment of the eclipse that indicates the climax of the predicted event is stated not here but in the next paragraph. See below, §9:1 and note.

[4]⁴: **Others said ... come later.** Although the opinion of “others” is mentioned here, this statement corresponds to Ptolemy’s opinion: “The nature of the ... more important intensifications of the events, however, are deduced from the position of the place of the eclipse relative to the centres. For if the place of the eclipse falls on the eastern horizon, this signifies that ... its important intensifications lie in the first third of the entire period of its duration; if on the mid-heaven, in ... the middle third; if upon the western horizon, in ... the final third” (*Tetrabiblos*, 1980, II:6, p. 167).

§9

[1]¹: **King Ptolemy ... (luminaries’) opposition.** This passage incorporates two statements concerning lunar eclipses. The first—each hour of a lunar eclipse corresponds to one month in the predicted event—echoes

Ptolemy's opinion in *Tetrabiblos*, 1980, II:6, p. 167, and corresponds to 'Olam I, § 30:6. See note there. However, the second statement—that the midpoint of the duration of the lunar eclipse corresponds to the climax of the predicted event—does not tally with Ptolemy's opinion in this regard. A similar opinion about the climax of an event predicted by a solar eclipse, also ascribed to Ptolemy, is presented in 'Olam I, § 30:5 and 'Olam II, § 8:2–3. See notes there.

[2] **2:** *Tetrabiblos*, Hebrew: ספר הארבעה ראשים, *lit.* book of the four heads. In his astrological writings, Ibn Ezra assigns several different titles to Ptolemy's *Tetrabiblos*. In *Ṭe'amim* I and in *Sefer ha-Moladot* it is ספר הארבעה שערִים (*Ṭe'amim* I, § 1.4:5, pp. 32–33; *Moladot*, BNF 1056, f. 46b); but in *Ṭe'amim* II and in the current passage it is ספר הארבעה ראשים (*Ṭe'amim* II, § 5.5:1, pp. 228–229). Both titles mean “Book of the Four Parts”. In two Latin works ascribed to Ibn Ezra, *Liber de Rationibus Tabularum* and the Latin version of the book on the astrolabe, Ptolemy's work is designated *Liber 4 capitulorum* (*Liber de Rationibus Tabularum*, 1947, p. 97; *Astrolabio*, 1940, p. 23). These references to *Tetrabiblos* usually incorporate paraphrases, not word-by-word quotations, so we cannot know whether Ibn Ezra knew Ptolemy's work in Arabic translation or instead depended on some secondary source that cited it. *Tetrabiblos* was never translated into Hebrew.

[3] **2–8:** He said in *Tetrabiblos* ... after the eclipse. This passage, which explicitly invokes Ptolemy's authority, deals with how long after the eclipse the event portended by it begins. Corresponds to 'Olam I, § 30:1–3, where Ptolemy is also cited, and to § 8:4 above, where a similar assertion is credited to “other” astrologers. Cf. “The nature of the beginnings and of the more important intensifications of the events, however, are deduced from the position of the place of the eclipse relative to the centres. For if the place of the eclipse falls on the eastern horizon, this signifies that the beginning of the predicted event is in the first period of four months from the time of the eclipse and that its important intensifications lie in the first third of the entire period of its duration; if on the mid-heaven, in the second four months and the middle third; if upon the western horizon, in the third four months and the final third” (*Tetrabiblos*, 1980, II:6, p. 167).

§ 10

[¹]**1: The Ancients said ... means of proportions.** A similar statement is assigned to Ptolemy above, § 8:1; in ‘*Olam* I, § 30:4, Ibn Ezra makes the Ancients and Ptolemy agree about this issue. See note there.

§ 11

[¹]**1: From the revolution of every year.** This refers to a special horoscope cast every year, when the Sun enters Aries, to forecast world affairs during the next year. See above, p. 106, note on ‘*Olam* I, § 10:2, meaning (b) of the term “Revolution of the year.”

[²]**1–4: General affairs ... revolution of a new year.** A similar presentation of the hierarchical chronological overlap of the three types of Saturn-Jupiter conjunctions (so that their effect persists until a new conjunction of the same type recurs) may be found in other sources, notably in *Kitāb al-Qirānat wa-tahwīl as-sinīn* by ‘Umar b. al-Farrukhān al-Ṭabarī’s (fl. ca. 800) (quoted in *On Great Conjunctions*, 2000, I, “Sources and Doctrines,” pp. 585–586). See also ‘*Olam* I, § 32:7, on the application of the doctrine of the dodecatemoria in combination with the three types of Saturn-Jupiter conjunctions. However, the account of the historical and political impact of each of the three types of conjunctions, together with that of the annual revolution of the year, rarely occurs in other sources in such a concise, schematic and clear-cut fashion as in the current passage. See, i.e., Ibn Khaldun, *The Muqaddimah*, 3:52, and ‘Umar’s *Kitāb al-Qirānat*, according to which the middle conjunction indicates “what happens in religions, kingdoms and dynasties, and that there is innovated in the world a religion or a dynasty which did not exist (before)” (quoted in *On Great Conjunctions*, 2000, I, “Sources and Doctrines,” p. 586).

§ 12

[¹]**1: All the Ancients ... Mars (govern) Spain.** For Capricorn with Mercury as the lord of India, see ‘*Olam* I, § 37:1 and § 56:7; for Aries with Jupiter as the lord of Babylonia, see ‘*Olam* I, § 37:1. The other items do not have precise counterparts in other lists. For example, below, in § 13:1, Spain is governed by Mars with Sagittarius, according to Dorotheus.

§ 13

[1]¹: Dorotheus said ... Mars ⟨govern⟩ Spain. The two first items of this brief list correspond to ‘*Olam* I, § 37:1 and § 56:6, 9. See notes there.

§ 14

[1]¹: **But it has been ... took place.** Māshā’allāh is probably Ibn Ezra’s source for this information. For the horoscope of the nativity of Jesus Christ, dated March 14, 25 BCE, when Saturn and Jupiter conjoined in the sign of Leo, see *Astrological History of Māshā’allāh*, 1971, pp. 45–47. The same conjunction in Leo as heralding the birth of Jesus is mentioned in: “וּיֵשׁ בַּחֲלָק הַשֶּׁמֶשׁ הַנוֹצְרִים כִּי בְאֵרֵיהֶּ הִיתָה מַחְבֵּרַת שֶׁל הָעֲלִיּוֹנִים” (“The Christians are in the Sun’s portion, because the conjunction of the upper ⟨planets⟩ took place in Leo”) (*Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 78). Cf.: “וּבְחֲלָקָהּ מֵהַגּוֹיִים אֲדוֹם בְּעֵבֹר הַיּוֹת מְזוּלָם אֲרִיָּה, שֶׁהוּא בֵּיתָהּ” (“Of the nations, Edom is in its [the Sun’s] portion, because their sign is Leo, which is its house”) (*Te’amim* I, § 4.6:2, pp. 78–79). Notice that Ibn Ezra offers different information regarding the sign and planet governing Edom in ‘*Olam* I, § 37:1, § 56:5, and above, § 13:1.

[2]²: **Aquarius is the zodiacal sign of Israel.** Here Ibn Ezra juxtaposes this claim with the talmudic dictum “there is no mazzal (zodiacal sign) for Israel” (see next two notes). This is why Ibn Ezra says nothing here about some particular Saturn-Jupiter conjunction that portended the emergence of Judaism, in contrast to § 14:1 and § 14:6, where he states that the emergence of Christianity and Islam were announced by Saturn-Jupiter conjunctions in Leo and Scorpio. From similar statements elsewhere, however, it transpires that Aquarius is the zodiacal sign of Israel because it was a Saturn-Jupiter conjunction *in Aquarius* that took place before the departure of the Israelites from Egypt or that portended that the Jewish nation should remain in exile. See, notably, long comm. on Ex. 33:21 (§ 6:2–4, below, pp. 278–279); long comm. on Ex. 6:7, 32:1; first comm. on Esth. 3:7; *Nativitatibus*, 1484, sig. c1^v: “Sciendum etiam quod adunatio Iovis et Saturni fuit in Aquario ante exitum Iudeorum de Egypto, eorundem adunatio fuit in Leone ante Christi nativitatem, eorundem vero adunatio fuit in Scorpione ante nativitatem Machometi”; *Nativitatum*, Erfurt, f. 53b: “Et debes scire stellam cuiuslibet gentis et signum eius. Signum de Israel Aquarius. Signum Sarrachenorum Scorpio signum

Christianorum Leo.” Ibn Ezra also claims that “(Saturn is in charge) of the Jews because their sign is Aquarius, which is its [Saturn’s] planetary house” (*Te’amim* I, § 4.2:2, pp. 72–71). For the connection between Saturn, Aquarius, the Saturn-Jupiter conjunctions, and the Jews, Ibn Ezra seems to have drawn on the doctrine of the *dawr*, a cycle of 360 years ruled by a planet and a sign, which was further divided into four quarters, on the analogy of the solar year. Ibn Ezra refers to the *dawr* in ‘*Olam* I, § 56:15 and § 58:1–3 (see notes there). In an astrological history still in manuscript—one of the fragments from which Abū Ma’shar’s *Kitāb al-Ulūf* has been reconstructed—there is a résumé of an astrological history based on a sequence of cycles of 360 years jointly ruled by a sign and a planet. The eighth cycle in this sequence is referred to as the period in which Moses appeared and is said to have been ruled by Aquarius and Saturn (*Kitāb al-Ulūf*, 1968, 69). For the claim that Saturn governs the Jews, see above, pp. 35–36.

[3]2: *Mazzal*. This term, in the plural, appears in 2 Kings 23:5, where it seems to refer to the planets other than the Sun and the Moon. In B Shabbat 156a, too, *mazzal* means a planet. *Mazzal* undoubtedly means planet in Genesis Rabbah 10:4, and this is how Maimonides understood the term in *Guide of the Perplexed* II, 10. A scrutiny of the uses of *mazzal* in the transition from Antiquity to the Middle Ages suggests that it gradually came to mean the twelve zodiacal constellations or signs, when used in the plural, and one of these twelve, when used in the singular. This process is already visible in the Babylonian Talmud (B Berakot 32b) and in some midrashim (Genesis Rabbah 100:9). It is evident in the *Baraita de-Shemu’el* and the *Baraita de-Mazzalot* and dominant after the twelfth century, with the creation of a new Hebrew corpus of astronomical and astrological works. Ibn Ezra employs this term very frequently to denote the concept of zodiacal sign, in multiple collocations. See Glossary, s.v. “sign.”

[4]2: **There is no *mazzal* for Israel.** This is a quotation from B Shabbat 156a, which reports an astrological discussion between R. Ḥanina and R. Joḥanan (ca. 180–ca. 279). R. Ḥanina holds that a *mazzal* gives wisdom and wealth (מזל מחכים מזל מעשיר) and that even Israel stands under the sway of a *mazzal* (ויש מזל לישראל). R. Joḥanan, the founder of the academy at Tiberias, tersely retorts that “there is no *mazzal* for Israel” (אין מזל לישראל); that is, Israel is immune to astrological influence. The remainder of the talmudic discussion develops R. Joḥanan’s opinion. The

main message is that even though “there is no *mazzal* for Israel,” Jews are not automatically protected against the decrees of the stars. Rather, astrological influence may be counteracted by good deeds, that is, by conduct that is morally impeccable according to rabbinic standards. In a joint responsum, Sherira Gaon (ca. 900–ca. 1000), the head of the talmudic academy in Pumbeditha, and his son Hai Gaon (939–1038) interpreted the dispute between R. Ḥanina and R. Joḥanan as referring to two groups of astrologers, endorsing respectively a “hard” and a “soft” version of astrology (*Responsa of the Geonim*, 1887, pp. 206–207). In the closing years of the twelfth century, a substantial part of this responsum was incorporated into the queries on astrology sent from southern France to Maimonides in Egypt, which led him to write his *Letter on Astrology* (see *Queries on Astrology*, 2004, pp. 98–101). In the twelfth century, Abraham Bar Ḥiyya (ca. 1065–ca. 1140), in the introduction to the astrological history incorporated into the fifth chapter of his *Megillat ha-megalleh* (The revelator’s scroll), explained the dictum “there is no *mazzal* for Israel” to mean that whereas every other nation has a specific zodiacal sign and a specific planet responsible for of it, the Jewish nation does not (*Megilat haMegaleh*, 1924, 115); this, however, did not keep him from explicating the history of Israel from Moses to the destruction of the Second Temple on the basis of the Saturn-Jupiter conjunctions that took place in this period. In Ibn Ezra’s interpretation, the talmudic dictum encapsulates one side of the Jews’ dual status vis-à-vis the stars (see § 14:2–5 and note), namely, that when they keep the Torah they are immune to astrological influence. Ibn Ezra also conveyed this idea in the long comm. on Ex. 33:21 (§ 6:2–3, below, pp. 278–279); long comm. on Ex. 6:3; *Yesod Mora*, 2007, p. 144.

[5]2–5: **Aquarius is ... all the other nations.** In this passage Ibn Ezra conveys his view that the Jews have a dual astrological status: on the one hand, when they keep the Torah, as in the case of the circumstances associated with their exodus from Egypt, they may escape collectively the decrees of the stars; on the other hand, if Israel does not keep the Torah, they are regarded the same as all the other nations (which seems to be the dominant state of affairs), such that “Aquarius rules over Israel” or a mighty Saturn-Jupiter conjunction in Aquarius determined that they would remain in exile. He makes an almost identical statement in his long comm. on Ex. 33:21 (§ 6:3–4, pp. 278–279 and notes). See also a rather different view of this dual astrological status in his commentary on Deut. 4:19: “דבר מנוסה הוא, כי יש לכל עם ועם כוכב ידוע ומזל, גם כן לכל עיר ועיר. 4:19:”

והשם שם לישראל מעלה גדולה—להיות השם יועצם, ולא כוכב, והנה ישראל נחלת
 “השם” (“It is known by experience that each and every nation has a specific
 planet and zodiacal sign, and so too each and every city. God has granted
 Israel a most-favored status, in that He determines their future, and not
 a star. Thus Israel is the portion of God.”)

[6]6: **The conjunction ... sign of Scorpio.** Ibn Ezra offers more details
 about this conjunction in *Te'amim* I, § 4.6:2, pp. 78–79: “זמהגויים מי שהוא
 על תורת ישמעאל בעבור היות מזלם עקרב בגבול נגה, והיה שם בהתחברות שבתאי
 עם צדק” (“of the nations, (Venus is in charge of) those who (follow) the
 Muslim law, because their sign is Scorpio in the term of Venus, and it
 [i.e., Venus] was there when the conjunction of Saturn and Jupiter took
 place”). For the conjunction and the corresponding horoscope indicating
 the religion of Islam, see *On Great Conjunctions*, 2000, I, § 8.2:4, pp. 493–
 496; *Astrological History of Māshā'allāh*, 1971, pp. 48–50.

§ 15

[1]1: **Know that ... it was founded.** This doctrine is mentioned by Ptol-
 emy: “... in the case of metropolitan cities, those regions of the zodiac
 are most sympathetic through which the sun and moon, and of the
 centres especially the horoscope, were passing at the first founding of the
 city, as in a nativity” (*Tetrabiblos*, 1980, II:3, p. 161); “In similar fashion
 ascertain which of the cities, either from their horoscope at the time of
 their founding and the position of the luminaries at the time, or from
 the mid-heaven of the nativity of their then rulers, are sympathetic to the
 zodiacal sign of the eclipse” (ibid. II:5, p. 163). See also Bouché-Leclercq,
 1899, pp. 368–371.

[2]2–25: **There are cities ... in Jupiter's term.** Corresponds, sometimes
 closely, to *Olam* I, § 38:1–24. See Appendix G. The personal touch for
 Pisa and Lucca (§ 15:24–25: “Pisa, some say Pisces, but according to what
 I have verified by experience its sign is Aquarius 6°. Lucca, according to
 what I have verified by experience several times its sign is Cancer, but
 in Jupiter's term”) strongly suggests that Ibn Ezra himself made obser-
 vations to determine the signs of these cities. We have abundant infor-
 mation about Ibn Ezra's sojourn in the city of Lucca; this passage allows
 us to establish that Ibn Ezra lived, too, for a time in Pisa, composing
 there one of the versions of *Liber de Rationibus Tabularum* (Sela and

Freudenthal, 2006, pp. 18–20, 27–31). The order in which Rome, Pisa and Lucca are mentioned in this list corresponds to what we know about Ibn Ezra's travels after he left Spain. Surprisingly, *Tractatus pluviarum* and *Epitome totius astrologiae*, two closely interconnected treatises ascribed to John of Seville, offer very similar information for the signs of Rome, Pisa, and Lucca, including reference to an observation made to determine the sign of Pisa: “Leo signum Rome. Dixerunt etiam Pise signum esse Piscem, experimento autem .2. gradus Aquarii, Luce vero Cancrum” (*Tractatus pluviarum*, 54–55; ed. Burnett, p. 246); “Pisae signum esse Piscis, experimento autem est secundus gradus Aquarii” (*Epitome*, 1548, Lib. I, cap. viii, sig. G4r). The Latin introduction to astrology, *Epitome totius astrologiae*, dated at least in part 1142, is ascribed to John of Seville, but has been found to have striking correspondences with various parts of Ibn Ezra's astrological corpus (Smithuis, 2004, especially chapter 3; *Tractatus pluviarum*, ed. Burnett, pp. 236–238).

§ 16

[1]3: **Exaltation**, Hebrew כבוד, *lit. honor*. A neologism by Ibn Ezra, a calque from the Arabic *sharaf*. Ibn Ezra explicates the term in *Ṭe'amim* I, § 2.16:1–14 (pp. 54–57) and *Ṭe'amim* II, §§ 2.7:1–14 (pp. 199–201). See: *Kitāb al-Madḥal*, 1996, V:5–7, v, pp. 187–196; *Abbreviation*, 1994, pp. 15–23; *Kitāb al-Tafḥīm*, 1934, § 443, p. 258; Al-Qabīṣī, 2004, I:15, p. 25. See Glossary, s.v. “exaltation” and related collocations.

[2]2–3: **You may find ... one** ⟨portion of power⟩. To determine which planet is the most powerful or the ruler (פקיד, תקיף) in some zodiacal location, powers, or portions of power, are assigned to the planets according to the precedence of their dignities (house, exaltation, triplicity, term, decans) in or with respect to this zodiacal location. See, for instance, *Reshit Hokhmah*, 1939, I, viii:12–15: “וּלְמִשְׁרָתִים מְמַשְׁלֵת בְּגוּלָה: יֵשׁ מְמַשְׁלֵת בֵּית, וּמְמַשְׁלֵת כְּבוֹד, וּמְמַשְׁלֵת שְׁלִישוֹת, וּמְמַשְׁלֵת גְּבוּל, וּמְמַשְׁלֵת פְּנִים, וּמְמַשְׁלֵת הַבַּיִת חֲמֵשָׁה כְּחוֹת, וּמְמַשְׁלֵת הַכְּבוֹד אַרְבַּעַה, וְהַשְּׁלִישוֹת שְׁלֹשָׁה, וְהַגְּבוּל שְׁנַיִם, וְהַפְּנִים אֶחָד.” (“The planets are assigned lordship over the orb: there is lordship over the ⟨planetary⟩ house, lordship over ⟨the house of⟩ exaltation, lordship over the triplicity, lordship over the term, and lordship over the decan. Lordship over the ⟨planetary⟩ house has five ⟨portions of⟩ power, lordship over ⟨the house of⟩ exaltation has four ⟨portions of⟩ power, ⟨lordship over⟩ the triplicity has three, ⟨lordship over⟩ the term

has two, and ⟨lordship over⟩ the decan has one ⟨portion of power⟩”). For similar statements see: *Mishpeṭei ha-Mazzalot* (Schoenberg 57, f. 80); *Moladot* (BNF 1056, f. 48a); *Kitāb al-Tafhīm* (1934, §495, pp. 307–498); *Tetrabiblos* (1980, III:2, pp. 232–233); Al-Qabiṣī, 2004, I:22, p. 33; *Epitome* (1548, Lib. I, cap. ii, sig. F2r). See also ‘*Olam* I, §33:1 and note.

[³]_{1–4}: **Now I give ... in the sixth, one.** An almost identical scale of powers, in a similar context, is offered in *Epitome*, 1548, Lib. I, cap. ii, sig. F2r: “Posse autem seu virtutes planetarum sic distinguuntur. Dominus domus quincque virtutes habet, dominus honoris 4, dominus termini tres, dominus triplicitatis duas, dominus faciei unam. Dominus autem ascendentis habet virtutes duodecim, dominus decimae habet undecim, dominus septimae habet decem, dominus quartae habet novem, dominus undecimae habet octo, dominus quintae septem, dominus nonae habet sex, dominus tertiae habet quinque, dominus secundae habet quatuor, dominus octavae habet tres, dominus 12 habet duas, dominus sextae habet unam.”

§ 17

[¹]_{1–17}: **When Saturn ... great power.** Ibn Ezra devoted the sixth chapter of *Reshit Hokhmah* I and a section of *Mishpeṭei ha-Mazzalot* to an exposition of the various conditions in which a planet, after being in conjunction with the Sun, gradually moves away from it and then approaches it until it again conjoins the Sun. In this process the planet’s power gradually waxes and wanes. For the upper planets, see *Reshit Hokhmah*, 1939, VI, liv:19–lv:23, which follows closely *Kitāb al-Madḥal*, 1996, VII:2, v, pp. 276–277, and *Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 74. For the lower planets see *Reshit Hokhmah*, 1939, VI, lv:24–lvi:9 and *Mishpeṭei ha-Mazzalot*, Schoenberg 57, ff. 75–76. See also *Epitome*, 1548, xxiii, sig. D3r–D4v. Thus, according to *Reshit Hokhmah*, Saturn and Jupiter are “burnt” (נשרפים) or in the “domain of burning” (גבול השרפה) if they are between 16′ and 6° away from the Sun; Mars, if between 16′ and 10°; and Venus and Mercury, if they are between 16′ and 7°. Saturn and Jupiter are said to be “under the rays of the Sun” (תחת אור השמש) if they are between 6° and 15° away from the Sun; Mars, if between 10° and 18°; and Venus and Mercury, if they are between 7° and 12° (1939, VI, liv:19–lv:5 [*Mishpeṭei ha-Mazzalot* gives slightly different values]). As for the

planets' powers in these conditions: ;ובהיות הכוכב נשרף אין לו כח כלל; ובצאתו מגבול השריפה והוא תחת האור אז תשוב הכח אליו מעט, וכל מה שיהיה רחוק הוא יותר טוב" ("When a planet is burnt it has no power, and when it leaves the domain of burning and is under the rays (of the Sun), it regains its power; and the further away the better") (ibid., VI, lv:5–8). The stations are those parts of a planet's orbit where it appears to stand still for a while before changing its course (from direct to retrograde or vice versa). The "first station" is where a direct planet becomes retrograde, and the "second station" is where a retrograde planet becomes direct.

Neither *Reshit Hokhmah* I nor *Mishpetei ha-Mazzalot* assign "portions of power" to these conditions, as the present passage does. But an almost identical Latin version of the quantification of the planets' powers in their conditions with respect to the Sun may be found in *Epitome totius astrologiae*, in a section that immediately follows what is virtually a Latin rendering of the previous passage in 'Olam II (see above, § 16:1–4 and note): "Porro Saturnus, Jupiter, Mars distantes a luce Solis, usque ad triginta gradus orientales, habent duodecim virtutes, ab inde usque ad sexaginta undecim, usque ad nonaginta decem, usque ad primam stationem novem, stando in secunda statione habent octo, deinde usque ad triginta gradus septem, inde usque ad sexaginta gradus sex, in prima statione quincque, inde usque ad triginta gradus quatuor, inde usque ad sexaginta tres, usque ad oppositionem Solis duas, hinc venientes ad combustionem unam tantum habent. Venus et Mercurius cum separantur a Sole, et sunt occidentales, fortes sunt, ut praedicti tres superiores orientales, et cum separantur a luce Solis, et sunt retrogradi, sunt tales, ut praedicti oppositi soli" (*Epitome*, 1548, Lib. I, cap. ii, sig. F2v).

§ 18

[1] **1–13: The moon has 12 keys ... opposition to the Sun.** Corresponds to 'Olam I, § 48:1–14. See note there. The account in 'Olam I of the lunar keys differs from the current one in two respects: (a) In 'Olam I (as well as in most other expositions of the keys of the Moon) the first key is the conjunction of the Moon with the Sun, whereas in 'Olam II the first key is "when the Moon] is 12° from the Sun and moving towards the Sun." (b) 'Olam I adds the ratios of the lunar keys to 360° (e.g., "when the Moon's distance from the sun is 45°, which is 1/8 of the circle"). There is a close Latin counterpart of the current passage in *Epitome totius astrologiae*, which not only follows 'Olam II in the aforemen-

tioned differences with ‘*Olam* I but also comes immediately after two passages that are virtual Latin translations of the two previous sections of ‘*Olam* II (§ 16 and § 17): “Lunae autem virtutes adscribuntur, secundum quod fuerit in ianuis suis, quae ianuae sunt proportiones eius ad Solem. Et est prima ianua incipiens a duodecim gradibus ante coniunctionem durans, usque ad coniunctionem. Secunda incipit a coniunctione durans, usque ad duodecim gradus post ipsam. Tertia ibi incipiens, durat usque ad quadraginta quinque gradus post coniunctionem. Quarta ibi inchoans, durat usque ad nonaginta gradus. Quinta deinceps durat usque ad centum triginta quinque gradus. Sexta ab huius sine inchoans, dura usque ad duodecim gradus ante oppositionem. Septima ibi incipiens durat usque ad oppositionem. Octava deinceps ab oppositione durat usque ad duodecim gradus post eam. Nona postea inchoans durat usque ad quadraginta quinque gradus post oppositionem. Decima ibi inchoans durat usque ad nonaginta gradus post oppositionem. Undecima porro in eius termino inchoans durat usque ad centum triginta quinque post oppositionem. Duodecima deinceps inchoans durat, dum appropinquat soli per duodecim gradus, unde incepit prima ut diximus” (*Epitome*, 1548, Lib. I, cap. ii, sig. F2v–F3r). Note that in the following section of ‘*Olam* II the lunar keys are assigned portions of power, just as in the continuation in *Epitome totius astrologiae*.

§ 19

[1]_{1–13}: **Portions of power ... Conjunction, one.** Precisely the same methodology, allocating portions of power to each of the lunar keys, is employed in *Epitome totius astrologiae*, which continues the account of the lunar keys as in ‘*Olam* II: “Caeterum Luna existens in octava circuli ianua habet virtutes duodecim, in septima habet undecim, in nona habet decem, in sexta habet novem, in quarta habet octo, in tertia habet Septem, in decima habet sex, in undecima quincque, in duodecima quatuor, in secunda habet tres, in quinta duas, in prima unam. Et omnis planeta sub luce Solis virtute caret” (*Epitome*, 1548, Lib. I, cap. iii, sig. F3r). Note, however, that *Epitome totius astrologiae* and ‘*Olam* II agree with respect to only four of the lunar keys (8, 7, 9, 1). *Reshit Hokhmah* (1939, VI, lvi:9–24) describes how the Moon’s power waxes or wanes when it arrives at each of the points. Although this account corresponds in rough lines to ‘*Olam* II, § 19:1–13, no specific scale of portions of power is given there.

§ 20

[1] **1: From triplicity to triplicity, Heb. מתולדת אל תולדת, lit. from nature to nature.** This meaning derives from Ibn Ezra's use of תולדת (see above, § 3:2 and note) to denote any of the four elements (fire, air, water, earth). Accordingly, תולדת stands for triplicity because each of the four triplicities is identified with one of the four elements. For these special usages of "nature" (תולדת) see, above, § 3:2–3, where Ibn Ezra denominates the signs that make up one triplicity as "the three signs that have the same nature" ("שהמזלות השלשה הם מתולדת אחת") and then refers to the signs of the earthy triplicity as "the signs of earthy nature" ("מזלות שהם מתולדת") (העפר).

[2] **1–7: Now I give ... have power.** Corresponds to 'Olam I, § 25:1–5, where similar statements are ascribed to Māshā'allāh.

§ 21

[1] **1: Benefic and malefic ⟨planets⟩.** Ibn Ezra lists these two types of planets in *Te'amim* II: "ויאמרו הקדמונים שהשם ברא שנים מזיקים, והם שבתאי ומאדים, והאחד גדול מחברו, ושני והאחד גדול מחברו, וככה שנים מטיבים, והם צדק ונגה, והאחד גדול מחברו, ושני" ("The Ancients said that God created two malefic ⟨planets⟩, Saturn and Mars (the former is larger than the latter), as well as two benefic ⟨planets⟩, Jupiter and Venus (the former is larger than the latter), two luminaries, and a mixed planet, sometimes benefic and sometimes malefic, namely, Mercury.") (*Te'amim* II, § 5.8:2, pp. 232–233). The classic account is in *Tetrabiblos*: "Because two of the four humours are fertile and active, the hot and the moist (for all things are brought together and increased by them), and two are destructive and passive, the dry and the cold, through which all things, again, are separated and destroyed, the ancients accepted two of the planets, Jupiter and Venus, together with the moon, as beneficent because of their tempered nature and because they abound in the hot and the moist, and Saturn and Mars as producing effects of the opposite nature, one because of his excessive cold and the other for his excessive dryness; the sun and Mercury, however, they thought to have both powers, because they have a common nature, and to join their influences with those of the other planets, with whichever of them they are associated" (*Tetrabiblos*, 1980, I:5, pp. 38–39).

[2]¹: **Find the sign ... in the *Book of the Beginning of Wisdom*.** *Reshit Hokhmah* I, in the separate sections allocated to each of the zodiacal signs, lists the planets that are the lords of the signs in which the power of the dodecatemoria falls, beginning with the sign in question (*Reshit Hokhmah*, 1939, II, x:28–xi:2 *et passim*). The current cross-reference may have that list in mind. Note, however, that *Reshit Hokhmah* I does not give any generic definition of the doctrine of the dodecatemoria and that the lists are of little use for determining “in which sign is the power of the dodecatemoria,” given the place of some benefic or malefic planet (see ‘*Olam* I, § 32:1–8 and notes). Thus we cannot rule out the possibility that the cross-reference is to *Reshit Hokhmah* II.

[3]^{1–2}: **You should observe ... befall any city.** Corresponds to ‘*Olam* I, § 32:1–8, where a longer and more detailed account is given (see notes there). Despite their different length, both accounts deal with the same astrological factors: (a) Whereas here the time for the observation is “at the beginning of the year of the conjunction,” in ‘*Olam* I (§ 32:1) it is set as “at the revolution of the year in which a Saturn-Jupiter conjunction takes place, whether a great, a middle, or a small conjunction.” (b) In both accounts the objective of the prediction and the associated astrological doctrines are the same: to “know all good or bad fortune that will befall any city” by means of the dodecatemoria and the doctrine of the benefic and malefic planets. The only significant difference lies in the sources: whereas ‘*Olam* I, § 32:1–8 draws on Dorotheus, who in turn draws on the *Book of Secrets* by Enoch, ‘*Olam* II, § 21:1–2 says nothing about its sources and refers readers to the *Book of the Beginning of Wisdom* in order to find out “in which sign is the power of the dodecatemoria.”

§ 22

[1]¹: **Year after year (good fortune or misfortune) is shown.** This passage is corrupt in all the manuscripts examined. The insertion of “good fortune or misfortune” is an attempt to reconstruct the sense.

[2]^{1–2}: **If you know ... city each year.** As defined in ‘*Olam* I, § 57:3 (see note there), the “terminal house” (בית הסוף) is an imaginary clock-hand or pointer that is set in motion from some zodiacal place, travels around the zodiac at a certain pace, and reaches another zodiacal place. However, the “terminal house” referred to in the current passage and in

the following one differs from the “terminal house” introduced in ‘*Olam* I, § 39:1–9 and § 57:1–4 in two main respects: (a) instead of traveling one sign in one year (‘*Olam* I, § 39:4 and § 57:3), this “terminal house” moves one degree in one year, as in the prorogation procedure in nativities (an affinity that may be inferred from the reference to “the method of the revolution of the nativity”); (b) instead of being set in motion from the place of some conjunction of Saturn and Jupiter (‘*Olam* I, § 39:1–2 and § 57:1), this “terminal house” is set in motion from the sign of the city, that is, from the ascendant that rose when the city was founded (§ 22:1) or from the tenth place of a horoscopic chart whose ascendant is the sign of the city (§ 23:1).

§ 23

[1]1: **Its tenth place.** Here the antecedent of “its” is the city just mentioned at the end of the previous section (§ 22:2). The reference is to the tenth place of a horoscope cast at the anniversary of the founding of the city or to the tenth place of a horoscope whose ascendant is the sign of the city.

[2]1: **As I have explained in the *Book of Nativities*.** This reference to the “terminal house” is in the last chapter of *Sefer ha-Moladot*, which is devoted to continuous horoscopy, but not in *Liber Nativitatum*, the Latin translation of a lost Hebrew version of *Sefer ha-Moladot*, or in *Liber Nativitatus*, another treatise on nativities ascribed to Ibn Ezra: “והחמישי” מזל הסוף, ולעולם הוא במעלות ישרות. וככה תעשה: בשנה הראשונה יהיה מזל הסוף תחלת המעלה הצומחת עד שלשים מהמזל השני. והסתכל, אם היה שם במולד ככב טוב יורה על טוב שיהיה לו אותה שנה מדבר ידוע קודם זה, ואם ככב מזיק הפך הדבר, שיבא לו חלי או נזק כפי מקומו ... והששי מזל הסוף ממקום החיים במעלות ישרות, ויגיע עד ל', ככה תעשה שנה שנה עד סוף י"ב שנה, שהם כמספר המזלות, ואח"כ “The fifth ⟨factor⟩ is the terminal sign, which is always calculated in equal degrees. Proceed as follows: in the first year the terminal sign is in the degree of the ascendant and moves 30 degrees, to the second sign. Observe whether there is a benefic planet there, for it signifies good fortune to him [the native] in this year from a certain thing that happened before, and if there is a malefic planet the contrary ⟨will happen⟩, ⟨namely⟩, some illness or harm will befall him, according to its place. ... The sixth ⟨factor⟩ is the terminal sign, beginning at the place of life, in equal degrees, and moving 30 ⟨degrees⟩. Proceed in this

manner every year until the completion of 12 years, which is the number of the signs, after which they repeat cyclically until the day of the native's death.") (*Moladot*, BNF 1056, f. 60a–60b).

[³1–3: (1) **They observe ... will be fortunate.** Although the “terminal house” is employed here along the lines of the previous passage (the “terminal house” travels one degree in one year), they differ in two main regards: (a) while the previous passage is concerned collectively with what “befalls the inhabitants of the city,” the current one deals with “affairs of the kingdom,” that is individually with kings, and consequently the terminal house is applied through the method of the revolution of the nativity; (b) instead of being launched from the ascendant which rose when the city was founded, here the “terminal house” is set in motion from the tenth place of an horoscopic chart whose ascendant is the sign of the city.

§ 24

[¹2: **Gives its power.** This condition is explained in *Reshit Ḥokhmah* (1939, VII, lix:12–15): “ותת הכח: הוא שיהיה הכוכב בביתו או בבית כבודו או בבית שליטתו או בגבולו או בפניו, ויתחבר עם כוכב אחר או יביט אליו, הנה יתן כח” “עצמו אליו.” (“Giving power: when ⟨a planet⟩ is in its ⟨planetary⟩ house, or in its house of exaltation, or in its triplicity, or in its term, or in its decan, and conjoins another planet or aspects it, then it gives its own power to the other planet.”).

[²1–3: **Dorotheus the king ... dissension ⟨will occur⟩.** Corresponds to ‘*Olam* I, §41:1–5, where a similar statement is assigned to Māshā’allāh. See note there. Passage §24:1 corresponds closely to ‘*Olam* I, §18:2, where Dorotheus, among other scientists, recommends that “we ... always observe the moment of the luminaries’ conjunction or opposition, whichever occurs last before the Sun enters Aries.”

§ 25

[¹6: **Increases its number, Hebrew מוסיף בהשבונו.** The peculiar wording derives from the use of astronomical tables, as explained in *Reshit Ḥokhmah*: “ואם תרצה לדעת מתי הכוכב נוסף במספרו, הסתכל כשתכנס במספרו”

בטורי המעלות הישרות. אם היה הראשון הוא נוסף ואם השני הוא חסר ואם אין שם מספר איננו נוסף ולא חסר. וכאשר תוסיף חשבון התיקון על מקומו האמצעי בסוף התיקון, אז יקרא נוסף בחשבוננו, ואם חסרת התיקון יהיה חסר בחשבוננו, ואם “If you wish to know when the number of a planet is increased, look at its number in the column of the equal degrees. If it [the planet] is in the first ⟨column⟩ it [the planet] increases ⟨its number⟩, and if in the second ⟨column⟩ it decreases ⟨its number⟩, and if there is no number, it neither increases nor decreases ⟨its number⟩. When you add the number of the correction to the intermediate place [the place of the mean motion] at the end of the correction, this is called ‘it increases its number,’ and if you subtract the correction ‘it decreases its number,’ and if you neither add nor subtract the planet is in the ecliptic” (1939, VI, liv:2–7) (1939, VI, liv:2–7).

Here Ibn Ezra is closely following Abū Ma‘shar’s *Kitāb al-Madḥal*, 1996, VII:1, v, pp. 274–275, both in contents and in terminology: “Augmentatus vero numero, aut non augmentatus nec minutus, scitur hoc ex lineis ⟨numeri⟩ planetarum in canonibus ⟨constitutis⟩. Nam prima linea augmentatur ab uno gradu usque in CLXXX (et dicitur aucta). Altera vero minuitur ex CCCLX usque in CLXXX (et dicitur minuta). Cumque quesitus numerus dum equator planeta fuerit inventus in prima linea, dicitur auctus numero. Cum vero fuerit inventus in secunda linea, dicitur minutus in numero. Porro cum fuerit in CLXXX equaliter, non erit augmentatus nec minutus. Auctus quoque in computatione est ut addatur quod exit de equatione eius super medium cursum eius in fine operis, minutus vero est ex quo minuitur ⟨predicat equatio⟩. Presentia autem eius in itinero medio est cum non fuerit ei equatio que addatur super medium cursum eius aut minuatur ex eo. Et cum ita fuerit, erit tunc in declivo circulo in itinere Solis.” See also below, § 29:2 and § 54:6. Notice that at ‘*Olam* I, § 42:3, Ibn Ezra conveys a similar idea with a different Hebrew nomenclature.

[1]1–7: Always observe ... their motion. Corresponds to ‘*Olam* I, § 42:2–5.

§ 26

[1]1–3: Now I will give ... applies to the Moon. The term “increase its motion” is defined in ‘*Olam* I, § 42:3 and ‘*Olam* II, § 25:6, § 54:6.

§ 27

[¹]₁₋₂: **You will ... moderate** ⟨prices⟩. Corresponds to ‘*Olam* I, §40:1-2.

§ 28

[¹]₂: **Meaning at the beginning of Aries**: This is probably a gloss that has been inserted at the wrong place. It should be after “at the revolution of the year.”

[²]₂ **Last, Hebrew בַּתְּחִלָּה**, lit. first. See above, p. 114, note on ‘*Olam* I, § 18:2.

[³]₂₋₃ **The lot of fortune ... the ascendant**. This refers to the computation of the lot of fortune. See Al-Qabīṣī, 2004, V:3, p. 141: “You take what is between the Sun and the Moon, and you cast it from the ascendant; that is, you add the degrees of the ascendant to it, and you cast that out from the beginning of the ascendant, and where the number is exhausted is the position of the Lot of Fortune.” See also *Tetrabiblos*, 1980, III:10, pp. 275-277; *Kitāb al-Taḥīm*, 1934, § 475, pp. 279-281; *Reshit Ḥokhmah*, 1939, IX, lxxvii:7-18; *Ṭe’amim* I, § 9.1:1, 92-93 and *Ṭe’amim* II, § 7.1:1-7, 242-245.

[⁴]₁₋₃: **Determine the lord ... nature of the lord**. For the influence of the lord at the beginning of the year on weather see below, § 41:10-11 and § 43:1-4.

§ 29

[¹]₁: **Māshā’allāh said in the *Book of the World***. This work is not mentioned in the catalogues of Māshā’allāh’s oeuvre. See, i.e., Pingree, 1972, pp. 159-162.

[²]₂: **Its number increases or decreases, Hebrew יוסיף או יחסר בחשבון**. Ibn Ezra explains this expression above, at § 25:6. See note there. See also above, § 26:1-3, below, § 54:6, and ‘*Olam* I, § 42:3.

[3]¹⁻²: *Māshā'allāh* said ... increases or decreases. Corresponds to 'Olam I, § 43:1-2.

§ 30

[1]³: **The relative duration ... beginning of Venus.** The meaning of this convoluted passage, (which is out of place, interrupts the continuity, and therefore may be dismissed as corrupt,) can perhaps be deciphered on the basis of 'Olam I, § 23:11, which indicates that the first planet in the order of exaltations is the first planet to rule in the sequence of *fardār* years. Thus, just as Aries, the Sun's exaltation, follows Pisces, Venus' exaltation, so the Sun follows Venus in the sequence of the *fardār* years.

[2]¹⁻¹¹: **The scientists of Persia ... over and over.** Corresponds to 'Olam I, § 23:1-12. See notes there.

§ 31

[1]¹: **If you want ... 259th (Metonic) cycle.** Strictly counting from the creation of the world, the year AM 4902 is not the beginning of the 259th Metonic cycle, as claimed here, but the last year of 258th Metonic cycle ($4902 = 258 \cdot 19$). But the discrepancy may be explained by the fact that Jewish calendarists did not identify the beginning of "year 1" with the Creation, but as the year before Creation. Ibn Ezra mentions this characteristic of the Jewish calendar in *Ibbur*, 1874, p. 3b.

[2]¹⁻³: **If you want ... lord (of the *fardār*).** Here Ibn Ezra speaks in riddles, in contrast to 'Olam I, § 24:1, where a straightforward solution to a similar problem is offered. In addition, here he attempts to find the planet that rules the *fardār*ship of some year in the framework of the 19-year Metonic cycles used in the Jewish calendar, in contrast to 'Olam I, where the "reckoning of the Persians" is used (see note there). What is puzzling is why subtracting "11 years from the years of the world in the year 4902" should make the 75-year *fardār* cycle correspond with the 19-year Metonic cycle of the Jewish calendar. This is clarified in the following section. The *Epitome totius astrologiae* offers a similar attempt to accommodate the calculations related to this astrological doctrine to another foreign calendar: "Volens ergo scire de cuius frigidaria sit

quisque annus, demas ab annis Christi 15 annos, reliquum divides per 75 et quod remanet a divisione, distribuas per planetas a Sole incipiens” (*Epitome*, 1548, Lib. I, sig. H1v).

§ 32

[¹]₂: **So the lord ... Persian scientists.** The 27th year of the *fardār* should correspond to the fifth year of the *fardār*ship ruled by Jupiter (10 [Sun] + 9 [Moon] + 3 [Head] + 5 [Jupiter] = 27), and not to the third year, as stated here. But this passage is based on the assumption that the Sun’s *fardār*ship lasts 12 years (12 [Sun] + 9 [Moon] + 3 [Head] + 3 [Jupiter] = 27). This is borne out by four manuscripts (see *variae lectiones* on § 30:1), the same manuscripts that (in § 30:10) assign six years to Venus’ *fardār*ship instead of eight. Note that three of these four manuscripts (see *variae lectiones* on § 32:1–5) also include § 32:1–5.

[²]_{1–5}: **Because 4891 ... years or the years** This section, which occurs only in a limited set of manuscripts, was written by some later glossator in order to solve the problem presented by Ibn Ezra in the previous section. This emerges from the fact that ‘*Olam* I is retrospectively referred to as “another book” (§ 32:3) and that it must be Ibn Ezra himself, referred to in the third person, who “intended to say that in the year 4902 you should subtract 11 years from the part in which serves Saturn” (§ 32:5). The gloss has three main points: (a) In § 32:1 the glossator works on the assumption that Ibn Ezra took the year of the biblical creation of the world as the beginning of the calculation; hence the year AM4902 (1141 / 2 CE) is the third year of a *fardār*ship ruled by Jupiter. (b) In § 32:3–5 the glossator realizes that the solution he has just proposed does not agree with that advanced by Ibn Ezra at ‘*Olam* I, § 24:1 for the year 4908 (1147 / 8): if that is correct, the year 4902 is the eleventh year of a *fardār*ship ruled by Saturn. (c) Finally, in § 32:6 the glossator explains why Ibn Ezra subtracted 11: “What he intended to say is that in the year 4902 you should subtract the 11 years of the period of the rule of Saturn.” This seems to coincide with the instructions given by Abū Ma’shar in the *Book of Religions and Dynasties* for finding the ruler of the current *fardār*ship: “From whatever remains which does not compete 75 cast out the years of the planets according to their succession in the order of the *fardārs*. Begin the casting out from Saturn” (*On Great Conjunctions*, 2000, I, § 8.2:12, p. 503).

§ 33

[¹]**1–2: The years of the lord ... ⟨other⟩ planets.** Corresponds to ‘*Olam* I, §24:2. This subdivision of each *fardār* into seven parts allocated to the planets usually occurs in astrological works that deal with nativities, and not with general astrology. See See *Moladot*, BNF 1056, ff. 59b–60a; *Tequfah*, JNUL 8°3916, f. 58b; Al-Qabiṣī, 2004, IV:20, p. 135; *Kitāb al-Taḥfīm*, 1934, §395, p. 239; *De iudiciis astrorum*, 1551, VI:4, p. 266.

§ 34

[¹]**1: Note that when ... place to place.** Corresponds to Māshā’allāh, *Book on Eclipses*, §4:7, below, pp. 246–247.

[²]**1–2: Note that when ... reduced slightly.** Cf. *On Great Conjunctions*, 2000, I, §8.2:17,19, pp. 507–509; *Epitome*, 1548, Lib. I, x, sig. H1v. Ibn Ezra, however, seems to have drawn on other sources for the information in this section.

§ 35

[¹]**1–3: You should observe ... of its cardines.** Cf. *On Great Conjunctions*, 2000, I, §8.2:23,24, pp. 509–511.

§ 36

[¹]**1: The Indian scientists also said.** In the parallel account in ‘*Olam* I, §47:1–2 (see note there) the doctrine of “opening of the door” is attributed to Ibn Ṣariq. This is in tune with the fact that Ibn Ṣariq may be identified with Ya‘qūb ibn Ṭāriq, an Abbasid scientist closely associated with the transmission of Indian science to Arabic civilization.

[²]**1: Which ⟨planet⟩ is the lord of the sign of the ascendant.** This refers to the lord of the month. For a definition and for how it affects weather, see §41:1–9 and note.

[³]**1–2: If you want to know about rain ... “opening of the door.”** Corresponds to ‘*Olam* I, § 47:1–2, where instead of “opening of the door” (פתיחת השער), Ibn Ezra writes of a planet that is “key” (מפתח) to another, and, instead of the scientists of India, a certain Ibn Ṣariq is introduced as the originator of this procedure for forecasting rain. See notes there. This procedure for forecasting rain is mentioned in similar terms, although without mentioning its Hindu provenance, in other sources. See: Al-Qabīṣī, 2004, III:11, pp. 95–97; *Tractatus pluviarum*, 8 (ed. Burnett, p. 240); and *Apertio Portarum*, 13–15 (Al-Kindī, 2000, p. 386). For a comparison of Ibn Ezra’s account with these sources, see “Introduction,” above, pp. 22–24.

[⁴]**3: This is also ... with the Sun.** This section lists the pairs of planets whose interaction generates the “opening of the door,” as well as the effects of these planets separately. For Saturn with the Sun or with the Moon, see ‘*Olam* I, § 47:2; for Jupiter with Mercury, see ‘*Olam* I, § 50:1–3; for Venus with Mars, see ‘*Olam* I, § 51:1–2.

[⁵]**8: As written in the *Book of the Beginning of Wisdom*.** *Reshit Ḥokhmah* I, in the sections on each of the zodiacal signs, specifies whether the sign in question is feminine or masculine. See *Reshit Ḥokhmah*, 1939, II, xi:16 *et passim*. The current cross-reference may relate to any of these places.

§ 37

[¹]**1: The Indian scientists ... end of the year.** Corresponds closely to *Apertio Portarum*, 30–31, a text on weather forecasting ascribed to Al-Kindī (“Likewise, wishing to know whether much rain will be at the beginning, in the middle or at the end of the rain, see the position of Venus when the Sun enters Libra. If Venus is in the light of the Sun and is western, there will be much rain at the beginning of that year which begins from Libra and little rain at the end. If it is eastern and visible, the rain will be the reverse” [Al-Kindī, 2000, p. 392]); see also Al-Kindī’s *Letter* II, 148 (Al-Kindī, 2000, pp. 225, 261), and *Tractatus pluviarum*, 21 (ed. Burnett, pp. 242, 256–257). Notice, however, that in these three interrelated sources the Venus’ positions with respect to the Sun are inverted from those in ‘*Olam* II, § 37:1. Corresponds also to ‘*Olam* I, § 63:4, where the Indian scientists say that one should observe the Sun entering Libra (but also Aries, Cancer, and

Capricorn) in order to know whether there will be rain, in close relationship with the inspection of the Moon in one of the lunar mansions.

[2]**2: Mercury portends ... with wind.** For Jupiter and Mercury portending rain with winds, according to the Indian scientists, see ‘*Olam* I, § 50:1–3; for Venus and Mars signifying rain “rain with lightning and blasts and torches,” see ‘*Olam* I, § 51:1.

[3]**3: You should also observe ... Aquarius and Leo.** For the indication of rain by the watery signs and by Aquarius and Leo, see ‘*Olam* I, § 46:2–4. For watery signs in rain forecasting, see also ‘*Olam* I, § 44:2 (when the Sun enters Aries, drawing on Al-Kindi’s *Book of the Revolution*) and § 63:3 (if the Moon is in one of the mansions at the beginning of the month and a retrograde planet aspects it).

[4]**4: Some of the mansions ... masculine (sign).** The dry lunar mansions are catalogued below (§ 44:2), right after the moist mansions (§ 44:1), which are designated there “mansions of rain.” See notes there. The intermediate mansions are not mentioned in ‘*Olam* II, although they are briefly alluded to in ‘*Olam* I, § 63:11 as “temperate” mansions. See note there. The statement about feminine signs as strong indicators of rain corresponds to ‘*Olam* I, § 63:3. See note there.

§ 38

[1]**2: Determine the nature ... be like it.** The meaning of this passage seems to be that at the conjunction of the luminaries, the empowered planet’s nature applies to the first half of the month; and at the opposition of the luminaries, the empowered planet’s nature applies to the second half of the month.

[2]**3–4: The day when ... number of days.** Corresponds to ‘*Olam* I, § 47:3–4. See note there.

§ 39

[1]**1: So always observe ... (subsequent) place.** Refers to § 36:2–3, above. See note there. See also ‘*Olam* I, § 47:1–2 and notes there.

[2]₂₋₃: **I have already informed ... fixed signs.** There is no such reference in *'Olam II*. For a similar hierarchical presentation of the cardines see: *Reshit Hōkhmah*, 1939, III, xl1:1-3; *Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 71. That the tropical signs signify swiftness and the fixed signs slowness is a leitmotif in the three works that Ibn Ezra wrote about the doctrine of interrogations: *She'elot I*, BNF 1056, ff. 65b, 66a, 67b, 68a; *She'elot II*, BNF 1058, f. 6b; *She'elot III*, Modena, left side of the verso.

[3]₇: **Do not forget ... keys of the Moon.** For a similar connection between the “opening of the door” and the “keys of the Moon,” see *'Olam I*, §47:4 and note.

§ 40

[1]₁₋₂: **There is also ... ⟨lot comes out⟩.** Unusual attention is paid to the lot of rain in *Reshit Hōkhmah*, which refers to two lots with this name. The first, unlike the one presented here and also mentioned in *Kitāb al-Taḥīm*, 1934, § 479, p. 291 and in Al-Qabiṣī, 2004, V:19, p. 155 (n. 38), is measured by day from the degree of the conjunction of the luminaries to the degree of the Moon, by night the opposite, and then cast from the ascendant (1939, IX, lxxii:32-lxxiii:4). This is the description of the second lot: “וַיֹּאמֶר חֲנוּךְ כִּי יוֹקֵחַ בְּכָל יוֹם מִמְקוֹם הַשֶּׁמֶשׁ אֶל מְקוֹם שֶׁבְתָאִי, וְהַהוּוּהוּ תִשְׁלִיכֵנוּ בְּבוֹקֵר מִמְקוֹם הַלְּבָנָה, וְשֵׁם הַגּוֹרֵל, וְזֶה הַדְּבָר מְנוּסָה. וְהִנֵּה אִם יֵצֵא הַגּוֹרֵל בְּאֶחָד בְּתֵי שֶׁבְתָאִי יִהְיֶה קוֹר, וְאִם בְּאֶחָד בְּתֵי צַדֵּק יִהְיֶה רוּחוֹת, וְאִם בְּאֶחָד בְּתֵי מְאָדִים יִהְיֶה חוּם, וְאִם בְּאֶחָד בְּתֵי נוּגָה יִהְיֶה גֶשֶׁם אוֹ עֶרְפֶּל, וְאִם בְּאֶחָד מִבְּתֵי כּוֹכַב חֲמָה יִהְיוּ רוּחוֹת חֲזִיקִים, וְאִם בְּבֵית הַלְּבָנָה יִהְיֶה עֲנָן אוֹ מִטְר, וְאִם בְּבֵית הַשֶּׁמֶשׁ כּוֹכַב חֲמָה יִהְיוּ רוּחוֹת חֲזִיקִים, וְאִם בְּבֵית הַלְּבָנָה יִהְיֶה עֲנָן אוֹ מִטְר, וְאִם בְּבֵית הַשֶּׁמֶשׁ כּוֹכַב חֲמָה יִהְיוּ רוּחוֹת חֲזִיקִים.” (“Enoch said that ⟨the lot of rain⟩ is measured day by day from the place of the Sun to the place of Saturn; in the morning, cast the result from the place of the Moon, and the lot it there. This has been tested by experience. So, if the lot is cast in one of Saturn’s houses there will be cold, and if in one of Jupiter’s houses there will be winds, and if in one of Mars’ houses there will be heat, and if in one of Venus’ houses there will be rain or mist, and if in one of Mercury’s house there will be strong winds, and if in the Moon’s house there will be clouds or rain, and if in the Sun’s house there will be a clear sky.”) (1939, IX, lxxiii:4-9). Charles Burnett has remarked that this passage is virtually a translation of a passage in Abū Ma’shar’s *Kitāb al-sirr* (see *Tractatus pluviarum*, ed. Burnett, “Introduction,” p. 234). A similar description of the lot of rain, which abbreviates the predictions given by Abū Ma’shar

and then by Ibn Ezra, is found in a Latin translation of a letter by Al-Kindī, “On the causes attributed to the higher bodies which indicate the origin of rains” (Al-Kindī, 2000, pp. 298, 382), in *Apertio Portarum* (Al-Kindī, 2000, pp. 387, 391), in *Epitome*, 1548, Lib. I, vii, sig. G3r, as well as in *Tractatus pluviarum*: “Et quot sint gradus equales inter Solem et Saturnum quoque mane considera et totidem gradus computa a loco Lune; quo pertingunt, ibi pars pluvie erit. Que computatio si erit in domo Lune vel Veneris, significat pluviam, si in domo Mercurii vel Iovis, significat ventos, si Martis vel Solis, serenitatem, si Saturni, significat nubila” (ed. Burnett, 25–26, p. 243). The lot of the rain is not mentioned in ‘*Olam* I.

[2]3: **Know that ... southern** ⟨signs⟩. For Saturn’s effect when it is in the northern signs (from Aries to Virgo) or in the southern signs (from Libra to Pisces), see Māshā’allāh, *Book on Eclipses*, § 6:7–8, below, pp. 248–251.

[3]4: **Likewise ... southern latitude**. For Saturn’s greater power when its ecliptical latitude is northern or when it is on the ecliptic, see ‘*Olam* I, § 21:4.

§ 41

[1]9: **Decan**, Hebrew פּוּנִים, lit. faces (Arabic *wujūh*, Latin *facies*). Each of the twelve zodiacal signs is divided into three equal divisions called decans, and each decan is assigned to a planet that functions as its lord. Several methods of allocation are used. See *Kitāb al-Madḥal*, 1996, V:15–16, v, pp. 202–203; *Kitāb al-Tafhīm*, 1934, § 449–451, pp. 262–263; Al-Qabiṣī, 2004, I:20, IV:18, pp. 29, 131; *Ṭe’amim* I, § 2.8:1–8, pp. 46–49; *Ṭe’amim* II, § 2.9:4–6, pp. 202–203; *Mishpeṭei ha-Mazzalot*, Schoenberg 57, ff. 70–71

[2]9: **Ninth-part**, Hebrew תשיעית. According to this doctrine of Indian origin, each sign is divided into nine equal parts (Heb. תשיעית, Arab. *nawbahra*, Lat. *novenarii*). Each ninth is associated with a sign; the lord of that sign is the lord of the corresponding ninth. This doctrine rests on the triplicities: first, because nine is the number of signs that separate the first and the last sign in any triplicity; second, because in every case the assignment of the lords of the ninth-parts starts from the tropical sign of the triplicity. See *Kitāb al-Madḥal*, 1996, V:17, v, pp. 203–204; *Kitāb*

al-Tafhīm, 1934, § 455, pp. 266–267; Al-Qabīṣī, 2004, IV:16–17, pp. 129–131; *Abbreviation*, 1994, p. 139; *Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 71; *Ṭe’amim* I, § 2.10:1–5, pp. 48–49; *Ṭe’amim* II, § 2.9:9, pp. 202–203.

[³]**1–9: Know that the air ... to ninth-part.** For the effects of the lord of the month, as defined here, on changes in the weather or on other aspects of weather forecasting, see: ‘*Olam* I, § 42:2–8 (invoking the authority of Māshā’allāh for the price of wheat); ‘*Olam* I, § 50:1–3 (regarding Jupiter and Mercury, which signify winds, when they are in the condition of the “opening of the door”); ‘*Olam* II, § 36:1–9 (invoking the authority of the Indian scientists in relation to rain forecasting and the condition of the “opening of the door”); ‘*Olam* II, § 46:1 (for Venus or Mercury as indicating rain).

[⁴]**10–11: You should not ... beginning of the year.** For a definition of the “lord at the beginning of the year,” see above, § 28:1–3. For its effects on weather, see below, § 43:1–4.

[⁵]**11: Assign half of (the power of) ... three seasons.** For a similar ascription of powers to the lord of the beginning of the year and to the lords of the other three seasons, see above, § 5:8.

§ 42

[¹]**1: Eccentric circle, Hebrew גלגל המוצק, lit. circle of the center.** For this expression, see below § 50:1 and note.

[²]**1–2: Know that when Saturn ... (it generates) moisture.** That the planet’s power is manifest when it rises in its eccentric orb is a leitmotif in Ibn Ezra’s introductions to astrology: *גלגל עולה בגלגל ... שייהיה עולה בכוכב ... יוכח הכוכב* (“the power of a planet is manifest ... when it rises in the orb of apogee and perigee, whose center is far from the center of the Earth”) (*Reshit Hokhmah*, 1939, V, lii:1–2); *“הכוכב בגבהותו כאדם על סוסו”* (“A planet in its apogee is like a man riding his horse”) (ibid., VIII, lxvi:9). In *Ṭe’amim* I, § 5.2:3–7, pp. 82–85, Ibn Ezra reveals that the Indian scientists are his source for this theory. See also *Ṭe’amim* II, § 4.1:1, pp. 206–207; *Mishpeṭei ha-Mazzalot*, Schoenberg 57, ff. 73, 74. For Saturn at the apogee or perigee of its eccentric orb, see *Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 78.

[3]3: **House of cold ... house of heat, Hebrew** **בית חום ... בית קור**. Here these terms designate the cold and hot signs, which are the same, respectively, as the feminine (Taurus, Cancer, Virgo, Scorpio, Capricorn, Pisces) and masculine (Aries, Gemini, Leo, Libra, Sagittarius, Aquarius) signs. For this definition, see Māshā'allāh, *Book on Eclipses*, § 3:4, below, pp. 244–245. See also *Kitāb al-Taḥīm*, 1934, § 348, p. 211. Ibn Ezra usually refers to them by means of the customary name of “cold and hot signs” (מזלות קרים/חמים). See *'Olam I*, § 40:3, § 46:2; *Ṭe'amim II*, § 2.3:11, pp. 190–191; *Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 82 *et passim*.

§ 43

[1]1: **Lord at the beginning of the year**. For a definition, see above, § 28:1–3 and note. For its effects on weather, see also above, § 41:10–11.

[2]3–4: **Likewise, if it “increases” ... leaves them**. For the role of the lunar mansions in rain forecasting related to retrograde planets at the beginning of the year, see *'Olam I*, § 63:3 and note there.

§ 44

[1]1: **These are the mansions ... *al-mukhar***. Corresponds to *'Olam I*, § 63:1–2, with the exception of *al-zub'anha* and *sa'd al-dhabih*, which are replaced there by *al-shwla* and *al-balda*. Corresponds partly to the lists in Al-Kindī's *Letter II*, 89 (Al-Kindī, 2000, p. 254) and *Tractatus pluviarum*, ed. Burnett, 97, p. 254.

[2]2: **Six mansions are dry ... *al-awwal***. Corresponds to *'Olam I*, § 63:10, except for *al-fargh al-awwal*, which is replaced there by *al-fargh al-muqaddam*. Corresponds partially to the list of dry mansions in Al-Kindī's *Letter II*, 90 (Al-Kindī, 2000, p. 254) and in *Tractatus pluviarum*, ed. Burnett, 98, p. 254.

[3]3: **There are also mansions of moistness ... *sa'd al-su'ud***. Corresponds to Al-Kindī's *Letter II*, 93–95 (Al-Kindī, 2000, p. 254): “Three mansions are similar to the moist mansions; they may have more rain and moisture than the six mansions we have described as moist ... these mansions are *al-sim'ak*, *al han'a*, *sa'd al-su'ud*.” This group does not occur in *'Olam I*.

§ 45

[1]₁₋₂: **They also judge ... lord of the month.** For the role of Moon and Venus in rain forecasting when they enter the “rain” mansions, see Al-Kindi’s *Letter II*, 110–112 (Al-Kindi, 2000, p. 256), which adds Mercury to the list. See also Al-Kindi’s *Letter II*, 79 (Al-Kindi, 2000, p. 253), where we read that “Venus is the essence of rain, the Moon is the essence of water.” For the role of Moon and Venus in rain forecasting see also *Tractatus pluviarum*, 28 (ed. Burnett, p. 258).

[2]₃: **You can compute ... in the *Book of the Astrolabe*.** Both the first and the second versions of Ibn Ezra’s *Sefer Keli ha-Neḥoshet* (Book of the Astrolabe) mention the role of the place of the Sun for finding the lunar mansion where the Moon is at a certain day of the month, although it is more prominent in the second version than in the first: “ודע כי הלבנה לא תראה בזמן היותה עם השמש במחנה אחת, והנה תראה במחנה השנית. והנה אם רצית לדעת באיזו מחנה תחנה הלבנה, אם אתה סופר מהמולד, החל לספור מהמחנה שהיה שם השמש בשעת המולד או ביום המולד, ותוכל לדעת מקום מחנה השמש מהחשבון ש’הראתיך.” (“Know that the Moon cannot be seen when it is with Sun in one mansion, but it becomes visible in the next mansion. So if you wish to know which mansion the Moon is in, if you count from the New Moon, begin counting from the mansion where the Sun was at the moment of the New Moon or on the day of the New Moon, and you will find the place of the mansion of the Sun from the reckoning I have shown you.”) (*Neḥoshet II*, Mant. 10, f. 46a); “ואם לא ידעת מקום הלבנה ותרצה לדעת באיזה מחנה היא חונה, החל מן המחנה אשר השמש שם ביום המולד ותן לכל מחנה יום וזה אינו בדקדוק יפה כי יש מחנה גדול, גם מחנה קטן” (“If you do not know the place of the Moon and you wish to know which mansion it is in, begin from the mansion where the Sun was on the day of the New Moon and assign one day to each mansion; but this calculation is not accurate enough because some mansions are large and other mansions are small.”) (*Neḥoshet I*, BNF 1061, f. 1157b). Note that in *Olam I*, §62:5 there is an implicit reference to *Sefer Keli ha-Neḥoshet*, probably to the second version. See note there.

[3]₃₋₄: **You can compute ... in the *Book of Reasons*.** This passage closely corresponds to *Olam I*, §62:1–4, where Ibn Ezra criticizes the opinion of the scientists of India about the 28 lunar mansions and emphasizes that the slow motion of the fixed stars should be taken into account for determining the ecliptical positions of the lunar mansions. As in

‘*Olam* I, § 62:3, Ibn Ezra highlights this criticism in order to call attention to the substantial difference between the positions of the planets in the astronomical tables compiled according to the method of the Indian scientists (who ignore the slow motion of the fixed stars) and in the astronomical tables he compiled himself (which take the slow motion of the fixed stars into account). However, whereas here Ibn Ezra’s procedure is to subtract 9° degrees from the place of the Sun, in ‘*Olam* I, § 62:3 he says to subtract 8° from the place of the Moon. The reference to the *Book of Reasons*, with regard to “the Sun according to ⟨the reckoning of⟩ India, which is ⟨located⟩ with respect to the images ⟨of the constellations⟩” probably means *Te’amim* II, § 8.3:1–3, pp. 250–251: *וזה אמת רק כנגד הצורות ואין צורך לשמש שלהם, רק למי שיתעסק בחכמת הצורות, והיא אסורה בתורת השם כי היא כדמות עבודה זרה. והשמש שהיא בלוחות שכתבתי תהיה אמת ולא יהיה בה שום דופי, רק אם עברו אלף שנים יהיה בה טעות מעט חלקים.* (“This is true only with respect to the images ⟨of the constellations⟩; there is no need for their [the Indian scientists] Sun, except for those who deal in the science of the images ⟨of the stars⟩, which is forbidden by the law of God, because it resembles idolatry. The ⟨motion of the⟩ Sun as recorded in the tables I have written is true and flawless; after the lapse of a thousand years there will be an error of only a few minutes”). However, *Te’amim* I, § 2.12:11, pp. 50–51, also refers to the “year of the Sun of India” in the context of criticism of the Indian scientists for disregarding the slow motion of the fixed stars.

§ 46

[1]1: **Many say ... rulership of the month.** Corresponds to ‘*Olam* I, § 46:1–3. For a definition of the “lord of the month” and how it alters the weather, see above, ‘*Olam* II, § 41:1–9 and note.

§ 47

[1]1: **The scientists of Persia ... governed by Jupiter.** Corresponds closely to Al-Kindī’s *Letter* II, 137 (Al-Kindī, 2000, p. 259: “Another method: When the Moon enters Cancer in the hour of the Sun, or Virgo in the hour of Venus, or Sagittarius in the hour of the Moon, or Leo and Libra in the hour of Jupiter, it indicates rain in its proper times and wind according to the sign and according to what will be of the substance of the

Moon itself and what will be of the substance of the signs.”) as well as to *Tractatus pluviarum* (ed. Burnett, 27, p. 243: “Cum intrat Luna Cancrum in hora Solis, vel Virginem in hora Veneris, vel Sagittarium hora Lune, vel Geminos hora Mercurii, vel Taurum hora Martis, vel Libram hora Iovis, significat pluviam vel ventos ad modum nature signi in quo est dominus hore”). See also the next section (§48:1–8), for the opinions of the Indian scientists. By contrast, *‘Olam I* takes no notice of these procedures.

§48

[¹2: In the order ... for the days. The order mentioned here—Mercury, Jupiter, Venus, Saturn, Sun, Moon, Mars for the nights, and Sun, Moon, Mars, Mercury, Jupiter, Venus, Saturn for the days—is the order of the planets that rule the first hour of the night and day respectively (or, by extension, the whole of the respective nights and days), and not the order of rulership of the planets over the 12 parts of the day or night. Ibn Ezra explains this in *Ṭe’amim I*, §4.2:10, 72–73: “Know that the days (of the week) begin from Sunday; the astrologers found out by experience that the Sun has more power on this day than on any other day. When they divided the day into twelve hours they always assigned the first hour to the Sun, the lord of the day, and the second hour to Venus, whose orb is beneath the Sun’s orb. For this reason they said that the lord of the second (hour) of Sunday is Venus and that it is in partnership with the Sun, the lord of the day, which has most of the power, and similarly with the other planets. Then the eighth hour is again under the charge of the Sun. Proceeding with this method, the diurnal part of Saturday is in the portion of Saturn, and of the nights Wednesday night (is in its portion).” For a similar explanation, see also *Kitāb al-Tafhīm*, 1934, §390, pp. 237–238: “With regard to the distribution of the days of the week among the planets, it is natural that the first hour of the first day Sunday should be given to the planet which is the cause of day and night, viz. the sun. The second hour is allotted to the next lower planet Venus, the third to Mercury, the fourth to the moon, the fifth to Saturn and so on till the second day Monday whose first hour falls to the moon, second to Saturn, and so on in the same way until another Sunday arrives, when the first hour is again the turn of the sun. The lords of the hours having been determined in this way it was natural that the days of the week should be assigned to the planet associated with the first hour thereof.”

[2]^{1–2}: **The lord of the hour ... for the days.** The term “lord of the hour,” as defined here, is frequently employed by Ibn Ezra in his astrological oeuvre in a variety of doctrines. (a) Nativities: *Moladot*, BNF 1056, f. 51a, 53b, 55b *et passim*; *Te’amim* II, §6.7:3, pp. 240–241; §8.2:7, pp. 250–251; §8.4:1, pp. 252–253; see also Al-Qabīṣī, 2004, IV:19, p. 133; (b) Elections: *Mivḥarim* I, Munich 202, ff. 111a, 111b; *Mivḥarim* II, BNF 1058, f. 11a, 11b, 12b, 13a, 13b; *Mivḥarim* III, Modena 368.3a, (c) Interrogations: *She’elot* I, BNF 1056, f. 62b, 63b, 65a; *She’elot* II, BNF 1058, f. 2a, 2b, 3b; *She’elot* III, Modena 368.3a; (d) General astrology: *Olam* II, §47.1, §48.1.

[3]^{1–8}: **The Indian scientists ... is the correct one.** This section continues the discussion of the previous section, but now offering the opinion of the Indian scientists as to the effect on rain forecasting of the lord of the hour when it enters the beginning of a sign. Notice that the opinion of the Indian scientists, with which Ibn Ezra agrees, is not recorded in Al-Kindī’s *Letter* II and in *Tractatus pluviarum*, which confine themselves to recording the opinion that Ibn Ezra ascribes in §47:1 to the scientists of Persia.

§ 49

[1]^{1–3}: **The scientists of Persia ... second half (of the year).** Corresponds to *Olam* I, §60:1–2, where Ya‘qub Al-Kindī is cited as warning that one not pay heed “to those who say that we should observe the Sun when it enters into the beginning of the 20th degree of the sign of Scorpio.” See note there.

§ 50

[1]¹: **Know that ... “circle of the center.”** Corresponds to *Olam* I, §54:1–3.

[2]¹: **The great circle, which is also called “circle of the center,”** Hebrew הגלגל הנקרא גלגל המוצק. Here the concept of the eccentric orb is denoted by two complementary Hebrew expressions. (a) גלגל גדול ‘great circle’, whose plain meaning is that it is not an epicycle. Notice that גלגל גדול stands in contrast to גלגל קטן ‘small circle’, meaning epicycle (see *Olam* I, §21:3), and that elsewhere גלגל גדול denotes the eighth orb of the fixed stars (see notably the first sentence of *Mishpeṭei ha-Mazzalot*,

Schoenberg 57, f. 69). (b) גלגל המוצק ‘circle of the center’, which incorporates the peculiar neologism מוצק (see *Olam* I, § 21:2 and note) and appears elsewhere with the explanation that it is “not identical with the center of the Earth” or is “far from the center of the Earth,” thereby clearly betokening the eccentric circle. For example, גלגל המוצק שמוצקו = “the circle of the center whose center is far from the center of the Earth” (*Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 76); גלגל הארץ = “circle of the center that is not the center of the Earth” (*Reshit Hokhmah*, 1939, I, viii:6–7). Note, however, that whereas *Olam* II uses גלגל המוצק ‘circle of the center’ repeatedly (§ 42:1,1; § 50:1), *Olam* I never does.

§ 51

[1]¹: **Know that every year ... mathematicians, and scribes.** Corresponds closely to *Olam* I, § 36:1, where for the same indications Ibn Ezra invokes the authority of the ancient Enoch and presents the planets in a different order (see note there). The order of the planets here is reminiscent of, although not identical with, that in *Ṭe’amim* II, § 5.1:1–§ 7.1:9, pp. 217–233. Regarding the Moon, corresponds to *Olam* I, § 54:1–3.

[2]²: **Mars has a share ... Sun in astrology.** For a general statement about Mars and its association with medicine, see: *Mivḥarim* I, Munich 202, ff. 109b, 114b; *Moladot*, BNF 1056, f. 57a. Here Ibn Ezra writes that Mars has only “a share” (שותפות) in the science of medicine, because he views medicine as a dual art, composed of a “hard” version under the sign of Mars and a “soft” version under Venus. This is stated clearly in *Ṭe’amim* II, § 2.4:2, pp. 192–193: “למאדים ולנגה שותפות בחכמת הרפואות, ויהיה כן בעבור שמאדים יורה על הפצעים ונגה על כל עקרים שיש להם ריח טוב.” (“Mars and Venus have a partnership in the science of medicine, because Mars indicates wounds and Venus all the essences with a pleasant smell.”). For this dual conception of medicine and its theological offshoots, see Sela, 2003, pp. 179–180. Mars’ specific role in the science of medicine is qualified in *Ṭe’amim* II, § 5.5:5, pp. 228–229, as follows: “ושלו חכמת הרפואות והפצעים והחבורות” (“the science of medicine and surgery belong to it”). The latter statement is corroborated in Arabic and Latin astrological works: *Kitāb al-Madḥal*, 1996, VII:9, v, p. 314; *Kitāb al-Tafhim*, 1934, § 435, p. 254; *Epitome*, 1548, sig D2r. The view that the Sun is in charge of astrology is quite unusual.

§ 52

[¹]1: **Saturn gives ... up to ten years.** This method of allocation of the ages of human life in ten-year intervals to the seven planets, according to the order of their orbs, is unusual. For two alternative and quite commonplace methods of chronocratores, see *Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 78.

§ 53

[¹]1: **So if a planet is strong ... vice versa.** See ‘*Olam* I, § 36:2 and § 56:15.

[²]2–3: **Accordingly ... a bit of sweetness.** For the rise and fall of prices according to the planets’ power, see ‘*Olam* I, § 43:3–4, § 65:1–3. The various indications of the planets presented here may be readily traced in introductions to astrology, in the sections on the planets’ qualities. As an illustration, regarding the connection between the Sun and gold, Saturn and lead, Saturn and anything sour and cold, Jupiter and anything sweet, and between Venus and anything fertile and fat, see *Mishpeṭei ha-Mazzalot*, Schoenberg 57, ff. 78–79.

§ 54

[¹]1–6: **You can know ... its mean motion.** This section summarizes in rough lines the contents of the fifth chapter of *Reshit Ḥokhmah* I (*Reshit Ḥokhmah*, 1939, V, li:9–liii:16), which is headed: **בבטבת המשרתים ורעתם וכחם ודלותם** (“On the fortune of the planets, and on their misfortune, powers, and weaknesses”). This chapter, in its turn, is an almost verbatim translation of Abū Ma‘shar’s *Kitāb al-Madhal*, 1996, VII:6, v, pp. 304–308. See also: *Mishpeṭei ha-Mazzalot*, Schoenberg 57, ff. 74–76, 80; *Epitome*, 1548, xxiv, sig. Drv–E1r (de fortitudine planetarum).

[²]7–8: **Many said ... things in the middle.** Corresponds to *Mishpeṭei ha-Mazzalot*, Schoenberg 57, ff. 73–74, where the two rival positions are maintained by the Ancients and King Ptolemy respectively, and to *Ṭe‘amim* I, § 5.2:3–6, pp. 82–85, where the same positions are defended by the Indian scientists and Ptolemy. Ibn Ezra takes a similar middle ground in both sources, as in the current section of ‘*Olam* II.

PART FIVE
RELATED TEXTS

THE BOOK OF MĀSHĀ'ALLĀH ON ECLIPSES OF
THE MOON AND THE SUN, THE CONJUNCTIONS OF THE
PLANETS, AND THE REVOLUTIONS OF THE YEARS

The main purpose of this section is to offer the first critical edition of the Hebrew translation of Māshā'allāh's *Book on Eclipses*, and to reconsider the opinion that Ibn Ezra was the translator. The twelve chapters of the book address the planetary influences on weather, plagues, and the rise of kings and prophets, with special attention to solar and lunar eclipses and the conjunctions of the upper planets. Māshā'allāh divides these conjunctions into "great," "middle," and "small," meaning respectively the conjunctions of Saturn-Jupiter, Saturn-Mars, and Jupiter-Mars, rather than the three classical types of Saturn-Jupiter conjunctions. This unique classification was never used by other Arabic astrologers to interpret the history of Islam or by Abraham Bar Ḥiyya and Abraham Ibn Ezra to explicate Jewish history.

The original Arabic text of Māshā'allāh's *Book on Eclipses* is now lost; it has survived in Hebrew and Latin translations only. The Hebrew translation circulated widely; the digital catalogue of the IMHM lists at least 28 extant manuscript copies. The earliest copy known to me was made no later than 1257 and is included in an anthology of astrological and astronomical works by Abraham Bar Ḥiyya and Abraham Ibn Ezra.¹ This copy, however, includes only the last four chapters. The Latin translation, made by John of Seville in the first half of the twelfth century, also circulated widely, with more than 60 extant manuscripts, and five print editions between 1493 and 1551.²

The edition of the Hebrew text offered here is based on the following six manuscripts, among the oldest of the surviving manuscript copies, collated with the Latin translation.

¹ Paris, Bibliothèque Nationale de France, MS héb. 1058, ff. 180a–182b. For a description of this manuscript, see above, pp. 45–46. For the year 1257 as the *terminus ante quem* for this astrological anthology, see esp. f. 85b. See also Vajda, 1960, p. 161.

² See notice by David Juste at <http://warburg.sas.ac.uk/pdf/fah765mesahw.pdf>.

- ⲡ Oxford, Bodleian Library, Add. Qu. 160 [Neubauer 2518] (IMHM: F 22230), 1367, ff. 158a–161a.
- Ⲕ Paris, Bibliothèque Nationale de France, MS héb. 1055 (IMHM: F 14658), 14th century, ff. 38b–39b.
- Ⲗ Paris, Bibliothèque Nationale de France, MS héb. 1045 (IMHM: F 33996), 15th century, ff. 180a–182b.
- Ⲙ Madrid, Biblioteca de la Real Academia de la Historia 7, (IMHM: F 7370), 15th century, ff. 176a–177b.
- Ⲛ Paris, Bibliothèque Nationale de France, MS héb. 1058 (IMHM: F 14642), 15th century, ff. 86b–87a.
- Ⲝ Munich, Bayerische Staatsbibliothek, Cod. Hebr. 202 (IMHM: F 01649), 15th century, ff. 127b–129b.
- Ⲟ Epistola Messahalae, 1549, sig. Fiii^r–Giii^v.

I selected MS ⲡ as the copy text. This is the earliest complete copy available (written in 1367) and, of the six manuscripts consulted, evinces the closest proximity to the Latin translation by John of Seville. The Hebrew text is accompanied by an English translation and a commentary. I am much indebted to B.R. Goldstein's existing English translation of this text, which is accompanied by an enlightening theoretical introduction.³ I have added punctuation to the Hebrew text and, to facilitate references, I have divided it into sections and sentences.

Was Ibn Ezra the translator of Māshā'allāh's Book on Eclipses?

Moritz Steinschneider (1816–1907), in a brief note, was the first to tentatively attribute the Hebrew translation of Māshā'allāh's *Book on Eclipses* to Ibn Ezra, arguing that the translation (along with that of Māshā'allāh's *Book of Interrogations*) can be found together with Ibn Ezra's other astrological works.⁴ A scrutiny of the manuscript copies of

³ *Book on Eclipses*, 1964, pp. 205–213. This work incorporates an introduction and the English translation alone. Goldstein based his translation on the transcription of the Hebrew text in *Sefer le-Masha'allah bi-qadrut ha-levanah we-ha-šemeš*, ed. Menasseh Grossberg (London, 1902), bound with *Sefer Yeširah*, after p. 79. Grossberg based his transcription on a single manuscript copied in 1893: Oxford, Bodleian Library, Mich. 39 [Neubauer 2023], ff. 67a–71a.

⁴ Steinschneider, 1880, p. 497. Elsewhere (Steinschneider, 1870, 602–603, § 370 (2)) Steinschneider did not explicitly credit Ibn Ezra with the translation of Māshā'allāh's treatise.

the Hebrew translation of the *Eclipses* listed in the digital catalogue of the IMHM confirms this: 21 out of the 28 copies are part of collections that include various combinations of Ibn Ezra's astrological works. But this cannot be taken as proof of Ibn Ezra's authorship of the translation. Nevertheless, since Steinschneider it has customarily been assigned to Ibn Ezra, without any further scrutiny of the matter.

Below I present four points: first, the grounds for accepting Ibn Ezra's authorship over the translation; then, three reasons for denying his authorship. I suggest that the Hebrew translation was made before 1257⁵ by a translator who had some familiarity with Ibn Ezra's astrological vocabulary but departed from it significantly in many instances, notably in the use of Hebrew technical terms and Latin loanwords or calques never employed by Ibn Ezra.

1. The translation includes several of Ibn Ezra's most idiosyncratic Hebrew neologisms: (a) משרתים, *lit.* servants, for the planets;⁶ (b) תולדת, denoting the four elements and the qualities of the planets and signs;⁷ (c) קדרות, *lit.* darkness, for eclipse;⁸ (d) מחברת for conjunction;⁹ and (e) תקופת השנה for the revolution of the year.¹⁰
2. The translator does not explicitly identify himself, whereas Ibn Ezra makes his presence clearly felt in all his works and as a rule identifies himself in the introduction.¹¹ Nor does Ibn Ezra ever refer explicitly to any part of Māshā'allāh's *Book on the Eclipses* in his astrological work, including the two versions of *Sefer ha-'Olam*.
3. The translation incorporates a series of a technical terms never used by Abraham Ibn Ezra and so alien to his distinctive astrological and scientific vocabulary that they strongly suggest that he could not have possibly been the translator: (a) אקלים, for climate;¹² (b) ממוסכים, חזקים, *lit.* stable and mixed, for "fixed" and "bicorporal"

⁵ See above, p. 235.

⁶ *Book on Eclipses*, § 1:3 and note, § 4:1.

⁷ *Ibid.*, § 1:2 and note, § 1:3, § 3:5.

⁸ *Ibid.*, § 2:4 and note, § 5:1, § 5:3, § 7:1, § 7:2, § 7:4, § 8:4.

⁹ *Ibid.*, § 4:9 and note, § 8:1–4, § 10:1–7, § 11:1–3, § 12:1–4.

¹⁰ *Ibid.*, § 2:4, § 4:2, 3, 5.

¹¹ A notable case is Ibn Ezra's translation of *Ibn al-Muthannā's Commentary on the Astronomical Tables of al-Khwārizmī*, which begins as follows (*Ibn al-Muthannā's Commentary*, 1967, pp. 147, 302): "בשם הנכבד והגורא והוא יהיה לי לעזרה נאם אברהם א'צ הספרד' ("In the name of the honored and revered Lord, may he be a help to me. Abraham Ibn Ezra, the Spaniard, spoke,"). See also *Moladot*, Introduction, § 1:1.

¹² *Book on Eclipses*, § 2:1 and note, § 2:2, § 2:3; § 2:5, § 6:7, § 6:8.

signs;¹³ (c) פִּיאֹת, for the cardines of the horoscope;¹⁴ (d) שלטון, for exaltation;¹⁵ (e) בֵּית שְׁנָאָה, for house of dejection;¹⁶ and (f) חֲבוּר for planetary conjunction.¹⁷

4. Ibn Ezra, a purist in his Hebrew, avoided Latin loanwords or calques, especially when intended to replace common and ready-to-hand Hebrew words. In the translation, however, we encounter a number of Latin loanwords and, in one notable case, a Latin calque, as follows: (a) מַרְקוּרְיוֹשׁ, יוֹפִיטֵר, מַאֲרֵשׁ, שְׁטוּרְנוֹ, which stand for *Mercurius*, *Jupiter*, *Mars* and *Saturnus*;¹⁸ (b) שְׁטַנְטְרִיאָו, a loanword for the Latin *septentrionalis* ‘northern’;¹⁹ (c) אֵילֵשׁ וְאַלְכוּלִקוּדִיב, from the Latin *hylech vel alcohoden* and hailing from the Persian *haylāj* and *kadkhuda*;²⁰ (d) the calque חֲצִי הַיּוֹם ‘midday’, used, on the model of the Latin *meridionalis*, to mean “southern,”²¹ although there is no shortage of Hebrew words with this sense. The incorporation of these Latin loanwords and calques in the translation suggests that the Latin of John of Seville may have been available to the translator, alongside the Arabic original.

¹³ Ibid., § 3:5 and note, § 8:4.

¹⁴ Ibid., § 10:7 and note.

¹⁵ Ibid., § 9:6 and note.

¹⁶ Ibid., § 9:6 and note.

¹⁷ Ibid., § 9:1, § 9:3 and note.

¹⁸ Ibid., § 4:7, § 4:8, § 6:6, § 10:2, § 10:5, § 11:1, § 12:1, § 12:3. Note, however, that in some manuscripts these planets are given their standard Hebrew names.

¹⁹ Ibid., § 6:8 and note.

²⁰ Ibid., § 7:6 and note.

²¹ Ibid., § 6:8 and note.

בשם האל¹ אני² מתחיל³ ספר⁴ למשאללה⁵ בקדרות הלבנה והשמש⁶, וחיבור הכוכבים, 158א ותקופות השנים. ויש בו שנים עשר שערים.

הענין⁷ הראשון: מפאת הגלגל ומן הכוכבים, ומעשיהם בעולם.
 הענין⁸ השני: מתהלוכות ההפוכים, זהו⁹ מפעלי¹⁰ הכוכבים באקלימין¹¹.
 השלישי¹²: במזלות ותולדותם קרים וחמים¹³, ואי זה מהם מתהפך, ומיום¹⁴ או מלילה.
 הרביעי¹⁵: בתקופות השנים.
 החמישי: בקדרות השמש והלבנה באמצעיתם¹⁶.
 הששי: בהשתנות העתים בעבור תנועות הכוכבים במזלות¹⁷.
 השביעי: בקדרות השמש ומראיתו¹⁸.
 השמיני: בחיבור הכוכבים ומפעליהם.
 התשיעי: בחיבור הכוכבים העליונים¹⁹.
 העשירי: במחברת הגדולה.
 העשתי²⁰ עשר: במחברת האמצעי²¹.
 השנים עשר: במחברת הקטנה.

1 (i) שער²² ראשון. אמר מאשא אללה²³ כי²⁴ יוצר הכל ברא²⁵ הארץ בדמות עגול, ונטה הגלגל²⁶ סביב הארץ מתגלגל בכל עת וזמן²⁷. (2) וחזק²⁸ הארץ²⁹ עומדת³⁰ בלי³¹ תנועה באמצע הגלגל, שלא תטה ימין ושמאל. ועשה הארבע תולדות מתהפכים כפי ההיפוך והכח לשבעה³² הכוכבים³³. (3) וראש³⁴ התלי והמזלות וכל הכוכבים יש³⁵ להם כח עם שבעת המשרתים³⁶ במפעליהם³⁷ ובתולדותם, ומפעלי³⁸ הכוכבים | 158ב

¹ בשם האל [קרמכ; פ > ספר אחר למשאללה. ² בשם האל אני [קרמפ; כ חסר. ³ מתחיל [קר; מכ אתחיל; פ מיחל. ⁴ ספר [קרמפ; כ הספר השני. ⁵ למשאללה [קפכ; ר למאשא אלה; מ למשאלה. ⁶ הלבנה והשמש [קרמפ; כ השמש והירח. ⁷ הענין [קמ; רכ השער. ⁸ הענין [קמ; רכ השער. ⁹ זהו [קמ; רכ זה הוא. ¹⁰ מפעלי* [כ; קרמפ מבעלי; ת operis stellarum in plagis terrae. ¹¹ באקלימין [קר; כ באקלימים; מ באיקלימים. ¹² השלישי [רכ; מ > הענין. ¹³ ותולדותם קרים וחמים [רמפ; כ תולדותם הקרים והחמים. ¹⁴ ומיום כק; רמפ מיום. ¹⁵ הרביעי [קרכ; מ > הענין. ¹⁶ באמצעיתם [קמכ; ר באמצעיותו. ¹⁷ בהשתנות העתים בעבור תנועות הכוכבים במזלות [קרמפ; כ לדעת העולם ומקורו. ¹⁸ בקדרות השמש ומראיתו [קרמפ; כ לדעת קדרות השמש; ת eclipsi solis & eius significatione. ¹⁹ העליונים [קרמפ; כ ומפעליהם. ²⁰ העשתי* [רמפכ; ק עשתי. ²¹ האמצעי* [קמ; ר האמצע; כ האמצעית. ²² שער [קרמכ; פ השער. ²³ מאשא אללה [קרכ; מ משאלה; פ משאללה. ²⁴ כי [קרמפ; כ חסר. ²⁵ ברא [קפ; רמכ < את. ²⁶ הגלגל [קפכ; מר הגלגלים. ²⁷ וזמן [קרמכ; פ ובכל זמן. ²⁸ וחזק* [רמפכ; ק וחזק. ²⁹ וחזק הארץ [רמפ; ק וחזק הארץ; כ והארץ; ת posuit terram fixam & immobilem. ³⁰ עומדת [קרמכ; פ > שתהיה. ³¹ בלי* [ק; כרמפ בלא. ³² לשבעה [קר; מפכ לשבעת. ³³ הכוכבים [קרמכ; פ המשרתים. ³⁴ וראש [קפכ; מר וראשי. ³⁵ יש [קרפכ; מ שיש. ³⁶ שבעת המשרתים [קמפכ; ר השבעה משרתים. ³⁷ במפעליהם [קרכ; מ במעליהם; פ בפעולתם. ³⁸ ומפעלי [קרמכ; פ וכח פעולת.

In the name of God, I begin Māshā'allāh's Book on the Eclipses of the Moon and the Sun, the Conjunctions of the Planets, and the Revolutions of the Years. It has 12 chapters.

First chapter: On the orb, the planets, and their effects on the world.

Second chapter: On the sequence of alterations, that is, the effects of the planets on the climates.

Third ⟨chapter⟩: On the zodiacal signs and their natures, either cold or hot, and which of them is tropical, diurnal, or nocturnal.

Fourth ⟨chapter⟩: On the revolutions of the years.

Fifth ⟨chapter⟩: On eclipses of the Sun and of the Moon at their midpoint.

Sixth ⟨chapter⟩: On the variability of the seasons as a result of the motions of the planets across the signs.

Seventh ⟨chapter⟩: On the eclipse of the Sun and its appearance.

Eighth ⟨chapter⟩: On the conjunction of the planets and their effects.

Ninth ⟨chapter⟩: On the conjunction of the upper planets.

Tenth ⟨chapter⟩: On the great conjunction.

Eleventh ⟨chapter⟩: On the middle conjunction.

Twelfth ⟨chapter⟩: On the small conjunction.

1 (1) First chapter. Māshā'allāh said that the Maker of all created the Earth in the shape of a circle. He put around the Earth the orb, which rotates at all time. (2) The Earth stands firm and motionless in the center of the orb, turning neither to the right nor to the left. He created the four elements,¹ which change in accordance to the change and the power of the seven planets. (3) The Head of the Dragon, the zodiacal signs, and all the stars share power with the seven planets² with regard to their effects and natures. The effects of the stars in the world are like the stone called

¹ To denote the four basic elements, the translator employs תולדות, an idiosyncratic Hebrew coinage by Ibn Ezra denoting the concept of nature. See 'Olam II, § 3:2 and note; Glossary s.v. "nature."

² Here the translator uses משרתים, which is one of Ibn Ezra's most idiosyncratic Hebrew neologisms, employed to denote the planets. See 'Olam II, § 1:1 and note; Glossary s.v. "planets."

בעולם¹ דומה לאבן² שקורין³ מְקַנֵּט⁴, שמושכת הברזל כשקרובה⁵ אליו. (4) כך כל הצמחים והאילנים והיצורים⁶ אשר על הארץ נבראים מחוזק ומתנועת⁷ הכוכבים, וכל בנין בעולם⁸ והריסות⁹ וכל¹⁰ המקרים בעולם הם¹¹ מפאת¹² הכוכבים. (5) והראיה על זה ענין האדם ומקריו וכל המוצא¹³ אותו, כי תמצא אדם שיהיה¹⁴ חכם ומשכיל בכל דבר ולא תשיג ידו¹⁵ לממון, ותמצא אחרים שוטים¹⁶ ורקים מכל דבר חכמה ומצליחים¹⁷ בכל עניניהם¹⁸. (6) וכל זה¹⁹ במצות האל²⁰ בכח הכוכבים וחיוזוקם.

2 (1) שער שני²¹. אמר מאשא אללה²²: דע כי מפעלי הכוכבים כפי ענין האקלימין²³, כי תמצא כוכבים שהם טובים באקלים²⁴ אחד והם בעצמם²⁵ רעים באקלים²⁶ אחר²⁷. (2) ואכן²⁸, יש לך להבין ענין²⁹ האקלימין³⁰, כמו³¹ אקלים³² הכושיים³³, שהנו³⁴ חם בכל עת, וכמו אקלים³⁵ אֲשֶׁכְּלֶבֶשׁ³⁶ שהוא³⁷ קר בכל זמן³⁸. (3) וכשהיה הכוכבים מורים³⁹ על קור באקלים⁴⁰ הכושיים⁴¹, תדין שיהיה להם האויר⁴² ממוסך, ושהיה⁴³ קור חזק באקלים⁴⁴ האשקלביש⁴⁵ ושימותו האנשים⁴⁶ מחוזק⁴⁷ הקור. (4) ודע כי לדעת⁴⁸ הכוכבים דבר חזק וקשה, והטוב שיכול⁴⁹ אדם⁵⁰ לדעת מהם הכללים כמו⁵¹ תקופת

¹בעולם] קרמכ; פ חסר. ²לאבן] קרפכ; מ להם. ³שקורין] קרמכ; פ חסר. ⁴מקנט] קמפכ (מנוקד בכ"י ק); ר מקניט. ⁵כשקרובה] קרמפ; כ הקרובה. ⁶הצמחים והאילנים והיצורים] קרכ; מפ היצורים. ⁷ומתנועת] קרמפ; כ תנועת; ת afficiuntur a motu planetarum. ⁸בעולם] קרמ; פכ העולם. ⁹והריסות] קרמכ; פ והריסותו. ¹⁰וכל] קרמכ; פ על. ¹¹הם] קרפכ; מ חסר. ¹²מפאת] קרמכ; פ מצד. ¹³המוצא] קרמכ; פ המוצאות; ת diversitas hominum is esse suo. ¹⁴שהיה] קרמפ; כ חסר. ¹⁵תשיג ידו] קרמכ; פ יהיה משיג. ¹⁶שוטים] קרמכ; פ סכלים. ¹⁷ומצליחים] קמפכ; ר ומצליחין. ¹⁸עניניהם] קמפכ; ר עניניהן. ¹⁹וכל זה] קרפכ; מ חסר. ²⁰האל] קרמכ; פ השם. ²¹שער שני] קרמכ; פ השער השני. ²²אמר מאשא אללה] קר; מ אמר משאלה; פ אמר משאללה; כ חסר. ²³האקלימין] קרמ; פכ האקלימים. ²⁴באקלים] קרפ; מכ באיקלים. ²⁵בעצמם] קרמפ; כ חסר. ²⁶באקלים] קר; מפכ באיקלים. ²⁷אחר] קרמפ; כ שני. ²⁸ואכן] קר; מ ועל כן; פ ולכן; כ חסר. ²⁹ש לך להבין ענין] קרמפ; כ חסר. ³⁰האקלימין] קר; פ האקלימים; מ האיקלים; כ חסר. ³¹כמו] קרמפ; כ הדמיון. ³²אקלים] קרכ; מפ איקלים. ³³הכושיים] קפ; רמכ הכושיים; ת Aethiopum. ³⁴שהנו] ק; כרמפ שהוא. ³⁵וכמו אקלים] קר; מפ כמו איקלים; כ ואקלים. ³⁶אשקלביש] קר (מנוקד בכ"י ק); מפ האשקלביש; כ אישקליוש; ת terra Sclavorum. ³⁷שהוא] קרמפ; כ חסר. ³⁸ומן] קמכ; רפ עת. ³⁹מורים] קרמכ; פ המורים. ⁴⁰באקלים] קרפכ; מ באיקלים. ⁴¹הכושיים] פכ; רמ הכושים. ⁴²האויר] קמכ; פ אויר; ר חסר. ⁴³ושהיה] קרמפ; כ וכשהוא. ⁴⁴באקלים] קרפכ; מ באיקלים. ⁴⁵האשקלביש] קמפכ; ר האשקלביש. ⁴⁶האנשים] קרמכ; פ אנשים. ⁴⁷מחוזק] קרמכ; פ לחוזק. ⁴⁸לדעת] קרכ; פ ידיעת; מ לידע. ⁴⁹שיכול] ק; רמפ שיכול; כ שיחל. ⁵⁰אדם] קרמפ; כ האדם. ⁵¹כמו] קרפכ; מ כפי.

“magnet,” which attracts iron when close to it.³ (4) Likewise, all the plants, trees, and creatures on the Earth are created by virtue of the planets’ power and motion, and all building or destruction on the Earth and all occurrences in the world are because of the planets. (5) The proof thereof is man’s affairs and accidents and everything that befalls him, for you may find a man who is wise and sagacious in everything but cannot make money, but find others who are dim-witted and devoid of wisdom but prosper in all their affairs. (6) All this has been decreed by God through the power of the stars and their strength.

2 (1) Second chapter. Māshā’allāh said: know that the effects of the stars depend on the climates;⁴ for you may find planets that are benefic in one climate but they themselves are malefic in another climate. (2) Indeed, you should understand the matter of the climates; for instance, the climate of the Ethiopians, which is always hot, and the climate of the Slavs,⁵ which is always cold.⁶ (3) (Therefore,) when the stars indicate cold in the climate of the Ethiopians, you should decree that their air [i.e., weather] will be temperate but (when the stars indicate cold) in the climate of the Slaves (the weather) will be bitter cold and people will die because of the intensity of the cold. (4) Know that astrology is a very difficult subject, but it is advisable for a man to know its main points thereof, for example, the revolution of the year and the eclipses,⁷ and to

³ Ibn Ezra never uses the word *מקנט* ‘magnet’, but he refers to it in two of his commentaries in similar terms. See long comm. on Ex. 28:9: *כי כח ימצא בתולדת כל אבן* *כי יש אבן שמושכת את הברזל* (“For a (special) power exists in the nature of each particular stone, and there is a stone that attracts iron”); short comm. on Ex. 7:11: *כי* “הנה בתולדת דברים רבים לא ידעום חכמי העולם כאבן המושכת הברזל” (“For there are in nature many things that the scientists of the world do not know, like the stone that attracts iron.”).

⁴ Here the translator uses *אקלים*, a calque of the Arabic *‘iqlim*, which is the standard term used by medieval Jewish writers for the concept of climate. But Ibn Ezra preferred biblical terms, systematically refrained from using *אקלים*, and frequently employed *גבול*, which he took from Psalms 74:17 and identified, in his commentary there, with the climates. See Introduction to *Moladot*, § 3:1 and note, below, pp. 284–285.

⁵ The prothetic e- in the Hebrew *אֶשְׁכְּלֵבֶשׂ* suggests that the word was borrowed from some of the emerging Romance vernaculars, possibly from Old Spanish.

⁶ This idea is based on *Tetrabiblos*, 1980, I:11, pp. 120–123. See Introduction to *Moladot* § 3:2 and note, below, pp. 284–285.

⁷ For “eclipse” the translator employs, here and elsewhere, *קדרות*, an idiosyncratic coinage by Ibn Ezra. See *Olam I*, § 29:1 and note; Glossary s.v. “lunar eclipse,” “solar eclipse.”

השנה¹ והקדרות, ולדעת מה יורו², ולדעת מפאת³ תולדת המזלות מה יורו בכל אקלים⁴. (5) וכבר הראיתוך כל⁵ זה בשאר ספרי, אך עתה אלמדך קצתם⁶ דרך קצרה.

3 (1) שער שלישי. אמר מאשא אללה⁷: המזלות הם י"ב⁸ ובכל מזל לי⁹ מעלה¹⁰, ובכל¹¹ מעלה ס'¹² ראשונים, וכל¹³ ראשון ס' שניים, וכמו כן¹⁴ עד אין סוף. (2) ואלה שמותם: ט"ש'ת¹⁵ ס"א"ב¹⁶ מ'ע"ק¹⁷ ג'ד"ד¹⁸, ומורים על אש ומים ועפר ואויר. (3) ואכן¹⁹ ג' מהם מאש²⁰ והם²¹ ט"א"ק²², | וג' מעפר והם ש"ב'ג'²³, וג' מאויר והם^{159א} ת"מ"ד²⁴, וג' ממים והם ס"ע"ד²⁵. (4) ודע כי מזלות הזכרים הם חמים והנקבות קרים, והזכרים מיום²⁶ והנקבות מלילה²⁷. (5) ויש מהם מתהפכים וחזקים וממוסכים: וטלה וסרטן ומאזנים וגדי²⁸ מתהפכים כי בהם ישתנה²⁹ הזמן והעת³⁰; ושור ואריה ועקרב

¹השנה] קמפכ; ר השמש. ²יורו] קרמפ; כ שיוורו. ³מפאת] קרמכ; פ מצד. ⁴אקלים] קרב; מ איקלים. ⁵כל] קכ; רמ בכל; פ חסר. ⁶קצתם] ק; רמכ קצת; פ חסר. ⁷אמר מאשא אללה] קר; מ אמר משאלה; פ אמר משאללה; כ חסר. ⁸י"ב] *רמפכ; ק < מעלות. ⁹לי] קכ; ר שלשים; פ ישל; מ חסר. ¹⁰מעלה] קרמכ; פ מעלות. ¹¹ובכל] קמפכ; ר וכל. ¹²ס' קרפכ; מ ששים. ¹³מרכ] קוכל; פ ובכל. ¹⁴כן] קמרכ; פ זה. ¹⁵ט"ש'ת] קרפכ; מ טלה שור תאומים. ¹⁶ס"א"ב] קרפכ; מ סרטן אריה בתולה. ¹⁷מ'ע"ק] קרפכ; מ מאזנים עקרב קשת. ¹⁸ג'ד"ד] קרפכ; מ גדי דלי דגים. ¹⁹ואכן] קמר; פכ חסר. ²⁰מהם מאש] קרמ; כ מהם מתולדת האש; פ חסר. ²¹והם] *רמפכ; ק חסר. ²²ט"א"ק] קרפכ; מ טלה אריה קשת. ²³ש"ב'ג'] קרפכ; מ שור בתולה גדי. ²⁴ת"מ"ד] קרפכ; מ תאומים מאזנים דלי. ²⁵ס"ע"ד] קרפכ; מ סרטן עקרב דגים. ²⁶מיום] קרמכ; פ מן היום. ²⁷מלילה] קרמכ; פ מן הלילה. ²⁸וטלה וסרטן ומאזנים וגדי] קרמ; פ טסמג; כ טלה סרטן מאזנים גדי. ²⁹ישתנה] קמכ; ר יתהפך; פ יתערב. ³⁰הזמן והעת] קרמ; כ נח; פ הזמן.

know what they indicate, and to know according to the nature of the signs what they indicate in every climate. (5) I have already shown you all that in my other books, but now I will teach you some of them in brief.

3 (1) Third chapter. Māshā'allāh said: There are 12 zodiacal signs, each sign has 30 degrees, each degree 60 minutes, each minute 60 seconds, and so on ad infinitum. (2) These are their names: A[ries], T[aurus], and G[emini]; C[ancer], L[eo], and V[irgo]; L[ibra], S[corpio], and S[agittarius]; C[apricorn], A[quarius], and P[isces]. They indicate fire, water, earth, and air. (3) Three of them are fiery, namely, A[ries], L[eo], and S[agittarius]; three are earthy, namely, T[aurus], V[irgo], and C[apricorn]; three are airy, namely, G[emini], L[ibra], and Aquarius; and three are watery, namely, C[ancer], S[corpio], and P[isces].⁸ (4) Know that the masculine signs are hot and the feminine (signs) are cold; the masculine (signs) are diurnal and the feminine (signs) are nocturnal.⁹ (5) Some of them are tropical, (some are) fixed, and (some are) bicorporal: Aries, Cancer, Libra, and Capricorn are tropical, because there is a change of the season (when the Sun enters) them; Taurus, Leo, Scorpio, and Aquarius

⁸ This four-part classification divides the signs according to whether they are hot or cold, dry or moist, thereby ascribing to each of the four groups one of the four basic elements, which is considered to be their common "nature." The signs are also divided into four groups, called triplicities, by means of four equilateral triangles, drawn across the zodiac, whose apexes touch the cusps of the corresponding signs. This four-part classification is common in introductions to astrology: *Tetrabiblos*, 1980, I:18, pp. 83–87; *Kitāb al-Taḥḥīm*, 1934, § 347, pp. 210–211; *Kitāb al-Madḥal*, 1996, II:3–4, v, pp. 71–76; Al-Qabīṣī 2004, I:16, pp. 25–27; *Mishpeṭei ha-Mazzalot*, Schoenberg 57, f. 69; 'Olam I, § 9:2–5; 'Olam II, § 3:3; comm. on Ex. 33:21 § 3:3–4, § 4:1 (below, pp. 274–277).

⁹ According to introductions to astrology, the masculine signs, which are hot, are identical with the diurnal signs (Aries, Gemini, Leo, Libra, Sagittarius and Aquarius); the feminine signs, which are cold, are identical with the nocturnal ones (Taurus, Cancer, Virgo, Scorpio, Capricorn, Pisces). See *Tetrabiblos*, 1980, I:12, pp. 69–71; *Kitāb al-Taḥḥīm*, 1934, § 347–349, pp. 210–212; *Kitāb al-Madḥal*, 1996, II:8–9, v, pp. 83–84; *Ṭe'amim* I, § 2.2:1, pp. 38–39; § 2.13:1, pp. 52–53; *Ṭe'amim* II, § 2.3:11, pp. 190–191. For cold signs, see 'Olam I, § 40:3, § 46:2; 'Olam II, § 54:5.

ודלי חזקים, כי בהם מתחזק¹ כל זמן וזמן; ותאומים ובתולה וקשת ודגים ממוסכים, כי בהם מתערב הזמן². (6) אלה הם תולדות המזלות.

4 (1) שער רביעי. אמר מאשא אלה³: כשתרצה לדעת אם יהיה בעולם⁴ מטר או רוח, תקן הצומחת בשעה שתכנם השמש בטלה, ותקן מקום שבעת המשרתים⁵, ודע כי⁶ השליט בצורה, אם הוא כוכב טוב, יורה על טוב בעולם, ואם רע⁷ יורה על רע. (2) וכן תעשה בד' תקופות השנים⁸ ובכל חדש וחדש. (3) ודע אם יתחברו כוכבים⁹ במזלות המים בתקופת השנה¹⁰ יורו על רוב מטר¹¹. (4) ואם יתחברו במזלות האש יורו על יוקר¹² ורעב בשביל¹³ חוזק החום והיבושת¹⁴. (5) ואם יהיו במזלות האויר יורו על רוח, כפי שיהיו בד' תקופות השנה¹⁵. (6) ואם יהיו במזלות העפר, שהם קריים¹⁶, יורו על קור ומסך החום. (7) ודע כשהיו¹⁷ מארש¹⁸ ושטרנו¹⁹ יהיו²⁰ שליטים בשנה ולא יהיו כוכבים טובים מביטים אליהם²¹, יורו על מלחמות²² והרג בעולם. (8) ואם מארש²³ שליט²⁴ ברביעית²⁵ הקיץ והוא בבית מרקוריוש²⁶, יורה על מטר ומות שיהיה²⁷ בעולם. (9) ודע²⁸ כי הרעב והתחלואים הם מחברת²⁹ הכוכבים במזלות האש. דע והבן³⁰.

¹מתחזק[*] רמפ; ק נתחזק; כ יתחזק. ²ישור ואריה ... מתערב הזמן] קרמכ; פ חסר. ³אמר מאשא אלה] קר; מ אמר משאלה; פ אמר משאללה; כ חסר. ⁴בעולם] קרמכ; פ חסר. ⁵שבעת המשרתים] קרמכ; פ השבעה משרתים. ⁶כי[*] רמכ; קפ חסר. ⁷רע] קרמפ; כ אינו טוב. ⁸בד' תקופות השנים] קמר; כ בארבעה תקופות השנה; פ בתקופות הארבעה מהשנה; ת in quartis anni. ⁹כוכבים] קרפכ; מ הכוכבים. ¹⁰בתקופת השנה[*] רפכ; ק בתקופות השנה; מ בתקופות השנים; ת in revolutione anni. ¹¹מטר] קרמכ; פ המטר. ¹²יוקר] קרפכ; מ < גדול. ¹³בשביל] קרמכ; פ בעבור. ¹⁴והיבושת] ק; רמ והיבושת פכ והיובש. ¹⁵כפי שיהיו בד' תקופות השנה] קרמכ; מ כפי שיהיו בד' תקופת השנה; פ כפי שיהיו בד' תקופות; ת & similiter in quartis anni. ¹⁶שהם קריים] קרמפ; כ חסר. ¹⁷כשהיו] קרכ; פ כשהיו; מ > כי. ¹⁸מארש] קר; מ מארסוס; פכ מאדים. ¹⁹ושטרנו] קר; מ וסטורנו; כ ושבת; פ ומאדים. ²⁰היו] קמר; פכ חסר. ²¹אליהם[*] ר; פ בשנה; קכמ חסר. ²²מלחמות] קרמכ; פ מלחמה. ²³מארש] קר; פכ מאדים; מ מארסו. ²⁴שליט] קרפכ; מ השליט. ²⁵ברביעית] קרפכ; מ ברבות. ²⁶מרקוריוש] קרמ; כ כוכב חמה; פ כוכב. ²⁷שיהיה] קרמפ; כ חסר. ²⁸ודע] קרמכ; פ < כשהיו מאדים ושטרנו שליטים. ²⁹מחברת] קרמכ; פ ממחברת. ³⁰דע והבן] קרמ; פ < זה; חסר.

are fixed, because they are the height of each season; Gemini, Virgo, Sagittarius, and Pisces are bicorporal, because weather becomes mixed (when the Sun enters) them.¹⁰ (6) These are the natures of the signs.

4 (1) Fourth chapter. Māshā'allāh said: If you wish to know whether there will be rain or wind in the world, correct the ascendant at the time when the Sun enters Aries, and correct¹¹ the location of the seven planets, and know that the ruler of the chart, if it is a benefic planet, indicates good fortune in the world, but if it is a malefic (planet) it indicates misfortune. (2) Proceed likewise at the (beginnings of the) four seasons and (at the beginning) of every month. (3) Know that if the planets conjoin in the watery signs at the revolution of the year, they indicate abundant rain. (4) If they conjoin in the fiery signs, they indicate high prices and famine because of the intense heat and dryness.¹² (5) If (they conjoin) in the airy signs they indicate winds: (all of these indications are) what will be in the (beginnings of the) four seasons.¹³ (6) If they are in the earthy signs, which are cold, they indicate cold and temperate heat. (7) Know that when Mars and Saturn are the rulers of the year and benefic planets do not aspect them, they indicate wars and slaughter in the world.¹⁴ (8) If Mars is the ruler of the summer quarter (of the year) and it [Mars] is in a (planetary) house of Mercury [i.e., in Gemini or Virgo], it indicates rain and death in the world. (9) Know that famine and illnesses come from the conjunction¹⁵ of the planets in the fiery signs. Know and understand (this).

¹⁰ This is a well known tripartite classification of the zodiacal signs, in accordance with the prevailing weather as the Sun traverses them in its annual path. See *Tetrabiblos*, 1980, I:11, pp. 64–69; *Kitāb al-Madhal*, 1996, II:6, v, p. 79; *Abbreviation*, 1994, I:9–76, pp. 15–25, *Kitāb al-Taḥfīm*, 1934, § 380, p. 231; Al-Qabīṣī, 2004, I:7, p. 27. Ibn Ezra frequently applies these three categories in his astrological work, but he uses a different nomenclature for the fixed signs (עומדים or נאמנים instead of חוקים; see 'Olam II, § 39:3–4) and for the bicorporal signs (בעלי שני גופות instead of ממסוכים). See also *Ṭe'amim*, 2007, "Glossary" s.v. "bicorporal," "fixed" (pp. 378, 381).

¹¹ For the concept of "correction," see 'Olam I, § 62:3 and note.

¹² Corresponds to 'Olam II, § 27:2.

¹³ I.e., the conjunction at the start of spring refers to spring, that at the start of summer to summer, etc.

¹⁴ Corresponds to 'Olam II, § 34:1.

¹⁵ Here and elsewhere the translator employs מהכרת for the concept of planetary conjunction. This is an idiosyncratic coinage by Ibn Ezra, which he uses frequently. See 'Olam I, § 2:1 and note; Glossary s.v. "conjunction."

5 (1) שער חמישי. אמר מאשא אללה¹: כשהיו השמש והלבנה נקדרים, צריך אתה לדעת² אם הם | נקדרים כולם או³ מקצתם, ולדעת⁴ הצומחת מאמצעית הקדרות,¹⁵⁹ ולדעת הכוכב השליט מהצומח⁵ מהצורה. (2) אם הוא רע יורה על רע, ואם הוא⁶ טוב יורה על⁷ טוב. (3) ודע כי קדרות הלבנה כשהיה⁸ במזל קר תורה על חוזק קור⁹, ובמזל מים¹⁰ על רוב מטר, ויותר בימות הקור¹¹, אך אם יהיה בימות הקיץ¹² יהיה האויר ממוסך. (4) ודע אם הכוכבים¹³ הטובים מביטים ללבנה¹⁴ ומקבלים אותה יורו על טוב.

6 (1) שער ששי. אמר מאשא אללה¹⁵: כשתרצה לדעת דבר מעניני העולם דע אם הכוכבים הכבדים הם במזלות קרים או חמים. (2) אם הם בחמים יורו על חום בקיץ וממסך¹⁶ האויר¹⁷ בחורף. (3) ואם הם בקרים יורו על קור¹⁸ בחורף וממסך¹⁹ האויר²⁰ בקיץ. (4) ואם הכוכבים במזלות המים יורו על מטר²¹ ועל אויר רע עם²² רוב מטר בחורף וממסך האויר ורדת טל בקיץ. (5) נסה זה כי יבוא על נכון, עם גזירת הבורא²³. (6) והכוכבים הכבדים הם שטורנו יופיטר ומארש²⁴, ויש חלק²⁵ עם אלה לשמש. (7) ודע²⁶: הכוכבים הכבדים יורו²⁷ על יבושת²⁸ ורעב לאקלים²⁹ אשר כנגדן³⁰, וכשהם רחוקים מהאקלים³¹ יורו על רוב מטר. (8) והכוכבים³² במזלות שטנטריאו³³ הם

¹אמר מאשא אללה] קר; מ אמר משאלה; פ אמר משאלה; כ חסר. ²לדעת] קרמכ; פ לידע. ³או] ק; רמפכ אם. ⁴לדעת] קפכ; ר לדעת; מ חסר. ⁵הצומח] קרפ; כ של הצומח; מ מהצומחת. ⁶הוא] קרמפ; כ חסר. ⁷על*] רמפכ; ק חסר. ⁸כשהיה*] רכ; מ כשהיה; ק כשהיו. ⁹קור] קמר; פכ הקור. ¹⁰מים] קרמכ; פ המים. ¹¹הקור] קכמ; ר קור; פ הגשמים. ¹²בימות הקיץ] קמפכ; ר בקיץ. ¹³הכוכבים] קרמכ; פ > היו. ¹⁴ללבנה] קרפכ; מ לבנה. ¹⁵אמר מאשא אללה] קר; מ אמר משאלה; פ אמר משאלה; כ חסר. ¹⁶וממסך] קרמפ; כ וממוסך. ¹⁷האויר] קרמפ; כ חסר. ¹⁸קור] קרמפ; כ > רוב. ¹⁹וממסך] קרמפ; כ וממוסך. ²⁰האויר*] רפ; קמכ חסר. ²¹מטר] קרפכ; מ > ואם הם במזלות האויר יורו רוח. ²²עם] קרפכ; מ אם. ²³עם גזירת הבורא] ר; ק ג'ה; מ עם גזירת הצור; פ עם גזירת השם יתעלה; כ בע'ה. ²⁴שטורנו יופיטר ומארש*] רמ; ק שטורנו יופיטר ומארש; פכ שבתאי צדק מאדים. ²⁵חלק] קרמפ; כ < להם. ²⁶ודע] קרכ; מפ < כי. ²⁷יורו] קרפכ; מ חסר. ²⁸יבושת] ק; רמ יבשת; פכ יובש. ²⁹לאקלים] קרפכ; מ לאיקלים. ³⁰כנגדן] קרמ; כ כנגדם; פ כנגדו. ³¹מהאקלים] קרפכ; מ מהאיקלים. ³²והכוכבים] קרפכ; מ ומהכוכבים. ³³במזלות שטנטריאו] קמר; כ במזלות שבטנטריאו; פ במזלות צפוניים; ת in signis septentrionalibus.

5 (1) Fifth Chapter. Māshā'allāh said: When an eclipse of the Sun or of the Moon takes place, you need to know whether they are completely or partially eclipsed,¹⁶ and to know the ascendant at the middle of the eclipse,¹⁷ and to know the planet that is the lord of the ascendant of the chart. (2) If it is a malefic ⟨planet⟩ it indicates misfortune, and if it is a benefic ⟨planet⟩ it indicates good fortune. (3) Know that when the eclipse of the Moon takes place in a cold sign it indicates intense cold, and if in a watery sign (it indicates) abundant rain, particularly during the winter. But if it takes place in summer the weather will be temperate. (4) Know that if the benefic planets aspect the Moon and receive¹⁸ it, they indicate good fortune.

6 (1) Sixth Chapter. Māshā'allāh said: When you want to know something about mundane affairs, find out whether the slow planets¹⁹ are in the cold or hot signs. (2) If they are in the hot ⟨signs⟩ they indicate heat in the summer and temperate weather in the winter. (3) If they are in the cold ⟨signs⟩ they indicate cold in the winter and temperate weather in the summer. (4) If the planets are in the watery signs they indicate rain and bad weather with abundant rain in the winter, and temperate air and ⟨heavy⟩ dew in the summer. (5) If you try this you will find that it really happens, as decreed by the Creator. (6) The slow planets are Saturn, Jupiter, and Mars, and the Sun is associated with them. (7) Know: the slow planets indicate dryness and famine in the climate that corresponds to them, but when they are distant from the climate they indicate abundant rain. (8) When the planets are in the northern signs,²⁰ they are

¹⁶ Corresponds to 'Olam I, § 29:2 (see note there); 'Olam II, § 6:1–2. See below, § 7:1.

¹⁷ See below, § 7:2.

¹⁸ For the condition of “reception,” see *Kitāb al-Tafhīm*, 1934, § 507, pp. 312–313: “Reception. When an inferior planet arrives in one of the dignities proper to a superior one ...” For a similar definition, see *Reshit Hokhmah*, 1939, VII, lxi:4–18.

¹⁹ For a similar Hebrew nomenclature (כוכבים כבדים) to denote the upper planets (Saturn, Jupiter, Mars), see 'Olam I, § 7:1.

²⁰ The northern signs—from Aries to Virgo—and southern signs—from Libra to Pisces—refer to a bipartite classification of the zodiacal signs as above or below the celestial equator. Here the translator uses שטנטריאי, a loanword from the Latin *septentrionalis* ‘northern’. Note, however, that the Hebrew שטנטריאי lacks the Latin case ending, which suggests that the borrowing is from some of the emerging Romance vernaculars, possibly from Old Spanish. Ibn Ezra never uses Latin loanwords; in this context he employs the common Hebrew words צפוני and דרומי. See, inter alia, *Mishpetei ha-Mazzalot*, Schoenberg 57, f. 69; 'Olam II, § 40:3.

כנגד האקלים¹ וקרובים אליו, וכשהם במזלות חצי היום² הם רחוקים. (9) ודע: אם³ הכוכבים הכבדים⁴ מזרחיים יורו על יבושת⁵ בקיץ וממסך⁶ בחורף, ואם הם מערביים יורו על מטר רב בחורף וממסך⁷ בקיץ.

7 (1) שער שביעי⁸. אמר מאשא אללה⁹: דע כי קדרות השמש יורה על העתיד כפי גודל הקדרות כשיהיה¹⁰ נקרר רביעית¹¹ ויותר. (2) ולדעת קדרות השמש הוא שתדע הצומח באמצעות¹² הקדרות ומקום¹³ | הכוכבים השליטים ברגע חצי הקדרות. (3) אם^{160א} הם רעים יורו על¹⁴ הרס¹⁵ ומיתת מלכים¹⁶ ונדיבים, ואם טובים יורו על טוב ותיקון כל דבר. (4) ודע אם קדרות השמש בטלה¹⁷ יורה על מיתת מלכים וקצינים ויבושת ורעב, וכמו כן במזלות האש. ובמזלות המים¹⁸ יורה על מטר¹⁹ שיעשה היזק רב. (5) ודע אם הכוכבים הטובים מביטים מחסרים מן הרע²⁰ ואם הרעים מביטים יוסיפו רע על רע.

¹האקלים] קרפכ; מ האיילים. ²חצי היום] קרמפכ; ת meridionalibus. ³אם] קרפ; כ כי אם; מ כי. ⁴הכבדים] קפכ; ר < הם; מ < כשהם. ⁵יבושת] ק; רמ יבשת; פכ יובש. ⁶ממסך] קרמפ; כ וממוסך. ⁷וממסך] קרמפ; כ וממוסך. ⁸שער שביעי*] רמפכ; ק ז'. ⁹אמר מאשא אללה] קר; מ אמר משאלה; פ אמר משאללה; כ חסר. ¹⁰כשיהיה] קרמפ; כ כשהיה. ¹¹רביעית] קרפכ; מ רביעיות. ¹²באמצעות] קרפכ; מ באמצע. ¹³ומקום] קרפכ; מ ומהם. ¹⁴יורו על*] רמפכ; ק חסר. ¹⁵הרס] קמכ; ר על רע; פ הרע. ¹⁶מלכים] קרמכ; פ המלכים. ¹⁷ודע אם קדרות השמש בטלה] קרמכ; פ חסר. ¹⁸יורה על מיתת מלכים וקצינים ויבושת ורעב וכמו כן במזלות האש. ובמזלות המים] ק; רמפכ חסר ת significabit interitum regum & divitum & siccitatem sive terrae sterilitatem atque > famem. Et ita in reliquis signis igneis. In aquaticis autem significant > רוב. ²⁰מן הרע] קמפכ; ר חסר.

above the climates and close to them, but when they are in the southern sign,²¹ they are distant (from the climates).²² (9) Know: if the heavy planets are oriental (of the Sun) they indicate dryness in the summer and temperate (weather) in winter, but if they are occidental (of the Sun) they indicate abundant rain in winter and temperate (weather) in summer.

7 (1) Seventh chapter. Māshā'allāh said: Know that an eclipse of the Sun indicates the future according to the size of the eclipse when a quarter or more is eclipsed.²³ (2) To determine (what is indicated by) a solar eclipse you should determine the ascendant at the (time of the) middle of the eclipse and the location of the ruling planets at the moment of the middle of the eclipse.²⁴ (3) If they are malefic (planets) they indicate destruction, and the death of kings and princes, but if they are benefic (planets) they indicate good fortune and the soundness of every thing. (4) Know that a solar eclipse in Aries indicates the death of kings and rulers, dryness and famine, and likewise in the (other) fiery signs. In watery signs it indicates rain that causes great damage. (5) Know that if benefic planets aspect (the eclipse) they mitigate the misfortune and if the malefic (planets) aspect (the eclipse) they add misfortune to misfortune.

²¹ See previous note. Here the translator uses the calque **חצוי היום**, *lit.* midday, based on the Latin *meridionalis*, both “noon” and “southern.”

²² Until the end of the Middle Ages the oecumene—the inhabited part of the Earth divided into seven climates—was considered to be located in the northern hemisphere of the Earth. Hence the northern zodiacal signs that are above the celestial equator were considered to be closer to the climates and the southern zodiacal signs that are below the celestial equator were considered to be distant from the climates.

²³ Corresponds to *'Olam I*, § 29:2.

²⁴ Corresponds to *'Olam I*, § 30:5; *'Olam II*, § 8:2–3.

(6) ודע אם השמש והלבנה הם במזל אדם אֵילֶש ואלכוֹלְקוּדִיב¹ והם נקדרים, יורו על כל רע² וחלי³ לילוד⁴ אם לא יביטו כוכבים טובים.⁵

8 (1) שער שמיני⁶. אמר מאשא אללה⁷: מחברת⁸ הכוכבים יורה⁹ העתידות מן הכללים. (2) ושתביט¹⁰ אם יתחברו העליונים עם התחתונים¹¹, כי הם¹² יורו על טוב אם יהיו הטובים חזקים¹³ בצורת המחברת, ואם הרעים יהיו חזקים יורו על רע. (3) ודע: אם¹⁴ הכוכבים הרעים יתחברו במזלות יורו על רע כפי המזל, שאם יתחברו במזלות המים¹⁵ יורו על מטר שיזיק, וכמו כן¹⁶ במזלות האחרים, אך אם יתחברו במזלות הנקבות יורו תחלואים¹⁷ ומות בכל נפש נקבה, וכמו כן בזכרים.¹⁸ (4) ודע אם מחברת הכוכבים וקדרות המאורות כשיהיו¹⁹ במזלות חזקים יורו על אורך הרע²⁰ ושיהיה חזק, ואם יהיו במזלות המתהפכים²¹ ויורו²² על קוצר הרע²³ ובמזלות הממוסכים יורו על אמצעית הרע, וכמו כן תורה על הטוב²⁴ כפי חוזק המזלות.²⁵

9 (1) שער תשיעי²⁶. אמר מאשא אללה²⁷ כי הדברים²⁸ הגדולים הם מקרים²⁹ בשביל חיבור הכוכבים העליונים, וזה בעבור שאינם מהירים בתנועתם. (2) וכאשר יתחברו

¹אילש ואלכול קודיב] קכ (מנוקד בכ"י ק); ר אילש סולקודיב; אילש בולקודיב; פ אילש; ת Hylech vel Alcochoden. סולקודיב] ר; כ קוריב; מ בולקו ריב; פ חסר. ²זהם נקדרים, יורו על כל רע] קרמ; פ חסר. ³כל רע וחלי] קרמ; פ וחלי; ת periculum magnum vel infirmitatem gravem. וחלי לילוד*] כ; מ חלי לילוד; ק לחלי לילוד; ר לחלי; פ חסר. ⁵אם לא יביטו כוכבים טובים.] קרמכ; פ חסר. ⁶שער שמיני*] רמפ; ק ח'; א חסר. ⁷אמר מאשא אללה] קר; מ אמר משאלה; פ אמר משאללה; א והחכם מאשאללה כתב; כ חסר. ⁸מחברת] קרמפכ; א שמחברת. ⁹יורה] קרמאכ; פ תורה. ¹⁰ושתביט] קמ; פ ותביט; ר ושהביט; א והבט; כ ודע. ¹¹עם התחתונים] קרמכ; פ לתחתונים; א עם תחתונים. ¹²כי הם] קרמאכ; פ הנה. ¹³חזקים*] רמפכא; ק חסר. ¹⁴אם] קרא; מכ כי אם; פ שאם. ¹⁵המים] קראפכ; מ הטובים. ¹⁶וכמו כן] קרמפכא; כ וכן. ¹⁷תחלואים] קרמאכ; פ > על. ¹⁸ומות בכל נפש נקבה, וכמו כן בזכרים] קרמפכ; א ומות לכל נפש נקבה, וכמו כן בזכרים; ת mortem foemini sexus animalium, et item dicitur de masculinis. ¹⁹כשיהיו] קרמפכ; כ כשיהיה; א יהיו. ²⁰הרע] קרמפכ; א רע. ²¹המתהפכים] קא; רמפכ מתהפכים. ²²ויורו] קפכא; מר חסר. ²³ושיהיה חזק ואם יהיו במזלות המתהפכים על קוצר הרע] קראפכ; מ חסר. ²⁴הטוב] קרמאכ; פ טוב. ²⁵חזוק המזלות] קאפכ; ר חזוק במזלות; מ חזוק הממשלה. ²⁶שער תשיעי*] רמפכ; ק ט'; א חסר. ²⁷אמר מאשא אללה] קר; מ אמר משאלה; פכ אמר משאללה; א ועוד אמר משאללה. ²⁸כי הדברים] קרמפכ; א כי שהדברים. ²⁹הם מקרים] קרמפכ; א יקרו.

(6) Know that if the Sun and the Moon are the *hyleg* or the *alcochoden*²⁵ in the horoscopic diagram of a man and they are eclipsed, they indicate great misfortune and grave illness for the native, on condition that the benefic planets do not aspect ⟨the eclipse⟩.

8 (1) Eighth chapter. Māshā'allāh said: A conjunction of the planets indicates future events related to general affairs. (2) Observe whether the upper planets conjoin the lower ⟨planets⟩, because they portend good fortune if the benefic ⟨planets⟩ are strong in the horoscopic diagram of the conjunction, but if the malefic ⟨planets⟩ are strong, they portend misfortune. (3) Know that if the malefic planets conjoin in the zodiacal signs, they signify misfortune according to the ⟨nature of the⟩ sign: if they conjoin in the watery signs, they signify damaging rain, and likewise regarding the other signs, but if they conjoin in the feminine signs they signify diseases and death in any female or male living creatures. (4) Know: if the conjunction of the planets and the eclipse of the luminaries takes place in the fixed signs, they indicate lasting and acute misfortune, and if in the tropical signs ⟨they indicate⟩ brief misfortune, and if in the bicorporal ⟨signs⟩ they indicate moderate misfortune, and they also indicate good fortune according to the strength of the signs.

9 (1) Ninth chapter. Māshā'allāh said that momentous events occur by virtue of the conjunction of the upper planets, and this is because they do not move rapidly. (2) When the three upper planets conjoin in

²⁵ Māshā'allāh refers here to a doctrine employed in nativities to find the prospective lifespan of the native, in which the Sun and Moon play an important role. For the *hyleg* and *alcochoden*, see *Moladot*, BNF 1056, ff. 48a–49b: מקום ה' הב' מקום: "ידענו כי מקומות החיים הם ה': הב' מקום: שני המאורות ביום ובלילה, והג' מקום מחברת המאורות או נכחם ההוא מהם בתחלה קודם לדת הגולד, והד' המעלה הצומחת, והה' הגורל הטוב ... והפריסיים יקראו לה' מקומות החיים הילאג והשליט אל ונקבה." ("We know that there are five places of life: [1–2] the two places of the luminaries by day and by night, [3] and the third is the place of the luminaries' conjunction or opposition, whichever occurs last before the birth of the native, [4] and the fourth is the degree of the ascendant, [5] and the fifth is the lot of fortune ... The Persians designate the five places of life *hyl'ej* and the ruler the *kadkad'ah*, meaning male and female"). For an almost identical account, see *Te'amim* II, § 6.2:1–11, 236–239. The *hyl'ej* is subsequently "directed" to a malefic place (Hebrew: מקום רע)—i.e., the degrees of the resulting zodiacal arc converted into a number of years, which represent the native's prospective lifespan. ואלכילקודיב is from the Latin *hylech vel alcochoden*, deriving in turn from the Persian *haylāj* and *kadkhuda*. In *Te'amim* II, § 6.2:5 (pp. 236–236; see note on pp. 315) and *Moladot* (BNF 1056, f. 50a) Ibn Ezra refers to them as, הילאג, כדכדאה, *hyl'ej*, *kadkad'ah*, and immediately explains the terms.

שלשת העליונים בגבול אחד, או בפנים אחד¹, והשמש מביט בהם², יורו על חורבן אומה וממלכה³, | ותנועתם⁴ ממקום למקום, ודברים עתיקים יורו כפי⁵ ממסך כחם וכפי⁶ תולדת המזלות. (3) וזה החיבור הגדול⁷ יורה על הקמת נביאים וחזוים וחורבן מקצת האקלימין, ויותר אם יביט אליהם⁸ אחד מן הכוכבים התחתונים. (4) ודע כי החזק בכולם⁹ הוא השליט והמורה. (5) אם הוא מן הטובים יורה על טוב ואם רע¹⁰ יורה על רע ובלבול. (6) ודע אם¹¹ הכוכבים האלה¹² יתחברו בשלטונם¹³ יורו על טוב ותקון העת ומלחמות רבות ומראות ומופתים, אך אם יתחברו בבית שנאתם¹⁴ יורו על רע וחורבן ויבושת¹⁵ ורעב¹⁶ אם אינם טובים. (7) ואם התחברו במזלות האש יורו על יבשות¹⁷, ובמזלות המים יורו על רוב מטר, ובמזלות האויר יורו על¹⁸ חזק הרוח גדולה¹⁹, ובמזלות העפר קור²⁰ חזק מאד²¹. (8) ואם יתחברו במזלות זכרים יורו על חורבן נשמות הזכרים²², וכמו כן²³ במזלות נקבות על הנקבות בנשמותם²⁴.

10 (1) שער העשירי²⁵. אמר מאשא אללה²⁶: כבר אמרתי כי הדברים הגדולים באים בשביל²⁷ מחברת²⁸ הגדולה שהיא מן הכוכבים העליונים, ובמחברתם יש בהם²⁹ שיוורו על גודל³⁰ עתידות³¹. (2) כי מחברת יופיטר עם שטורנו³² היא מחברת גדולה ויורה³³ על עתידה גדולה. (3) והכרת העתידה³⁴, שתסתכל³⁵ שעת³⁶ מחברתם והצומחת

¹אחד] קרמאכ; פ אחדים. ²בהם] קרמאכ; פ אליהם. ³חורבן אומה וממלכה] קמאכ; ר חורבן סיקטא'ש וממלכה; פ חורבן שם אומה סיקמ'אש וממלכה; ת & destructionem sectarum regnorum. ⁴ותנועתם] קרמא; פ ותנועתה; כ והעתקם. ⁵כפי] קפכא; מר חסר. ⁶וכפי] קרמאכ; פ כפי. ⁷הגדול] פכא; קמר הגדולה. ⁸ביט אליהם] קפא; רמ יביט אליה; כ יביטו אליהם. ⁹בכולם] קמאפכ; ר חסר. ¹⁰רע] קרמפא; כ רעים. ¹¹אם] קרמפכ; א שאם. ¹²האלה] קרמפא; כ העליונים. ¹³בשלטונם] קרמא; פ בממשלתם; ת in exaltationibus. ¹⁴בבית שנאתם] קרמפכא; ת in casibus suis. ¹⁵ויבושת] קרמא; פכ ויובש. ¹⁶ורעב] קפכ; מרא ורעה. ¹⁷ויבושת ורעה ... יורו על יבשות] קמפכא; ר חסר. ¹⁸יורו על] פמפכ; א יורו; קר חסר. ¹⁹חזוק הרוח גדולה] קרמפ; א חזוק הרוח הגדולה; כ רוח גדולה וחזקה. ²⁰קור] קרמפכ; א > יורו. ²¹מאד] קרמאכ; פ חסר. ²²חורבן נשמות הזכרים] קמאפ; ר חורבן נשמות הנשמים; כ נפשות הזכרים. ²³וכמו כן] קרמפא; כ ואם. ²⁴הנקבות בנשמותם] קמפ; א חורבן הנשמות הנקבות; ר הנקבות בנשמותם ת foeminis foemiorum. ²⁵שער העשירי] רמפכ; קי; א חסר. ²⁶אמר מאשא אללה] קר; מ אמר משאלה; פ אמר משאלה; א ועוד אמר משאלה; כ חסר. ²⁷בשביל] קרמא; פ מצד. ²⁸מחברת] קרמפא; כ המחברת. ²⁹בהם] קרמפכ; א מהם. ³⁰גודל] קראפכ; מ גורל. ³¹עתידות] קמאפכ; ר העתידות. ³²ופיטר עם שטורנו] רמ; ק יוביטר עם שטורנו; אפכ צדק עם שבתאי. ³³ויורה] קרמפכ; א ומורה. ³⁴העתידה] קראפכ; מ עתידה. ³⁵שתסתכל] קרמאכ; פ תביט. ³⁶שעת] קרמכ; א בשעת; פ לשעת.

one term,²⁶ or in one decan,²⁷ and the Sun aspects them, they indicate the destruction of nations and kingdoms, and their migration from one place to another, and they indicate ancient things according to the complexion of their powers and to the nature of the signs (where they conjoin). (3) This great conjunction²⁸ portends the rise of prophets and seers, and the destruction of some of the climates, particularly if one of the lower planets aspects them. (4) Know that the strongest of them is the ruler and the significator. (5) If it is one of the benefic (planets) it indicates good fortune but if it is a malefic (planet) it indicates misfortune and confusion. (6) Know that if these planets conjoin in their exaltation,²⁹ they indicate good fortune, improvement of time, many wars, and portents and miracles, but if they conjoin in their house of dejection³⁰ they indicate evil, destruction, dryness, and famine, if they are not benefic (planets). (7) If they conjoin in the fiery signs they indicate dryness, if in the watery signs they indicate abundant rain, in the airy signs they indicate the force of a strong wind, and in the earthy signs (they indicate) intense cold. (8) If they conjoin in the masculine signs they indicate the destruction of male living things, and likewise (if they conjoin) in the feminine signs they indicate the destruction of female living things.

10 (1) Tenth chapter. Māshā'allāh said: I have already said that momentous events come about because of the great conjunction, which is of the upper planets, some of whose conjunctions indicate the magnitude of future events. (2) The conjunction of Jupiter and Saturn is a great conjunction that indicates a great future event. (3) To make a prediction of

²⁶ See note on 'Olam I, § 56:2.

²⁷ See note on 'Olam II, § 41:9.

²⁸ Here the translator uses חיבור to denote a planetary conjunction. By contrast, Ibn Ezra employs מחברת and never uses חיבור in this sense. See Glossary s.v. "conjunction" and the other related collocations. But the translator also uses מחברת as in § 4:9, § 8:1 *et passim*. See also § 10:1, where the translator, to convey the meaning of "great conjunction", uses החיבור הגדול instead of המחברת הגדולה.

²⁹ The word שלטון is a very rare rendering of exaltation. For this meaning Ibn Ezra never uses שלטון but employs the neologism כבוד, lit. honor. See 'Olam I, § 23:11; 'Olam II, § 16:3.

³⁰ The planet's dejection or fall (Latin *casus*) is the opposite of its exaltation or the seventh sign from the house of exaltation. To denote this meaning the translator uses בית שנאה, lit. house of hate, a neologism that Ibn Ezra uses with the meaning of house of detriment, that is, the opposite of the planetary house or the seventh sign from the planetary house of each planet. See 'Olam I, § 33:3; § 43:4 § 65:2.

והכוכבים. (4) ודע השליט בצורה, אם הוא טוב יורה על טוב ותקון העתים¹, ואם רע יורה על רע וחורבן ויבשות² ורעב ומלחמות³. (5) ודע אם⁴ יופיטר⁵ חזק יותר מן שטורנו⁶ יורה על טוב במחברת, ואם שטורנו⁷ חזק⁸ יורה על רע ויגון במחברת. (6) ומחברתם במזלות⁹ האש והאוויר יורו על יבשות¹⁰ ויוקר וחורבן בארצות¹¹ הזרעים ורעב, ובמזלות¹² המים יורו על רוב מטר ומות אם | יש להם שום¹³ מבט רע, ואם יש¹⁴ להם מבט טוב יורו תיקון בכל דבר שיורו וחסרון רע. (7) ודע כי המחברת הגדולה, אם היא באחת מן הפיאות, ויותר אם היא בחצי השמים¹⁴, יורו שיקום מלך או נביא בפאת¹⁵ אות¹⁶ המזל. (8) ואם¹⁷ אותו המזל ובעליו יש להם מבט טוב יורו על ניצוח ושולטנות שיהיה למלך שיקום, ואם אין להם מבט טוב יורו על מיתת אותו המלך.

11 (1) שער עשתי עשר¹⁸. אמר מאשא אללה¹⁹: מחברת האמצעי²⁰ היא מארש עם שטורנו²¹ ויורה על מלחמה וקטטה אם השליט בצורה וחזק²² כוכב רע, ואם כוכב טוב הוא השליט יורה על טוב ותקון דבר²³. (2) ודע אם המחברת במזלות²⁴ שהם על צורת אדם יורה על תחלואים. (3) ודע כי מחברתם אם היא בפאה באחת²⁵ מפיאות השנה יורה על מלחמה וקטטה בין המלכים ותאריך זו הקטטה עד זמן שיתחברו פעם אחרת, ובמזלות העפר יורה על חוזק הקור והשלגים²⁶. (4) ודע אם הטובים מביטים יחסרו מן הרע, ואם הרעים מביטים יסיפו²⁷.

¹ אם הוא טוב יורה על טוב ותקון העתים] קרמפא; כ נח. ² ייבשות] קר; מ ויבשות; אפכ ויובש. ³ ומלחמות] קראפכ; מ ומלחמה. ⁴ אם] קראפ; מ כי. ⁵ יופיטר] רמ; ק יוביטר; אפכ צדק. ⁶ מן שטורנו] קרמ; אפכ משבתי. ⁷ שטורנו] קרמ; אפכ שבתאי. ⁸ חזק] קרמפ; אכ < יותר. ⁹ במזלות] קראפכ; מ ומזלות. ¹⁰ יבשות] קר; מ ויבשות; אפכ יובש. ¹¹ בארצות] קראפכ; מ וארצות. ¹² ובמזלות] קראפכ; מ ומזלות. ¹³ שום] קראפ; מכ חסר. ¹⁴ השמים] קראפכ; מ חסר. ¹⁵ בפאת] קאפכ; רמ בפאה. ¹⁶ אותו] קראפכ; מ חסר. ¹⁷ אם] קאפכ; מר ואף. ¹⁸ שער עשתי עשר] רמכ; פ שער אחד עשר; ק י'א; א חסר. ¹⁹ אמר מאשא אללה] קר; מ אמר משאלה; פ אמר משאללה; א ועוד אמר משאללה; כ חסר. ²⁰ האמצעי] קרמאכ; פ האמצעית. ²¹ מארש עם שטורנו] קרמ; פכא מאדים עם שבתאי. ²² חזק] קרמאכ; פ חסר. ²³ דבר] קרמפא; כ > כל. ²⁴ במזלות] קרמפא; כ חסר. ²⁵ באחת] קרמפא; כ אחת. ²⁶ והשלגים] קרמא; פ ויותר השלגים; כ רוב שלגים. ²⁷ ואם הרעים מביטים יסיפו] קרמפא; כ חסר.

that future event, determine the time of their conjunction, the ascendant, and the (position of the) planets. (4) Determine the ruler of the chart: if it is a benefic (planet) it signifies good fortune and improvement of the times, but if it is a malefic (planet) it signifies misfortune, destruction, dryness, famine, and wars. (5) Know that if Jupiter is stronger than Saturn, it signifies good fortune in a conjunction, but if Saturn is stronger it signifies misfortune and sorrow in the conjunction. (6) Their conjunctions in the fiery and airy signs indicate dryness, high prices, destruction of cultivated lands, and famine, and in the watery signs they signify abundant rain and death if they are in an unfortunate aspect, but if in a fortunate aspect they portend improvement in anything indicated by them and an lessening of misfortune. (7) Know that the great conjunction, if it takes place in one of the cardines,³¹ and particularly at midheaven, indicates that a king or a prophet will rise in the region (ruled by) the sign.³² (8) If this sign and its lords are in a fortunate aspect, they indicate that the king who is about to rise will be victorious and dominant, but if they are not in a fortunate aspect they indicate that king's death.

11 (1) Eleventh chapter. Māshā'allāh said: The middle conjunction is (the conjunction) of Mars and Saturn,³³ and it portends war and conflict if the ruler of the chart is strong and a malefic planet, but if the ruler is a benefic (planet) it indicates good fortune and improvement. (2) Know that if the conjunction takes place in signs with a human shape³⁴ it indicates diseases. (3) Know that their conjunction, if it takes place in one of the turning points of the year, it indicates war and conflict between kings, and that the conflict will continue until they conjoin again. (If they conjoin) in the earthy signs, it indicates intense cold and snow. (4) Know that if the benefic (planets) are in aspect they lessen the misfortune, but if the malefic (planets) are in aspect they increase (the misfortune).

³¹ Here the translator uses פִּיאֹת to denote the cardines of the horoscope. Ibn Ezra never uses this word in this sense, preferring תְּדוּת. See Glossary, s.v. "cardines."

³² Cf. 'Olam I, § 10:2 and *On Great Conjunctions*, 2000, II, § 1.3:3, p. 23. For lists of countries governed by signs, see 'Olam I, § 37:1-2; § 56:1-14; 'Olam II, § 12:1, § 13:1-2; § 14:1-7.

³³ See 'Olam I, § 27:1; 'Olam II, § 4:1, which refers to the Saturn-Mars conjunction in Cancer, which recurs every 30 years.

³⁴ This is a reference to Gemini, Virgo, Libra, and half of Sagittarius and Aquarius. See 'Olam I, § 29:5 and note.

12 (1) שער שנים עשר. אמר מאשא אללה¹: מחברת² הקטנה היא מן יופיטר³ ומן מארש⁴ יורו על מטר ועננים ובלבול האויר ומלחמה וקטטה. (2) ואם כוכב טוב שליט על זה⁵ המחברת יורה על טוב, ואם רע יורה על רע. (3) ודע אם מארש⁶ ויופיטר⁷ יהיו⁸ בצומחת מן השנה⁹ נחברים, או באחת¹⁰ מפיאות השנה, יורו על טלטול ונענוע וקטטה¹¹ ממלכים, אם¹² אין הטובים מביטים. (4) ודע אם¹³ הטוב יתחבר עם הרע תדין כפי החזק¹⁴ כי הוא המנצח, ואם רע יתחבר עם רע יורה על תוספת רע אם אין כוכב טוב שליט על המחברת, ואם טוב יורה על¹⁵ טוב¹⁶.

ברוך נותן ליעף כח ולאין אונים עצמה ירבה¹⁷.

¹אמר מאשא אללה [קר; מ אמר משאלה; פ אמר משאלה; א ועוד אמר משאלה; כ חסר. ²מחברת] קרמפכ; א המחברת. ³מן יופיטר* [רמ; ק יוביטר; א מצדק; פ מן צדק; כ וצדק. ⁴מארש] קר; מ מארסו; כא מאדים; פ ומאדים. ⁵זה [קרמכ; אפ זאת. ⁶מארש] ר; מ מארסו; כאפ מאדים. ⁷יופיטר* [רמ; ק יוביטר; כאפ וצדק. ⁸היו] קרמפכ; א חסר. ⁹מן השנה [קרמפא; כ השעה. ¹⁰נחברים או באחת] קרמאכ; פ חסר. ¹¹וקטטה [קרמפכ; א > וגלות. ¹²אם] קראפכ; מ כי. ¹³ודע אם] קרמפ; כ ודע כי; א ואם. ¹⁴החזק [קרמפ; כ החזוק; א < יותר. ¹⁵על] קכ; רמפא < תוספת. ¹⁶טוב] רמפא; כ < בנורת האל. ¹⁷ברוך נותן ליעף כח ולאין אונים עצמה ירבה] ק; ר נשלם זה הספר; כמ נשלם זה הספר תהלה לאל עולם.

12 (1) Twelfth chapter. Māshā'allāh said: The small conjunction is the conjunction of Jupiter and Mars,³⁵ which indicate rain, clouds, unstable weather, and war and conflict. (2) If a benefic planet is the ruler of this conjunction, it indicates good fortune, but if a malefic ⟨planet is the ruler of this conjunction⟩, it indicates misfortune. (3) Know that if Mars and Jupiter are in the ascendant at the ⟨beginning of the⟩ year in which they conjoin, or at one of the turning points of the year, they indicate flight, expulsion, and quarrel of kings, if benefic ⟨planets⟩ are not in aspect. (4) Know that if a benefic ⟨planet⟩ conjoins a malefic ⟨planet⟩, you should decree according to the stronger, because it is victorious, and if a malefic ⟨planet⟩ conjoins another malefic ⟨planet⟩ this indicates an increase of misfortune, on condition that a benefic ⟨planet⟩ is not the ruler of the conjunction, but if a benefic ⟨planet is the ruler⟩ it indicates good fortune.

Blessed be He who gives power to the faint, and to him that hath no might He increaseth strength (Isa. 40:29).

³⁵ Cf. *On Great Conjunctions*, 2000, II, § 3.2:3, p. 169.

THE TENTH CHAPTER OF *RESHIT ḤOKHMAH*

A transcription of the Hebrew text of the tenth chapter of *Sefer Reshit Ḥokhmah*, accompanied by an English translation and commentary, are presented here. Because the text in a previous edition (*Reshit Ḥokhmah*, 1939, X, lxxv:9–lxxvi:24) is sometimes unsatisfactory, I have produced a new text based on six manuscripts:

- א Paris, Bibliothèque Nationale de France, héb. 1056 (IMHM: F 14659), 14th–15th centuries, ff. 32b–33b.
- ב Paris, Bibliothèque Nationale de France, héb. 1055 (IMHM: F 14658), 14th century, ff. 26b–27a.
- ג Philadelphia, University of Pennsylvania, Schoenberg Collection LJS 57 (IMHM: F 09357), 14th century, ff. 69–86.
- ד New York, Jewish Theological Seminary, Mic 2626 (IMHM: F 28879), 15th century, ff. 74b–75b.
- ה Cambridge, University Library, Add. 1517 (IMHM: F 17454), 14th–15th centuries, ff. 15b–16a.
- ו Vatican, Biblioteca Apostolica Vaticana, Urbinati Ebr. 47 (IMHM: F 686), 15th century, ff. 24a–24b.

MS א, the clearest and most precise, served as the copy text. I have added punctuation to the Hebrew text and divided it into sections and passages to facilitate references. The same applies to the English translation. This is not intended to be a definitive critical edition; that must wait for a forthcoming volume devoted to Ibn Ezra's introductions to astrology.¹

¹ For a study of the contents of this text, see above, pp. 29–31.

1 (1) השער העשירי במבטים והניהוגים.¹ (2) דע כי² המבטים, גם³ הנהוגים אליהם⁴,²⁶ הם על שני דרכים. (3) הדרך⁵ האחד מבט האור, כפי חשבון⁶ מצעדי המזלות בכל מדינה ומדינה. (4) והדרך השנית במספר מעלות המזלות, והן שוות בכל מדינה ומדינה. (5) ואם היה הכוכב במעלה הצומחת, תנהיגהו כפי מצעדי המזלות על המקום⁷; ואם היה בתחלת הבית השביעי, תנהיגהו בתמורת מעלת הכוכב, והטעם המעלה שהיא לנכח מעלתו; ואם היה בתחלת קו חצי השמים או בתחלת הבית הרביעי, תנהיגהו במצעדי המזלות בגלגל היושר. (6) ככה דעת חנוך, והדרך השני על דעת⁸ כל חכמי⁹ המזלות, שתנהג כל כוכב או גורל¹⁰ שאתה צריך לנהיגהו באי זה מקום שיהיה בגלגל במעלות שוות כנגד גלגל המזלות, ולא כנגד גלגל היושר; ונסו זה הדבר פעמים אין קץ להם¹¹, ונמצא הדבר¹² נכון. (7) והנה מבט הנכח לעולם יהיה ק"פ מעלות, ומבט שלישיית

¹ והניהוגים] רפקנ; ש וניהוגים. ² דע כי] רפטשנ; ק חסר. ³ גם] רפטקנ; ט חסר. ⁴ אליהם] רפט; שקנ חסר. ⁵ הדרך] רשנ; טקפ חסר. ⁶ חשבון] רפטקנ; ט דרך החשבון. ⁷ המקום] רפטקנ; נ < ההוא. ⁸ דעת] רפטקנ; נ דרך. ⁹ כל חכמי] רפטקנ; טנ חכמי. ¹⁰ גורל] רפטקנ; ש כוכב. ¹¹ אין קץ להם] רפטשנ; ק רבות. ¹² הדבר] רפטקנ; שנ חסר.

1 (1) Tenth chapter: on aspects and directions. (2) Know that the aspects, as well as the directions to them, are ⟨calculated⟩ by two methods.³⁶ (3) The first method is ⟨to calculate the⟩ aspect of the ⟨planet's⟩ ray according to the reckoning of the rising times of the signs in any particular city. (4) The second method is ⟨to count⟩ the number of degrees of the signs, which are the same in every city.³⁷ (5) If the planet is in the degree of the ascendant, direct it according to the rising times of the signs at that ⟨terrestrial⟩ location; if it is in the cusp of the seventh place, direct it by exchanging the degree of the planet, that is, ⟨by taking⟩ the degree that is opposite its [the planet's] degree; if it is at the cusp of the line of the midheaven or in the cusp of the fourth place, direct it according to the rising times at sphaera recta.³⁸ (6) This is Enoch's opinion; but the second method, to which all the astrologers consent, is that you should direct any planet or ⟨any⟩ lot you need to direct, at any location on the ⟨zodiacal⟩ circle in equal degrees of the zodiacal circle, but not at sphaera recta; this was tested innumerable times and was found to be correct. (7) The aspect of opposition is always 180°, and the aspect of trine 120°, and the

³⁶ A similar dual methodology is proposed in *Sefer Mishpeṭei ha-Mazzalot*: “הניהוגים: צריך אתה לנהוג החמשה מקומות השררה בשני דרכים. הדרך האחת במעלות הישרות, לכל מעלה שנה תמימה, וכפי חלקי המעלה יהיו ימים מהשנה. ... ותתן לניהוג הזה שלישיית כח הניהוג על הדרך שהוא תמימה. ...” (“The directions. Direct the five places of domination by two methods. One method is in equal degrees, ⟨assigning⟩ to each degree one complete year, and the days of the year are ⟨assigned⟩ in accordance with the minutes of the degree. ... Assign to this direction a third of the power ⟨you assign⟩ in the direction according to the rising times.”) (*Mishpeṭei ha-Mazzalot*, Schoenberg 57, ff. 83–84).

³⁷ The term “rising time” refers to how many degrees of the equator cross the horizon of a given locality simultaneously with the consecutive zodiacal signs. The “rising time” changes according to the terrestrial latitude of the observation. For an example, see *Almagest*, 1984, II:8, pp. 100–103. See also Evans, 1998, pp. 109–125; *Sanctification of the New Moon*, 1967, pp. 142–143. The two methods mentioned differ according to whether or not they apply the “rising time” to determine the number of degrees in the arc between two zodiacal points in order to calculate the aspects or directions. Thus, whereas in the first method these distances change as a function of the observer's location, because it employs “rising times,” in the second method these distances are the same for different cities at different terrestrial latitudes.

³⁸ This passage (§ 1:3–§ 1:5) is expanded on in *Ṭe'amim* I, § 10.3:1–7, § 10.4:1–8 (pp. 96–99 and notes, pp. 174–176).

ק"כ¹, ומבט רביעית צ' מעלות, ומבט שישית ס' מעלות, והכל מעלות שוות. (8) וזה אמת אם לא היה לכוכב מרחב מחשב אפודת הגלגל, ואם היה לו מרחב, מעט יזיק. (9) וככה עשה אלבתני בספרו, וכל הקדמונים הבאים אחריהם. (10) וטעם אלו הניהוגים, כאשר תנהג כוכב או מעלה אל גוף כוכב או מבט אורו², לדעת כמה שנים יש ביניהם. (11) ובניהוגים יודע כל טוב ורע שיקרה למלכים, ונצוח³ המלכות מאומה לאומה אחרת, ושנויים שיתחדשו בעולם בכללים ובפרטים, מרע לטוב, ומטוב לרע.

2 (1) והניהוגין על חמישה דרכים. (2) האחד לדעת ענייני העולם בדרך כלל, כמו המבול והבצורת שיחריבו העולם⁴, | או דברי מדינות כמו⁵ מלחמות, וחדוש תורות. (3) הגנה העולם⁶ יהיה בכח מזל אלף שנים, וחלק שנה אחת בניהוג הזה ראשון אחד ושמונה וארבעים שנים⁷. (4) והניהוג השני הוא תחת ניהוג⁸ האלפים, והוא יורה על מה⁹ שיקרה לכל עם ועם וכל¹⁰ פאה¹¹ ופאה. (5) והנה יהיה¹² העולם בכח כל

¹ ומבט שלישית ק"כ [רפשטק; נ חסר. ² מבט אורו] רפשק; ט מבט. ³ ונצוח [רפשק; ש ונסוח. ⁴ העולם] רפשק; ט חסר. ⁵ כמו [רפשק; שג או. ⁶ העולם] רפשק; נ חסר. ⁷ שניים [רפשק; ט שנים. ⁸ ניהוג] רפשק; נ חסר. ⁹ מה [רשנ; טפק > כל. ¹⁰ וכל] רפשק; נ ולכל. ¹¹ פאה [טשק; רפ פאה. ¹² יהיה] רפשק; שג היה.

aspect of quartile 90° , and the aspect of sextile 60° , all in equal degrees. (8) This is true if the planet has no latitude with respect to the ecliptic [i.e., if the planet is on the ecliptic], but if it has ⟨some⟩ latitude [i.e., if it is slightly off the ecliptic], this will very slightly affect ⟨the calculation⟩. (9) Al-Battānī proceeded similarly in his book,³⁹ as did all the Ancients who followed them [i.e., the astrologers].⁴⁰ (10) ⟨The procedure of⟩ direction means that you direct some planet or degree to the body of some planet or to the aspect of its ray in order to know how many years there are between them.⁴¹ (11) By ⟨the procedure of⟩ direction one may know all good and evil that befalls kings, and ⟨the transfer of⟩ the conduct of the realm from one nation to another, and the alterations that occur in the world affecting collectives and individuals, from evil to good and from good to evil.

2 (1) There are five types of directions. (2) The first is ⟨used⟩ to know general worldly affairs, such as flood and drought that devastate the world, or the affairs of cities such as wars, and ⟨the establishment of⟩ new religions. (3) ⟨In this type of direction⟩ the world is under the power of one sign for 1000 years, and in this direction one year corresponds to $1' 48''$.⁴² (4) The second ⟨type of⟩ direction is subordinate to the direction of thousands and signifies what befalls individual nations and specific regions ⟨of the Earth⟩. (5) ⟨In this type of direction⟩ the world is under

³⁹ See *Opus Astronomicum*, 1977, cap. LIV, pp. 129–131.

⁴⁰ This passage (§ 1:6–§ 1:9) is expanded on in *Ṭe'amim* I, § 10.1:1–5 (pp. 94–97).

⁴¹ The procedure of direction—Gr. *aphesis*; Arab. *tasyir*; Heb. גיהורים; Lat. *ductus*—involves establishing an arc of the zodiac between two zodiacal places and then converting this arc into a period of time by setting in motion an imaginary clock-hand or pointer that travels at a certain speed from the initial point until it reaches the final zodiacal place. The procedure of direction is used mainly in the doctrine of natiuities to determine the length of the native's life, by establishing an arc between one of the five “places of life” (called *hyl'eg* in *Ṭe'amim* II, § 6.2:5 [pp. 236–237]) and the place of “cutting” or place of death (*Moladot*, BNF 1056, f. 50a). The length of life is determined by converting the degrees of the arc, usually projected on the equator, into a corresponding number of years, months, and days. For this procedure, see: *Tetrabiblos*, 1980, III:10, pp. 279–307; *Moladot*, BNF 1056, ff. 49b–50a; *Mishpetei ha-Mazzalot*, Schoenberg 57, ff. 80, 83–84; *Ṭe'amim* II, § 6.2:1–11 (pp. 236–239 and notes, pp. 314–316), § 8.6:1–2 (pp. 252–253 and notes on pp. 331–332); Al-Qabiṣī, 2004, IV:11–13, pp. 121–129; *Kitāb al-Taḥfīm*, 1934, § 522–523, pp. 324–327; *Carmen astrologicum*, 1976, III:1, III:2, pp. 235–245; *Kitāb Al-Mawālīd*, 1971, pp. 148–152. See also: Bouché-Leclercq, 1899, pp. 411–419; Tester, 1987, pp. 84–85.

⁴² $(1' 48'') \cdot 1000 = 30^\circ$. This cycle is completed in 12,000 years. This can be extrapolated from § 2:9, which states that the one-year direction “is completed in 12 years,” and from § 2:5, which states that, for the hundreds direction, “the world is under the power of *each* sign for 100 years.”

מזל מאה שנה, וחלק שנה אחת בניהוג הזה שמונה עשר חלקים. (6) והדרך השלישית הוא תחת ניהוג המאות, והוא יורה על כל מה שיתחדש בכל מדינה ומדינה, משפחה ומשפחה. (7) והנה יהיה¹ העולם בכח המזל עשר שנים, וככה יהיה כל אדם בכח המזל עשר שנים² עד סוף מאה ועשרים שנה; וחלק שנה אחת בניהוג הזה שלש מעלות. (8) והדרך הרביעי הניהוג הנקרא אל פרדאר. ככה ינהגוהו בדברי העולם³, ויחלו מכל כוכב שיש בית כבודו⁴ קדמון כנגד מזל טלה. רק בנולדים ביום יחלו מהשמש ובלילה מהלבנה; וכלל חשבון זמן אל פרדאר חמש ושבעים. (9) והדרך החמישי נהוג האחדים בדברי העולם, לדעת כל מה שיקרה שנה שנה. והנה⁵ גם בנולד תהיה כל שנה בכח מזל אחד, והנה יקרא מזל החזור חלילה. והנה ישרים זה הניהוג לשתים עשרה שנה, וחלק שנה אחת שלשים מעלות שהם⁶ מעלות מזל אחד.

3 (1) וככה יש⁷ לך לנהג⁸ המחברת הגדולה עד שיעתיק שבתאי וצדק משלישות אל שלישות⁹ עד שובם אל מקומם הראשון¹⁰, וזה יהיה¹¹ בתשע מאות וששים שנה; וחלק השנה האחת שנים ועשרים חלקים ראשונים וששה עשר שניים וחמשה שלישיים. (2) גם תנהג המחברת האמצעית, שהיא העתקת הנזכרים משלישות אל שלישות, וזה יהיה במאתים וארבעים שנה; וחלק השנה האחת מעלה אחת וכ"ט חלקים ראשונים וארבעה שניים. (3) גם תנהג המחברת הקטנה בהעתקת הנזכרים ממזל אל מזל בבתי השלישות, וזה יהיה בכל עשרים שנה בדרך קרובה; וחלק שנה אחת י"ח¹² מעלות בדרך קרובה.

¹יהיה] רפשטק; נ זה. ²וככה יהיה כל אדם בכח המזל עשר שנים] רפשק; ט חסר. ³בדברי העולם] רפשק; ט חסר. ⁴כבודו] רפשק; ט נגדו. ⁵והנה] רטנ; שפק חסר. ⁶שהם] רפשק; ט חסר. ⁷וככה יש] רפשק; נ וככה; ש חסר. ⁸לך לנהג] רפשק; ט לך לנהג; נ נהג. ⁹משלישות אל שלישות] רפשטק; נ מראש טלה. ¹⁰עד שובם למקומם הראשון] רפשק; נ עד שובם אל ראש טלה; ש חסר. ¹¹יהיה] רפשטק; נ חסר. ¹²י"ח] רטשק; פ שמונה ועשרים.

the power of each sign for 100 years, and in this direction one year corresponds to $18'$.⁴³ (6) The third type (of direction) is subordinate to the direction of hundreds and signifies what befalls individual cities and families. (7) (In this type of direction) the world is under the power of one sign for 10 years; similarly, an individual person is under the power of the sign for 10 years until the end of 120 years; in this (type of) direction each year corresponds to 3° . (8) The fourth type is the direction called the *fardār*. It is directed with regard to mundane affairs, as follows: they begin from any planet whose house of exaltation is the first with respect to the sign of Aries. It is only for (nativities) of those born in the day they start from the Sun and (for those born at) night (they start) from the Moon. The complete duration of the *fardār* is 75 (years).⁴⁴ (9) The fifth type is the direction of single (years) with regard to mundane affairs, to know what takes place each year. For nativities, too, each year is under the power of one sign, and this is called the cyclical sign.⁴⁵ This direction is completed in 12 years, and one year corresponds to 30° , which is equal to the degrees of one sign.

3 (1) Likewise, direct the great conjunction as Saturn and Jupiter shift from triplicity to triplicity until they return to their initial position, which takes place after 960 years; one year corresponds to $22' 16'' 5'''$.⁴⁶ (2) Direct, too, the middle conjunction, that is, the shift of the aforementioned (planets) [Saturn and Jupiter] from triplicity to triplicity, which takes place after 240 years; one year corresponds to $1^\circ 29' 4''$.⁴⁷ (3) Direct, too, the small conjunction, (that is) the shift of the aforementioned (planets) [Saturn and Jupiter] from sign to sign in the houses of the triplicities, which takes place after approximately 20 years; one year corresponds to

⁴³ $18' \cdot 100 = 30^\circ$. The cycle is completed in 1,200 years, when the cycle has traversed all 12 signs.

⁴⁴ Corresponds to 'Olam A, § 23:1–12; § 24:1–2, and 'Olam B, § 30:1–11; § 31:1–3.

⁴⁵ See Al-Qabiṣī, 2004, IV:8, pp. 117–119: “As for the years of the nativities, knowledge of this is that you consider the complete solar years which have passed for the native and take a sign for each year, and you begin with the ascendant of the nativity in the order of the signs, and the sign which is next to the sign where the counting is exhausted is the sign of the *intihā'*. . . Its lord is called the *sālhudāy*, which means the lord of the year.” See also *Kitāb al-Taḥḥīm*, 1934, § 522, p. 325; *Carmen astrologicum*, 1976, IV:1, pp. 245–246. Corresponds to *Tequfah*, JNUL 8°3916, f. 57b; *Moladot*, BNF 1056, ff. 60a–60b.

⁴⁶ $(22' 16'' 5''') \cdot 960 \approx 360^\circ$. This means that this direction moves $22' 16'' 5'''$ a year and completes the circuit of 360° in 960 years.

⁴⁷ $(1^\circ 29' 4'') \cdot 240 \approx 360^\circ$. This means that this direction moves $1^\circ 29' 4''$ a year and completes the circuit of 360° in 240 years.

(4) ויש עוד נהוג אחד במולד האדם ובתקופת שנת העולם, והוא שתנהג מן המעלה הצומחת¹ אל גוף כוכב, או מבט אורו אל מזל ידוע או מעלה ידועה, לכל שנה מעלה אחת; ונהוג הגורלות הפך המזלות, כאשר הזכיר בטלמיוס² בספר הפרי.

¹המעלה הצומחת] רפשיק; ט הצומח. ²בטלמיוס] רפשיק; ט בטלמיוס החכם השר.

approximately 18° .⁴⁸ (4) There is another direction ⟨used⟩ in the nativities of human beings and in the revolution of the world year, which is to direct from the degree of the ascendant to the body of a planet, or ⟨from⟩ the aspect of its ray to a particular sign or particular degree, ⟨assigning⟩ one degree to each year.⁴⁹ The direction of the lots is the opposite of the ⟨direction⟩ of the signs, as mentioned by Ptolemy in *Sefer ha-Peri*.⁵⁰

⁴⁸ $18^\circ \cdot 20 = 360^\circ$. This means that this direction moves 18° a year and completes the circuit of 360° in 20 years.

⁴⁹ On the assumption that this fourth type of direction is set in motion when the conjunction of Saturn and Jupiter shifts from one triplicity to another, this may be a reference to the *dawr*, which moves one degree in one year, and is mentioned in *Olam* I, § 58:1–3 (see note there). If it is not connected to the Saturn-Jupiter conjunctions, however, this direction may be identical with the “mighty *fardar*” mentioned in Abū Ma‘shar’s *Kitāb al-Ulūf*, 1968, pp. 60, 60–61. See also Kennedy, 1964, pp. 28–29. The “mighty *fardar*” moves one degree a year; the cycle of 360 years is jointly ruled by a planet and a zodiacal sign.

⁵⁰ “דבור פ”ח. אמר בטלמיוס: כשתרצה לנהג גורל היופי בשאר שנת ההקפה, לקחנו ממקום השמש
 “(Aphorism 88. Ptolemy said: when you wish to direct the lot of fortune for the whole year of a revolution, we take it from the Sun to the location of the Moon in a new Moon, and project it from the ascendant.)” (*Sefer ha-Peri*, BNF 1055, f. 65a). Cf. *Tetrabiblos*, 1980, III:10, 275–277; *Reshit Hokhmah*, 1939, IX, lxvii:7–18; *Te‘amim* I, § 9.1:1–2 (pp. 92–93 and notes); *Te‘amim* II, § 7.1:1–2 (pp. 242–245). *Sefer ha-Peri* (Book of the Fruit), called *Kitāb al-Tamara* in the Arabic world and *Centiloquium* in Latin Europe, is a compendium of *Tetrabiblos* in 100 statements, which the Middle Ages considered to be an authentic work by Ptolemy. See above, p. 16.

A FRAGMENT OF THE LONG COMMENTARY ON EX. 33:21

What follows is the astrological section of the exegetical excursus in Ibn Ezra's long commentary on Exodus 33:21. The Hebrew is transcribed from the *Mikra'ot Gedolot Haketer*,¹ the most recent printed version of Ibn Ezra's two commentaries on Exodus. Because its text is unsatisfactory in two crucial places, I have collated it with two fifteenth-century manuscripts: (a) MS Vatican, Biblioteca Apostolica ebr. 451, (IMHM: F 521), ff. 1–288; (b) MS Rome, Biblioteca Casanatense 2839 (IMHM F 763), ff. 1–151. The two significant variants derived from them are specified in the notes. I have added punctuation to the Hebrew text, and, to facilitate references, I have divided it into sections and sentences. The same applies to the English translation.²

¹ *Commentary on Exodus*, 2007, p. 159.

² For a study of the contents of this text, see above, pp. 31–34.

1 (1) ודע כי כל הצמחים והחיים בארץ, והעוף והבהמה והחיה והרמש, וכל האדם קשורים בעליונים, כי הכללים קשורים בארבעים ושמונה צורות הגלגל. (2) וזהו "אשר חלק ד' אלהיך אותם לכל העמים" (דברים ד:יט). (3) והמוסיפים "להאיר" (מגילה ט, ב) אינו מטעם העניין; אולי ידעו זה ולא רצו לגלות הסוד לתלמי.¹ והעד הנאמן "ולא חלק להם" (דברים כט:כה).

2 (1) וידוע כי המחברות הם מאה ועשרים מחברות השבעה. (2) והמחברת הגדולה במספר כולם היא אחת. (3) והמחברת השניה היא אחת ועשרים, וכנגדה מחברת

¹לתלמי] ראה נוסח זה בכ"י ווטיקאן 451 (IMHM: F 521), דפים 131א-131ב; קאסאנאטסה 2839 (IMHM: F 763), דף 104ב. בהוצאה של מקראות הגדולות הכתר וגם בכל ההוצאות המודפסות האחרות: לתלמידים.

החמשה ככה, וזה המספר יצא משבעה. (4) ומחברת השלשה—חמשה ושליש, שגם זה המספר יוצא משבעה, וככה מחברת הארבעה. (5) והנה מחברת הששה—שבעה.

3 (1) והמחברת שהיא כוללת המשפחות לכל האדמה כפי מזל כל גבול מהשבעה גבולות שהם כל הישוב. (2) ועליהם כתוב: "אתה הצבת כל גבולות ארץ קיץ וחורף אתה יצרתם" (תה' עד:יו), שהשתנה בכל הגבולות אתה יצרתם, ואין השינוי בא מהשמש, רק בעבור נטותה לפאת צפון ודרום. (3) והנה מחברת השניים העליונים במזל טלה הוא בכל תשע מאות וששים שנה, ושניהם סובבים ממזל התחברותם אל מזל תשיעי בכל עשרים שנה, ככה יתגלגלו שנים עשרה פעמים עד מאתיים וארבעים שנה. (4) ומשם יתגלגל במספר הזה ובדרך הזה במזלות העפר, גם במזלות הרוח, גם במזלות המים.

quadruple conjunctions [i.e., there are also 35 quadruple conjunctions, and 35 is divisible by 7]. (5) There are 7 sextuple conjunctions.⁵⁴

3 (1) 〈Behold now〉 the conjunction that incorporates all the families of the earth [i.e., all the nations] according to the sign of each of the seven climates (Heb. *gevulot*) that make up the inhabited part 〈of the earth〉.⁵⁵ (2) Regarding them [the seven climates] it is written: “Thou hast set all the borders (Heb. *gevulot*) of the earth; thou hast made summer and winter” (Ps. 74:17): the change is in all the climates that you made, and the change does not come from the Sun but because of its tilting towards the north and the south.⁵⁶ (3) The conjunction of the two uppermost planets [i.e., Saturn and Jupiter] in the sign of Aries takes place every 960 years, and both revolve from the sign of their conjunction to the ninth 〈following〉 sign every 20 years, and they repeat this cycle twelve times to make up two hundred and forty years. (4) From there they repeat this cycle the same number of times and in the same manner in the earthy signs, in the airy signs, and in the watery signs.⁵⁷

⁵⁴ Corresponds closely to ‘*Olam* I, § 1:2–§ 6:7. See notes there. Note that in stark contrast to that passage, where Ibn Ezra studies the several combinations of planets in ascending order, from double conjunctions to sextuple conjunctions and finally the grand conjunction of all seven planets, here he pairs them into sets of conjunctions that have the same number of combinations: there are 21 double and 21 quintuple conjunctions, and 35 triple and 35 quintuple conjunctions. For a discussion of the two approaches, see Sela, 1999, pp. 313–323. See also ‘*Olam* II, § 2:1.

⁵⁵ This is probably a generic reference to all Saturn-Jupiter conjunctions and their relationship to the climates and the corresponding nations and countries of the Earth. See *On Great Conjunctions*, 2000, I, § 1.2:5, 31–33: “Information on the power of the people of the regions may also be gained at the time of the shift of conjunction from one triplicity to another from the managements and positions of the planets in the horoscopes of the conjunctions. If that management belongs to Saturn, it indicates power for the people of the first clime; then the rest of the planets follow Saturn in the order of the spheres, and the first clime 〈is followed by the others〉 in numerical order until one gets to the last of them.”

⁵⁶ Similar ideas occur in Ibn Ezra’s commentary on Ps. 74:17: “וְהִזְכִּיר כִּי הַשְּׁבִיעָה גְבוּלוֹת הֵם נִצְבִּים לְעוֹלָם וְלֹא יִתְחַלֵּף הַיְיָשׁוּב, וְטַעַם קִיץ וְחֹרֶף בְּעִבּוֹר הַיּוֹת רֹב הַיְיָשׁוּב בַּפֶּאֶת שְׂמָאל וְקִצְתוֹ בַּפֶּאֶת דְּרוֹם, וְטַעַם לְהִזְכִּיר זֶה עִם גְּבוּלוֹת אֶרֶץ כִּי בְהִיּוֹת בְּמִקּוֹם אֶחָד קִיץ הוּא בְּמִקּוֹם אֲחֵר חֹרֶף” (“And he mentioned that the ‘seven climates’ are fixed forever, and the inhabited part of the earth will not change. The reason for writing ‘summer and winter’ is that most of the ecumene is in the north and only a slight part is in the south. The reason for mentioning this together with the climates is that when it is summer in one place it is winter in the other.”).

⁵⁷ Corresponds closely to ‘*Olam* I, § 7:1–3; § 8:1–4; § 9:1–6; § 10:1–2 and ‘*Olam* B, § 3:1–4. See notes there.

4 (1) ואל יעלה על לבך, כי הארבעה תולדות בשמים, ויש בשמש חום וקור בלבנה ובשבת; חלילה חלילה. (2) כי הבריות העליונות נכבדות הם ועליהן כתוב: "כי הוא צוה ונבראו, ויעמידם לעד לעולם" (תה' קמח:ה—ו). רק נקראו ככה בעבור המקבלים. (3) והנה לא יוכלו המשרתים לשנות דרכם, שיעבור אחד מהם החק שנתן לו השם, גם כן כל צבא השמים. והשפליים קבלו מהם כפי מתכונתם. (4) על כן לא ייטיבו ולא ירעו. והנה המשתחוה למלאכת השמים לא יועיל לו, כי מה שגור עליו כפי מערכת כוכבי מולדתו כן יקרנו, חוץ אם ישמרנו כח עליון יותר מכח הכוכבים, שהיה דבק בו, אז ינצל מהגורות.

5 (1) ואתן לך משל חשוב, שהיתה מערכת הכוכבים שידגל נהר על עיר אחת וישטוף אנשים או ימותו. (2) ובא נביא והזהירם שישובו אל השם טרם בא יום רעתם. (3) ושבו אליו בכל לבם, ובעבור שדבקו בו, נתן בלבם שיצאו אנשי העיר לחוץ להתפלל. והנה כן עשו. (4) וביום ההוא גדל הנהר פתאום כמנהגו, כאשר ראינו בעינינו פעמים רבות, ושטף כל העיר. והנה לא סרה גזרת השם והוא הצילם. (5) וחשוב כי המשרתים כסוסים עוברים במסלה, ולא ירוצו להרע או להיטיב, רק ככה דרכם. (6) וחשוב כי במסילה

4 (1) But do not think that the four elements are in heavens, and that there is heat in the Sun and cold in the Moon and Saturn. God forbid.⁵⁸ (2) For the uppermost creatures are noble, and about them it is written: “For he commanded, and they were created, He hath also established them for ever and ever” (Ps. 148:5–6). They are called so [i.e., fiery, earthy, airy, and watery signs] only for the receivers ⟨of their influence⟩. (3) Now the planets cannot alter their paths—they cannot violate the law given by God. This applies to all the heavenly host as well. The creatures of the lower world receive ⟨astrological influence⟩ from them according to their own constitution. (4) Therefore they [i.e., the stars] have no intention of causing either good or evil. So, one who bows to the celestial system will have no benefit from doing so, for what was decreed for him according to the configuration of the planets of his nativity will befall him, unless he is protected by a power superior to the power of the stars, to which he cleaved, then he will be saved from the decrees ⟨of the stars⟩.⁵⁹

5 (1) Now I give you a significant parable. According to the configuration of the stars a river was to flood a city and wash away or kill its inhabitants. (2) But a prophet came and warned them to turn back to God before the day of their disaster. (3) They returned to Him with all their hearts. And because they cleaved to Him, He put it into the inhabitants’ hearts to leave the city to pray ⟨to God⟩. They did this. (4) On the appointed day the river suddenly overflowed as usual, as we have seen many times, and flooded the entire city. But God’s decree did not change and He saved them.⁶⁰ (5) Now imagine that the planets are like horses that run along a road: they do not run with the intention of doing good or evil, but that is their nature. (6) Now imagine that a blind man is on

⁵⁸ Here and in other parts of his oeuvre Ibn Ezra appears to be haunted by the prospect that the names of the triplicities (fiery, airy, watery, earthy) or the standard astrological view of the physical qualities or natures of the zodiacal signs (i.e., that the signs of the fiery triplicity are hot) or of the planets (i.e., that the Sun is hot and the Moon is cold) may threaten the rigid Aristotelian separation between the super- and sublunary domains, with which he identifies wholly. See *Te’amim* I, § 1.5:1–16, pp. 33–35; § 2.7:3, pp. 46–47; *Te’amim* II, § 2.1:1–2, pp. 184–185; § 8.7:8, pp. 254–255.

⁵⁹ See *Moladot*, Introduction, § 9:4–5 (below, pp. 290–291).

⁶⁰ For an explanation of this parable, see Sela, 1999, 98–102.

איש עור, לא ידע מנהג הסוסים, מתי הולכים לימין או לשמאל, והוא נשען על פקח שידע סורם. והנה הוא ישמרנו, כי ברוצם בצד זה יוליך העֵנָר לצד האחר, ומרוצת הסוס לא תשתנה והעֵנָר ימלט.

6 (1) ובעבור זה אמר השם "אשר חלק" (דבר' ד:יט); "ואתכם לקח יי' ... להיות לו לעם נחלה כיום הזה" (דבר' ד:כ); ככה "לא כאלה חלק יעקב, כי יוצר הכל הוא" (ירמי' נא:יט). וזהו "ונפלינו אני ועמך" (שמות לג טז). (2) וזהו שאמרו חכמינו "אין מזל לישראל" (שבת קנו, א; נדרים לב, א)—כל זמן שהם שומרי התורה. (3) ואם לא ישמרוה, ישלוט בהם המזל כאשר הוא מנוסה, כי כל מחברת ומזל דלי במערכת רעה, הנה יבא רעה לישראל¹. (4) והיודעים חכמת המזלות יודו כן, והנה היתה במערכת המחברת, שיעמדו במצרים בגלות עוד שנים רבות. ובעבור שצעקו אל השם ושבו אליו, הושיעם השם.

¹רעה לישראל] ראה נוסח זה בכ"י קאסאנאטנסה 2839 (IMHM: F 763), דף 105א. בהוצאה של מקראות הגדולות הכתר: רעה לשונאי ישראל.

the road. The blind man does not know the way of horses, when they turn right or left, but he relies on a sighted person who knows the way the horses run. The sighted person will protect the blind man, because when the horses run to one side he will lead the blind man to the other side, so that the even though the horse's course does not change the blind man escapes.

6 (1) It is because of this that ⟨Scripture⟩ states, “which the Lord thy God has allotted” (Deut. 4:19); “But you hath the Lord taken . . . to be unto Him a people of inheritance, as ye are this day” (Deut. 4:20); “The portion of Jacob is not like these, for he is the former of all things” (Jer. 51:19). This is the meaning of “so that we are distinguished, I and Thy people” (Ex. 33:16). (2) This is what the Sages mean by “there is no *mazzal* for Israel” (B Shabbat 156a *et passim*)—as long as they observe the Torah. (3) But if they do not observe the Torah, then the zodiacal sign rules over them, as has been proven by experience, for any conjunction ⟨of Saturn and Jupiter that takes place⟩ when Aquarius is in an evil configuration results in harm to Israel.⁶¹ (4) Those versed in astrology admit that a conjunction took place in a configuration which meant that they would remain in exile in Egypt for many more years,⁶² but because they cried out to God and returned to Him, He saved them.

⁶¹ Corresponds closely to ‘Olam B, § 14:1–5. See notes there.

⁶² See *Moladot*, Introduction, § 2:2 (below, pp. 282–283).

THE INTRODUCTION TO *SEFER HA-MOLADOT*

The present transcription of the Hebrew text of the introduction to *Sefer ha-Moladot* (Book of Nativities), accompanied by an English translation and a commentary, is based on a collation of five manuscripts:

- Ⓜ Munich, Bayerische Staatsbibliothek, Cod. Hebr. 202 (IMHM: F 01649), 15th century, ff. 70a–71a.
- Ⓝ New York, Jewish Theological Seminary, Mic 2626 (IMHM: F 28879), 15th century, ff. 91b–92a.
- Ⓟ Paris, Bibliothèque Nationale de France, MS héb. 1056 (IMHM: F 14659), 14th–15th centuries, ff. 46a–46b.
- Ⓜ Madrid, Biblioteca de la Real Academia de la Historia 7 (IMHM: F 7370), 15th century, ff. 53a–53b.
- Ⓥ Vatican, Biblioteca Apostolica Ebr. 390 (IMHM: F 472), 1436, ff. 108a–109b.

MS Ⓜ, one of the most precise and most clear, was chosen as the copy text. I have added punctuation to the Hebrew text, and divided it into sections to facilitate references. The same applies to the English translation. This is not intended to be a definitive critical edition; that must wait for a forthcoming volume devoted to Ibn Ezra's work on nativities.¹

¹ For a study of the contents of this text, see above, pp. 34–40.

1 (1) אמר אברהם הספרדי¹: כל משכיל בחכמת משפטי המזלות² ואיננו³ יודע ^{א70} מהחכמה העליונה⁴ יש פעמים שיהיו דיניו כזבים בעבור שלא נשמר מהדברים הראויים להשמר מהם. (2) וכלל אומר⁵ כי דיני הכללים יבטלו הפרטים, והנה אזכיר מהם⁶ שמנה דרכים.

2 (1) הדרך האחת⁷ שיש לו לדעת הנולד מאיזה עם הוא. (2) כי אם היה המולד לישראל⁸ וראה⁹ במערכת כוכבי מולדו¹⁰ להיותו מלך, אין¹¹ ראוי לדין כך, בעבור כי המחברת¹² הגדולה שהיא מחברת¹³ שבת¹⁴ וצדק כבר התברר ממנה להיות¹⁵ עמו¹⁶ בגלות. (3) והנה כח זה הפרט לא יוכל לבטל הכלל, וככה ראוי שידין כי הנולד¹⁷

¹אמר אברהם הספרדי] כמט; פ אמר רבי' אברהם הספרדי; נ חסר. ²המזלות] כפמט; נ הככבים. ³ואיננו] כפמט; נ ואינו. ⁴מהחכמה העליונה] כפנ; ט מחכמה העליונה; מ (בשוליים) < פ' חכמת הטבע והחכמה האלוקית וזהו שיצטרך לו לדעת טבה הארץ ומוג האנשים ופרטי הה? מהחכ? ישאר לא ישמר מהם יכויב במשפט. ⁵אומר] כפנט; מ אני אומר. ⁶מהם] כנמט; פ חסר. ⁷הדרך האחת] כנ; פ הא; מט האחת. ⁸לישראל] כפנט; מ ישראל. ⁹וראה] כפנ; מ והוא; והוא ראה. ¹⁰מולדו] פט; נ המולד; מכ מזלו. ¹¹אין] כפמט; נ אינו. ¹²המחברת] כנמט; פ במחברת. ¹³מחברת] כפט; מ מערכת; נ חסר. ¹⁴שבת] כפמט; נ שבתאי. ¹⁵להיות] כפנט; מ להיותו. ¹⁶עמו] כפט; נ עמה. ¹⁷כי הנולד] כפט; נמ שהנולד.

1 (1) Abraham the Spaniard said: Anyone who is versed in the science of the judgments of the zodiacal signs⁶³ but is not acquainted with the higher science⁶⁴ will sometimes make erroneous (astrological) judgments, because he was not wary of matters that call for caution. (2) I state it as a general rule that judgments about collectives take precedence over those about individuals,⁶⁵ of which I now present eight ways:

2 (1) The first (way states) that he [the astrologer] should know to which nation the native belongs. (2) If the natal chart belongs to a Jew and he [the astrologer] sees in the stars' configuration of the natal chart that he [the native] will become a king, it is not appropriate to pronounce such a judgment [i.e., that that this Jew will be crowned king], for the great conjunction, that is, the conjunction of Saturn and Jupiter, has already shown that his [the native's] nation is in exile.⁶⁶ (3) But the (judgments about) collectives cannot (totally) abrogate the power related

⁶³ The expression "science of the judgments of the zodiacal signs" (הכמת משפטי המולות) means only astrology and is used occasionally in Ibn Ezra's oeuvre (see *Mishpeṭei ha-Mazzalot*, Schoenberg 57, ff. 71, 77; *Ibbur*, 1874, 6b; *Mivḥarim* III, Archivio di Stato, 368.3). By contrast, the very frequent "science of the zodiacal signs" (הכמת המולות) also denotes astronomy, mathematics, and the regulation of the calendar. See Sela, 2003, pp. 81–82.

⁶⁴ Elsewhere Ibn Ezra uses the expression "higher science" (ההכמה העליונה) only in his biblical commentaries to denote a comprehensive discipline that is concerned with theoretical principles rather than with practice and experiment and aims at grasping the most fundamental and profound laws of nature. See commentary on Eccles. 3:11, 12:10; Dan. 2:2; long comm. on Ex. 3:15.

⁶⁵ See *Tetrabiblos*, 1980, II:1, 117–119: "Since prognostication by astronomical means is divided into two great and principal parts, and since the first and more universal is that which relates to whole races, countries and cities, which is called general, and the second and more specific is that which relates to individual men, which is called genethiological, we believe it fitting to treat first of the general division, because such matters are naturally swayed by greater and more powerful causes than are particular events."

⁶⁶ In a number of his biblical commentaries Ibn Ezra regards a Saturn-Jupiter conjunction in Aquarius (closely associated with the events surrounding the Israelites' exodus from Egypt under Moses) as have shaped the historical fate of the Jewish nation and particularly as responsible for their long exile. See long comm. on Ex. 6:7, 32:1, and Ex. 33:21 (§ 6:3–4, pp. 278–279); *Nativitatibus*, 1484, sig. C1b: "Sciendum etiam quod adunatio Iovis et Saturni fuit in Aquario ante exitum Iudeorum de Egipto."

יהיה עם המלכים ויתערב ויתעסק עמהם רק לא יהיה מלך בעצמו. (4) וככה אם מצא שבת¹ במולד ישראלי² בבית התשיעי³, לא יורה שתהיה אמונת הנולד בתורתו בלתי⁴ נכונה, רק אם היה במולדות⁵ ישמעאל⁶ יקרה כך.

3 (1) והדרך⁷ השנית⁸ מפאת הגבולים. (2) כי הנולד בארץ כוש, א'ע'פ⁹ שיהיה נגה עם הלבנה במעלה הצומחת, לא נדין | שיהיה הנולד¹⁰ יפה ולבן¹¹ כנגד האנשים שהם בגבולים אחרים¹², רק יהיה ככה כנגד צורות אנשי גבולו. (3) וככה, אם היה השליט

¹שבת] כפמט; נ שבתאי. ²ישראלי] כפמנ; ט ישראל. ³התשיעי] כמט; פנ הט'. ⁴בלתי] פנמ; כט חסר. ⁵במולדות] כפט; נמ במולד. ⁶ישמעאל] כפמ; נט ישמעאלי. ⁷הדרך] כפמט; נ הדרך. ⁸השנית] כט; פנ הב'; מ השני. ⁹א'ע'פ] כנמט; פ אע'פי. ¹⁰הנולד] נמט; פכ המולד. ¹¹ולבן] כנמט; פ חסר. ¹²אחרים] כנ; פנט האחרים.

to ⟨judgments about⟩ individuals, so he should judge that the native will be close to kings and will mingle and have dealings with them, but that he himself will not become a king.⁶⁷ (4) Likewise, if the planet Saturn is in the ninth ⟨place⟩ in a Jew's natal chart,⁶⁸ it does not signify that the native will not be firm in his religious belief, but if it [the same configuration] is in the natal charts of Ishmaelites it will be so.⁶⁹

3 (1) The second way relates to the climates.⁷⁰ (2) If the native was born in Ethiopia,⁷¹ even though Venus and the Moon are in the ascendant ⟨of his natal chart⟩,⁷² we will not judge that the native will be as handsome and white as persons ⟨born⟩ in other climates, but only with respect to the form and figure of persons of the same climate. (3) Likewise, if Mercury

⁶⁷ Ibn Ezra, a twelfth-century Spaniard, probably took his inspiration for this example from famous historical figures such as Hasdai Ibn Shaprut in Cordoba (d. ca. 975) and Samuel b. Naghrillah ha-Nagid (d. 1055/6) in Granada.

⁶⁸ The ninth place is held to be in charge of the native's religious belief. Claudius Ptolemy named it the "House of the God" (*Tetrabiblos*, 1980, III:10, pp. 272–273). Abū Ma'shar, too, designated the ninth place "the place of faith" (*On Great Conjunctions*, 2000, II, § 1.4:3, pp. 44–45). Ibn Ezra refers to it as the "the place of religious belief" (e.g., *Reshit Hokhmah*, 1939, III, xlii:10–11; *Ṭe'amim* I, § 3.6:14, pp. 68–69; *Mishpetei ha-Mazzalot*, Schoenberg 57, f. 73).

⁶⁹ With Saturn (the most malefic planet) in the ninth place (which is in charge of religious belief), one would expect the native to be an apostate. This does not hold for Jews, however, because Saturn is the planet in charge of the Jews. In addition, Ibn Ezra maintains that a planet that favors the members of the religion over which it has sway bodes ill for the members of the other faiths. He repeats this idea in *Moladot*, BNF 1056, f. 57a: "וואם היה שבתי או מאדים בבית הט' יורה על כובן באמונתו ונשבע לשקר רק אם היה הנולד" "If Saturn or Mars are in the ninth place they signify (that the native will be) a false believer and a perjurer; but if the native is a Jew Saturn will hardly harm him, but Mars will harm him to such an extent that he becomes an apostate".

⁷⁰ Ibn Ezra based this coinage (גבול) on Psalms 74:17, identifying its "boundaries" with the concept of the oecumenical climates. See: long comm. on Ex. 33:21 (§ 3:2, pp. 274–275 and note); Sela, 2003, pp. 107–112.

⁷¹ Ibn Ezra took this stereotype from *Tetrabiblos*, 1980, I:11, pp. 120–123: "The people who live under the more southern parallels ... since they have the sun over their heads and they are burned by it, have black skins ... and in habits are for the most part savage because their homes are continually oppressed by heat; we call them by the general name *Ethiopians*." See also *Book on Eclipses*, § 2:2–3 (above, pp. 242–243).

⁷² Venus and the Moon are considered to be benefic planets (see: *Tetrabiblos*, 1980, I:5, pp. 38–39; *Ṭe'amim* II, § 5.8:2, pp. 232–233). Hence a favorable outcome is to be expected if they are in the ascendant of the natal chart.

על המולד כוכב¹ חמה, לא נדין שיהיה חכם גדול² בכל מיני חכמה,³ כי לא יתכן להיות חכם בארץ כוש בעבור התגבר חום השמש. (4) על כן,⁴ לא תהיה⁵ תולדתם⁶ ישרה רק נדין שיהיה מבין כנגד אנשי מקומו.

4 (1) והדרך⁷ השלישית⁸ הכלל הבא מהמחברת הגדולה על כל מדינה ומדינה. (2) והנה, אם⁹ בכח המחברת¹⁰ שתבא חרב על מדינה ידועה, א'ע'פ¹¹ שיש בנולדים בה¹² אנשים רבים שאין במולדם שימותו¹³ בחרב, בבא פקודת המדינה יהרגו כולם¹⁴.

5 (1) והדרך¹⁵ הרביעית¹⁶ מפאת תקופת העולם. (2) אם בא מכלל התקופה¹⁷ חולי שיקרה למדינה ידועה, א'ע'פ¹⁸ שאין¹⁹ במולד אדם שיש בה²⁰ שיחלה באותה שנה, יקרנו²¹ אותו החלי, כי הפרט לא יבטל²² הכלל.

6 (1) והדרך²³ החמישית²⁴ מפאת המשפחה. (2) כי אם היו שני²⁵ נולדים ברגע א'²⁶

¹כוכב] פנמט; כ נגה. ²גדול] כמ; פנט חסר. ³חכמה] כפמט; נ חכמות. ⁴על כן] כנמט; פ ע'כ. ⁵תהיה] כנ; פט יהיה; מ יהיו. ⁶תולדתם] כנמ; פט תולדתו. ⁷והדרך] כפמט; נ הדרך. ⁸השלישית] כט; פנ הג; מ השלישי. ⁹אם] כפמט; נ < היה. ¹⁰המחברת] כפמנ; ט המדינות. ¹¹א'ע'פ] כנמט; פ אע'פי. ¹²בנולדים בה] כפנט; מ במדינה כח. ¹³שימותו] כפמט; נ שיהרגו. ¹⁴יהרגו כלם] כפנט; מ יהרוג את כולם. ¹⁵והדרך] כפמט; נ הדרך. ¹⁶הרביעית] כמט; פנ הד'. ¹⁷התקופה] כפמנ; ט חסר. ¹⁸א'ע'פ] כנט; פמ אע'פי. ¹⁹שאין] פמט; נכ שיש. ²⁰שיש בה] כמט; נ שיש בהם; פ חסר. ²¹יקרנו] כפ; נ יקרה לו; מ יקרה בו; ט יקרא לו. ²²יבטל] כפמט; נ יוכל לבטל. ²³והדרך] כפמט; נ הדרך. ²⁴החמישית] כט; פנ הה; מ החמישי. ²⁵שני] כמט; פנ ב'. ²⁶א'ע'פ] כפנ; מט אחד.

is the lord of the nativity,⁷³ we shall not judge that ⟨the native⟩ will be a great scholar in all sorts of sciences, inasmuch as it is impossible for there to be a scholar in Ethiopia because of the intense heat of the Sun ⟨there⟩. (4) As a result their temperament is not balanced⁷⁴ and we should judge only that he may be more intelligent than his countrymen.

4 (1) The third way stems from the great conjunction ⟨of Saturn and Jupiter⟩⁷⁵ which holds sway over every city. (2) Thus, if the power of the conjunction determines that a certain city will be plunged into war,⁷⁶ even though the natal charts of many of those born in the city do not indicate that they will die by the sword, they will be all killed when the city meets its fate.

5 (1) The fourth way refers to the power of the revolution of the world.⁷⁷ (2) If the power of the revolution of the world ⟨determines⟩ a plague in a certain city,⁷⁸ even though the natal chart of one of its inhabitants does not indicate that he will fall ill that year, he will nevertheless be struck by the disease, because the ⟨astrological judgments affecting⟩ individuals cannot annul ⟨astrological judgments affecting⟩ collectives.

6 (1) The fifth way is concerned with the ⟨social rank of the⟩ family. (2) If two children are born at the same moment in the same city, one

⁷³ Mercury indicates wisdom, speech, and the rational soul. See *Tetrabiblos*, 1980, III:13, pp. 332–333; *Reshit Hōkhmah*, 1939, IV, xlix:9–10; *Te'amim* I, § 4.7:2, pp. 78–79; *Te'amim* II, § 5.7:1, pp. 232–233.

⁷⁴ Here Ibn Ezra applies the Hippocratic-Galenic theory that health and illness are determined by the mixture and proportion of the four humors (blood, phlegm, black bile, and yellow bile) in the body. An excess of heat violates this equilibrium. See below, § 9:3.

⁷⁵ Here “great conjunction” refers indifferently to any of the so-called small, middle, or great Saturn-Jupiter conjunctions. For a similar use of the term, see ‘*Olam* I, § 20:1–3, § 58:1.

⁷⁶ For the association of wars with the three types of Saturn-Jupiter conjunctions, see ‘*Olam* I, § 39:1–7; ‘*Olam* II, § 20:4.

⁷⁷ The “revolution of the world” (תְּקוּפַת הָעוֹלָם) is a special horoscope cast every year, when the Sun enters Aries, in order to forecast world affairs during the coming year. The timing evokes the creation of the world. See also *Te'amim* I, § 2.11:3, pp. 50–51. In ‘*Olam* I and ‘*Olam* II Ibn Ezra employs “revolution of the year” (תְּקוּפַת הַשָּׁנָה) instead.

⁷⁸ For the association between disease and the horoscopes cast when the Sun enters Aries, see ‘*Olam* A, § 24:3, § 50:1.

במדינה אחת, והאחד¹ בן משנה והשני² בן משרת פורני³ ויש בכח המולד לעלות⁴ למעלה⁵ גבוהה ולשררה עליונה, הנה בן המשנה ישוב מלך ובן המשרת יהיה⁶ סוחר.

7 (1) והדרך⁷ הששית⁸ מפאת המלך, כי כחו ככח כלל⁹. (2) כי אם המלך יש במולדו¹⁰ ללכת למלחמה, הנה יוציא¹¹ למלחמה אנשים רבים שאין במולד אחד מהם להתנועע ממקומו.

8 (1) והדרך¹² השביעית¹³ מפאת התולדת. (2) כי אם יכנס אדם בספינה בימי הקור בתוך הים והים הולך וסוער, א'ע'פ¹⁴ שישים¹⁵ במעלה הצומחת צדק ונגה, שהם הכוכבים הטובים, לא ינצל כי התולדת היא¹⁶ כלל¹⁷ והפרט שבחר לא יעוילנו.¹⁸ (3) וככה אלף אנשים בים בספינה אחת¹⁹ ולא תמצא במולד כל אחד²⁰ מהם שימות באותה²¹ שנה. (4) רק ימצא²² במולד כל אחד מהם²³ שהגיע²⁴ אחד מפקידיו החיים אל מקום מסוכן, ואילו לא היה בתוך הים שהוא מקום מסוכן יארע לו מעט נזק וינצל.

9 (1) והדרך²⁵ השמינית²⁶ מפאת כח הנשמה, וכחה²⁷ היא החכמה. (2) כי אם היה

¹ והאחד] כפמט; נ והא'. ² והשני] כנמט; פ והב'. ³ פורני] כפט; נמ חסר. ⁴ לעלות] פנמט; כ חסר. ⁵ למעלה] כפט; נמ במעלה. ⁶ יהיה] כפנט; מ ישוב. ⁷ והדרך] כפמט; נ הדרך. ⁸ הששית] כמט; פנ ה'. ⁹ כלל] כפמט; נ הכלל. ¹⁰ המלך יש במולדו] פנמט; כ יש במולד המלך. ¹¹ יוציא] פנמט; כ > הוא. ¹² והדרך] כפט; נ הדרך. ¹³ השביעית] כט; פנמ הו'. ¹⁴ א'ע'פ] כט; פנמ אע'פי. ¹⁵ שישים] כפמט; ט שיש שם. ¹⁶ היא] כפמט; נ חסר. ¹⁷ כלל] כפנט; מ הכלל. ¹⁸ יעוילנו] פנט; מכ יצילנו. ¹⁹ בספינה אחת] כפמט; נ חסר. ²⁰ אחד] כנמט; פ א'. ²¹ באותה] פנ; כט אותה; מ חסר. ²² ימצא] כפט; נ תמצא; מ חסר. ²³ שימות באותה שנה רק ימצא במולד כל אחד מהם] כפנט; מ חסר. ²⁴ שהגיע] פנמט; כ שתגיע. ²⁵ והדרך] כפמט; נ הדרך. ²⁶ השמינית] מט; פנ הח'; כ השמיני. ²⁷ וכחה] כפמט; נ חסר.

of them the son of a duke and the other the son of a baker's servant,⁷⁹ and the natal chart of each predicts that they will rise to higher rank and supreme power, then the son of the duke will become king and the son of the servant will become a merchant.

7 (1) The sixth way is concerned with the ⟨natal chart of the⟩ king, for his power stands for a power affecting collectives. (2) Thus, if the king's natal chart determines that he will go to war, he will send into battle many people whose natal charts do not determine that they will leave home.

8 (1) The seventh way is concerned with nature.⁸⁰ (2) If somebody sails on a ship in the cold season and there is a storm at sea—even though he made sure that Jupiter and Venus, which are the benefic stars,⁸¹ are in the ascendant ⟨of the electional horoscope⟩—he will not survive, for nature is a general power, and the individual election will not avail him. (3) The same holds for a thousand people sailing together in one ship—⟨all of them will die if there is a storm at sea⟩ even though not one of them has a natal chart that determines that they will die that year. (4) But ⟨the astrologer⟩ may find in the natal chart of each that one of the lords of life reached a dangerous place,⁸² so that if he [the native] had not gone to sea, which is a perilous place, he would have incurred only lesser harm and would have survived.

9 (1) The eighth way is concerned with the power of the soul, whose

⁷⁹ For this translation, see *Te'amim* I, § 9.1:7, pp. 92–93 and note on p. 171.

⁸⁰ The word *toledet*, in Ibn Ezra's vocabulary, usually means nature. See note on 'Olam II, § 3:2. But here it denotes "weather."

⁸¹ The doctrine of elections is concerned with finding the best time to begin a particular activity by constructing and analyzing a horoscopic chart for a hypothetical time of launching the activity. In this example, Ibn Ezra supposes that the benefic Jupiter and Venus are in the ascendant of an electional horoscope cast in order to find the most favorable time to set sail in winter.

⁸² Here Ibn Ezra refers to the procedure of direction or prorogation, employed in the doctrine of nativities to determine the length of the native's life by drawing an arc between one of the five places of life and a place of "cutting" or place of death (*Moladot*, BNF 1056, f. 50a) and converting the degrees of the arc, usually projected onto the equator, into a corresponding number of years, months, and days. See *Reshit Hokhmah*, Chapter X, § 1:10 (above, pp. 264–265 and note).

הנוולד חכם בחכמת המזלות וראה בתקופת שנתו כי יקרנו¹ חולי מחום בזמן ידוע בהכנס מאדים אל מעלתו הצומחת. (3) והנה אם ישמר הוא קודם בא החלי מכל מאכל² חם וישתה משקיות³ לקרר גופו, הנה | תתישר תולדת גופו בהכנס מאדים^{א71} במעלתו הצומחת. (4) וככה, הבוטח בשם בכל לבו השם יסבב לו סבות ולו נתקנו עלילות להצילנו⁴ מכל נזק שיש⁵ במולד. (5) על כן⁶ אין ספק כי הצדיק יותר שמור מהמשכיל בדיני המזלות, כי פעמים ישתבשו עליו הדינין, כדרך⁷ שאמר⁸ הכתוב⁹ וקוסמים יהולל [ישעיהו מד:25], והנה¹⁰ אשרי מי שלבו תמים עם אלהיו.

¹יקרנו] כפנט; מ יקרה בו. ²מכל מאכל] כפנט; מ ממאכל. ³משקיות] פט; נמכ משקים. ⁴להצילנו] כפ; נמט להצילנו. ⁵שיש] כנמט; פ חסר. ⁶על כן] כנמט; פ ע"כ. ⁷כדרך] כפמט; נ כמו. ⁸שאמר] כפמט; נ שאמ' עליו. ⁹הכתוב] כפנט; מ חסר. ¹⁰והנה] כפמט; נ חסר.

power resides in wisdom.⁸³ (2) Consider the case that the native is an astrologer who observes in his anniversary horoscope⁸⁴ that he will come down with fever at a certain time when Mars enters the degree of the ascendant. (3) If he takes precautions before the illness comes, abstaining from hot foods and drinking beverages in order to cool his body, then he will maintain a balance in his bodily temperament⁸⁵ when Mars enters the degree of the ascendant. (4) Likewise, he who trusts in God with all his heart, God—“by Him actions are weighed” (1 Samuel 2:3)—will effect for him the causes to save him from any harm prognosticated in his natal chart.⁸⁶ (5) Therefore, there is no doubt that the righteous person is more protected than the scholar regarding astrological judgments, since sometimes the scholar’s (astrological) judgments will be faulty, as Scripture says (Isaiah 44:25), “and make fools of the augurs”, whereas he whose heart is wholly with his God is fortunate.

⁸³ Here Ibn Ezra is referring to the highest component of the tripartite soul, that is, the “superior,” “wise,” or “rational” soul, which, in his view, is the most significant means by which human beings can evade the decrees of the stars. Here are examples of this key feature of Ibn Ezra’s thought: (1) *Mivḥarim* I, Munich 202, f. 108b: כח לנשמת האדם העליונה כח לבטל קצת הפרטים ולהוסיף או לגרוע על כל מה שיורו הכוכבים, רק אין כח לה לבטל הכלל (“The human superior soul has the power to annul some of the (judgments about) individuals and to augment or reduce anything signified by the stars, but it does not have power to annul (judgments about the) collective”); (2) long comm. on Ex. 6:3: “והעולם השפל יקבל כח מהעולם התיכון—כל אחד מהפרטים כפי המערכת העליונה. ובעבור כי נשמת האדם גבוהה מן העולם האמצעי, אם היתה הנפש חכמה והכירה מעשה השם, שהם בלא אמצעי ועל ידי אמצעי, והניחה תאות העולם השפל, והתבודדה לדבקה בשם הנכבד—אם יש במערכת הכוכבים בעת ההריון רעה כח מהעולם התיכון—שבתבוא עליו ביום ידוע, השם, שדבק בו, יסבב סבות להצילו מרעתו.” (“The lower world receives power from the middle world [the superlunary domain of stars and orbs]—each one of its parts [of the lower world] according to the upper configuration (of the stars). But since the human soul is higher than the intermediary world, if the soul becomes wise and apprehends the deeds of God, which are [both] without intermediary and through an intermediary, and if it renounces the desires of the lower world and secludes itself to cleave to the Glorious Name—then, if according the configuration of the stars at the moment of conception some misfortune was to occur to him at a certain time, God, to Whom he has cleaved, will effect causes to save him from his misfortune”). See also *Mivḥarim* II, Paris BNF 1058, f. 9a; long comm. on Ex. 3:15, 23:25, *Yesod Mora’*, 2007, VII, pp. 140–145 *et passim*.

⁸⁴ An anniversary horoscope is cast on every birthday, when the Sun arrives at the same point in the zodiac where it was at the time of birth, to make predictions about individuals for the next year. Here it is contrasted to the revolution of the world (see above § 5:1 and note), which is cast every year when the Sun enters Aries to forecast world affairs during the next year.

⁸⁵ See above, § 3:4 and note.

⁸⁶ In this contrast between the astrologer and the righteous person, as well as some of the details of this comparison, Ibn Ezra drew on a responsum by Sherira Gaon (d. 1006) and Hai Gaon (d. 1038). This responsum would later be quoted in a series of queries on astrology sent to Maimonides by rabbis in southern France. See “Queries on Astrology,” 2004, pp. 100–101.

PART SIX

APPENDIXES

APPENDIX A

MANUSCRIPTS

Manuscripts of *‘Olam I*

- 1 Oxford—Bodleian Library MS Opp. Add. Qu. 160 [Neubauer 2518], (IMHM: F 22230), 1367, ff. 141a–154a.
- 2 Philadelphia—University of Pennsylvania, Schoenberg Collection Ljs 57/2, (IMHM: F 09357), 14th century, ff. 86–92.
- 3 Cambridge—University Library Add. 1517 (IMHM: F 17454), 14th–15th century, ff. 50a–53a.
- 4 Munich, Bayerische Staatsbibliothek, Cod. Hebr. 304, (IMHM: F 01109), 14th–15th century, ff. 1a–10a.
- 5 Paris, Bibliothèque Nationale de France, héb. 189, (IMHM: F 04173), 14th–15th century, ff. 134a–142b.
- 6 Vatican, Biblioteca Apostolica Vaticana ebr. 390, (IMHM: F 00472), 1436, ff. 146a–157b.
- 7 Warsaw—Żydowski Instytut Historyczny 255, (IMHM: F 10122), 1460, ff. 55b–60a.
- 8 Paris, Bibliothèque Nationale de France, héb. 259, (IMHM: F 27838), 1489, ff. 27a–136b.
- 9 Madrid, Biblioteca de la Real Academia de la Historia 7, (IMHM: F 07370), 15th century, ff. 89a–96b.
- 10 Dresden, Sächsische Landesbibliothek, Eb 384 (IMHM: F 20765), 15th century, ff. 69b–74a.
- 11 Munich, Bayerische Staatsbibliothek, Cod. Hebr. 202, (IMHM: F 01649), 15th century, ff. 116a–124b.
- 12 Moscow, Russian State Library, Günzburg 840, (IMHM: F F 48061), 15th century, ff. 17b–18b (fragment).
- 13 New York, Jewish Theological Seminary Ms. 2601, (IMHM: F 28854), 15th century, ff. 115a–119a.
- 14 Paris, Bibliothèque Nationale de France, héb. 1045, (IMHM: F 33996), 15th century, ff. 168b–177b.
- 15 Wien, Österreichische Nationalbibliothek, Cod. Hebr. 132 [Schwarz 185], (IMHM: F 01406), 14th–15th century, ff. 3a–3b.
- 16 Leiden, Universiteitsbibliothek, Scal. 14, (IMHM: F 19186), 15th–16th century, ff. 72a–86a.
- 17 Paris, Bibliothèque Nationale de France, héb. 1056, (IMHM: F 14659), 15th–16th century, ff. 80a–86a.
- 18 Vatican, Biblioteca Apostolica Vaticana ebr. 477, (IMHM: F 00530), 1545, ff. 108a–121a.

- 19 Berlin—Staatsbibliothek (Preussischer Kulturbesitz) Or. fol. 1618 (IMHM: F 1817), 1577, ff. 4–10.
- 20 Cambridge—University Library Add. 1501 (IMHM: F 17118), 16th century, ff. 34a–57a.
- 21 Oxford—Bodleian Library MS Hunt. 606 [Neubauer 2026], (IMHM: F 19311), 16th century, ff. 9b–16a.
- 22 Paris, Bibliothèque Nationale de France, héb. 1057, (IMHM: F 14641), 16th–17th century, ff. 95b–103a.
- 23 Berlin—Staatsbibliothek (Preussischer Kulturbesitz) Or. Qu. 679 (IMHM: F 1817), 17th–18th century, ff. 65a–71a.
- 24 Nürnberg, Stadtbibliothek, Cent.V.app.4, (IMHM: F 08783), 17th–18th century, ff. 358–392.
- 25 Oxford—Bodleian Library Mich. 144 [Neubauer 2027], (IMHM: F 19312), 17th century, ff. 1a–9a.
- 26 Jerusalem—The Jewish National and University Library Ms. Heb. 8°3906, (IMHM: B 812), 1749, ff. 101a–109b.
- 27 New York, Jewish Theological Seminary Ms. 9356, (IMHM: F 49957), 1770, ff. 79a–89a.
- 28 New York, Jewish Theological Seminary Ms. 2636, (IMHM: F 28889), 1772, ff. 151a–159a.
- 29 Oxford—Bodleian Library Mich. 39 [Neubauer 2023], (IMHM: F 19308), 1813, ff. 49a–61b.
- 30 Manchester, John Rylands University Library, Gaster 59, (IMHM: F 15977), 1837, ff. 91a–91b (fragment).
- 31 Moscow, Russian State Library, Günzburg 421, (IMHM: F 47781), 18th century, ff. 36b–39b.
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- 10 Cambridge, University Library Add. 1186, (IMHM: F 17052), 1590, ff. 73b–79b.
- 11 Cambridge—University Library Add. 1501, (IMHM: F 17118), 16th century, ff. 57b–74a.
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- 13 Oxford—Bodleian Library MS Opp. Add. Qu. 160 [Neubauer 2518], (IMHM: F 22230), 17th century, ff. 165a–167b.
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APPENDIX B

REFERENCES FROM THE REST OF IBN EZRA'S ASTROLOGICAL CORPUS TO *SEFER HA-'OLAM*

(1) *She'elot* II, BNF 1058, f. 4a

ואם היו נחברים בעל הבית הראשון ובעל הבית השביעי או הממונה על כל אחד מהם, אם לא היה מביט בעל הבית הראשון, הסתכל מי ינצח כאשר כתבתי בספר ראשית חכמה, ויורו שילחמו שניהם, וככה מבט הנכה, וינצח מי שיש לו יותר כח כאשר פרשתי לך בספר העולם.

If the lord of the first place and the lord of the seventh place, or the ruler over each of them [the first and seventh place], are in conjunction, on condition that the lord of the first place does not aspect ⟨them⟩, find out which of them is victorious, as I have explained in the *Book of the Beginning of Wisdom*. (In this condition) they signify that both (armies) will wage war; the same applies to the aspect of opposition, and the victor will be the one that has more power, as I have explained in the *Book of the World*.

This reference to *Sefer ha-'Olam* targets 'Olam II, §16:1–4 (see note there), which gives two numeric scales of power, the first according to the precedence of the planets' dignities (house, exaltation, triplicity, term, decans) in some zodiacal location (§16:3) and the second according to the planets' position in the horoscopic houses (§16:4). There is no clear parallel to this in 'Olam I. The reference to *Reshit Hokhmah* (Book of the Beginning of Wisdom), right before that to the *Book of the World*, may have a lost passage of the second version of *Reshit Hokhmah* in mind. This is suggested by the fact that the surviving version of *Reshit Hokhmah* does not discuss which of two conjoining planets should be considered to be victorious over the other. There is a virtually identical reference to *Reshit Hokhmah* in a fragment from the recently found third version of *Sefer ha-Mivharim* (see *Mivharim* III, MS Archivio di Stato 368.3: "ויאם היו שניהם מתחברים תהיה המלחמה קשה מאד, או הסתכל למי הניצוח כאשר הזכרתי בספר ראשית חכמה") = "But if the two of them are in conjunction the war will be very intense. Then find out which of them will be victorious, as I mentioned in the *Book of the Beginning of Wisdom*.")

(2) *Mivharim* III, Archivio di Stato 368.3

ויש לך להסתכל אל תקופת שנת העולם איך יהיו המאורות מסתכלים אל מאדים, או במחברתו, או שיוצג מזל הסוף ממקום המחברת בראשית השלישית אל מקום מאדים, או מזל הסוף מהעשרים שנה, כאשר פרשתי בספר משפטי העולם.

You should find out, at the revolution of the world-year, how the luminaries aspect Mars, or ⟨how the luminaries are⟩ in its [Mars'] conjunction,

or whether the terminal sign moves from the place of conjunction at the beginning of the triplicity to the place of Mars, or whether the terminal sign ⟨completes⟩ twenty years [the cycle of the small conjunction of Saturn-Jupiter], as I have explained in the *Book of the Judgments of the World*.

This reference clearly points to ‘*Olam* I, § 39:1–9, which examines, for the revolution of the year and apropos predictions about “wars that will break out in the world,” the case in which the terminal sign reaches the place of Mars after being launched at some middle or small Saturn-Jupiter conjunction. Note, however, that there is a terminological difference: whereas *Mivḥarim* III employs מול הסוף ‘terminal sign,’ ‘*Olam* I § 39:8 has בית הסוף ‘terminal house.’ The same inconsistency recurs throughout Ibn Ezra’s astrological corpus and even within a single treatise.

(3) *Ṭe’amim* I, § 6.3:6, pp. 86–87

ומפתחות הלבנה אבארם בספר העולם.

I shall explain the keys of the Moon in the *Book of the World*.

On the basis of what we know about Ibn Ezra’s travels, this reference points to ‘*Olam* I, § 48:1–14, although the keys of the Moon are also described in very similar terms in ‘*Olam* II, § 18:1–13.

(4) *Ṭe’amim* I, § 10.9:4, pp. 106–107

גם זה שהזכרתי במאתים וארבעים שנה, שהם שנים עשרה פעמים שיתחברו, יש פעמים שיתחברו שלוש עשרה פעמים, וזה יקרה בעבור מהירות הליכת שני עליונים או המתנתם, ועוד אפרש זה בספר העולם.

Also, as for what I have mentioned, that 240 years are the time of 12 conjunctions, sometimes they conjoin 13 times, because of the rapid motion or lagging behind of the two upper ⟨planets⟩. I shall explain this topic further in the *Book of the World*.

This topic is explained in ‘*Olam* I, § 9:1 and ‘*Olam* II, § 3:2, although, on the basis of what we know about Ibn Ezra’s travels this reference is to ‘*Olam* I.

(5) *Ṭe’amim* I, § 2.4:5, pp. 42–43

ובעבור זה יסתכלו למחברת שבתאי ומאדים במזל הזה בכל שלשים שנה לדעת ממחברתם דברי העולם, כאשר אפרש בספר המחברות.

For this reason they look at the conjunction of Saturn and Mars in this sign [Cancer] every thirty years, so as to know about mundane affairs from their conjunction, as I shall explain in the *Book of Conjunctions*.

On the basis of what we know about Ibn Ezra’s travels, this reference is to ‘*Olam* I, § 27:1, although the same topic is explained identically in ‘*Olam* II, § 4:1.

(6) *Te'amim* II, § 6.2:1, pp. 236–237

המושלים. היו ממקומות החיים חמשה, בעבור כי שני המאורות יורו על החיים, ומקום המחברת או הנכח יורה על כל דבר שיתחדש בעולם, ככתוב בספר העולם

The rulers. The places of life are five: [1–2] the two luminaries indicate life; [3] the place of the conjunction or the opposition (of the luminaries) indicates anything that is renewed in the world, *as is written in the Book of the World*

This is probably a reference to *'Olam* I, § 18:2–3, where Ptolemy highlights the importance of luminaries' conjunction or opposition for knowing "all the judgments of the world." Ibn Ezra endorses this opinion, which is correct, he says, because the two luminaries signify mundane affairs, and all the Ancients agree with this. Such a comprehensive mention of the significance for general astrology of the place of the conjunction or the opposition is not found in *'Olam* II.

APPENDIX C

CONTENTS OF ‘OLAM I AND CONCORDANCE TO ‘OLAM II

Generic Topic	‘ <i>Olam A</i>	‘ <i>Olam B</i>
Introduction	§ 1:1–3: Criticism of Abū Ma‘shar’s <i>Book on Conjunctions</i>	
120 conjunctions	§ 2:1–4: Introduction and formula for solving the problem	§ 2:1
”	§ 3:1–3: Conjunctions of two planets	
”	§ 4:1–4: Conjunctions of three planets	
”	§ 5:1–20: Conjunctions of four planets	
”	§ 6:1–7: Conjunctions of five and six planets	
Theory of conjunctionalism	§ 7:1–3: The great Saturn-Jupiter conjunction in Aries	§ 3:1
”	§ 8:1–4: How the Saturn-Jupiter conjunctions move along the zodiac and the triplicities	§ 3:2–3
”	§ 9:1–6: The middle Saturn-Jupiter conjunction	§ 3:2–3
”	§ 10:1–2: The small Saturn-Jupiter conjunction; the great Saturn-Jupiter conjunction signifies that a prophet will come to found a nation	§ 3:4
Astronomical digression	§ 11:1–5: It is impossible to determine the sign of the ascendant at the hour of the conjunction of the upper planets	
”	§ 12:1–3: Ptolemy: scientists cannot determine the sign of the ascendant in any city at the moment when the Sun enters Aries.	
”	§ 13:1–9: Nobody can know the true length of the solar year; the instruments used to determine the Sun’s altitude at noon can provide a result in minutes but not seconds; Hipparchus’ value	
”	§ 14:1–10: Determining the latitude of a city; various values for the arc of the Sun’s inclination	

Generic Topic	' <i>Olam A</i>	' <i>Olam B</i>
”	§ 15:1–8: Determining when the Sun enters Aries at a specific latitude;	
”	§ 16:1–2: Cumulative errors in the measurement of the beginning of the year and how to rectify them	
”	§ 17:1–12: The values provided by Ptolemy and others for the length of the year and the solar apogee	
”	18:1–3: Priority to the moment of the luminaries' conjunction/opposition for all judgments of the world, because it can be determined precisely	
Solar and lunar eclipses	§ 19:1–2 Ptolemy: All events that will occur during the year can be known from the sign of the ascendant at the moment of the luminaries' conjunction/opposition	§ 9:2–9
Jupiter-Saturn conjunctions	§ 20:1–6: In the year of a conjunction, observe the sign of the ascendant at the moment of the luminaries' conjunction/opposition before the Sun enters Aries, or any of the quadrants of the year, or before any month	§ 5:1–9
General predictions	§ 21:1–6: Fate of nations, hate, jealousy, etc. according to the astronomical characteristics of Saturn and Jupiter	
General predictions	§ 22:1–6: Bloodshed, promiscuity, plenty, etc. according to the planets' aspects to Saturn and Jupiter on the day of the conjunction	
The <i>fardār</i>	§ 23:1–12: Periods of the planets and of the Head and Tail of the Dragon	§ 30:1–11
”	§ 24:1–2: The lord of the <i>fardār</i> ship according to the reckoning of the Persians in the year AM 4908 [= 1148 CE]	§ 31:1–3
”	§ 24:3–8: The likelihood that the same pattern of a <i>fardār</i> cycle of 75 would be repeated	
Predictions about cities	§ 25:1–5: Great misfortune will befall the city according to the planets' aspects to the sign of the city/the lord of the sign at the beginning of the revolution of the year of a Saturn-Jupiter conjunction	§ 20:1–7

Generic Topic	<i>'Olam A</i>	<i>'Olam B</i>
Theoretical explanation	§ 26:1–4: The conditions in which a planet removes the harm of another	
Theory of conjunctionalism	§ 27:1: Saturn-Mars conjunction in Cancer every 30 years	§ 4:1
Predictions about cities	§ 28:1: The configuration of the planets with respect to the sign of the city	
Solar eclipses	§ 29:1–8: Ptolemy's opinion about the intensity and quality of the predictions	§ 6:1–2
Solar and Lunar eclipses	§ 30:1–6: Ptolemy: when the portended event is felt most strongly; when the predicted event takes place; when the strongest effect is felt	§ 8:1–4; § 9:1–9; § 10:1
”	§ 31:1–2: Role of the planets in solar and lunar eclipses	§ 7:1–3, 6
Dodecatemoria	§ 32:1–7: Dorotheus: The power of the dodecatemoria in predictions about cities at the beginning of the year of a Saturn-Jupiter conjunction; illustration	§ 21:1–2
Theoretical explanation	§ 33:1–3: If a malefic and a benefic planet are associated with the sign of a city, which is stronger	
Predictions about cities	§ 34:1–7: War, siege, distress, etc., when the lord of the sign of a city is in the seventh place or the lord of the seventh place is in the ascendant	
”	§ 35:1–7: Misfortune for the inhabitants of the city, depending on the position of a malefic planet in a horoscope cast at the anniversary of the foundation of the city or a horoscope whose ascendant is the sign of the city	
Indications about human groupings	§ 36:1–2: The Ancient Enoch: the planets' indications about people according to their age, occupation, gender, and social position, depending on whether the planet is strong or weak at the beginning of the year	§ 51:1
Countries governed by planets and zodiacal signs	§ 37:1–2: Enoch the Egyptian: list of lands and kingdoms assigned to planets and zodiacal signs (almost identical list in <i>'Olam I</i> , § 56:1–14, below)	§ 12:1; § 13:1–2 § 14:1–7

Generic Topic	'Olam A	'Olam B
Signs of cities	§ 38:1–24: List of signs of cities	§ 15:2–25
Predictions about cities	§ 39:1–9: War and bloodshed according to the location of Mars in a Saturn-Jupiter conjunction	cf. § 22:1–2 (terminal house)
General predictions	§ 40:1–3: Price of wheat and famine according to the signs where Saturn and Jupiter conjoin	§ 27:1–2
”	§ 41:1–7: Māshā'allāh: indication about good fortune or misfortune in the world, depending on the planet with which the Moon conjoins at the beginning of the year	§ 24:1–3 (Dorotheus)
Predictions about cities	§ 42:1–7: Māshā'allāh: price of wheat depends on the location of the lord of the sign of the ascendant at the beginning of any year when a Saturn-Jupiter conjunction takes place	§ 25:1–7
”	§ 43:1–4: Māshā'allāh: price of olive oil depends on the location of the lord of the sign of the ascendant at the beginning of any year when a Saturn-Jupiter conjunction takes place	§ 29:1–2
Weather forecasting	§ 44:1–6 Ya'qub al-Kindī (<i>Book of the Revolution</i>): rain depends on the place of the conjunction/opposition of the luminaries before the Sun enters Aries	
”	§ 45:1–2: Ibn Ezra: rain on condition that the sign of the ascendant is in one of the cardines of the sign of the city	
”	§ 46:1–4: Role of retrograde planets, lower planets, feminine signs, cold signs, etc. in rain forecasting.	§ 46:1
Opening of the door	§ 47:1–4: Ibn Šariq: role of the “opening of the door” in rain forecasting; determining the day of rain	§ 36:1–4; § 38:2–4; § 39:1–7
Keys of the Moon	§ 48:1–14: Description of the 12 keys of the Moon.	§ 18:1–13; § 19:1–3; § 39:7
Weather forecasting	§ 49:1–2: Role of a retrograde planet in the first place in rain forecasting	

Generic Topic	' <i>Olam A</i>	' <i>Olam B</i>
Opening of the door	§ 50:1-3: The "opening of the door" in predictions about winds	§ 36:3, 5
Weather forecasting	§ 51:1-2: Role of Venus or Mars in predictions about rain and hail	§ 36:3, 6; § 37:1
Predictions about cities	§ 52:1-2: Earthquake in cities, depending on the location of Saturn at the beginning of the seasons	
"	§ 53:1-7: Wars, bloodshed, etc. in cities, depending on the location of Mars at the beginning of the year	
General predictions	§ 54:1-3: Human health and illness, depending on the location of the Moon at the beginning of the year	§ 50:1; § 51:1
Weather forecasting	§ 55:1-4: Predictions about seafarers, rain, hailstones, etc., depending on the location of the planets.	
Predictions about cities	§ 55:5-6: Disputes, quarrels, and wars, depending on the location of the planets	
Planets and zodiacal signs assigned to lands and kingdoms.	§ 56:1-14: Enoch the Egyptian: list of lands and kingdoms assigned to planet-zodiacal sign pairs (almost identical list in ' <i>Olam I</i> , 37:1-2)	§ 12:1; § 13:1-2 § 14:1-7
Predictions about cities; weather forecasting	§ 57:1-4: Māshā'allāh: Drought or plenty in cities, depending on the complexion of the planets in years when a Saturn-Jupiter conjunction takes place, when the terminal house reaches the planets	cf. § 22:1-2 (terminal house)
The <i>dawr</i>	§ 58:1-3: Al-Andruzagar the Jew: explanation of the <i>dawr</i>	
The mighty <i>qisma</i>	§ 59:1: Abū Ma'shar: explanation of the mighty <i>qisma</i>	
Weather forecasting	§ 60:1-8: Ya'qub al-Kindī: Water of the wells begins to increase depending on the location of the planets with respect to the luminaries at the beginning of the year.	§ 49:1-3 (the scientists of Persia)
"	§ 61:1-4: Abū Ma'shar: drought or abundant rain, depending on the location of Mars at the beginning of the year	

Generic Topic	<i>'Olam A</i>	<i>'Olam B</i>
28 mansions of the Moon	§ 62:1–5: The scientists of India: general definition of the 28 lunar mansions	§ 45:1–4
”	§ 63:1–11: The scientists of India: list of the 28 lunar mansions	§ 44:1–3
120 conjunctions	§ 64:1–2: Judgments according to the complexions of the planets	
General predictions	§ 65:1–3: Everything signified by a planet becomes more expensive according to its power with respect to the Sun, the ascendant, and its rulership in its location	§ 53:1–3
Indications about human groupings	§ 66:1–2: Religions and nations governed by planets	§ 14:1–6
”	§ 67:1: The planets govern people according to their age, occupation, gender, and social position	§ 51:1 (<i>'Olam I</i> , § 36:1–2)
Predictions about cities	§ 68:1: Conspiracy against the king in cities, depending on the location of the Moon.	
Theoretical explanation	§ 69:1–3: Al-Andruzagar: determining the lord of the sign of the ascendant at the beginning of the revolution of the year	
General predictions	§ 70:1–8: Joy, health, disease, etc., depending on the location of the lord of the sign of the ascendant	

APPENDIX D

CONTENTS OF 'OLAM II AND
CONCORDANCE TO 'OLAM I

Generic Topic	'Olam II	'Olam I
Introduction	§ 1:1-3: Zodiacal constellations and terrestrial species; upper planets and general affairs	
120 conjunctions	§ 2:1: Brief general statement	§ 2:1
Theory of conjunctioalism	§ 3:1-4: The great, middle, and small conjunction according to the shift of the conjunctions along the zodiac and the triplicities	§ 7:1-3; § 8:1-4; § 9:1-6; § 10:1-6
"	§ 4:1: Saturn-Mars conjunction in Cancer every 30 years	§ 27:1
"	§ 5:1-6: In the year of a conjunction, observe the sign of the ascendant at the moment of the luminaries' conjunction or opposition before the Sun enters Aries, or any of the quadrants of the year, or before any month	§ 20:1-6
"	§ 5:7-9 If the conjunction takes place in one of the quadrants, include other signifiers together with the lord of the revolution of the quarter of the year	
Solar and lunar eclipses	§ 6:1-2: Significance of predictions according to the degree of occultation	§ 29:2
"	§ 7:1-3: Role of the planets	§ 31:1-2
"	§ 7:4-10: Sway over cities	
Solar eclipses	§ 8:1-4: Ptolemy: duration and beginning of the prediction	§ 30:4-5
Lunar eclipses	§ 9:1-9: Ptolemy: duration and beginning of the prediction	§ 19:1-2 § 30:1-6
Solar eclipses	§ 10:1 The Ancients: duration of the prediction	§ 30:4

Generic Topic	<i>‘Olam II</i>	<i>‘Olam I</i>
Jupiter-Saturn conjunctions	§ 11:1–4 Hierarchical presentation of the three types of conjunctions and the revolution of the year, according to their cycle and historical impact	
Countries governed by planets and zodiacal signs	§ 12:1: The Ancients: list of countries governed by planets and zodiacal signs § 13:1–2: Dorotheus: list of countries governed by planets and zodiacal signs	§ 37:1–2 § 37:1–2
Indications about human groups	§ 14:1–7: Religions and nations governed by planets and zodiacal signs	§ 66:1–2
Signs of cities	§ 15:2–25: List of signs of cities	§ 38:1–24
Theoretical explanation	§ 16:1–4: Scale of powers for finding the lord of the sign of the ascendant in a year when the upper planets conjoin at the beginning of the triplicities ” § 17:1–17: Planets’ powers in their conditions with respect to the Sun	
Keys of the Moon	§ 18:1–13: Description of the 12 keys of the Moon ” § 19:1–3: Portions of power of the keys of the Moon	§ 48:1–14
Predictions about cities	§ 20:1–7: War, famine, dissension, etc., according to the conditions, complexions, and aspects of the planets to the sign of the city/the lord of the sign	§ 25:1–5
Dodecatemoria	§ 21:1–2: The power of the dodecatemoria in predictions about cities at the beginning of the year of a conjunction	§ 32:1–7
Predictions about cities	§ 22:1–2: The terminal house in predictions about cities at the beginning of every year ” § 23:1–3: Affairs of the kingdom according to the terminal house at the beginning of every year	cf. § 39:1–9; § 57:1–4 cf. § 39:1–9; § 57:1–4
General predictions	§ 24:1–3: Dorotheus: Illnesses, war, dissension, etc., according to the planet with which the Moon conjoins at the beginning of the year	§ 41:1–7

Generic Topic	' <i>Olam</i> II	' <i>Olam</i> I
Predictions about cities	§ 25:1-7: Price of wheat according to the location of the lord of the sign of the ascendant at the beginning of the year	§ 42:1-7
Theoretical explanation	§ 26:1-3: How to know whether a planet is increasing or decreasing its motion	§ 42:3
General predictions	§ 27:1-2: Prices according to the signs where Saturn and Jupiter conjoin	§ 40:1-3
Theoretical explanation	§ 28:1-5: Another way to determine the lord at the beginning of the year	
Predictions about cities	§ 29:1-2: Māshā'allāh in the <i>Book of the World</i> : price of olive oil according to the place of the luminaries' conjunction	§ 43:1-4
The <i>fardār</i>	§ 30:1-11: Periods of the planets and of the Head and Tail of the Dragon	§ 23:1-12
"	§ 31:1-3: The lord of the <i>fardār</i> ship in AM 4902 [= 1142 CE]	§ 24:1-2
"	§ 32:1-6: Explanation of § 31:1-3	
"	§ 33:1: Division of the <i>fardār</i> ship of a planet into seven parts	§ 24:2
"	§ 34:1-2: Indications when the years of the <i>fardār</i> reach the portion of Saturn or Jupiter	
"	§ 35:1-3: Predictions about cities according to the place of the lord of the <i>fardār</i> at the beginning of the year	
Opening of the door	§ 36:1-9: The Indian scientists: role of the "opening of the door" in predictions about rain, wind, clouds, and clear air	§ 47:1-4
Weather forecasting	§ 37:1-4: The Indian scientists: role of the planets when the Sun enters Libra in predictions about rains	§ 63:4
"	§ 38:1-5: Predictions of rain and finding the day of rain according to the place of the Moon vis-à-vis other planets	§ 47:3-4
"	§ 39:1-7: Role of the "opening of the door," the cardines, and the keys of the Moon	§ 47:1-4

Generic Topic	'Olam II	'Olam I
"	§ 40:1-4: Role of the lot of rain	
"	§ 41:1-11: Changes in the air with the alterations of the lord of the month	§ 42:2-8; § 50:1-3
"	§ 42:1-3: Cold or heat according to the position of planets in their eccentric circle or in cold/hot signs	
"	§ 43:1-4: Changes in the weather according to the latitude and motion of the lord at the beginning of the year changes, or if it enters or leaves the mansions of rain	
28 Lunar mansions	§ 44:1-3: The reckoning of India: list of the 28 lunar mansions	§ 63:1-11
"	§ 45:1-4: General definition of the 28 lunar mansions	§ 62:1-5
Weather forecasting	§ 46:1: Role of retrograde lower planets in rain forecasting	§ 46:1-3
"	§ 47:1: The Persian scientists: indication of rain when the Moon enters various signs	
"	§ 48:1-8: Changes in the air according to the nature of the planet that is the lord of the hour when the Moon enters the beginning of a sign	
"	§ 49:1-3: The scientists of Persia: rain according to the location of the planets when the Sun enters Scorpio 20°	§ 60:1-8 (al-Kindi)
General predictions	§ 50:1: Diseases when the Moon conjoins or aspects a malefic planet at the start of the year or the Sun enters the seasons	§ 54:1-3
Indications about human groups	§ 51:1: Indications of the planets about people according to their profession, gender, or social position	§ 36:1-2 § 54:1-3
"	§ 52:1: Indications of the planets about people according to their age	§ 36:1-2
General predictions	§ 53:1-3: Everything signified by a planet becomes more expensive according to the planet's power at the beginning of the year	§ 65:1-3
Theoretical explanation	§ 54:1-8: Five factors from which a planet derives its power	

APPENDIX E

LIBER PRIMUS DE GENTIBUS, REGIBUS, CIVITATIBUS,
AERIS MUTATIONE, FAME ET MORTALITATE AND
CONCORDANCE WITH ‘OLAM I AND ‘OLAM II

Epitome totius astrologiae is a popular astrological work, dated at least in part to 1142, and attributed to John of Seville.¹ It is composed of an introductory book, *Ysagoge*, and the four-part *Liber quadripartitus*, which addresses the four main subfields of Arabic astrology: world astrology, nativities, interrogations, and elections. The first component of *Liber quadripartitus*, the *Liber primus de gentibus, regibus, civitatibus, aeris mutatione, fame et mortalitate*, deals with historical and meteorological astrology. The following table offers a concordance of the relevant material in eleven chapters of the *Liber primus* and ‘Olam I and ‘Olam II. Striking parallels are in bold.

Rubrica	Contents	Parallels in ‘Olam I and ‘Olam II
C. I	Pairs of a single planet and a single zodiacal sign governing peoples and countries	‘Olam I, § 37:1–2 ‘Olam I, § 56:1–4 ‘Olam II, § 12:1; § 13:1–2; § 14:1–7
C. II de coniunctionibus planetarum, quae sunt numero CXX	(1) The 120 conjunctions of the planets (2) Great, middle and small conjunctions of Saturn and Jupiter (3) Preference for syzygies before the Sun enters Aries (4) Signification of lunar or solar eclipses according to the ascendant and extent of occultation (5) Portions of power for finding the lord of the ascendant according to the precedence of their dignities and position in the horoscopic places	‘Olam I, § 2:1–4; § 3:1–3; § 4:1–4; § 5:1–20; § 6:1–7 ‘Olam II, § 2:1 ‘Olam I, § 7:1–3; § 8:1–4; § 9:1–6; § 10:1–2; ‘Olam II, § 3:1–4 ‘Olam I, 18:1–3 ‘Olam I, § 29:1–2 ‘Olam II, § 6:1–2 ‘Olam II, § 16:1–4

¹ *Epitome totius astrologiae, conscripta a Ioanne Hispalensi Hispano Astrologo celeberrimo, ante annos quadringentos, ac nunc primum in lucem edita. Cum praefatione Ioachimi Helli Leucopetraei, contra Astrologiae adversarios*. Ed. by Iohannes Montanus and Ulricus Neuber, Nuremberg, 1548.

Rubrica	Contents	Parallels in 'Olam I and 'Olam II
	(6) Portions of power according to various conditions of a planet with respect to the Sun	'Olam II, § 17:1-17
C. III de virtutibus Lunae secundum proportionem ad Solem	Portions of power of the 12 keys of the Moon	'Olam II, § 18:1-13 'Olam II, § 19:1-13
C. 4 de revolutione anni mundi	Planetary indications about individuals according to their age, occupation, gender, and social position (among other topics)	'Olam I, § 136:1-2; § 67:1 'Olam II, § 51:1-2; § 52:1
C. 5 de significatione eclipsis solis vel lunae	Eclipses of the sun and moon	'Olam I, § 19:1-2; § 29:1-8; § 30:1-6; § 31:1-2; 'Olam II, § 6:1-2; § 7:1-3; § 7:4-10; § 8:1-4; § 9:1-9; § 10:1
C. 6-7 de dispositione aeris	Weather and rain forecasting lot of rain (among other topics)	'Olam II, § 40:1-4
C. 8 de partibus mundi distributis planetis et signis	Signs of cities (among other topics)	'Olam I, § 38:1-24 'Olam II, § 15:2-22; § 23:25
C. 9 de duodenariis signorum	Dodecatemoria	'Olam I, § 32:1-7 'Olam II, § 21:1-2
C. 10 de fridariis planetarum	The <i>farḏār</i>	'Olam I, § 23:1-12; § 24:1-8 'Olam II, § 30:1-11; § 31:1-3; § 32:1-6; § 33:1
C. 11 de mansionibus lunae	28 mansions of the moon in rain prediction	'Olam I, § 62:1-5; § 63:1-11 'Olam II, § 44:1-3; § 45:1-4

APPENDIX F

ZODIACAL SIGNS OF CITIES

Cities	' <i>Olam</i> I, § 38:1–24	' <i>Olam</i> II, § 15:1–25	<i>T. Pluviarum</i> ed. Burnett, 54–55, 29	<i>Epitome</i> , 1548, Lib. I, viii, sig. G4r
Baghdad	Cancer 21°			
Egypt (Alexandria?)	Taurus 5°			
Al Mahdiyya	Leo 3°	Leo 6°		
Zawilā	Virgo 15°	Virgo		
Tunis	Virgo 4°			
Palermo	Leo 1°		Leo	Leo 1°
Rome	Leo 15°	Leo	Leo	Leo Aquarius
Pisa	Aquarius 3°	Aquarius 6° (according to what I have verified by experience) Pisces (some say)	Aquarius 2° (experimento) Pisces	Aquarius 2° (experimento) Pisces
Lucca		Cancer, in Jupiter's term (according to what I have verified by experience several times)	Cancer	Cancer
Saragossa	Aries 6°	Aries		
Almeria	Libra 20°	Libra		
Valencia	Scorpio 6°	Scorpio		
Cordoba	Gemini 22°	Gemini 27°		
Sevilla	Pisces 7°	Pisces (according to the scientists of Spain) Aquarius (Ibn Ezra)		

Cities	' <i>Olam</i> I, § 38:1–24	' <i>Olam</i> II, § 15:1–25	<i>T. Pluviarum</i> ed. <i>Epitome</i> , 1548, Burnett, 54–55, Lib. I, viii, sig. 29 G4r	
Granada	Cancer 10°	Cancer		
Ulcena [Lucena]	Taurus 7°			
Madinat Sal'am	Capricorn 6°	Aquarius		
Boujje	Gemini 7°	Gemini 10°		
Madinat Washqa Gushqa (?)	Taurus 10°	Taurus		
Gabes	Pisces 2°	Pisces 10°		
Al Qayrâwân	Cancer 15°			
Malaga		Aquarius		
Batelius (?)		Taurus		
Verona		Taurus		
Marseilles		Leo		
Toledo		Virgo		
Mantua		Libra		
Ifriqiya		Pisces 2°	Leo 4°	Leo 4°
'At'ables (?), called 'Alber		heart of Scorpio		

APPENDIX G

ZODIACAL SIGNS AND PLANETS
ASSIGNED TO LANDS AND KINGDOMS

Lands and kingdoms	<i>‘Olam I,</i> § 37:1–2: Enoch the Egyptian	<i>‘Olam I,</i> § 56:1–14: Enoch the First	<i>‘Olam I,</i> § 56:1–14: Abū Ma’shar	<i>‘Olam II,</i> § 12:1: the Ancients	<i>‘Olam II,</i> § 13:1: Dorotheus	<i>‘Olam II,</i> § 14:1: proved by experience
Land of Iraq	Jupiter with Aries	Jupiter with Cancer (the land called al-‘Ir’aq)	the term of Jupiter in Cancer	Jupiter with Aries [Babylonia]		
Kingdom of Persia	Jupiter with Aries					
Edom	Saturn with Libra	Saturn with Libra (the land of Rome, which is the kingdom of Edom)			Saturn with Libra	Sun and Leo
India	Mercury with Capricorn	Mercury with Capricorn	Mercury governs their souls, Capricorn their bodies/ (the inhabitants of India, who are called al-Hind)	Mercury with Capricorn		
Arabia	Venus with Scorpio	Venus with Scorpio (Hejaz, where Mecca is)	in any year that Scorpio aspects a malefic planet the king of the Arabs will die as well as the ruler of the kingdom of the Muslims.		Venus with Scorpio (the land of Kedar)	Scorpio (The Saturn- Jupiter conjunction before the emergence of the Muslims’ prophet)

Lands and kingdoms	'Olam I, § 37:1-2: Enoch the Egyptian	'Olam I, § 56:1-14: Enoch the First	'Olam I, § 56:1-14: Abū Ma'shar	'Olam II, § 12:1: the Ancients	'Olam II, § 13:1: Dorotheus	'Olam II, § 14:1: proved by experience
Barghan	Mars with Leo	Mars with Leo				
Land of Israel	the Sun with Aquarius (Canaan)	The Sun with Aquarius		Cancer and Mars, but the correct datum is Leo with Saturn (Jerusalem)		Aquarius (the zodiacal sign of Israel)
Greece	the Sun with Aquarius	The Sun with Aquarius				
Egypt	the Sun with Aquarius	The Sun with Aquarius		Venus and Gemini		Capricorn (sign of Egypt)
Land of al-Chin [China]		The Moon with Virgo		Mars and Leo (Şin)		
Khorasan		The Moon with Virgo				
Shur				Mars and Taurus		
Jerusalem				Cancer and Mars (but the correct datum is Leo with Saturn)		
Spain				Mars and Virgo	Mars with Sagittarius	

APPENDIX H

AUTHORITIES AND SOURCES
MENTIONED IN 'OLAM I AND 'OLAM II

English	'Olam I	'Olam II	
Abraham (Ibn Ezra)	אני אברהם	§ 31:1; § 45:1	
Abraham al-Zarqāl	ואברהם אל זרקל	§ 14:9	
	אברהים אל זרקאל	§ 17:11	
Abū Ma'shar	אבו מעשר	§ 1:1; § 56:2,8,10; § 59:1; § 61:1	
A great man (Abraham Bar Ḥiyya)	אדם גדול	§ 17:5	
al-Sūfi	אל צופי	§ 17:10,11	
Al-Andruzagar, the Jew	אל אנדרוזגר הישראלי	§ 58:1	
Al-Andruzagar	אל אנדרוזגר	§ 69:1	
al-Battānī	אל בתאני	§ 17:5; § 62:3	
(the) Ancients	הקדמונים	§ 18:3; § 11:3	הקדמונים § 1:2; § 10:1; § 12:1; § 22:2; § 49:1; § 52:1
ancient scientists	החכמים הקדמונים	§ 30:4	
Arab scientists	חכמי ישמעאל	§ 14:9	
astrologers	חכמי המזלות	§ 13:7; § 16:1; § 40:1	חכמי המזלות § 1:3; § 14:7
author of <i>Sefer Yešira</i>	בעל ספר יצירה	§ 24:6	
Banū Shākir	בני שאכר		
a Book		ספר	§ 32:4
Book (by Abū Ma'shar)	ספרו	§ 61:4	

English	'Olam I		'Olam II	
Book by Abū Ma'shar on the planetary conjunctions	ספר אבו מעשר במחברת השמרתים	§ 1:1		
Book of Elections (Ibn Ezra)	ספר המבחרים	§ 34:6		
Book of the Astrolabe (Ibn Ezra)			ספר כלי הנחושת	§ 45:3
Book of the World (Māshā'allāh)			ספר העולם (משאללה)	§ 29:1
Book of Nativities (Ibn Ezra)			ספר המולדות	§ 23:1
Book of Reasons			ספר הטעמים	§ 45:4
Book of the Revolution (Ya'qub al-Kindī)	ספר התקופה	§ 44:1		
Book of the Secrets by Enoch	ספר הסודות של הנוך	§ 32:1		
Book of the Tables			ספר הלוחות	§ 54:4
Book of the Beginning of Wisdom (Ibn Ezra)	ספר ראשית חכמה	§ 64:2	ספר ראשית חכמה	§ 21:1; § 36:8
Book on Rain (Plato)	ספר הגשם	§ 45:2		
Dorotheus	דורוניוס	§ 18:1	דורוניוס	§ 13:1
Dorotheus, the king	דורוניוס המלך	§ 32:1	דורוניוס המלך	§ 24:1
Enoch	הנוך	§ 32:1		
Enoch the Ancient	הנוך הקדמון	§ 36:1		
Enoch the Egyptian	הנוך המצרי	§ 37:1		
Enoch the First	הנוך הראשון	§ 56:1		

English	'Olam I		'Olam II	
experts in the images	חכמי הצורות	§ 62:2		
Hipparchus	אברכו	§ 13:8; § 14:8; § 17:1		
Ibn Šariq	אבן צארק	§ 47:1		
Māshā'allāh	מאשא אללה	§ 25:1; § 41:1; § 42:1; § 43:1; § 57:1	משאללה	§ 29:1
mathematicians	חכמי המספר	§ 24:8		
method of nativities			דרך המולד	§ 20:3
modern scientists	חכמים אחרונים	§ 50:4		
Our sages			חכמינו	§ 14:2
Plato	אפלטון	§ 45:2		
Ptolemy	בטלמיוס	12:1; § 13:1,9; § 14:6,7; § 17:1,2,3,4,5,7; § 18:2; § 19:1; § 26:4; § 30:4		
Ptolemy, the King			תלמי המלך	§ 8:1; § 9:1
reckoning of the Persians	חשבון הפרסיים	§ 24:1		
scholars who rely on experience	חכמי הנסיון	§ 1:4; § 11:3		
scientists of Egypt	חכמי מצרים	§ 18:2		
scientists of India	חכמי הודו	§ 1:3; § 11:3; § 14:5; § 18:2; § 59:1; § 63:1; § 64:1	חכמי הודו	§ 37:1; § 43:4; § 48:1
			אנשי הודו	§ 36:1
scientists of our generation	חכמי דורנו	§ 12:2		
scientists of Persia	חכמי פרס	§ 18:2; § 23:1	חכמי פרס	§ 30:1; § 32:3; § 47:1; § 49:1
scientists of Spain			חכמי ספרד	§ 15:7
<i>Sefer Yešira</i>	ספר יצירה	§ 24:6		

English	'Olam I	'Olam II
Tables	לוחות	§ 11:3; § 30:5
Tables of al-Battānī	לוחות אל בתאני	§ 17:5; § 63:3
Tables of Ptolemy	לוחות בטלמיס	§ 17:4,5
Tables of the Indian scientists	לוחות חכמי הודו	§ 1:3
Tables of the scholars who rely on experience	לוחות חכמי הנסיון	§ 1:4; § 11:3
Tetrabiblos (Ptolemy)		ספר הארבעה ראשים § 9:2
Yahyā ben Abī Mansūr	יהי בן אבי מנצור	§ 14:9
Ya'qub al-Kindī	יעקב אל כנדי	§ 44:1; § 60:1

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GLOSSARY OF TECHNICAL TERMS

<i>English</i>	<i>'Olam I</i>	<i>Section, passage</i>	<i>'Olam II</i>	<i>Section, passage</i>
120 conjunctions (of the planets)	מאה ועשרים מחברות	§ 2:1; § 6:6; § 64:1	מחברות השבעה המשרתים הם מאה ועשרים	§ 2:1
afflicted	מושחת	§ 70:5		
airy signs	מזלות הרוח	§ 9:5; § 55:4	מזלות הרוח	§ 3:3; § 27:2
apogee	גבהות	§ 13:3,5; § 14:2,10; § 15:1,3,4,6,7; § 17:2,6; § 21:1,3,4;	גבהות	§ 26:3; § 54:7
arc	קשת	§ 14:4,9		
arithmetic	דרך חשבון	§ 24:4	דרך חשבון	§ 51:1
aspect	מבט	§ 22:1,3; § 25:1; § 26:1,2; § 34:5,7; § 45:1; § 47:3; § 56:11; § 65:3; § 70:8	מבט	§ 7:1,4; § 24:2; § 36:2; § 41:6; § 49:6; § 50:1; § 54:3
aspect of antagonism	מבט איבה	§ 34:7; § 51:1	מבט איבה	
aspect of love	מבט אהבה	§ 34:7	מבט אהבה	
aspect of opposition	מבט נכח	§ 22:5; § 25:2; § 31:2; § 34:7; § 39:1; § 52:1; § 54:3; § 55:6; § 56:3; § 68:1		
aspect of quartile	מבט רביעית	§ 22:5; § 25:2; § 34:7; § 39:1; § 51:1; § 52:2; § 54:3; § 55:6; § 56:3; § 68:1	מבט רביעית	
astrolabe			כלי הנחושת	§ 45:3
astrologers	חכמי המזלות	§ 13:7; § 16:1; § 40:1	חכמי המזלות	§ 1:3; § 14:7
astrology			חכמת המזלות	§ 51:2
astronomical tables	לוחות	§ 1:3,4; § 11:3,4; § 17:4,5; § 30:5; § 63:3	לוחות	§ 45:4
bad year	שנה רעה	§ 60:3		
be victorious	מנצח	§ 34:4; § 57:4	מנצח	§ 16:2
beginning of the year	תחלת השנה	§ 16:1; § 30:1; § 41:1; § 53:1,7; § 54:2; § 60:2; § 61:1; § 66:2	תחלת השנה	§ 24:4; § 28:1; § 35:1; § 37:1; § 41:10,11; § 43:1; § 50:1; § 53:1

<i>English</i>	<i>'Olam I</i>	<i>Section, passage</i>	<i>'Olam II</i>	<i>Section, passage</i>
benefic planets	כוכבים טובים	§ 25:2,4; § 29:4; § 31:2; § 32:8; § 33:1; § 35:6; § 39:9; § 52:2; § 54:2; § 61:1,2,3; § 66:3 טובים § 35:1; § 61:4	כוכבים טובים	§ 21:1; § 22:1; § 23:3; § 24:2; § 35:2; § 54:3
burnt	נשרף	§ 70:2	נשרף	§ 23:3
burnt by the Sun	נשרף מהשמש	§ 25:2; § 31:2; § 42:6; § 65:2	נשרף מהשמש	§ 20:3
cardines	יתדות	§ 35:6-7; § 39:7; § 42:3,4,5,7; § 60:3	יתדות	§ 7:7; § 23:3; § 25:3,4; § 35:3; § 38:3; § 39:4; § 41:3; § 48:5; § 49:4; § 54:4
cardines of the ascendant	יתדות הצומח	§ 44:2; § 51:1; § 53:2; § 60:4		
	יתדות מזל הצומח	§ 50:2		
	יתדות המזל העולה	§ 60:3	יתדות המזל העולה	§ 48:5
cardines of the city	יתדות המדינה	§ 35:1; § 50:3; § 52:2	יתדות המדינה	§ 38:3; § 48:6
	יתדות מזל המדינה	§ 25:2; § 45:1		
			יתדותיה	§ 9:6
center	מוצק	§ 21:2	מוצק	§ 42:1; § 50:1
circle	גלגל	§ 14:7; § 20:2,6; § 48:4,5,6,10,11; § 58:3	גלגל	§ 5:7
cold (noun)	קור	§ 64:8,9	קור	§ 42:1,2,3
cold (adjective)	קר	§ 46:2	קר	§ 53:3; § 54:5
cold signs	מזלות קרים	§ 40:3; § 46:2	מזלות קרים	§ 54:5
complexion	ממסך	§ 57:4; § 64:1	ממסך	§ 7:1,4,6; § 20:2,6,7; § 23:3; § 35:1; § 54:3
configuration	מערכת	§ 23:2,11	מערכת	§ 11:2
conjunction	מחברת	§ 1:2-§ 6:7; § 8:1; § 8:3; § 10:1,2; § 11:4; § 20:3, 4; § 20:6; § 21:1; § 22:4; § 25:1; § 26:1,2; § 27:1; § 29:2,3,6; § 30:5; § 31:1,2; § 33:3; § 34:5; § 39:1,3; § 41:1; § 42:2; § 43:1; § 44:2,3; § 47:2,3; § 48:2; § 56:15; § 57:3; § 57:4; § 48:2; § 60:1,2; § 64:1	מחברת	§ 2:1; § 3:2,3,4; § 5:1,4,6,7,9; § 6:1; § 7:1,4,6; § 11:3; § 14:1,6; § 18:3; § 20:1; § 21:1; § 24:2; § 25:1; § 38:4; § 39:1,5,6; § 41:5; § 49:6; § 50:1; § 54:3
conjunction of Saturn and Mars in Cancer	מחברת שבאתי עם מאדים במזל סרטן	§ 27:1	מחברת שבאתי עם מאדים במזל סרטן	§ 4:1; § 5:2

English	'Olam I	Section, passage	'Olam II	Section, passage
conjunction of Saturn and Jupiter	מחברת שבתאי וצדק	§ 5:5; § 32:1; § 39:7; § 58:1	מחברת שבתאי וצדק	§ 3:1
conjunction of the luminaries (and their opposition)	מחברת המאורות (תכחם)	§ 18:2; § 19:2; § 20:1,2,3; § 29:2; § 41:1; § 42:1,2; § 44:1,2; § 44:2,3; § 47:3; § 60:1; § 60:3	מחברת המאורות (תכחם)	§ 5:2,5; § 24:1; § 28:2; § 29:1,2; § 36:1; § 39:4; § 41:1,8; § 48:5; § 50:1
conjunction of the planets	מחברת המשרתים מחברת הכוכבים	§ 1:1; § 64:1 § 1:3; § 64:1		
conjunction of the upper planets	התחברות העליונים	§ 11:1	התחברות העליונים	§ 20:1 מחברת העליונים § 5:5,7,8,9; § 16:1
constellation	צורה	§ 62:2,4,5	צורה	§ 1:2; § 7:5; § 45:4
correction	תיקון	§ 17:5; § 60:3; § 62:3		
counting	חשבון מספר	§ 23:11 § 47:3		
decan			פנים	§ 41:9
deformed signs	מולות המומים	§ 54:3		
degree	מעלה	§ 8:4; § 11:3; § 15:1,2; § 17:2,3,6,7; § 23:12; § 24:5; § 32:2-6; § 38:1,7,9; § 39:3,5; § 47:3; § 48:3-13; § 56:1,3; § 57:3; § 59:1; § 60:1; § 62:2,3,4	מעלה	§ 9:3,7; § 15:3,17,18,19,21,24; § 17:2,7,11,12,14,15; § 18:2,4,8,10,11,12,13; § 23:1; § 26:2; § 38:4; § 40:1; § 45:4; § 49:1,2,6
degree of the ascendant	מעלה צומחת	§ 30:3; § 44:5; § 65:1; § 69:1,3	מעלה צומחת	§ 5:7; § 9:4,7; § 25:2; § 28:2,3; § 41:1,11; § 49:4,5; § 54:4
degree of the circle	מעלת הגלגל	§ 58:3		
degree of the conjunction	מעלת המחברת	§ 57:3		
direct [in its motion]	ישר (בהליכתו)	§ 21:3	ישר (בהליכתו)	§ 36:9; § 41:4
distance	מרחק	§ 48:9,10,11,12,13	מרחק	§ 9:5,7; § 28:2
divide	לחלק	§ 9:7	לחלק	§ 9:7; § 33:1; § 48:2
domain of burning			גבול השרפה	§ 17:14
dry	יבש	§ 63:7,10		
dry mansions	מחנות יבשות	§ 63:10	מחנות יבשות	§ 44:2

<i>English</i>	<i>'Olam I</i>	<i>Section, passage</i>	<i>'Olam II</i>	<i>Section, passage</i>
dryness	יבושת	§ 63:7	יבושת	§ 37:4
earth	ארץ	§ 13:6; § 21:2 § 30:2	ארץ	§ 5:3; § 7:8
earthy nature			תולדת העפר	§ 3:3
earthy signs	מזלות העפר	§ 9:2; § 40:2; § 51:1; § 52:2; § 53:4	מזל עפר	§ 3:3
			מזלות מתולדת עפר	§ 3:3
eccentric circle			גלגל המוצק	§ 42:1,2
			גלגל הגדול הנקרא גלגל המוצק	§ 50:1
	גלגל הגדול שמוצקו רחוק ממוצק הארץ	§ 21:2		
ecliptic	חשב האפודה	§ 21:4; § 25:4	האפודה אפודת הגלגל	§ 40:4; § 43:2 § 40:4
epicycle	גלגל הקטן	§ 21:3		
equal degrees	מעלות ישרות	§ 47:3; § 48:3; § 57:3; § 58:1	מעלות ישרות	§ 22:2
equal hour	שעה ישרה	30:5,8	שעה ישרה	8:1; § 9:1; § 10:1
equator	קו השווה קו הצדק	§ 14:1 § 62:2	קו השווה	§ 5:3
exaltation	כבוד	§ 23:11	כבוד	§ 16:3
experience	נסיון מנוסה	§ 43:1; § 48:14 § 56:5,11; § 61:1,3; § 66:1 § 45:2; § 56:3	נסיון מנוסה	§ 15:24,25; § 29:1 § 49:1 § 14:1; § 24:4 § 35:3
falling (from the cardines)	נופלים	33:2; § 44:3 § 53:7; § 42:5,6	נופלים	§ 25:4
<i>pardār</i> period	החלק הנקרא אל פרדאר	§ 23:1		
<i>pardār</i> years			שנות אלפרדאר	§ 30:1,3
feminine sign	מזל נקבה	§ 46:1, § 63:3	מזל נקבה	§ 54:5
fiery signs	מזלות האש	§ 9:2; § 40:1; § 53:4	מזלות האש	§ 3:3; § 27:2
fixed signs			מזלות עומדים	§ 39:3,4
fixed stars	כוכבים	§ 17:6; § 46:3		
flavor			מטעם טעם	§ 53:3 § 53:3
fortunate aspect	מבט טוב	§ 54:2	מבט טוב	§ 23:2
fraction	שבר	§ 14:10		

<i>English</i>	<i>'Olam I</i>	<i>Section, passage</i>	<i>'Olam II</i>	<i>Section, passage</i>
general affairs	הכלל	§ 7:2	הכללים דברי הכל	§ 11:1 § 1:3
giving power	תת הכח	§ 42:4; § 47:2	תת הכח	§ 24:2; § 38:1,4
good fortune	טוב/טובה	§ 30:4; § 32:8 § 41:2; § 56:15; § 60:3	טוב/טובה	§ 7:6; § 8:4 § 9:2,6; § 11:2; § 20:7; § 21:2; § 23:2; § 34:2; § 35:1; § 54:7
good year	שנה טובה	§ 60:3		
great circle	גלגל הגדול	§ 13:2; § 21:2	גלגל הגדול	§ 50:1
great conjunction	מחברת גדולה	§ 7:1; § 7:3 § 10:2; § 20:1,2,3; § 32:1,7; § 39:1; § 42:1; § 57:1; § 58:1	מחברת גדולה	§ 3:1; § 5:1 § 11:1,2
Head of the Dragon	ראש התלי	§ 24:4	ראש התלי	§ 30:4
heat	חום	§ 63:9	חום	§ 36:6; § 42:1,3,3
hot	הם	§ 63:6,7	הם	§ 53:3; § 54:5
hot sign			מזל הם	§ 54:5
hour	שעה	15:5,8; § 30:4	שעה	10:1; § 47:1
house (planetary)	בית	§ 21:3; § 31:1 § 43:3; § 47:2; § 49:2; § 61:1,2	בית	§ 7:2; § 16:3 § 20:2; § 23:2,3; § 25:2; § 40:2; § 41:2; § 48:5; § 54:5
house of dejection	בית קלון	§ 33:3; § 43:4 § 65:2	בית קלון	§ 25:5; § 41:2
house of detriment	בית שנאה	§ 33:3; § 43:4 § 65:2		
house of exaltation	בית כבוד	§ 43:3	בית כבוד	§ 16:3; § 25:5 § 30:3; § 48:5; § 54:5
house of the triplicity	בית השלישות	§ 8:1,2; § 9:1; § 10:1	בית השלישות	§ 3:2; § 7:8; § 16:1
illustration	דמיון	§ 2:3; § 15:1 § 32:2; § 39:3; § 56:11		
inclination of the Sun	נטיית השמש	§ 14:4,9; § 15:5		
increase its number (motion)	מוסיף בהליכתו	§ 42:3	מוסיף בהשבונו	§ 25:6; § 26:1,2; § 29:2; § 54:6
intersection	מחברת	§ 13:2	מחברת	
Judgment (astrological)	משפט	§ 70:8	משפט	§ 2:1; § 40:2
	דין	§ 29:1; § 34:2 § 42:4; § 70:8	דין	§ 2:1; § 5:4,8 § 40:2; § 41:1,1; § 43:2
judgments of the world	דיני העולם	§ 18:2		

<i>English</i>	<i>'Olam I</i>	<i>Section, passage</i>	<i>'Olam II</i>	<i>Section, passage</i>
key	מפתח	§ 47:1		
keys of Saturn	מפתחות שבתאי	§ 47:2		
keys of the Moon	מפתחות הלבנה	§ 47:4; § 48:1,12; § 48:12,14	מפתחות הלבנה	§ 18:1,3; § 39:7
latitude (ecliptical)	מרחב	§ 21:4	מרחב	§ 41:5; § 49:6
	רחב	§ 21:3	רחב	§ 40:3,4; § 54:6
latitude (geographical)	מרחב	§ 14:1,4,10	מרחב	§ 43:2
	רחב	§ 15:1; § 44:2; § 60:3		
least years	שנים קטנות	§ 23:12		
light	אור	§ 63:1	אור	§ 7:4
lord	ממונה	§ 24:1; § 42:2,3,6; § 43:3; § 44:5	ממונה	§ 16:1; § 28:2; § 29:2; § 31:3; § 32:2; § 33:1,2; § 35:3; § 41:11
lord of grain	ממונה על התבואה	§ 43:2		
lord of the ascendant	בעל הצומח	§ 50:2		
	בעל המזל הצומח	§ 51:1	בעל המזל הצומח	§ 36:1; § 39:4
	ממונה בצומח	§ 44:4	בעל המזל העולה	§ 5:9; § 49:2
lord of the beginning of the year			ממונה בתחילת השנה	§ 28:1; § 41:10; § 43:1
lord of the conjunction			ממונה במחברת	§ 39:5
lord of the decan			בעל הפנים	§ 16:3
lord of the degree of the ascendant			ממונה על המעלה הצומחת	§ 41:1
lord of the exaltation			בעל הכבוד	§ 16:3
lord of the hour			בעל השעה	§ 16:3
lord of the house			בעל הבית	§ 16:3; § 25:2; § 40:2
lord of the location			ממונה על המקום	§ 25:1
lord of the month			ממונה על החודש	§ 41:1; § 45:2

<i>English</i>	<i>'Olam I</i>	<i>Section, passage</i>	<i>'Olam II</i>	<i>Section, passage</i>
lord of the location of the conjunction	ממונה אל מקום המחברת	§ 43:2		
lord of the place	בעל הבית	§ 34:4,5; § 47:1; § 49:2; § 50:1	בעל הבית	§ 23:3; § 36:2; § 39:1
lord of the revolution of the year			בעל תקופת השנה	§ 5:7,8,9
lord of the sign	בעל המזל	§ 25:1,2; § 34:2; § 44:4	בעל המזל	§ 5:8
lord of the sign of the ascendant	ממונה על המזל הצומח	§ 42:2		
lord of the sign of the city	בעל מזל המדינה	§ 25:3; § 34:5		
lord of the term			בעל הגבול	§ 16:3
lord of the triplicity			בעל השלישות	§ 16:3
lordship	שלטון ממשלה	§ 21:3,4; § 41:6; § 42:2; § 53:2; § 60:3; § 69:3; § 23:2		
lot			גורל	§ 28:2
lot of fortune			גורל הטוב	§ 40:1
lot of rain			גורל המטר	§ 40:2
lower planets	כוכבים שפלים שפלים	§ 34:4; § 4:7; § 5:19; § 46:1; § 60:7	שפלים	§ 54:2
luminaries (see also conjunction and opposition of the luminaries)	מאורות	§ 18:3; § 29:6; § 44:2,5; § 47:1; § 64:1	מאורות	§ 7:4,6; § 35:6
lunar eclipse	קדרות הלבנה	§ 19:2; § 30:6; § 31:1,2	קדרות הלבנה	§ 6:1; § 9:1,2,3,4,6,8
malefic planets	כוכבים מזיקים	§ 25:4; § 32:1; § 39:9; § 41:2; § 56:3,4,10; § 60:3	כוכבים מזיקים	§ 7:5,8; § 23:2; § 35:1
	מזיקים	§ 22:7; § 25:2; § 24:5; § 31:1,2; § 32:6; § 33:1; § 35:1,7; § 60:4,5; § 70:6	כוכבים רעים	§ 21:1; § 22:1; § 24:2; § 35:2; § 50:1; § 54:3
mansions of the Moon	מחנות הלבנה	§ 62:2,3,4,5	מחנות הלבנה	§ 37:4; § 45:3; § 49:6
	מחנות גשם	§ 63:3	מחנות גשם	§ 43:4; § 44:1; § 45:1

<i>English</i>	<i>'Olam I</i>	<i>Section, passage</i>	<i>'Olam II</i>	<i>Section, passage</i>
masculine sign			מזל זכר	§ 54:5
mean motion	מהלך השווה	§ 1:1; § 11:4; § 16:1; § 17:3,4; § 42:3	מהלך האמצעי	§ 25:6; § 54:6
middle conjunction	מחברת אמצעית מחברת תיכונה	§ 32:1,7; § 39:1; § 42:1 § 9:3	מחברת אמצעית	§ 3:3; § 5:1; § 19:1
minutes	חלקים ראשונים ראשונים	§ 14:6,8; § 15:1,2,4,5,7; § 62:4 § 13:5 § 13:3,4; § 14:4; § 16:1		
misfortune	רע/רעה	§ 22:3; § 25:2 § 29:7; § 34:6; § 34:2,3; § 35:1,2,3,4; § 41:2; § 55:1; § 55:4,6; § 56:1,5; § 60:4	רע/רעה	§ 7:4,5,7; § 8:2,4 § 9:1,2,6; § 11:2; § 20:2,3,6,7; § 21:2; § 22:1; § 23:2,3; § 24:3; § 35:1,2
moist	לח			
moist mansions	מחנות לחות	§ 63:1	מחנות לחות	§ 44:3
moistness	לחה	§ 63:7	לחות	§ 37:4; § 42:2; § 44:3
month	חודש	§ 20:3		
motion	מהלך תנועה	§ 7:4; § 17:7 § 11:4	הליכה	§ 20:1
multiply	לערוך	§ 2:4; § 3:3 § 4:3,4,5,6; § 5:4,6,8,11,13,17	לערוך	§ 9:7
nativity	מולד	§ 24:7; § 70:1	מולד	§ 20:3; § 23:1
nature	תולדת	§ 21:5; § 29:7; § 63:8	תולדת	§ 3:2,3; § 20:1; § 49:4
nature of the lord			תולדת הממונה	§ 28:2
nature of the lord of the house			תולדת בעל הבית	§ 40:2
nature of the place			תולדת המקום	§ 23:2
nature of the planet			תולדת הכוכב	§ 7:5; § 20:2; § 23:2; § 38:2; § 49:3; § 50:1; § 54:3,5
nature of the sign			תולדת המזל	§ 7:5
nature of the year			תולדת השנה	§ 28:2
ninth-part			תשיעית	§ 41:9

English	'Olam I	Section, passage	'Olam II	Section, passage
noble ratio	ערך נכבד	§ 26:4		
noon	חצי היום	§ 13:3,5; § 14:1,10; § 15:3,4,8		
northern signs			מולות צפוניים	§ 40:3
number	מספר	§ 2:1,2,3,4; § 3:1,3; § 4:2,3,7; § 6:6,7; § 23:11,12; § 32:5; § 57:3; § 58:3	מספר	§ 3:3; § 16:2; § 17:16; § 26:3; § 28:2; § 32:1; § 38:4; § 40:1,2
	חשבון	§ 2:2	חשבון	§ 54:6
occidental	מערבי	§ 22:2; § 53:5; § 60:2,6	מערבי	§ 17:11,17; § 24:4; § 28:4; § 37:1; § 49:3,5
opening of the door			פתיחת השער	§ 36:2; § 39:1
opposition	נכח	§ 18:2; § 19:2; § 20:1,2,3; § 31:1,2; § 41:1,2; § 42:1,2; § 44:1,2,3; § 47:2,3; § 48:7,8,9; § 60:1; § 60:3	נוכח	§ 5:2,4,5,6,7,9; § 9:1,4; § 17:10; § 18:8,9,10,11,13; § 24:1; § 25:1; § 29:1,2; § 36:1; § 38:1,4; § 39:1,4,6; § 41:1,8; § 48:5; § 50:1
opposition of the luminaries	נכח המאורות	§ 19:2; § 42:1; § 44:1; § 60:1	נוכח המאורות	§ 5:2, 5; § 28:2; § 36:1
orb	גלגל	§ 24:8; § 25:4	גלגל	§ 7:5; § 33:1; § 40:1
order			ערך	§ 30:3; § 33:2
oriental	מזרחי	§ 22:2; § 53:2; § 55:6; § 60:2,6	מזרחי	§ 17:1,14,15; § 28:4; § 37:1; § 49:3,5
pattern	מתכות	§ 24:8		
perigee	(מקום) שפלות	§ 21:2	(מקום) שפלות	§ 54:8
place (horoscopic)	בית	§ 10:2; § 25:3 § 30:1,2,3; § 33:2; § 34:1,4,5; § 35:3,4,5; § 44:3; § 47:1; § 49:1,2; § 50:1; § 53:7; § 60:3; § 70:3-7	בית	§ 7:9,10; § 16:4 § 23:1,2,3; § 25:3,4; § 36:2; § 39:1
planets	משרתים	§ 1:1; § 3:1,2; § 18:1; § 24:1,5; § 32:1	משרתים	§ 1:1; § 2:1; § 16:2; § 33:2; § 54:1
	כוכבים	§ 1:3; § 3:1; § 11:4; § 22:4; § 23:2; § 24:4; § 25:1; § 28:1; § 37:1,2; § 39:8; § 42:4; § 49:2; § 56:15; § 64:2; § 65:1	כוכבים	§ 5:3; § 7:5; § 20:2; § 23:2; § 25:3; § 26:1,2,3; § 28:2,3; § 30:3; § 35:1,2; § 36:2; § 38:1,2,3,4; § 39:1; § 40:3; § 41:6,7,8; § 48:3,7; § 50:1; § 53:1; § 54:6
	משרתים	§ 64:1		

English	'Olam I	Section, passage	'Olam II	Section, passage
power (planet)	כח	§ 25:4; § 26:2; § 33:1,2; § 34:1; § 35:1; § 37:2; § 42:4; § 47:2; § 49:2; § 60:5,6; § 66:2	כח	§ 5:9; § 6:1; § 11:3,4; § 16:2,3,4; § 17:1,13,14,16,17; § 19:1; § 20:7; § 28:1,4; § 31:1; § 38:1,4; § 39:6; § 40:3,4; § 41:2,9; § 48:5,6; § 49:5,6; § 54:1
power of the dodecat- emoria	כח שנים העשר	§ 32:1,7,8	כח שנים העשר	§ 21:1
private affairs	פרטים	§ 7:2		
pronounce judgment (verb)	לדין	§ 25:1,5; § 29:1,3,7; § 34:2,6,7; § 35:1; § 39:9; § 43:2; § 56:1,5; § 64:2; § 65:3; § 66:2; § 70:5,7	לדין	§ 41:10; § 45:1 § 48:4; § 49:2,6
quadrant	רביעית הגלגל רביע הגלגל	§ 20:2,5,6; § 48:11,12 § 48:5	רביע הגלגל רביע רביעית מרובע	§ 5:7 § 8:4 § 28:3 § 54:8
quarter of a day	רביעית יום	§ 13:8; § 17:1,8		
quarter of a sign	רביעית מול	§ 8:4; § 62:2		
ratio	ערך	§ 24:4; § 24:5; § 26:4; § 39:6	ערך	§ 8:3; § 33:2
rays of burning	אור השרפה	§ 34:3		
rays of Mars			אור מאדים	§ 24:4
rays of the Sun	אור השמש	§ 26:3; § 33:2; § 60:7	אור השמש	§ 7:3; § 17:1,13; § 24:4; § 36:7; § 54:2
reckoning	חשבון	§ 17:10; § 24:1	חשבון	§ 4:1; § 45:3
retrograde	חזור אחורנית/ לאחור שב אחורנית/ לאחור	§ 42:3; § 46:1; § 49:1; § 53:7; § 60:7; § 63:3; § 65:2 § 21:3; § 33:3; § 34:3	חזור אחורנית/ לאחור שב אחורנית/ לאחור	§ 46:1 § 36:7,8; § 41:4
revolution	תקופה	§ 44:1; § 52:2	תקופה	§ 5:9; § 41:11; § 50:1
revolution of the nativity			תקופת המולד	§ 23:1
revolution of the season of the year			תקופת רביעית השנה	§ 5:8
			תקופת הרביע	§ 5:7
revolution of the year	תקופת השנה	§ 12:2; § 13:9; § 18:1; § 32:7; § 36:2; § 37:2; § 39:1,3,8; § 40:3; § 42:1; § 53:2; § 56:3,15; § 69:1	תקופת השנה	§ 5:7,8; § 11:1,4; § 28:2

English	'Olam I	Section, passage	'Olam II	Section, passage
revolution of the year of the conjunction	תקופת שנת המחברת	§ 10:2; § 25:1; § 32:1; § 56:15	תקופת שנת המחברת	§ 5:1
rule	משפט	§ 9:5	משפט	§ 9:7; § 41:6; § 45:2
ruler	מושל	§ 18:3	פקיד	§ 5:7; § 16:2; § 20:3; § 25:1,2; § 41:11; § 46:1
	שליט	§ 60:5; § 69:1,2; § 70:2		
rules, rule	לשמש, שמוש	§ 23:2,3,11	לשמש, שמוש	§ 30:2; § 32:1-5; § 33:2
scientists in the natural sciences			חכמים בתולדת	§ 51:1
season	תקופה	§ 52:1	תקופה	§ 41:11; § 50:1
season of the year			רביעית השנה	§ 5:8
			רביעית רביעי	§ 5:9 § 5:7
seconds	שניים	§ 13:3,4		
setting sign	מזל שוקע	§ 30:2		
shadow	צל על הארץ	§ 13:6		
sign (zodiacal)	מזל	§ 7:1,3; § 8:1,2,3,4; § 9:6; § 12:2; § 14:1,10; § 15:2,3,5,8; § 17:2,6,10; § 18:2; § 20:1,4,5; § 25:1,2; § 27:1; § 28:1; § 32:1,2,3,4,5,6; § 39:4,6,8; § 40:1,3; § 41:1,6; § 42:1; § 44:1; § 46:3,4; § 50:3; § 52:2; § 53:2,4; § 55:1; § 56:1,2,7,8,10,12,13,14,15; § 57:3,4; § 59:1; § 60:1; § 62:1,2; § 63:4,9; § 68:1; § 29:5	מזל	§ 3:1,2,3; § 4:1; § 5:2,4; § 7:5; § 12:1; § 14:2,3,5,6; § 15:1-25; § 21:1; § 24:1,3; § 28:3; § 35:3; § 36:8; § 37:1,4; § 41:9,10; § 46:1; § 47:1; § 48:1; § 49:1; § 50:1
	בית	§ 7:8; § 27:2; § 36:8; § 42:3	בית	
sign of the ascendant	מזל הצומח	§ 10:2; § 11:1; § 12:2; § 18:1; § 19:2; § 20:1,2,3,4; § 23:11; § 24:4; § 25:4; § 29:1; § 34:4; § 35:2; § 42:1,2; § 44:2,4; § 45:1; § 50:2; § 51:1; § 69:1; § 70:2	מזל הצומח	§ 23:3; § 25:1; § 39:1; § 39:4
	מזל עולה	§ 53:2; § 60:3	מזל עולה	§ 5:3,4,5,6,9; § 16:1; § 22:1; § 48:5
sign of the city	מזל המדינה	§ 25:1,2,3; § 33:1,2; § 34:1,5; § 38:1,2,3,4; § 45:1; § 50:3; § 52:2; § 53:4	מזל המדינה	§ 7:4,6; § 9:6; § 15:1; § 20:3; § 48:6,7
sign of the conjunction	מזל המחברת	§ 39:2; § 57:3		
sign of the world	מזל העולם	§ 27:1		

<i>English</i>	<i>'Olam I</i>	<i>Section, passage</i>	<i>'Olam II</i>	<i>Section, passage</i>
signs with a human shape	בתים שהם על צורת בן אדם מול על צורת בן אדם	§ 29:5 § 53:1,5; § 55:5		
slow planets	כוכבים כבדים	§ 7:1		
slowness	כובד	§ 11:4		
small conjunction	מחברת קטנה	§ 10:1; § 32:1; § 39:1,1; § 42:1	מחברת קטנה	§ 3:4; § 5:1; § 11:1
solar eclipse	קדרות השמש	§ 19:1,2; § 29:1,2,3; § 30:1,4; § 31:1,2	קדרות השמש	§ 6:1,2;; § 7:1,4,6; § 8:1,2,4; § 10:1
southern signs			מזלות דרומיים	§ 40:3
stars (fixed)	כוכבים כוכבים שהם בגלגל העליון כוכבים עליונים	§ 46:3 § 17:7 § 24:5		
station			מעמד	§ 17:5,6,9
succedent (house)	סמוכים	§ 42:5		
Sun enters the sign of Aries	הכנס השמש במזל טלה	§ 12:1; § 14:1,10; § 15:1; § 15:3,8; § 18:2; § 20:1; § 32:1; § 41:1; § 42:1; § 44:1; § 60:1; § 63:4	הכנס השמש במזל טלה	§ 5:2,4; § 24:1; § 41:10; § 50:1
Tail of the Dragon	הזנב	§ 23:8	הזנב	§ 30:8
temperate mansions	מחנות ממוסכות	§ 63:11	מחנות בינוניות	§ 37:4
term	גבול	§ 56:2	גבול	§ 15:25; § 41:9; § 48:5; § 54:5
terminal house	בית הסוף	§ 39:8; § 57:2,3,4	בית הסוף	§ 22:1; § 23:1
triplicity	שלישות	§ 8:1,2; § 9:1,4,5; § 10:1	שלישות	§ 3:2,3,4; § 16:1,3; § 54:5
tropical signs	מזלות מתהפכים	§ 63:5	מזלות מתהפכים	§ 39:2
unfortunate aspect	מבט רע	§ 41:1	מבט רע	§ 23:2
upper cardo			יתד עליון	§ 39:2; § 49:4
upper planets	כוכבים עליונים עליונים	§ 11:1; § 24:5; § 34:2; § 47:1; § 60:6 § 24:5; § 46:1	כוכבים עליונים עליונים	§ 1:3; § 5:4; § 26:2 § 5:5,7,8,9; § 16:1; § 17:16; § 20:1; § 54:2
uppermost orb	גלגל העליון	§ 17:7	גלגל העליון	§ 1:2

<i>English</i>	<i>'Olam I</i>	<i>Section, passage</i>	<i>'Olam II</i>	<i>Section, passage</i>
watery signs	מזלות המים	§ 9:5; § 29:6; § 40:2; § 44:2,4; § 64:3; § 46:2; § 55:1,3	מזלות המים	§ 3:3; § 27:2; § 37:3
whole degrees	מעלות שלמות	§ 14:5		
whole year	שנה תמימה	§ 30:4	שנה תמימה	§ 8:1; § 9:2,3; § 52:1
year	שנה	§ 8:1,2,3; § 9:1,6; § 10:1; § 12:1; § 13:1,9; § 17:1,2,3,5,6,7,8; § 18:1; § 19:1; § 20:5; § 23:2,3,4,8,9,10,11; § 24:2,5; § 27:1; § 29:1; § 39:5,6; § 32:7; § 33:3; § 36:2; § 37:2; § 39:1,3,4,5,8; § 40:3; § 42:1,8; § 44:3; § 53:1; § 56:10; § 57:2,3,4; § 58:1,2; § 59:1; § 60:3; § 68:1	שנה	§ 3:1,2,3; § 4:1; § 5:8; § 6:1; § 9:5,6; § 10:1; § 11:3; § 22:1,2,3; § 23:2; § 28:4; § 30:1,2,4,5,6,7,9,10,11; § 31:1; § 32:1-5; § 35:2; § 49:2; § 50:1; § 51:1; § 52:1
year of the conjunction	שנית המחברת	§ 10:2; § 25:1; § 32:1; § 33:3; § 56:15	שנת המחברת	§ 16:1; § 21:1
year of the Sun	שנת החמה	§ 13:1,8; § 17:1	שנת החמה	
zodiac	גלגל המזלות	§ 1:2	אפודה	§ 7:5

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