

COMMENTARY ON THE BOOK OF FORMATION CALLED SEFER ḤAKHMONI

Commentary on the Book of Formation, called Sefer Ḥakhmoni [of] Shabbatai¹

¹ Part of the following introductory section is translated into English in Sharf, *The Universe*, 7–11. The Hebrew text appears on 159–163. Sharf’s text is based on Castelli’s edition of SH which often differs from the present edition. The present translation departs from Sharf’s text accordingly. The following is the first of two rhymed poems which Donnolo composed to proclaim his authorship of the work and to protect its integrity. To this end he employed the device of the acrostic, whereby the initial letters of the stichs formed his signature: שבתִי בר אברהם חוק הוא דונולו הנולד מאורס חוק, [“Shabbatai, son of Abraham—(be) strong—who is Donnolo born in Oria—(be) strong”]. (*Hazaq* [“strong”], an adjective used as an exclamation, has no equivalent in English). The use of the acrostic is a common literary device which Hebrew developed from its earliest phases. It is attested in many Biblical passages, where it was employed either as a mnemonic, or in order to impose graphic coherence on otherwise disjointed literary elements. See Freedman, “Acrostic Poems,” 408–431; Marcus, “Alphabetic Acrostics,” 110–114. In post-Biblical and particularly in medieval Hebrew poetry, the acrostic was used widely as a mnemonic device, but also to protect the original composition from additions, deletions and involuntary omissions. For such a purpose the acrostic was employed by Yannai and Qilir (ca. 7th–8th centuries), as well as Pinḥas ha-Kohen (8th century) and Sa’adiah Gaon (10th century). See Fleischer, *Hebrew Liturgical Poetry*, 127–129. In most of the poems composed in southern Italy between the 9th and the 11th century, the acrostic was used primarily as a mnemonic, but in a limited number of cases, e.g. some poems by Zevadiah (9th century) and Amittai bar Shefatyah (second half of the 9th century), it was employed also in order to proclaim the authorship of the work. See Schirmann, *Mivḥar ha-shirah*, 9–11. Donnolo used the acrostic for the same purpose, in both his introductory poems to SH, and in one passage in the introductory section of the work (see below n. 84). The two acrostics seem to relate to the contents of the two poems themselves. The first acrostic contains the author’s name and patronymic, which is precisely what the poem warns the reader not to obliterate when copying the text. The acrostic of the second poem reads שבתִי בר אברהם קונה חכמה, [“Shabbatai, son of Abraham, acquiring wisdom”], which is in perfect consonance with the content of the poem, consisting of selected verses from the book of Proverbs, all of them dealing with the notion of “wisdom.” The second part of the acrostic (קונה חכמה), moreover, is taken from Prov. 16:16 (קנה חכמה מה-טוב מחרוץ וקגות) [How much better to acquire wisdom than gold; to acquire understanding is preferable to silver]), which is one of the verses used in the poem itself. The third acrostic which reads שבתִי בר אברהם חוק, [“Shabbatai, the son of Abraham, (be) strong”], is much

By Almighty God's word, [may] this great peace² / may boundless good blessings and consolations / flow³ to those who copy out this book of my studies. / May God grant him salvation if he copies it out in the name of Shabbatai / without erasing my name from this book of my recondite deliberations [*sodai*],⁴ / but rather let him inscribe my name [to preserve my reputation] among my friends, / for then he will certainly be reckoned to have paid me my due. / For as I trained myself to record my wisdom, He should appreciate how I laboured and toiled with all my might. / I withheld none of my precious findings (lit. "precious things"). / Surely, it is appropriate that he who feeds on my delectable nourishment / should preserve what I have said and record it as I wrote it. / Let him act graciously and not hold it to be beneath his dignity to learn from me by the name my parents gave me. / Let him remember the verse: "I became wiser than all my teachers,"⁵ / let him avert jealousy from his heart and not repay evil for my kindness. / He who wishes to gain a blessing from the Lord and righteousness from the God of my salvation,⁶ as is my wish, / let him hearken [to my plea] and copy my rhymes and my instructions first, / leaving my wisdom, which is the substance of this book, to the end, as I have done. / I bear witnesses that, since I desire to have my ideas inscribed in book form, / I declare that if those [who copy it] do not comply [with my request], the Just Judge will adjudicate my case,⁷ / and the Lord, the God of vengeance⁸ will wreak my vengeance upon them. / God will not be willing to forgive them my insult.⁹ / He

shorter and unrelated to the content of the text in the middle of which it appears. In both the Hebrew edition (see above, Hebrew Text, 137) and the translation, slashes were inserted at the end of each stich as indicated by the running rhyme ׀ (-āy), although the rhyming was not reproduced in the translation.

² Cf. Sal. 119:165.

³ Literally, "come."

⁴ "Secrets," according to Sharf, *The Universe*, 7, 12–13. However, this has an esoteric connotation which seems at odds with the character of the work. Donnolo's main aim in SHI is to display and explain what he had learnt in the fields of astronomy, astrology and medicine, and there is no indication that he regarded any of these as esoteric fields of knowledge. For *sod* as counsel, deliberation, see Alcalay, *Hebrew-English Dictionary*, 1735–1736.

⁵ See Ps. 119:99.

⁶ See *ibid.* 24:5.

⁷ See *ibid.* 9:5.

⁸ See *ibid.* 94:1.

⁹ See Deut. 29:19.

will set back their wisdom,¹⁰ preventing them from understanding my deliberations. / Their glory and their splendour will be brought down by God's decree, / and what they say¹¹ will not be preserved among the people of the Lord. / May they be blotted out from the land of the living¹² if they blot out the poem that should commemorate me. / May they descend to their grave alive,¹³ like those who stand against the people of the Lord, / if they refuse to copy my words in the order in which I have set out my teachings. / May my God despise them if they do not spare me [this] disgrace. / But for all this I put my trust in the Lord, my God / who will recompense me for my many years of toil. / The beginning of wisdom¹⁴ is to explain to those who fear the Lord / better than my predecessors have managed to explain the recondite knowledge [contained in] abstruse, inaccessible and profound books. / May His mercies, in which I trust, comfort me for all my agonies and sorrows. / May He grant me a lasting memorial and a good reputation¹⁵ within His house and in the congregation of the Lord; / may He grant wisdom¹⁶ to my children and my children's children.¹⁷ Forever and ever. Amen.

¹⁰ See Is. 44:25.

¹¹ See *ibid.* 57:19.

¹² See Ps. 69:29 and Ex. 32:32.

¹³ See Deut. 29:19. Ms. Parma 2123 (P) reads ספר חיים which seems to be an emendation based on text of the Biblical verse: בַּסֵּפֶר הַזֶּה וּמָחָה יְהוָה אֶת שְׂמוֹ מִתַּחַת הַשָּׁמַיִם.

¹⁴ See Ps. 111:10; Prov. 4:7; 9:10 and *Wisdom of Solomon*, 7:17: *The beginning of wisdom is the most sincere desire for instruction.* About *Wisdom of Solomon*, see below p. 287 n. 31.

¹⁵ See Is. 56:5.

¹⁶ See Prov. 8:22 which reads: ה' קנני ראשית דרכו [*The Lord created me at the beginning of His course*], where the speaker, who is the subject of the entire chapter, is a personification of wisdom. There is no doubt that with the phrase קנני ראשית דרכו, which is clearly derived from this verse in Proverbs, Donnolo is obliquely referring to Wisdom. This method of oblique allusion is a well known literary technique, which Donnolo shares with the Hebrew liturgical poets of Palestine in the second half of the first millennium. On this technique, see Fleischer, *Hebrew Liturgical Poetry*, 104–107. Sharf translates the hemistich literally as “may my children and my children's children, be granted for an inheritance to walk in the Lord's ways,” *idem*, *The Universe*, 8. It should be noted that Donnolo's main concern is to transmit to his descendants the knowledge he had acquired, rather than to ensure their moral conduct, as Sharf's interpretation suggests.

¹⁷ Cf. Deut. 4:9.

All this¹⁸ I have put to the test of wisdom; I said “I am resolute to be wise,” but wisdom eluded.¹⁹ I, Shabbatai, son of Abraham, called Donnolo the doctor, with the help of the ever-living God who grants wisdom, understanding and knowledge,²⁰ have sought to discover valuable things,²¹ taking pains to write many books.²² I undertook to seek and search out by wisdom²³ that which the seasons have brought about.²⁴ Oria, the land of my birth, was conquered by Muslim soldiers,²⁵ on Monday, at the fourth hour of the day under the planet of Mars,²⁶ on the ninth day of the month of Tammuz, in the year 4685 since the Creation of the

¹⁸ The section from here to “the lands that are under the Romans’ rule” on p. 227 below is quoted verbatim in the Wistinetzki’s edition of *Sefer Hassidim*; see *Sefer Chassidim*, Wistinetzki, ed., 151–152 § 545, where Donnolo’s name is misspelt as *z-w-l-g-w* (Zolgo?). The passage does not appear in the Margoliouth edition of *Sefer Hassidim*, Jerusalem, 1957. This is only one of many quotations from Donnolo’s SH in the works of the 12th–13th-century German Pietists. They traced the origin of their own tradition to Italy, from which, following the migration of the Qalonimous family from Lucca to Germany, it was transmitted to the Jewish communities of Northern Europe. See Grossman, “The Migration of the Kalonymus,” 154–186. About the transmission of knowledge from Italy to Germany and the origins of this in the Palestinian milieu, see Bonfil, “Between Eretz Israel and Babylonia,” 1–30, particularly 22, and idem, “Can medieval storytelling?”

¹⁹ See Eccl. 7:23.

²⁰ Cf. Ex. 31:3, 35; 31; 36:1.

²¹ Eccl. 12:10.

²² Ibid. 12:12.

²³ Ibid. 1:13.

²⁴ This is Sharf’s translation (*The Universe*, 9). However, the passage is susceptible to another interpretation, by reading עונות [“seasons”] as עוונות, that is, sins or transgressions, understood as the cause of the tragic events which, as Donnolo says immediately afterwards, befell him and his community.

²⁵ The conquest of Oria in 925—the same year as the one noted by Donnolo—is recorded in the Saracen-Sicilian Chronicle: *παρελήφθησαν αὶ ὠρα* [“Oria surrendered”]; see Cozza-Luzi, ed., *La cronaca siculo-saracena*, 42–43 [Greek and Arabic texts]; 72–73 [Italian translation]. Oria had previously been occupied by the Arabs until 867, when the city was freed by the French emperor Ludovic II. A few years later Oria returned to Byzantine rule. See von Falkenhausen, *La dominazione bizantina*, 22. According to *Sefer Yuhasin*, Oria had been invaded by Arab raiders in the year 856, when Shefatyah was in charge of the negotiations with them; see Salzman, ed., *The Chronicle of Ahimaaz*, 75; Amari, *Storia dei Musulmani*, I 513–525 and Sharf, *Byzantine Jewry*, 91.

²⁶ Mars—in Greek *Ares*—was the God of war, and the planet named after him—in Hebrew *Ma’adim*—was conceived in the classical astrological tradition as a male and negative celestial body, the bearer of unpropitious influences. “Under the planet of Mars” is a clear reference to the principle of the so-called “planetary hours,” according to which every hour of the day is governed by a specific planet. See Sharf, *The Universe*, 27 and below 405–406 nn. 298; 423 n. 343.

world,²⁷ that is the 11th year of the 247th cycle.²⁸ Ten wise and righteous scholars—blessed be their memory—were slain there: rabbi Ḥassadyah ben rabbi Ḥanan'el²⁹ the great and the righteous—blessed be the memory of the righteous, may his soul rest in paradise—a member of my family, related to my grandfather who is known by the name of rabbi Yo'el,³⁰ and rabbi Amnon, rabbi Uri'el, my righteous teacher of blessed memory, rabbi Menaḥem, rabbi Ḥiyya, rabbi Ṣadoq, rabbi Mosheh, rabbi David,³¹

²⁷ Corresponding to Monday, 4 July 925 of the Gregorian calendar, at about 9 a.m. See Sharf, *The Universe*, 129, n. 31 and Lacerenza, ed., *Šabbetai Donnolo*, 49 n. 15.

²⁸ This chronological indication is based on the lunar cycle of nineteen years consisting of two hundred and thirty-five synodic months, which are the periods intervening between each month, when the sun and the moon have identical longitudes. The earliest references to this cycle are in *Pirqe de-rabbi Eli'ezer* (ed. Friedlander, 57), in the 8th century *Kiddush Yerahim* of the astronomer rabbi Pinḥas, and in a monographical study on the Jewish calendar by the Muslim astronomer al-Kawarizmi (823–824); see Stern, *Calendar and Community*, 193, 196–200. The interpretation of the passage offered by Sylvie Anne Goldberg, “dans l'année 5685 [sic] de la creation du monde, qui est la onzième année des 277 cycle” is erroneous. See Goldberg, *La Clepsydre II*, 299. According to Sharf, *The Universe*, 129 n. 32, the cycle of nineteen years was created in the 3rd century by rabbi Adda bar Ahava, an amora from Sura. As observed by Stern, however, references to this system are totally absent from early rabbinic sources, which means that it was probably instituted after the 4th century. See Stern, *ibid.*, 196.

²⁹ Abraham I. Schechter identified this rabbi Ḥanan'el with Ḥanan'el ben Amnon, author of a *piyyut* contained in *Seder Ḥibbur Berakhot* (*Order of a Collection of Blessings*), the Palestinian ritual adopted by southern Italian Jews and composed by Menaḥem b. Solomon. See Schechter, *Studies in Jewish Liturgy*, 71, 73 n. 75. Schechter's hypothesis is not convincing: first, rabbi Ḥanan'el was the father of one of the martyrs, not a martyr himself; secondly, if rabbi Ḥanan'el and rabbi Amnon were related, Donnolo would almost certainly have pointed this out.

³⁰ According to Adler, “Un document,” 40–43, Yo'el was Donnolo's maternal grandfather, while his paternal grandfather was Ezra, a name he found in a document from the Cairo Genizah (ms. Adler 2156 of the Jewish Theological Seminary of America, New York), which refers to a certain “rav Shabbatai (bar) Abraham bar Ezra.” See also Adler, *Catalogue of the Hebrew Manuscripts*, plate 4; Posznanski, “Sur les fragments de la Guenizah,” 289 and Mann, *Texts and Studies*, I, 25. In the Genizah fragment, however, the parchment is corrupted and, as pointed out by Sharf, the name of Ezra is almost indecipherable. See Sharf, *The Universe*, 152 n. 8. The text of the Genizah fragment led some scholars to suppose a relation between Donnolo's father, Abraham, and El'azar, the grandson of Amittai I, the ancestor of the author of *Sefer Yuḥasin*. See Fiaccadori, “Donnolo,” 214. This would make Shabbatai Donnolo the same Shabbatai, father of Esther, who married Ḥanan'el II according to *Sefer Yuḥasin*. See Colafemmina, ed., *Sefer Yuḥasin*, 21, 35.

³¹ Ms. Florence 44.14 (F) reads here ור' הוד [“and rabbi Hod”].

rabbi Yirmeyah, rabbi Nuri'el,³² and the pious elders, leaders of the congregation, guides for the generation and many disciples, of blessed memory and for the life of the world to come.³³ Amen.

I, Shabbatai, was ransomed in Taranto³⁴ with my parents' money, at the age of twelve.³⁵ My parents and my relatives were deported to Palermo³⁶

³² Mss. Parma 2123 and Moscow 302 (P and M) read here אוריאל, which occurred earlier as the third name on the list. As pointed out by Lacerenza, *Šabbetai Donnolo*, 49 n. 17, if this is the correct reading, then the name of the first Uri'el is followed by the epithet of רבי הצדיק ["my righteous teacher of blessed memory"], in order to distinguish between the two persons.

³³ In an anonymous letter found in the Cairo Genizah, which relates to the same events, another rabbi is mentioned by the name of Abraham b. Jehoshphat, who served as a rabbi in Bari and lived in Otranto: "In our community there remains R. Abraham b. Jehoshaphat, formerly rabbi of the [now] scattered community of Oria ..."; see Mann, *Texts and Studies*, I, 24 ss.; Adler, "Un document," 40–43, and Starr, *The Jews*, 152–154, §§94–95. The text of the letter was also published by Cassuto, "Una lettera ebraica," 97–112 and Schirmann, *Zur Geschichte der hebräischen Poesie*, 99. The information provided by Donnolo about the fall of Oria and the deportation of its inhabitants also occurs in *Sefer Yuhasin*: ויהי בימים ההם והישמעאלים יצאו בחיליהם ואלמעזו קייט עליהם ועברו איטליאה והסרו כל הארץ קלבריאח ובא עד אוירי אשר בקצה פולייה ויצורו עליה והשמידו כל חיליה ותבוא העיר במצור ולא היה כח באנשי המדינה לעצור והעיר הובקעה והחרב עד הנפש נעה והרגו רובם. והנאשאים והליכו בשיבייה. ["In those days the Arabians with their armies, with al-Mu'izz their commander, overran Italy; they devastated the entire province of Calabria, and reached Oria, on the border of Apulia; they besieged it, defeated all its forces; so that the city was in dire distress; its defenders had no power to resist; it was taken by storm; the sword smote it to the very soul. They killed most of its inhabitants, and led the survivors into captivity"] (Salzman, ed., *The Chronicle of Ahimaaz*, 16, [Hebrew section], 88 [English translation]). As noted by Salzman, *ibid.*, 21, al-Mu'izz was born in 929, and the reference to him as commander of the Arab army at Oria is a clear historical mistake.

³⁴ A city founded in the 8th century BCE by Greek settlers from Sparta, which became part of the Byzantine empire in 540. It suffered numerous attacks by the Saracens who conquered it on 15 August 927, enslaved and deported the population to Africa. The city remained under Saracen control until it was reconquered by the Byzantines in 967 during the reign of emperor Nicephoros II Phocas (963–969). See G. Cozza-Luzi ed., *La cronaca siculo-saracena*, 44–45 [Greek and Arabic texts]; 74–75 [Italian translation]; von Falkenhausen, "I Bizantini in Italia," 56 and *idem*, "Taranto," 133–166. About the Jewish presence in the city, see Colafemmina, "Gli ebrei a Taranto," 109–127; *idem*, *Gli Ebrei a Taranto—Fonti documentarie*, 6–10. Of note is the discovery in Taranto of the bilingual Hebrew/Latin tombstone of the fourteen-years old בן דומנו [לו] / [Dom]nolo filio D[omnoli] ["Donnolo son of Donnolo"] dated between the 7th and the 8th century. Hebrew and Latin text in *ibid.*, 37–38; *idem*, "Di alcune iscrizioni giudaiche," 233–242 and Noy, *Jewish Inscriptions*, I, 167–168. During his journey in the second half of the 12th century, Benjamin of Tudela visited the city whose community at that time he estimated as consisting of 300 Jews, "some of them men of learning, and at their head are R. Meir, R. Nathan, and R. Israel." See Benjamin of Tudela, *The Itinerary*, 9 [English translation], 11 [Hebrew text].

³⁵ From this we know that Donnolo was born in 912–913.

³⁶ The Aghlabites—a royal dynasty from Qairawan (Tunisia), allied to the Abbasid

and to Africa,³⁷ while I remained in the lands that are under the Romans' rule.³⁸ Then I looked to all the works my hands had wrought and to the labour that I had laboured to do,³⁹ for there was no practical occupation my eyes had seen that my hands had not turned to.

But all was futile and the pursuit of wind; there was no real value under the sun⁴⁰ and I found that wisdom is superior to folly as light is

caliphate—made Palermo the capital of Arab Sicily in 831. The island was a Byzantine *θέμα* (thema, one of the administrative and political divisions of the Byzantine domain), whose major military outpost was Syracuse, a city on the south eastern coast, which the emperor Constans II (641–668) had chosen as the capital of the Byzantine empire between 663 and 668. The Arabs began raiding the island in the second half of the seventh century, gradually intensifying their attacks, which led in 831 to the occupation of Palermo and the fall of Syracuse in 878. On Byzantine Sicily, see Correnti, *Storia della Sicilia*, 103–118; von Falkenhausen, “I Bizantini in Italia,” 47–55. On the Arab conquest and the life of the Jewish community in Sicily, see Amari, *Storia dei Musulmani*, I, 150–156; 237–248; Correnti, *ibid.*, 123–139; Bresc, *Arabi per lingua—Ebrei per religione*, 13–35, and Simonsohn, *The Jews in Sicily*, I, xi–xiv. For a detailed historical analysis of the creation of the other Byzantine *themes* in southern Italy, see Pertusi, “Contributi alla storia dei temi bizantini,” 495–517.

³⁷ “Ifriqiya,” referring to modern Tunisia. See Altmann and Stern, eds., *Isaac Israeli*, xix. Another victim of the Saracen raid was Paltī’el—astrologer, physician and member of the Amittai family, who was deported to Egypt where, under the name of Musa ben El’azar, he eventually became well known for his medical and astrological knowledge. His deportation from Oria was mentioned in the mid 10th-century autobiography of Ja’far al-Ḥājib, a member of the Fatimid court, who described the expedition led by Abū Aḥmad Ja’far ibn Ubayd against the Byzantine possessions: “... and he conquered a large town called Oria, and took great booty there, and Mūsā, the physician of al-Manšūr, al-Mu’izz, and al-‘Aziz, was among the captives taken at Oria.” See Lewis, “Paltiel ben Shefatyah,” 177–181 and Colafemmina, ed. *Sefer Yuhasin*, 31–35.

³⁸ In the territories of the former Roman empire, which in Donnolo’s time were under Byzantine control. Regarding themselves as the legitimate heirs of the Roman Empire, the inhabitants of the political entity centred on Constantinople called themselves *Romaioi* (Romans), and *Romania* designated the whole of the territory under their rule. The term *Byzantinoi* (Byzantines) was used in reference only to the citizens of Constantinople, the old Greek *polis* of Byzantium. The subjects of the crown of Constantinople were normally known as the *Graeci* or *Greki* (Greeks), but as *Rum* (Romans) by the Turks and the Arabs. See Ahrweiler, *L'idéologie politique*, 9–24; Mango, *Byzantium*, 1–2; Herrin, *Women in Purple*, 9; Angold, *Byzantium*, 1–2; Sharf, *The Universe*, 129 n. 34, and Centanni, “Fantasmi dell’antico,” 816–821. *Rum* and *Rumi* were often used in the documents found in the Cairo Genizah to designate people coming from the Byzantine territories. See Mann, *Texts and Studies*, I, 241 and de Lange, “Hebraism and Hellenism,” 139–140. *Romaioi* gradually acquired a wider sense, being used until the twelfth century to refer to the whole of Christian Europe. See Goitein, *A Mediterranean Society*, I, 43 and El Cheikh, *Byzantium Viewed*, 21–24.

³⁹ Eccl: 2:11.

⁴⁰ *Ibid.* 2:11.

superior to darkness,⁴¹ for while wisdom shelters just as money shelters, the advantage of acquiring wisdom is that it preserves the life of those who possess it,⁴² according to the word of the Lord who gives wisdom.⁴³

I have therefore toiled hard to acquire knowledge and comprehension of the science of medicine and the science of the planets⁴⁴ and constellations.⁴⁵ I copied out for myself the books of the early Jewish scholars—blessed be their memory—but throughout these lands I did not find [even] one Jewish scholar who understood them. Rather, some of them would say of the astronomical books written by Jews that there is no substance in them, because they did not understand them at all; and they would say that the books on the science of the constellations and planets were the preserve of the gentiles, that they do not correspond to the knowledge [contained in] the [astronomical] books of the Jews, and that the science of the constellations is quite different from the science contained in these Jewish books.⁴⁶

⁴¹ Ibid. 2:13.

⁴² Ibid. 7:12.

⁴³ Cf. Eccl. 2:26 and 1 Kings 5:26.

⁴⁴ Donnolo uses the term כוכבים (*kokhavim*) to indicate the five planets—Saturn, Jupiter, Mars, Venus, and Mercury—and the two luminaries, following a long established astronomical tradition. See Ptolemy, *Almagest*, Toomer, ed., 21 and also *Barayta di-Sh' mu'el*, 544 and *Barayta de-mazzalot*, 30.

⁴⁵ The Hebrew reads מזלות (*mazzalot*) which, as the Greek ζώδια (sing. ζώδιον), indicates either the patterns or groups of stars better known as “constellations,” or twelve homonymous sections, better known as “signs,” into which is divided the zodiacal belt. Because of the so-called phenomenon of the “precession of the equinoxes” and the unequal segmentation of the constellational Zodiac and tropical Zodiac, the positions of the constellation do not correspond to that of the signs. See Gettins, *The Arkana Dictionary*, 117, 470–471 and Ridpath, ed. *Dictionary of Astronomy*, 503–504. For the sake of consistency in the present translation the term *mazzal* is always translated “constellation.”

⁴⁶ This denigration of the science of stars was restricted to the Jews but was commonplace among the learned classes of the Byzantine empire. After the short-term rehabilitation of pagan astronomy under Julian the Apostate in the 4th century, and following the upsurge of astronomical studies in the 5th and 6th centuries represented by the works of Hephaestion, Proclus, Julian of Laodicea and John Lydus, astrology had almost disappeared as a major scholarly discipline in Byzantium. In 529 the emperor Justinian closed the school of philosophy in Athens and officially banned the practice and study of astrology. The science flourished again between the 8th and the 9th century—at the same time as the *Barayta di-Sh' mu'el* was composed under the influence and as a consequence of the translations of numerous astronomical Syriac and Arabic texts. See Mogenet, “L'influence de l'astronomie arabe,” 44–55 and Tihon, “L'astronomie Byzantine,” 603–624.

For this reason, I turned my attention to the science of the Greeks, the Ishmaelites, the Babylonians and the Indians,⁴⁷ to know, to search and to seek it.⁴⁸

I did not rest until I had copied out the books of the Greek and Macedonian scholars,⁴⁹ just as they were originally written and explained, as well as the books of the Babylonian and Indian scholars.⁵⁰ I investigated

⁴⁷ Donnolo does not provide any information about these sources of instruction. As pointed out by Sharf, the “Babylonians” were probably contemporary scholars originating in the ‘Abbasid province of Iraq. See Sharf, *The Universe*, 129 n. 41. The author of the *Barayta di-Sh’ mu’el*, Eisenstein, ed., 545, identifies the Babylonian sages with the Chaldean astrologers, in all likelihood referring to the Chaldean astrological tradition mentioned in Ptolemy’s *Tetrabiblos*, Robbins, ed., 99–107. Since the 8th century, Sanskrit texts on astrology and calculus had been translated into Arabic and their doctrines absorbed into Muslim astrology. One of the first Sanskrit texts to be translated into Arabic in Baghdad (probably the birth place of Donnolo’s astrology mentor; see above, Biographical Details, 16 n. 56) was the *Brāhmasphuṭasiddhānta*, a treatise on the position of the stars, written in 628 by the Indian astrologer and mathematician Brahmagupta. See Nallino, *Raccolta di Scritti*, 203–208. As observed by Saliba, *History of Arabic Astronomy*, 72, at the time of Donnolo, the Sanskrit tradition occupied an important position in Muslim astrology, as is attested by the work of the 10th-century Muslim astronomer al-Birūnī, author of *Kitāb al-taḥqīq mā li’l-Hind*. See also Kusuba and Pingree, eds., *Arabic Astronomy in Sanskrit*, 4. By the 10th century, Indian astrological and astronomical doctrines were well known also to Byzantine astrologers, probably through Greek translations of the Arabic texts. See Jones, *An eleventh-century manual*, 12 and Pingree, “The Indian and Pseudo-Indian Passages” particularly pp. 147–151, 180–181. In *Sefer ha-mazzalot*, for example, Donnolo, while speaking about the Dragon, similarly says: **וּגַם חַכְמֵי הַגֵּימִים הֵם** ... and also the gentiles sages, who are the sages of Babylon, India and the Muslim sages, say that the Dragon has a head and a tail ...]. Hebrew text in Luzzatto, “Mikhtav gimel,” 62.

⁴⁸ Eccl. 7:25.

⁴⁹ That is to say, Classical or Hellenistic and Byzantine sages. See Sharf, “Shabbetai Donnolo as a Byzantine,” 168. Donnolo refers to “Macedonian” scholars elsewhere in his work. See, for example, the beginning of his *Sefer ha-mirqaḥot*, where he writes: ... לְרַקַּח הַמְרַקְחָת כַּחכְמַת רוּפְאֵל יִשְׂרָאֵל וּמְקַדְדָן [“to prepare medicines according to the science of Jewish and Macedonian physicians”]; critical Hebrew text and English translation in Ferre, “Donnolo’s *Sefer ha-yaqar*,” 12. The same use is attested in *Sefer Josippon*; see Flusser, ed., *The Josippon*, I, 6. The Macedonian dynasty ruled in Byzantium from the time of Emperor Basil I (867–886) until the reign of Michael VI (1056–1057). See Sharf, *The Universe*, 129. On the usage of “Macedonian” as synonymous with Byzantine, see Schechter, “An Unknown Khazar Document.” See also Jenkins, *Byzantium: The Imperial Centuries*, 183–197; Ostrogorsky, *History of the Byzantine State*, 232–314 and Angold, *Byzantium*, 135–141.

⁵⁰ As pointed out by Lacerenza, “Donnolo e la sua formazione,” 63–64, the image of the scholar by which Donnolo represented himself, and the emphasis he placed on the wide range of his knowledge, is a literary *topos* common to many autobiographical texts written in Italy in the early Middle Ages. Ieraci Bio, “Notazioni mediche,” 452, found similar

and found that, on the science of the planets and constellations, they were the same in every respect as the books of the Jews, and that the opinions of all of them were identical and correct. From these books I realised⁵¹ that the whole of the science of the planets and constellations was based on the *Barayta* of Samuel the Wise, for the books of the gentiles, too, agree with it, but he has made his book very difficult to understand.⁵² After I copied out the books, I travelled around the country seeking out gentiles who knew the science of the constellations and the planets in order to learn from them. I found one or two, but eventually I encountered a Gentile⁵³ scholar from Babylon by the name of B-g-d-ṭ⁵⁴ who had profound knowledge of the science of the planets and constellations, and who also knew how to make calculations in order to gain a true understanding of what had been and what was to be, as well as how to observe the constellations and the planets. His wisdom entirely agreed with the *Barayta* of Samuel, as well as with all the Jewish books and all the books of the Greeks and the Macedonians. Yet, the wisdom of that gentile was clear and very lucid.

examples in the *Vita Iohannis Damasceni*—a hagiographical text written in southern Italy in the 10th century—as well as in the *Vita* of Saint Nilus of Rossano, on which see above, *Biographical Details*, 15–21.

⁵¹ See Daniel 9:2 wherein Daniel, as observed by Lacerenza, *Šabbetai Donnolo*, 50 n. 30, is said to have read “the books concerning the numbers of years,” probably texts of an astronomical nature.

⁵² The *Barayta di-Shē mu’el* is the last witness to the astronomical wisdom which, according to Donnolo in *Sefer ha-mazzalot* (Luzzatto, “Mikhtav gimel,” 62), the Jews did not cultivate and finally lost during their wandering in the Diaspora: *שנ' בישעיה ויכרת: ... מ' מישראל ראש חונב כפה ואגמון בא זה הפסוק ללמדך שמתוך גלותם של ישראל אבדה מהם חכמת ראש ה' התלי חונבו וחכמת המולות שבכיפת הרקיע המתנהגים מכח הענולה* [“It is said in the book of Isaiah, therefore will the Lord cut off from Israel head and tail, branch and rush (Is. 9:13). This passage is to teach you that because of the Exile, the wisdom of the head of the Tli and of its tail has been lost to Israel, as that of the constellations which are in the vault of the firmament and whose motive power comes from the Wain”]. English translation in Sharf, *The Universe*, 45. See also Sharf, “‘Tli’ and ‘Jawzahr,’” 182.

⁵³ “Eḥad goy ḥakham mi-bavel”; the use of *goy* [“gentile”] instead of *yishma’el* [“Ishmaelite”] by which Donnolo had previously indicated people of the Muslim faith, suggests, according to Lacerenza (“Il sangue fra microcosmo,” 60) that he was a Christian scholar.

⁵⁴ Some manuscripts of SH have *b-g-d-sh*. For further discussion of this name, see above, *Biographical Details*, 14 n. 54.

After I had tested the wisdom of this gentile on numerous occasions and found that by the calculation of the planets, the Dragon [*tli*]⁵⁵ and the constellations, he was able to speak about things that had already happened and things that would happen,⁵⁶ in return for a considerable sum of money and lavish gifts, I had him teach me the discipline of the planets⁵⁷ and the calculation of the constellations. And that gentile taught

⁵⁵ From the Assyrian *antaluu* and Syraic *atalu* [“eclipse”] In ancient Syriac astrology *’athliya* was the snake that swallowed the celestial bodies, thus causing the lunar and solar eclipses. See Bouché-Leclercq, *L’Astrologie grecque*, 121 and Sharf, *The Universe*, 39–40 nn. 26 and 114. About the *tli* as Dragon in Jewish Gnosticism, see Mastrocinque, *Jewish Magic*, 161.

⁵⁶ Forecasting future events was particularly important to Donnolo as a physician, since it had become an essential part of the medical profession long before his time. Hippocrates, for example, said in his *Prognosis*: Τὸν ἡτηρὸν δοκεῖ μοι ἄριστον εἶναι πρόνοιαν ἐπιτηδεύειν· προγινώσκων γὰρ καὶ προλέγων παρὰ τοῖσι νοσέουσι τὰ τε παρόντα καὶ τὰ προγεγονότα καὶ τὰ μέλλοντα ἔσεσθαι, ὅσοσα τε παραλείπουσιν οἱ ἀσθενέοντες ἐκδιηγούμενος πιστεύοιτο ἂν μᾶλλον γινώσκειν τὰ τῶν νοσεόντων πρήγματα, ὥστε τομῶν ἐπιτρέπειν τοὺς ἀνθρώπους σφᾶς αὐτοὺς τῷ ἡτηρῷ [“I hold that it is an excellent thing for a physician to practise forecasting. For if he discover and declare unaided by the side of his patients the present, the past and the future, and fill in the gaps in the account given by the sick, he will be the more believed to understand the cases, so that men will confidently entrust themselves to him for treatment”]. Greek text and English translation in Jones, ed., *Hippocrates*, II, 2. Similarly, according to the *Epidemics*, another work included in the Corpus Hippocraticum, “declare the past, diagnose the present, foretell the future; practise these acts.” Translation and Greek text in Jones, ed., *ibid.*, I, 164–165.

⁵⁷ Literally, מסורת הכוכבים is “the tradition of the planets”, implying the transmission of knowledge. The translation follows Lacerenza (“Donnolo e la sua formazione,” 35) who translates “disciplina delle stele” [“discipline of the stars”]. Sharf (*The Universe*, 10) does not translate the term, interpreting the entire passage simply as “how to do the calculations myself.” Elsewhere in the text (e.g. above Hebrew Text, 138) Donnolo uses also חכמת המזלות הכוכבים and חכמת המזלות והכוכבים [“science of the planets and the constellations/of the constellations and the planets”], with reference to the observation and study of the planets and the evaluation of their influences (thus including astronomy, astrology and the applied mathematical calculus). This invalidates Sela’s claim that חוכמת הכוכבים was an expression coined by Abraham ibn Ezra (1098–1164) in order to indicate the study of astrology, astronomy and mathematics. See Sela, “Abraham Ibn Ezra’s Special Strategy,” 67 and *idem*, *Abraham Ibn Ezra*, 205. This is only a detail of a much more general problem concerning Sela’s study of Ibn Ezra’s astrological sources. Sela attributes to Ibn Ezra the creation of an astrological vocabulary, even though some of its terms are well attested in earlier astrological works such as the *Barayta di-Sh^h mu’el* and Donnolo’s SH. Sela fails to note, for example, that Ibn Ezra employs the word *tli* with the meaning of *axis mundi* and lunar nodes in exactly the same way Donnolo uses it in SH and *Sefer ha-mazzalot*, as well as that Ibn Ezra quotes verbatim from Donnolo’s *Sefer ha-mazzalot* in his commentary on Amos 5:8 and Job 38:31. See Luzzatto, “Mikhtav gimel,” 65–67; Sela, *Abraham Ibn Ezra*, 263–264, 371 and Abraham Ibn Ezra, *Commentary on Amos*, 209. Sela, moreover, does not consider the possibility that Ibn Ezra may have known the works of Donnolo, even though, as Sela himself observes (*ibid.*, 10), Ibn Ezra composed

me how to recognise the twelve constellations and the five planets⁵⁸ in the firmament; he taught me about the rising constellation,⁵⁹ which comes up and rises in the east; the constellation of the deep,⁶⁰ which is fourth from the rising one, and which is covered and hidden beneath the height of the earth⁶¹ to the north; the constellation which sets⁶² in the west, and which directly faces the rising one and is the seventh from it; the constellation of the height,⁶³ which is in the middle of the vault of the firmament to the south and which is tenth from the rising [constellation].⁶⁴

some of his most important astrological works after his stay in Lucca, a small city north-west of Florence, where the Qalonimus—a prominent Apulian family, whose members were very well acquainted with Donnolo's works (see above n. 18)—moved from southern Italy in the early 9th century. See Grossman, "The Migration of the Kalonymus," 154–186.

⁵⁸ Here Donnolo excludes the sun and the moon which elsewhere in the text (e.g. pp. 327–328, 331–334) he includes among the seven planets. This is because, as observed by Castelli (*Il commento*, 180 n. 5), there was no need for specific training in order to pick out the positions of the sun and the moon, which can be distinguished very easily from all the other celestial bodies.

⁵⁹ The Hebrew has מוֹל הַצּוּמָה, literally "the growing constellation," known in the Western astrological tradition as "ortus," the point on the horizon at which a celestial body rises. See Sarfatti, *Mathematical Terminology*, 57.

⁶⁰ The Hebrew has מוֹל הַתְּהוֹמָה, which, according to Sarfatti (*Mathematical Terminology*, 56), indicates the *imum caeli*, the culminating degree of the ecliptic. See also Gettings, *The Arkana Dictionary*, 254, 318.

⁶¹ The "height of the earth," wherein גּוֹבְהָה שֶׁל אֶרֶץ seems to indicate the celestial vault, and more specifically in the present context, the part of the sky which is not visible to the observer.

⁶² The Hebrew reads מוֹל הַשׁוֹקֵעַ, literally, "the constellation that sinks." The *Barayta demazzalat*, (Wertheimer, ed., 32) refer to it as the מוֹל הַטּוֹבֵל ["the dipping constellation"].

⁶³ This is the so-called *medium caeli*, the culminating degree of the ecliptic, known also as "Midheaven." See Gettings, *The Arkana Dictionary*, 310, 317–318.

⁶⁴ According to Sharf, Donnolo is referring here to the four positions which the planets maintain through their cycle, namely "their rising, their settings, their zenith and their nadir" (*The Universe*, 10). See also Lacerenza, *Sabbetay Donnolo*, 51 nn. 36–37. The contradiction between the position of the upper and lower constellations and the geographical indication ("the constellation of the deep ... to the north" and "the constellation of the height ... to the south") is only apparent. Sharf suggests that "the astrologers, in addition to the divisions of the zodiac, took account of what they called "the four centres of the ecliptic. These were the points of the rising, the setting, the upper culmination and the lower culmination of a heavenly body. These centres had terrestrial orientations. The rising point ("Horoscopus") was obviously in the east, the setting point ("Dusis") in the west. And the lower culmination ("imum caeli") was often thought of as somehow in the north, from the idea that it was through the north that the stars returned to their rising point. A kind of north was, therefore, astrologically speaking, beneath one's feet and, thus, the upper culmination ("medium caeli") became a kind of south more or less directly overhead ..." (Sharf, *The Universe*, 63). Donnolo thus explains some of the rudiments of classical astrology, whereby the zodiacal constellations rise in the east and move clockwise to the west, where they set into the lower part of the Zodiac; every rising

He taught me the rules of the observation of planets and constellations, and how to tell which of them are beneficent and which maleficent;⁶⁵ he taught me how to measure the shadow cast by the rod, as described in the *Barayta* of Samuel,⁶⁶ in order to know and find the hour, the constellation

constellation confronts the constellation that is separated from it by 180 degrees, which is the “setting” sign (e.g. Aries and Libra, numbers 1 and 7 in the illustration below); likewise, the constellation setting “in the middle of the vault” is separated from the rising sign by 120 degrees and, following the anticlockwise enumeration of the signs in the zodiacal belt, is tenth from the rising sign (e.g. Aries and Capricorn, numbers 1 and 10 in the illustration below).



According to Ptolemaic astrology, which conforms with Donnolo's view, the constellations of the Zodiac contract different relations with one another depending on the position they occupy in the zodiacal belt. See *Tetrabiblos*, Robbins, ed., 72–73.

⁶⁵ Ptolemy devoted a section of his *Tetrabiblos* to the positive and negative qualities of the planets. Jupiter, Venus and the moon were said to be beneficent. Saturn and Mars were maleficent, while the sun and Mercury, which have neither negative nor positive qualities, were said to intensify the qualities of the planets they are associated with. See *Tetrabiblos*, Robbins, ed., 38–39.

⁶⁶ See *Barayta di-Sh'e mu'el*, Eisenstein, ed., 543: אצבעות חוקפו חוקפו שיה ומודר צילן הצריך לידע מביא קצב של קנה בין י"ב ["he who needs to know (the angular distance between the planets in relation to the fixed stars) should bring a stick cut to the measure of twelve fingers and raise it up on a plane surface and measure its shadow"]. As suggested by Sharf (*The Universe*, 12–13; 130 n. 49), the measuring instrument to which Donnolo refers must be an early version of the so-called “Jacob-staff,” a cross-staff which astronomers and navigators used for measuring the angle between the direction of two stars. The staff was apparently invented by the southern French Jewish mathematician Levi ben Gershom (also known as Ralbag or Gersonides, 1288–1344) who described it in his *Millhemot ha-Shem* (*The Wars of the Lord*) in 1328. See also Lacerenza, “Donnolo,” 52 n. 39; Goldstein, *The Astronomy of Levi ben Gerson*, 52–54 and idem, *The Astronomical Tables*, 21–22. Some, however, attribute the invention of the device to Yehudah [or Jacob] Machir (ca. 1236–1304); see idem, “Ships and Sailing”; Sarton, *Introduction*, II, ii, 623, 851 and Harper, “Prophatius Judaeus,” 61–68. It should be noted, however, that shadow is not involved in the method of measuring with the “Jacob-staff.” Donnolo probably refers to the method described by Ptolemy in *Almagest* XV,15 and developed by Muslim astronomers such as al-Birūni (973–1048) in his treatise on the celestial shadows. See Ptolemy's *Almagest*, in G.J. Toomer, ed., 255–257 and al-Birūni, *The Exhaustive Treatise*, I, 263–270.

and the planet of any hour,⁶⁷ so as to understand everything and to ask any question.

After I had learned from this gentile and tested his wisdom, after I had understood what is noted in the scripture of truth,⁶⁸ I set my mind to explaining all the books that came into my possession. I combined all their wisdom with the wisdom and teaching of the Babylonian gentile, and I wrote down and explained them in the book called *Ḥakhmoni*. *Blessed are you, O Lord, train me in Your laws* [Ps. 119: 12], *I rejoice over the way of Your decrees as over all riches* [ibid. ibid. 14], *I rejoice over your promise as one who obtains great spoil* [ibid. ibid. 162], *Your mercies are great, O Lord, as is Your rule, preserve me* [ibid. ibid. 156].

[I hereby explain the current date,] the cycle of the planets, the Dragon [*tli*] and constellations for the year 4706 since the Creation of the world,⁶⁹ in order to know in which constellation and in which degree of the constellation the seven planets⁷⁰ and the Dragon are.⁷¹ You should know that the first letters⁷² are thirty degrees⁷³ in the constellation, and that the last letters are sixty degrees in a section of the constellation.⁷⁴ The days of

⁶⁷ That is, the planet which dominates that specific hour. See below, 315 n. 91, 318 n. 102.

⁶⁸ Dan. 10:21.

⁶⁹ Equivalent to the year 946 according to the Gregorian calendar.

⁷⁰ The two luminaries and the five planets.

⁷¹ The Hebrew reads ייהי which could mean either “will be” or “are” as in the present translation. The table of ephemerides, in fact, were used either to forecast future events (which involved calculating the positions of the planets and evaluating their influence) or to draw a map of the celestial bodies at a specific time (normally, an individual’s birthday) in order to draw up a horoscope. See Gettings, *The Arkana Dictionary*, 177. In this passage Donnolo refers neither to his birthday nor to any other specific event of his life. This suggests that the table below is of the second type and that the verb must be translated using the present tense.

⁷² This refers to the Hebrew letters in the table that follows immediately below. They are used to indicate the longitudes of the planets in relation to the signs of the Zodiac, each one being divided into 30 degrees, and each degree into 60 minutes. In the English version below, the letters have been translated into Arabic numerals. The table, which is attested only in ms. Oxford, Bodleian Library, Heb.e.26 (G) is wrongly aligned and not always perfectly legible. This transcription is based on the amended Hebrew version edited above, in the Hebrew Text, pp. 140–141.

⁷³ The Hebrew has חלקים [literally, “parts”] which is probably a calque of the Greek μοῖραι, used in Greek and Ptolemaic astrology to indicate the degrees of the Zodiac. See e.g. Ptolemy, *Tetrabiblos*, Robbins, ed., 72; Liddell-Scott, *Greek-English Lexicon*, II, 1141 (5); *Thesaurus Graecae Linguae*, V, 1133 and Sarfatti, *Mathematical Terminology*, 51, 56. The use of the Hebrew term in this sense is attested also in the *Barayta di-Sh’ mu’el*, Eisenstein, ed., 545.

⁷⁴ The following passage describes the table which appears below. The first four columns, as Donnolo says, present the days of the month of Elul according to the different

the month called in Arabic *Safar*,⁷⁵ a lunar month [corresponding to] the Hebrew month of Elul, [which corresponds to] the Persian [and to] the Egyptian month.⁷⁶ The days of the week, sun, moon, Saturn, Jupiter, Mars, Venus, Mercury, lunar node [*tli*—Dragon], Virgo, Libra, Leo, Cancer, Capricorn, [Leo, Leo], Pisces.⁷⁷ This is the *Book Hakhmoni*.^{78,79}

calendric systems he mentions. The fifth column indicates the days of the week. The remaining eight columns indicate the position of the planets in relation to the zodiacal constellations and the position of the lunar node. For further discussion of the reading and the interpretation of this table, see below Appendix.

⁷⁵ In the Hebrew text the name is spelt with *samekh*, but its correct pronunciation should be *Şafar*. See *EI*, VIII, 764–765.

⁷⁶ Though the exact interpretation of this paragraph is uncertain, it is clearly aimed at providing the reader with different chronological indications in addition to those of the Hebrew calendar. In this respect, an important precedent is represented by a passage from the book of *Asaf ha-rofè* (6th century CE), the oldest medical text written in Hebrew. Here, having outlined the succession of the months and the seasons as in the Hebrew calendar, *Asaf* presents the succession of the months according to the Persian calendar: ואלה שמות החדשים בלשון פרסי: ארור מ'ה[?], פרורדין מ'ה, הורודד מ'ה, בהמין מ'ה, בהמין מ'ה, שהריר מ'ה, ישת מ'ה, מורדד מ'ה, אדרכה מ'ה, אבאן מ'ה, דין מ'ה, אספנדימור מ'ה. אלה שמותם בלשון חכמי פרס. ["These are the names of the months in the Persian language. Arahah, Fravartin, Horvadat, Harmin, Mitro, Satvairo, Patiz, Tir, Ataro, Zamistan, Din, Speredarmat. These are the names of the months in the Persian language"]. Hebrew text and English translation in Muntner, *Mavo le-sefer*, 157.

⁷⁷ On the correct reading of this passage, see above Notes to the Critical Text, 210–211.

⁷⁸ Probably in order to give a clear instruction as to the correct reading of the table, the scribe of ms. Oxford, Bodleian Library, Heb.e.26 (G) set this text in vertical tabular form alongside the beginning of the table.

⁷⁹ The top line of the table does not appear in the manuscript. It was inserted here on the basis of the description of the table ("The days of the month ... Aquarius") on the previous page. In square brackets are the names of the zodiacal signs and the degrees of the planets which, according to the coordinates and the information provided in the table, should have appeared at the time indicated. To produce these data I used the computer programmes *Zet 8* and *Kairos*, kindly provided by Dr. Raymond Mercier.