

Piergabriele Mancuso

**Hebrew Science in Early Medieval South Italy:  
Greco-Latin Astrological Lore in Hebrew Garb\***

*1. Southern Italy, an area of cultural convergence*

Set in the middle of the Mediterranean, a few miles from northern Africa and along the most important commercial routes between east and west, the Jews of Byzantine Apulia, southern Italy, were involved in a process of cultural revitalization that between the 8<sup>th</sup> and the 11<sup>th</sup> centuries brought Hebrew – a language that they had largely neglected in favour of other linguistic codes (mostly Latin and Greek) – back to its original role as a tool of written communication. As underlined since the time of the *Wissenschaft* and more recently in research by Bonfil,<sup>1</sup> the Jews of southern Italy benefited of a twofold influence: the

---

\* This article is a slightly revised and augmented version of a paper read at the conference on *Latin into Hebrew: the Transfer of Philosophical, Scientific, and Medical Lore from Christian to Jewish Cultures*, that was hosted by the University of Paris in December 2009. I express my most sincere gratitude to Professor Gad Freudenthal for his constructive criticism and insightful suggestions. All errors, imperfections and faults are only mine.

<sup>1</sup> R. Bonfil, “Between Eretz Israel and Babylonia,” *Shalem* 5 (1987) 1-30 (Hebrew); Id., “Tra due mondi. Prospettive di ricerca sulla storia culturale degli Ebrei dell’Italia meridionale nell’alto Medioevo,” in *Italia Judaica I (Atti del Convegno di Bari, 1981)*, Istituto Poligrafico, Roma 1983, 135-158 (repr. in Id., *Tra due mondi. Cultura ebraica e cultura cristiana nel Medioevo*, Liguori, Napoli 1996, 65-91); Id., “Myth, Rhetoric, History? A Study in the *Chronicle of Ahima’az*,” in M. Ben-Sasson et al. (eds.), *Culture and Society in Medieval Jewry: Studies Dedicated to the Memory of Haim Hillel Ben Sasson*, Zalman Shazar Center, Jerusalem 1989, 99-136 (Hebrew); Id., “Can Medieval Storytelling Help Understanding Midrash? The Story of Paltiel: A Preliminary Study on History of Midrash,” in M. Fishbane (ed.), *The Midrashic Imagination: Jewish Exegesis, Thought, and History*, State University of New York Press, Albany NY 1993, 228-254; Id., “Cultura ebraica e

culture of Palestine (wherefrom the Jews of Apulia were allegedly taken to Italy by Titus after the fall of Jerusalem) and the traditions of Babylonian Judaism, which since the 8<sup>th</sup> century gradually spread to southern Italy and then to the rest of the Jewish Diaspora, through Italy to Europe.

Cultural revitalisation among southern Italian Jews was a complex, long lasting and multi-faceted process that took place beginning in the 8<sup>th</sup> century, seemingly from the merging of the Western Latin and Graeco-Byzantine traditions into the fabric of south-Italian Judaism, which at that time, as I said, was witnessing a gradual convergence of the traditions of Palestinian and Babylonian Judaism.<sup>2</sup>

The aim of this paper is to offer a preliminary examination of the extent to which Latin and Greek have contributed to the creation of an astrological Hebrew terminology. Astrology – just as many other disciplines and liberal arts – enjoyed widespread popularity, and thus offered opportunities for cultural and intellectual encounters between people and scholars of different faiths and with different cultural backgrounds. The study of astrological terminology is thus one of many possible paths to gaining a clearer and more comprehensive view of southern Italian Jewish society in the Middle Ages. My analysis of Hebrew astrological texts composed or known to early

---

cultura cristiana nell'Italia meridionale nell'alto medioevo," in C.D. Fonseca *et al.* (eds.), *L'ebraismo dell'Italia Meridionale Peninsulare dalle origini al 1541 – Atti del Convegno internazionale di studio. Potenza–Venosa*, Università della Basilicata - Congedo, Potenza - Galatina 1996, 115-160.

<sup>2</sup> Important information about the cultural renaissance of southern Italian Jews and their revival of Hebrew was obtained from the study of tombstones and related archaeological testimonies. On this, see especially the works by late professor C. Colafemmina, "Di alcune iscrizioni giudaiche a Taranto," in M. Paone (ed.), *Studi di storia pugliese in onore di Giuseppe Chiarelli*, Congedo, Galatina 1972, 233-242; Id., "L'iscrizione brindisina di Baruch ben Yonah e Amittai da Oria," *Brundisii res* 7 (1975) 295-300; Id., "Gli ebrei a Taranto nella documentazione epigrafica (secc. IV-X)," in C.D. Fonseca (ed.), *La Chiesa di Taranto, I. Dalle origini all'avvento dei Normanni*, Congedo, Galatina 1977, 109-127; Id., "Archeologia ed epigrafia ebraica nell'Italia meridionale," in *Italia Judaica I*, 202-205; Id., "Note su di una iscrizione ebraico-latina di Oria," *Vetera Christianorum* 25 (1988) 641-651; Id., "Hebrew Inscriptions of the Early Medieval Period in Southern Italy," in B.D. Cooperman, B. Garvin (eds.), *The Jews of Italy: Memory and Identity*, University of Maryland, Potomac MD 2000, 65-81.

medieval southern Italy revealed some unexpected information, such as, for example, that some of the advancements – specifically those in terminology – commonly attributed to 12<sup>th</sup> and 13<sup>th</sup> century Jewish astrologers (for example to Avraham Ibn Ezra), were in fact made possible thanks to the work of early medieval scholars and interactions between Jewish and Greco-Latin traditions.<sup>3</sup>

In this paper I will examine a series of works composed around the 10<sup>th</sup> century by southern Italian Jewish astrologers. Most of these are by Shabbatai Donnolo (ca. 912-913 – after 982) – a physician, an astrologer, a distinguished exegete, and one of the most important intellectuals of Jewish Apulia. Donnolo was the author of *Sefer ha-Mazzalot* and *Sefer Ḥakhmoni*. The first is a commentary on the *Baraita of Samuel*, a pseudo-epigraphic work attributed to the Talmudic sages Samuel bar Abba or to Shemu'el ha-Qatan (Samuel the Young), which Donnolo more than once claimed to be the oldest and most authoritative work of Hebrew astrology.<sup>4</sup> We only have a fragment of Donnolo's original work – a portion of text equivalent, according to recent analyses, to circa a fifth of the original work – which was handed down in the form of a citation in the commentary on the book of Job by the French exegete Yosef ben Shim'on Qara (11<sup>th</sup> century), a pupil of Rashi.<sup>5</sup>

<sup>3</sup> As correctly pointed out by S. Sela (*Abraham Ibn Ezra and the Rise of Medieval Hebrew Science*, Brill, Leiden - Boston 2003, 205ff.), Ibn Ezra coined a series of astrological and astronomical terms in Hebrew allowing him to deal with and write about specific issues. Some of the terms that Ibn Ezra used in his works, however, are attested in the works of earlier authors such as Donnolo's *Ḥakhmoni* and *Sefer ha-Mazzalot*. For more information on this, see P. Mancuso, *Shabbatai Donnolo's Sefer Ḥakhmoni: Introduction, Critical Text and Annotated English Translation*, Brill, Leiden - Boston 2010, 231 n. 57 (hence Mancuso, *Sefer Ḥakhmoni*).

<sup>4</sup> The text of the *Baraita of Samuel* was transmitted in a single manuscript, discovered by N. Amram in his father's library. Amram published it in Thessaloniki in 1861. The text was re-published by A.L. Lipkin, *Baraita di-Šemu'el ha-qatan*, Piotrków 1901 (repr. Yemini, Jerusalem 1933), and J.D. Eisenstein (ed.), *Ošar midrašim*, II, Grosman, New York 1915, 542-547. The present whereabouts of this manuscript (if extant) are unknown.

<sup>5</sup> The Hebrew text was published for the first time by S.D. Luzzatto, "Mikhtav gimel," *Kerem Ḥemed* 7 (1843) 60-67 and subsequently by Z. Frankel, "Der Commentar des R. Joseph Kara zu Job," *Monatsschrift für Geschichte und Wissenschaft des Judentums* 5 (1856) 223-229; 6 (1857) 270-274; 7 (1858) 255-

*Sefer Ḥakhmoni*, Donnolo's *opus magnum*, is one of the oldest extant commentaries on *Sefer Yeşirah*,<sup>6</sup> and at the same time one of the most comprehensive works on astrology and exegesis written in Hebrew in early medieval Italy.<sup>7</sup> The work – which Donnolo probably composed in 946 and then revised and augmented in 982<sup>8</sup> – consists of three distinct parts. The first is an introduction containing an

---

263, 345-358. On the work of Kara, see M.M. Ahrend, *Le commentaire sur Job de Rabbi Joseph Qara*, Olms, Hildesheim 1978. A critical edition of the extant portion of *Sefer ha-Mazzalot* together with notes and an English translation is currently being prepared by the author of the present contribution. A very comprehensive analysis of the texts of the two Baraitot as well as of the astrological issues Donnolo dealt with in his works is offered by R. Leicht, *Astrologumena Judaica: Untersuchungen zur Geschichte der astrologischen Literatur der Juden*, Mohr Siebek, Tübingen 2006, 82-89.

<sup>6</sup> *Sefer Yeşirah* contains some astrological passages, most concerning the position of the planets and their relationship with the hours of the day, the days of the week, the months of the year, and the organs of the human body. These passages are extremely problematic, as they do not fit into any known cosmological and calendrical-astrological system. *Sefer Yeşirah* was the subject of a number of studies. For a comprehensive study of the text and a general analysis of its most important problems, see P.A. Hayman, *Sefer Yeşira: Edition, Translation and Text-Critical Commentary*, Mohr Siebeck, Tübingen 2004.

<sup>7</sup> The Hebrew text was first published by the Italian scholar David Castelli, *Il commento di Shabbatai Donnolo sul Libro della Creazione*, Le Monnier, Firenze 1880. The text edited by Castelli was reprinted several times as an appendix to several editions of *Sefer Yeşirah*, the most important of which was *Sefer Yeşirah*, Lewin-Epstein, Jerusalem 1962, 1965, and several other times (reprint of the *editio princeps*, Mantua 1562, with commentaries). An Italian translation of Castelli's text was published by P. Mancuso and D. Sciunnach (eds.), *Sefer Yetzirà - Libro della formazione: secondo il manoscritto di Shabbatai Donnolo con il commentario Sefer Chakhmoni (Libro sapiente) di Shabbatai Donnolo*, Lulav, Milano 2001. A new critical edition of the work was then published by Mancuso, *Sefer Ḥakhmoni* cit. A shorter version was published in Italian by Id., *Sefer Ḥakhmoni. Introduzione, testo critico e traduzione italiana annotata e commentata*, Giuntina, Firenze 2009. The commentary on Genesis contained in Donnolo's work was also republished by A. Dovidovitz, *Sefer Ḥakhmoni le-rabbi Šabbatai bar Avraham Donnolo ben doro šel Sa'adiah Ga'on*, Rosh Pinnah 2002, following the text of Castelli's edition.

<sup>8</sup> See Mancuso, *Sefer Ḥakhmoni*, 27-28.

autobiographical sketch and two rhymed poems; the second, a commentary on the verse of Genesis 1,26 (*Let us make man in our image, after our likeness*)<sup>9</sup> where Donnolo tries to reconcile the neo-Platonic idea of creation by emanation with the biblical account of Genesis (creation *ex nihilo*); the third, a commentary on *Sefer Yeşirah* (*The Book of Formation*), undoubtedly the most complex and interesting part of his entire literary production, where Donnolo tries not only to harmonise the astrological sections of *Sefer Yeşirah* with the principles of classic astrology, but also to outline the principles of a peculiar form of neo-Platonism drawing on both Jewish and non-Jewish sources, combining the midrash and the Talmud with the philosophical ideas of early Patristic thought. Donnolo, as a very close analysis of his works has recently revealed, knew Christian philosophy and the early Church Fathers' writings well, particularly the *De Opificio Hominis* by Gregory of Nyssa (ca. 335-394), Nemesius of Emesa's (4<sup>th</sup> century) *De Natura Hominis*, a work long included in the canon of Gregory's works, and probably also the *De Divisione Naturae* by Scotus Eriugena (ca. 810-877).<sup>10</sup> The multifaceted character of Donnolo's cultural background is also apparent in his language, where Hebrew – mostly modelled on the language of the Mishnah – is often blended with non-Hebrew terms or neologisms coined on Greek or Latin words.<sup>11</sup>

<sup>9</sup> *The Bible: Authorized King James Version with Apocrypha*, Oxford University Press, Oxford 1997.

<sup>10</sup> On this subject, see G. Sermoneta, "Il neoplatonismo nel pensiero dei nuclei ebraici stanziati nell'Occidente medievale (riflessioni sul "Commento al Libro della Creazione" di Rabbi Shabbatai Donnolo)," in *Settimane di studio del Centro italiano di studi sull'Alto Medioevo*, Centro Studi sull'Alto Medioevo, Spoleto 1980, 867-925; Id., "Le correnti del pensiero ebraico nell'Italia medievale," in *Italia Judaica I*, 273-285; and Mancuso, *Sefer Hakhmoni*, 35-40.

<sup>11</sup> For more information about the cultural background of Donnolo and his knowledge of non-Hebrew sources, see G. Lacerenza, "Donnolo e la sua formazione," in Id. (ed.), *Šabbetai Donnolo: scienza e cultura ebraica nell'Italia del secolo X*, Istituto Universitario Orientale, Napoli 2004, 45-68; on his medical knowledge see Id., "Il sangue tra microcosmo e macrocosmo nel commento di Šabbatai Donnolo al *Sefer Jeşira*," in F. Vattioni (ed.), *Sangue e antropologia nella teologia medievale*, Centro Studi Sanguis Christi, Roma 1991, 389-417 and the recent study by E. Rosato, *L'uomo microcosmo e la circolazione dei fluidi in Shabbetai Donnolo (Oria-Rossano, X sec.)*, Messaggi, Cassano delle Murge 2012.

In my analysis, I will also refer to the *Baraita de-Mazzalot* (*The Baraita of the Constellations*), an anonymous commentary on the *Baraita of Samuel*, which, I claim in the light of recent investigations and my comparative study of the texts, may well be by Donnolo or a coeval author.<sup>12</sup>

As pointed out by E. Wolfson, southern-Italian Jews, and Donnolo as well, were probably somehow “conversant” with their Arab neighbours (often known to them as conquerors or invaders),<sup>13</sup> but their encounter does not seem to have borne any significant fruits. As A. Sharf points out in his seminal studies on Donnolo and Byzantine cosmology, Arab astrology certainly played a significant role in the study and development of Hebrew astrology in the south of Italy, although more as regards astrologic *mathematica* and practice (e.g., the inclusion of the numerical values of the lunar nodes in the calculation of planet positions in a natal or zodiacal chart) than as regards linguistic loans.<sup>14</sup> I will not be addressing the problem of Hebrew-Arabic linguistic interactions here.

## 2. *The birth of an astrological Hebrew vocabulary*

The study and practice of astrology, like that of any other discipline based on a set of codified and shared concepts, needs a set of terms with intelligible meanings and conveying exact information.

---

<sup>12</sup> The authorship of the work is uncertain and controversial, as is the time of its composition. The work was attributed to Donnolo by Gad B. Sarfatti on the base linguistic analysis and comparative examination of quotations from Donnolo’s work in later texts. On this see G.B. Sarfatti, “An Introduction to ‘Baraita de-Mazzalot,’” *Bar-Ilan University Annual* 3 (1965) 56–82 (Hebrew); Id., *Mathematical Terminology in Hebrew Scientific Literature of the Middle Ages*, Magnes, Yerušalayim 1968 (Hebrew), particularly pp. 48-57; Id., “The Astrological Books of Shabbetai Donnolo,” *Korot* 8 (1981) 27-29 [English section], 31-35 [Hebrew section]; Id., “I trattati di astrologia di Šabbetai Donnolo,” in Lacerenza, *Šabbetai Donnolo*, 141-147. The text of the *Baraita de-Mazzalot* was published by S.A. Wertheimer (ed.), *Batei midrašot*, II, Mosad ha-Rav Kok, Yerušalayim 1955, 7-37.

<sup>13</sup> E.R. Wolfson, “The Theosophy of Shabbetai Donnolo, with Special Emphasis on the Doctrine of Sefirot in His *Sefer Ḥakhmoni*,” *Jewish History* 6 [*The Frank Talmage Memorial Volume*, 2] (1992) 281-316 and Id., *Through a Speculum that Shines: Vision and Imagination in Medieval Jewish Mysticism*, Princeton U.P., Princeton NJ 1994, 125-144.

<sup>14</sup> See A. Sharf, *The Universe of Shabbetai Donnolo*, Ktav, New York 1976, 14-51.

The strategy adopted by Donnolo and the authors of the *Baraitot* (*Baraita of Samuel* and *Baraita of the Constellations*) in this regard is simple. It follows two complementary methods: first, it *translates* into Hebrew astrological terms in other languages, whenever corresponding terms exist in Hebrew, or terms that are adaptable so as to convey the new astrological meaning), and secondly, it *transliterates* terms, mostly from the Greek repertoire, lacking an analog or whose meaning is in no way paraphrasable in Hebrew.<sup>15</sup>

### 2.1. Translations

An interesting example of translation is found in the first part of Donnolo's *Sefer Ḥakhmoni*. It is a passage where he describes the beginnings of his astrological apprenticeship under the supervision of a Babylonian scholar, and his early interest for the *Baraita of Samuel*:

והקרתני אותם ומצאתים שוים בכל דבר חכמת הכוכבים המזלות עם ספרי ישראל ודעת כולם שוה ונכונה כן בינותי בספרים כי כל חכמת הכוכבים והמזלות מיוסדת בבריתא דשמואל החכם ... והוא הגוי למדני להכיר ברקיע שני עשר המזלות וחמשה הכוכבים ולמדני מזל הצומח הוא העולה זורח במזרח ומזל התהום הוא הרביעי לזורח אשר יהיה מכוסה ונעלם מתחת גובהה שלארץ בצד צפון ומזל השוקע במערב הוא הסוכל המסתכל לזורח והוא שביעי לזורח ומזל הרום הוא אשר יהיה באמצע כיפת הרקיע שבצד דרום והוא עשירי לזורח ...

I investigated and found that, on the science of the planets and constellations, they (the Gentiles' books) 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 realised that the whole of the science of the planets and constellations was based on the Baraita of Samuel the Wise ... And that Gentile taught me how to recognise the twelve constellations and the five planets in the firmament; he taught me about the rising constellation, which comes up and rises in the east; the constellation of the deep, which is fourth from the rising one, and which is covered and hidden beneath the height of the earth to the north; the constellation which sets in the west, and which directly faces the rising one and is the seventh from it; the constellation of the height, which is in the middle of the vault of the firmament to the south and which is tenth from the rising (constellation) ...<sup>16</sup>

<sup>15</sup> See Sarfatti, *Mathematical Terminology*, 56.

<sup>16</sup> Hebrew text and English translation in Mancuso, *Sefer Ḥakhmoni* cit., 138:19-139:10 [Hebrew text], 230-232 [English translation]. For the sake of clarity I did not include critical notes here.

The text, particularly the last part of it, is clear and intelligible. The four cardinal positions concerning the astrological evaluation of the position of the planets – known in Roman and Hellenistic-Greek astrological traditions respectively as *ortus*, *occasus*, *imum* and *medium coeli*, and ἀνατολή, ἐπιτολή, μεσουράνημα and ὑπόγειος, respectively – here are rendered into Hebrew with מזל הצומח (literally “the rising/growing constellation”), signifying the astrological function of what in Greek is known as *horoscopus*, in Latin *ortus* or *ascendens*, that is the rising sign or ascending degree in the east, while מזל השוקע (*the constellation which sets*) indicates the descending sign or degree in the west. The other two expressions – מזל התהום (*the constellation of the deep*), גובהה של ארץ (*height of the earth*, which the *Baraita of Samuel* linguistically more consistently calls מזל הטובל [“the dipping constellation”]) – obviously refer to the lowest and highest degree of the ecliptic, the *imum* and *medium coeli*.

Other examples of translations can be found in the *Baraita de-Mazzalot*, whose author seems to be well acquainted with Greek astrological terminology.

Here the Hebrew בית (“house”), for example, is consistently used to refer to the domicile of a planet, exactly as οἶκος in Greek astrology. The term גבול (lit. “border”) indicates the “boundary” or subdivision of a zodiacal sign, just as the Greek ὄριον.<sup>17</sup>

The use of בית חייו (lit. “the house of his life”), is very interesting. The expression is consistently used both in the *Baraita of Samuel* and in the *Baraita de-Mazzalot* to indicate a planet whose position is said to exert influence upon one’s longevity.<sup>18</sup> It is semantically very close to what Hellenistic astrologers called βιοδότης, a compound of βίος [“life”] and δότης [“giver”],<sup>19</sup> and to what in late classical Greek

<sup>17</sup> See for example *Baraita de-Mazzalot* (Wertheimer ed.), pp. 30-32. גבול appears also in § 47 of *Sefer Yeširah* (see ed. Hayman, pp. 149-151) but its meaning there is far from clear. Donnolo does not comment on that chapter of SY and therefore there is no evidence that he interpreted SY’s use of the word in astrological terms.

<sup>18</sup> See *Baraita de-Mazzalot*, p. 32 and *Baraita di-Šemu’el* in Eisenstein, *Ošar Midrashim* II, p. 545.

<sup>19</sup> See *Baraita de-Mazzalot*, p. 32. Also F. Gettings, *The Arkana Dictionary of Astrology*, Arkana, London - New York 1990, 247.



sources is said to be the οἰκοδεσπότης τῆς γενέσεως<sup>20</sup> (lit. “the house-master of the birth”). The Hebrew בית חייו is more than a plain adaptation of the Greek expressions, appearing more as a sort of interpretation. The main concept in בית חייו is the idea of “position” – the *bayit*/house – the only factor thought to be responsible of one’s longevity, the *per se* valid astrological “fact”, whereas the Greek expression emphasizes the ideas of control over one’s own life, house ownership, and the action of granting someone a short or long life.<sup>21</sup>

A concept closely connected to that of longevity is what modern astrology usually refers to as “Lot” or “Part of Fortune”, i.e., the point in a horoscope chart situated at the same distance of zodiacal arc from the Ascendant as the Moon is from the Sun.<sup>22</sup> To indicate this point, the *Baraita de-Mazzalot* uses two expressions: גורל היפה (lit. “good fortune”) and חלק היפה<sup>23</sup> (lit. “good part”), exactly as in the Latin *sors fortunae* and *pars fortunae*, and the Greek κλήρος τύχης [lit. “lot of fortune”].<sup>24</sup>

The verb שמח (“to merry”, “to rejoice”) indicates the occupation by a planet of a position appropriate to another celestial body, exactly as χαίρω, (literally, “to take pleasure in,”) in Ptolemy’s works. The author of the *Baraita* speaks of a planet’s שפילה – a term normally meaning “lowland” or the “lower position” of a place – which is a

<sup>20</sup> See R. Hand (ed.), *Late Classical Astrology: Paulus Alexandrinus and Olympiodorus (with the Scholia from Later Commentators)*, transl. by D.G. Greenbaum, ARHAT, Reston VA 2001.

<sup>21</sup> See *Baraita de-Mazzalot*, pp. 32ff. The etymological origin of this expression, however, is far from clear. It departs from the Greek term and is different also from the adaptation we find, for example, in Arabic sources (*al-kadudah*, lit., “the house master”; see on this P. Kunitzsch, *Mittelalterliche astronomisch-astrologische Glossare mit arabischen Fachausdrücken*, Bayerische Akademie der Wissenschaften, München 1977, 35-37). It may well be that the Hebrew בית חייו was coined after a Latin expression such as *dominus annorum* (lit., “master of years”, well attested in Latin sources; see Kunitzsch, p. 37 n. 72), which was changed into *domus annorum* (lit., “house of years”), which Hebrew translated with בית חייו. The same can be said about מזל הצומח, מזל השוקע, and מזל הטובל.

<sup>22</sup> See Gettings, *Arkana Dictionary*, 367.

<sup>23</sup> See *Baraita de-Mazzalot*, p. 32.

<sup>24</sup> See for example Ptolemy, *Tetrabiblos* (Robbins ed.), pp. 243, 255, 373ff. and Manilius, *Astronomica* (Goold ed.), p. 170. See also Gettings, *Arkana Dictionary*, 366-367.

semantic adaptation of the Greek *ταπείνωμα* [“depression”], and similarly of a planet’s גובה, (elevation), just as the Greek *ὑψωμα* [“elevation”].<sup>25</sup>

Similarly derived from Greek are a series of construct forms of שפילה and גובה such as שפילתו שפלש, שפילתו שפל, גבהו שפל and רום שפילה, attested in the two *Baraitot* and in Donnolo’s *Sefer ha-Mazzalot*. These indicate the passages that a celestial body performs through the Zodiacal belt moving from a place of exaltation to that of depression intersecting the ecliptic.<sup>26</sup>

## 2.2. Transliterations

A number of other astrological terms used in these works, as I said, are simply transliterated, apparently, as the late professor G. Sermoneta suggested, from Greek words. These terms refer to very specific and technical elements of the astrological discourse, conveying a variety of complex meanings difficult to express by paraphrases or to be semantically adapted.

Astrological terms directly transliterated from Greek can be found in the *Baraita of Samuel* and especially in its commentary, the *Baraita de-Mazzalot*, which use טריגון (*trygon*), from the Greek *τρίγωνον* [*trigonon*, “triangle”], a group of three signs linked by the same

<sup>25</sup> See *Baraita de-Mazzalot*, p. 20 and Luzzatto, “Mikhtav,” 66. These terms and expressions appear in a number of Greek sources, such as Cleomedes’ *De Motu Circulari* I.19, ed. Ziegler p. 34ff.

<sup>26</sup> In a passage of Martianus Capella’s *De Nuptiis Philologiae et Mercurii* (also known as *De Septem Disciplinis* or *Satyricon*) – one of the most authoritative texts for academic learning in the Middle Ages, well known during the Carolingian Renaissance (9th-10th century), chronologically coinciding with the age of Jewish renaissance in southern Italy, we read: ... *vero eadem Luna cum secans solarem lineam in aquilonem scandit, vocatur ὑψος ὑψουμένη, cum ad aquilone ad solarem lineam redit, dicitur ὑψος ταπεινουμένη; cum a solari in astrum discendi ταπείνωμα ταπεινουμένη; cum deinde rediens ad Solem resurgit, ταπείνωμα ὑψουμένη* ... (text in J. Willis ed., *Martiani Capellae De Nuptiis Philologiae et Mercurii*, VIII, Teubner, Leipzig 1983, 869). Italian translation with notes and critical commentary in I. Ramelli (ed.), *Marziano Capella, Le nozze di Filologia e Mercurio*, Rusconi, Milano 2001, 619-620. In this passage – as in several others in the work – the author offers a very clear explanation of the Greek expressions. The book could thus serve as a sort of reference work or scientific formulary for non-Greek readers.

element; סטיריגמוס (*sterygmos*), from the Greek στεριγμός [*sterigmòs*, “standing firm”], the position held by a planet apparently not moving either forward or backward; and דיאמטרון (*diametron*), from διάμετρος [*diàmetros*, “diameter”], the position of two or more celestial bodies situated at a distance of 180 degrees. As Sermoneta suggests, these three words derive directly from the Greek. Although, on the one hand, this hypothesis seems on the whole quite convincing (particularly considering that while *trigonon* and *diametron* are phonetically not dissimilar from the corresponding Latin words), on the other hand we should also remember that these three words, like many other Greek astrological and astronomical technical terms, are attested – either transliterated into Latin or in the original Greek characters with full explanations of their meaning – as we shall see below, in some late antique Latin astrological sources. It follows that one cannot rule out that the original sources were Latin or Latinised texts.

The texts under scrutiny only occasionally use non-Hebrew names for planets and constellations, especially those of the Zodiacal belt, for which Hebrew has a specific set of nouns. Generally speaking, the two *Baraitot* and Donnolo seem to concede no room to non-Hebrew onomastics. Neither Donnolo nor the *Baraitot* resort to transliterations to indicate the two points where the Moon crosses the ecliptic, which both the Greek-Hellenistic and Arab astrological traditions identified as the extremities of an imaginary Dragon (*Drakon* in Greek and *al-Jawazar* in Arabic): they use the Hebrew word *t-l-y* [Teli], attested in *Sefer Yeşirah* (according to Donnolo, a sacred text, a portion of the Sinaitic revelation), where it seems, however, to convey the much more Gnostic-oriented meaning of celestial entity ruling over the entire universe.<sup>27</sup>

In a few places, but especially in the last part of the *Sefer ha-Mazzalot* concerning an obscure passage of the *Baraita of Samuel* on the role and characteristics of *Kesil* and *‘aš* (two names traditionally attributed respectively to Orion and the Bear, that is, to extra-Zodiacal constellations) Donnolo, in order to clarify the passage and, more specifically, to offer precise information about the real identity of the

<sup>27</sup> See Hayman, *Sefer Yeşira*, pp. 36-37 and § 55, 5, pp. 168-170, 176-179. On the Aramaic-Syriac origin of this term see E. Ben-Yehuda, *A Complete Dictionary of Ancient and Modern Hebrew*, II, ed. by H. Torczyner, La’am Publishing House, Tel-Aviv 1948, 5818b. *Sefer Yeşirah* is the first occurrence of *tly* as a cosmological-astrological term.

two asterisms, is forced to use Greek and Latin astrological names, mentioning the Greek name of איסקיפרניאה (*Yisqiparniah*) and the Latin *Falx*:

כסיל הוא איסקיפרניאה הכימה אחר שהולך קורין יון בלשון אלא עוד ולא ...  
מגל שמה ופשר פלכי אותו קורין ורומיים

... not only that, but in Greek [this constellation] which moves behind the *Kimah* is called *Yisqiparniah*, that is *Kesil* [Orion], while the Romans call it *Falx*, which means sickle...<sup>28</sup>

Here there seems to be a confluence of two astrological sources, a Greek one and a Latin one. *Yisqiparniah* probably derives from the Greek *σκαπαρνία*, a term used in Classical Greek sources to indicate a sort of axe or hatchet used in battle, and not a constellation. To the best of my knowledge and according to a recent survey of most of the ancient astrological Greek sources, the only place where *σκαπαρνία* is mentioned in an astrological context is the *Etymologicum Gudianum*, a collection of Greek etymologies compiled around the 11<sup>th</sup> century, where the term is used to refer to the constellation of Orion.<sup>29</sup>

The identification of the Latin source is more problematic. In modern astronomical terms, *falx* – “sickle” in English – is normally referred to a group of stars – namely η, μ, ζ, γ, ε e α Leonis<sup>30</sup> – making up the constellation of Leo. The text here seems to follow quite closely a passage in Gregory of Tours (538/39-593/94), *De Cursu Stellarum Ratio* (an important work on astronomy, well-known to medieval scholars and clerks, used to fix the moments of daily Christian

<sup>28</sup> Hebrew text in Luzzatto, “Mikhtav,” 62.

<sup>29</sup> See F.W. Sturz *et al.* (eds.), *Etymologicum Graecae Linguae Gudianum*, Weigel, Lipsiae 1818, particularly pp. 580-581. See also A. Scherer, *Gestirnnamen bei den indogermanischen Volkern*, Winter, Heidelberg 1953, 189. Donnolo could not know this work, which was compiled, as I mentioned above, in the 11<sup>th</sup> century, almost one hundred years after his death. Donnolo, however, may very well have had access – whether directly or indirectly through chrestomathies or compendia – to the much earlier sources that the compiler had later gathered in the *Gudianum*. I express my most sincere gratitude to Professor Charles Burnett of the Warburg Institute, London, for pointing me to this important source.

<sup>30</sup> See I. Ridpath (ed.), *A Dictionary of Astronomy*, Oxford U.P., Oxford - New York 2004<sup>2</sup>, 412.

worship) – where *Falx* is said to be, exactly as Donnolo says, one of the names of the constellation of Orion.<sup>31</sup>

As in other texts by Donnolo – especially those on medicine and, more specifically, pharmacopoeia and botany, where the curative properties of several plants and natural ingredients, most lacking proper Hebrew names, are explained – the recourse to non-Hebrew onomastics normally only occurs in cases where Hebrew is unable to convey precise information and identify the object in question. This is not peculiar to Donnolo and authors of astrological works in general, being also true of the classical Rabbinic sources – from Mishnah, through Talmudim to midrashim – which are rich in names and expressions directly derived – mostly by transliteration – from Greek and Latin.

The question of what non-Hebrew sources are behind this process of linguistic specialisation, what sources Jewish astrologers drew upon for their astrological dictionary, is certainly not an easy one to answer. The late professor G. Ben-Ami Sarfatti, the first scholar to conduct a comprehensive study of mathematical Hebrew terminology in the middle ages (including astrology and astronomy), had apparently very little doubts on this issue, finding consonant correspondences in astrological and astronomical Hellenistic and Byzantine sources<sup>32</sup>. He probably took for granted that south Italian Jews living under the Byzantine administration were necessarily also Hellenised and that the sources of their non-Jewish knowledge were primarily Greek. I would distance myself from such a clear-cut position, particularly as concerns scientific sources and the channels by which these terms came to the knowledge of southern Italian scholars and authors.

The author of *Sefer Josippon* – an anonymous narrative probably composed in southern Italy in ca. 953 C.E. and modelled on Josephus' work, describing the history of the Jewish people from Adam to the period of the Second Temple – for example, probably did not know

<sup>31</sup> One cannot rule out, however, that Donnolo's פלכי is a corrupted form (or a scribal mistake) of *Phoenix* – the mythical bird which Orion was often associated with, as we read in Hyginus' *De Astronomia* (... *incidit etiam compluribus erratio, quibus de causis minor Arctos Phoenice appelletur*). On this subject, see G. Chiarini, G. Guidorizzi (eds.), Iginio, *Mitologia astrale*, Adelphi, Milano 2009, 18. For more information about the names of the stars and the constellations, see P. Kunitzsch, T. Smart, *A Dictionary of Modern Star Names: A Short Guide to 254 Star Names and Their Derivations*, Sky, Cambridge MA 2006.

<sup>32</sup> Sarfatti, *Mathematical Terminology*, 51-57.

Greek but only Latin and Latinate Italian vernacular. In early medieval Byzantium, especially in southern Italy, although Greek obviously held a leading political and cultural role as a tool of written and oral communication, Latin was never entirely discarded, its knowledge being in some cases a necessary requirement, especially in diplomatic, bureaucratic, academic and religious curricula.<sup>33</sup>

Latin neologisms similar to the Hebrew ones examined above, moreover, are well attested in a number of classical and late antique Latin sources, most of which are encyclopaedic in character and were broadly used in the Middle Ages both by instructors and scholars. Greek astrological terms were extensively used, for example, in Hyginus' *De Astronomia* (1<sup>st</sup> century C.E.),<sup>34</sup> in the later *Mathesios* by Firmicus Maternus (4<sup>th</sup> century)<sup>35</sup> and in the *Commentary on the Dream of Scipio* by Macrobius (4<sup>th</sup> century),<sup>36</sup> as well as in the well-known 6<sup>th</sup>

---

<sup>33</sup> On this, see H. and R. Kahane, "The Western Impact on Byzantium: The Linguistic Evidence," *Dumbarton Oaks Papers* 36 (1982) 127-153, with additional bibliographical information. As personally communicated to me by Professor Vera von Falkenhausen – a leading expert in the field of Byzantine Italy – in Byzantine southern Italy the Bible was thought and studied in Latin. Evidence of this can be found in a passage in Donnolo's *Sefer Ḥakhmoni* where the author refers to *Sefer ha-Hokhmah* (Book of Wisdom), a title which seems to translate the Latin *Liber Sapientiae* rather than the Greek title, "Book of Solomon". The Book of Wisdom was also quoted by the author of *Sefer Yosippon*. On this subject, see Mancuso, *Sefer Ḥakhmoni*, 37-38 n. 14. This suggests that Jews knew apocryphal texts through Latin version of the Bible. This seems confirmed by inscriptions on several Apulian tombstones; see Colafemmina, "Hebrew Inscriptions".

<sup>34</sup> See A. Le Boeuffle (ed.), Hygin (Hyginus), *L'Astronomie*, Les Belles Lettres, Paris 1983.

<sup>35</sup> See P. Monat (ed.), Firmicus Maternus, *Mathesis*, 3 vols., Les Belles Lettres, Paris 1992-97. Greek astrological and astronomical terms appear everywhere in this work. As I said above, the use of Greek terms was often followed by an explanation of their meaning, as in the following example: ... *in genituris cardines sunt quattuor, ortus, occasus, MC., IMC.; quae loca a Graecis solent appellari his nominibus: ἀνατολή, δύσις, μεσουράνημα, ὑπόγειον* ...

<sup>36</sup> See A. Armisen-Marchetti (ed.), Macrobius, *Commentaire au songe de Scipion*, Les Belles Lettres, Paris 2001. What Armisen-Marchetti writes in the introduction to the text (p. XLIII) is quite interesting: «... d'où l'hypothèse, signalée, sinon retenue, par divers auteurs, selon laquelle l'œuvre de Macrobe s'inscrivait dans

century *Etymologiae* by Isidore of Seville<sup>37</sup> and in Martianus Capella's *De Nuptiis*. This last was one of the most important works of the Carolingian Renaissance of the 8<sup>th</sup> century. It enjoyed tremendous fortune and dissemination in medieval Europe (particularly in the field of liberal arts, including *mathematica*, that is, astrology-astronomy), together with its several later commentators, among whom was also Scotus Eriugena (9<sup>th</sup> century), whose philosophical views and works, as I mentioned above, were well-known to Donnolo and probably also to other southern Italian Jewish intellectuals.

In many of these Latin works, Greek words are not only employed extensively (in the native Greek characters or transliterated into Latin characters), but usually are also introduced by detailed explanations of their etymology and astrological meanings. In this regard, Latin astrological literature may very well have performed – not necessarily by itself, but also together and simultaneously with the study of the Greek sources – a didactic function, playing a key role as a bridge between the ancient knowledge of the Greeks and their language and the early medieval Jewish writers.<sup>38</sup>

---

le mouvement encyclopédique qui, presque au même moment, donne à Rome la somme de Martianus Capella ...».

<sup>37</sup> See A. Valostro Canale (ed.), Isidoro di Siviglia, *Etimologie o Origini*, UTET, Torino 2004.

<sup>38</sup> The aim of the following chart is merely to offer a concise overview of the astrological terms mentioned in this article. Some of the terms I examined are no longer used in modern astrology and their translation is therefore problematic. In some instances, I included the modern astrological term in addition to the literal translation. My English translations are taken from Gettings, *Dictionary of Astrology*, s.v.

| Greek                                      | Latin                                    | Hebrew                    | Translation   |
|--|--|---------------------------|---|
| ἀνατολή                                    | <i>ortus</i>                             | מזל הצומח                 | ascendant   |
| ἐπιτολή                                    | <i>occusus</i>                           | מזל השוקע                 | descendant  |
| ὑπόγειος                                   | <i>imum coeli</i>                        | מזל התהום                 | anti-midheaven  |
| μεσουράνημα                                | <i>medium coeli</i>                      | גובהה של ארץ<br>מזל הטובל | midheaven   |
| οἶκος                                      | <i>domus/domicilium</i>                  | בית                       | domicile; domal<br>dignity  |
| ὄριον                                      |  | גבול                      | border  |
| χαίρω                                      |  | שמח                       | rejoicing   |
| ταπείνωμα                                  |  | שפילה                     | depression/fall   |
| ὑψωμα                                      |  | גובה                      | elevation/<br>exaltation  |
| ὑψος ταπεινουμένη                          |  | גובה שפילתו               | upper degree of<br>planetary<br>depression/fall                                       |
| ταπείνωμα<br>ταπεινουμένη                  |  | שפל שפילתו                | lower degree of<br>planetary<br>depression/fall                                       |
| ταπείνωμα ὑψουμένη                         |  | שפל גבהו                  | lower degree of<br>planetary<br>elevation/<br>exaltation                              |
| ὑψος ὑψουμένη                              |  | רום רומו                  | higher degree of<br>planetary<br>elevation/<br>exaltation                             |
| βιοδότης -<br>οἰκοδεσπότης τῆς<br>γενέσεως |  | בית חייו                  | master of the house<br>– giver/sustainer<br>of life                                   |
| κλήρος τύχης                               | <i>sors fortunae / pars<br/>fortunae</i> | גורל היפה<br>חלק היפה     | part/lot of fortune   |
| τρίγωνον                                   |  | טריגון                    | trigon (in modern<br>astrological<br>language also “trine<br>aspect”)                 |
| στηριγμός                                  |  | סטיריגמוס                 | standing firm/fixed   |
| Διάμετρος/ον                               |  | דיאמיטרון                 | diameter (in<br>modern astrology,<br>more commonly<br>referred to as<br>“opposition”) |
| σκαπαρνία                                  |  | איסקיפריניאה              | axe/hatchet<br>(asterism of Orion)  |
|  | <i>Falx</i>                              | פלכי                      | sickle  |



