# Abstract

The thirteenth century saw the emergence of several encyclopedic works which sought to provide readers of Hebrew with access to a diverse range of philosophical and scientific knowledge. These works include, *inter alia*, sections devoted to astronomy, some of which also deal with the various branches of astrology. This study examines the contents, sources, manner of source usage, and Hebrew scientific terminology of the astronomical and astrological sections of five encyclopedic works authored during the thirteenth century: (1) *Midrash ha-Ḥokhmah* by Judah ben Solomon ha-Cohen; (2) *De‘ot ha-Filosofim* by Shem Tov ibn Falaquera; (3) *Livyat Ḥen* by Levi ben Abraham ben Ḥayyim; (4) *Sha‘ar ha-Shamayim* by Gershom ben Solomon; and (5) *Sefer ha-Kolel*, a work devoted exclusively to astronomy and astrology, penned by an anonymous scholar. In addition, the study deals with the astrological work known as *Tractatus Particulares* and examines its place in the context of the genre of Hebrew encyclopedias. These investigations are intended to expand our knowledge about the astronomical and astrological sections of the abovementioned works in particular, and, more generally, to enhance our understanding of the encyclopedic genre’s place in the transmission, reception, and domestication of scientific knowledge in medieval European Jewish society.

The dissertation opens with introductory chapters that present the research aims and questions alongside the various methodologies employed throughout the study. These introductory chapters also include discussion as to the status of astronomy and astrology in Hebrew during the period leading up to the appearance of the Hebrew encyclopedias, as well as several fundamental distinctions with which I will deal throughout the study: the distinction between astronomy and astrology; the distinction between different scientific traditions that deal with the celestial bodies; and three distinctions relating to the encyclopedias themselves and the cultural contexts in which their authors lived and worked.

Chapter 1 of the dissertation focuses on the historical and social circumstances which, in my estimation, led to the proliferation of the genre of the Hebrew encyclopedia in the thirteenth century. In this chapter, I argue that one can explain the appearance of the first Hebrew encyclopedias against the backdrop of the tension between supply and demand for works dealing with philosophy and science in various Jewish communities in Christian Europe, and I point to evidence suggesting the existence of significant demand for the acquisition of comprehensive scientific and philosophical knowledge in the thirteenth century. Since the encyclopedias examined here were written in diverse cultural climates and geographical regions, in other chapters I discuss the specific cultural and social context in which each encyclopedia was produced, and in the concluding chapter, I deal with the shifting status of each work in the process of transmission and inculcation of scientific knowledge among readers of Hebrew in the Middle Ages.

The next five chapters are devoted to the astronomical and astrological sections of the five abovementioned encyclopedias, and these chapters constitute the chief part of the dissertation. Each chapter delineates the structure of the relevant sections of the work, discusses its contents, uncovers the scientific sources utilized by the author and the manner in which they are used, and examines the Hebrew scientific terminology the writer adopted. The first of these chapters (Chapter 2 of the study) focuses on the the two astronomical segments of *Midrash ha-Ḥokhmah –* one of which summarizes the astronomical work of al-Biṭrūjī, while the other synopsizes Ptolemy’s *Almagest* – as well as the astrological section of the work, which contains the first Hebrew summary of Ptolemy’s *Tetrabiblios*, alongside a critique of it. Chapter 3 deals with the astronomical section of *De‘ot ha-Filosofim*. This chapter includes, *inter alia*, a critical edition of the third part of the astronomical section of the work. (This edition indicates which source the author utilized in writing each passage of the section and points out every instance in which the author omitted text from his Arabic sources or inserted additions of his own). Chapter 4 is dedicated to the astronomical-astrological chapter of *Livyat Ḥen*, a hefty chapter which is divided into four sections. Chapter 5 examines the entire astonomical section of *Sha‘ar ha-Shamayim*, which is comprised of no fewer than twenty chapters, the vast majority of which are missing from all of the printed editions of the book, and some of which have survived only in a single manuscript. Chapter 6 deals with *Sefer ha-Kolel*, a comprehensive work devoted exclusively to astronomical and astrological knowledge. Since the encyclopedias differ from one another in many ways, and since each has a number of distinct features, these five chapters are not identical in their structure. For example, several of the chapters include a broad but comprehensive examination of the contents of the section under discussion, while in other chapters, I saw fit to present a dedicated examination of select topics dealt with in the encyclopedia – for example, trapezoidal theory, catalogues of the stars, the phenomenon lunar spots (*maria*), and various astrological doctrines – by means of which I endeavor to ascertain the manner in which the author deals with various scientific topics and the general character of the work.

The final chapter (Chapter 7) is dedicated to *Tractatus Particulares*, a work which incorporates various astrological writings and whose Hebrew original has been lost, but which has survived in two Latin translations. Unlike the five preceding chapters, Chapter 7 does not contain a discussion of the contents and sources of the work or the manner in which the author utilised these sources, since all of this has already been examined and discussed in the existing scholarly literature. However, the chapter addresses the manner in which the lost Hebrew original came into being, the cultural context in which it appeared, and the way in which it was disseminated in the Latin sphere.

In light of the discoveries uncovered in the chapters devoted to the various encyclopedias, I present, in the concluding chapter of the dissertation, a number of insights related to the place of the Hebrew encyclopedias in the process of transmission and inculcation of scientific knowledge in medieval Jewish communities. In this chapter, I argue that although the works at the center of this study are considered by many scholars as belonging to a single literary genre – that of encyclopedias – they are, in fact, distinct from one another in the cultural function they served for their readers and in their respective places in the process of transmission of scientific knowledge to Jewish communities in Christian Europe. I propose not only that the different encyclopedias were intended for different readerships, but also that they represent distinctive stages in the process of absorption and integration of scientific knowledge in medieval Jewish society.

The dissertation concludes with two appendices: The first appendix contains several texts discussed over the course of the study, redacted on the basis of the various manuscripts. The second appendix includes a list of the contents of the astrological chapter of *Livyat Ḥen*, as well as the sources upon which the author drew. This list is presented in an appendix due to its length, and its order follows that in which the subject matter appears in the astrological chapter itself.