# Abstract

The thirteenth century saw the composition of several encyclopedic works which sought to provide readers of Hebrew with access to diverse philosophical and scientific knowledge. These works include, *inter alia*, sections devoted to astronomy, and some of them also deal with various branches of astrology. This study examines the contents, sources, use of sources, and Hebrew scientific terminology in the astronomical and astrological sections of five encyclopedic works composed during the thirteenth century: (1) *Midrash ha-Ḥokhmah* by Judah ben Solomon ha-Cohen; (2) *De‘ot ha-Filosofim* by Shem Tov ben Joseph 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 astronomical and astrological knowledge, written by an anonymous scholar. In addition, the study deals with the astrological work known as *Tractatus Particulares*, and examines its place in 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 process of transmission, reception, and integration 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 discuss the state of Hebrew astronomy and astrology during the period preceding the appearance of the Hebrew encyclopedias, as well as several fundamental distinctions to which I refer throughout the study: a distinction between astronomy and astrology; a distinction between disparate scientific traditions that deal with the heavenly bodies; and three distinctions relating to the encyclopedias themselves and the cultural contexts in which their authors lived and worked.

The first chapter of the dissertation focuses on the historical and social circumstances which, in my estimation, led to the proliferation of the Hebrew encyclopedic genre in the thirteenth century. In this chapter, I argue that one can explain the emergence 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 some demand for the acquisition of extensive scientific and philosophical knowledge in the thirteenth century. Since the encyclopedias examined here were written in diverse cultural climates and different geographical regions, in the chapters that follow I also discuss the specific cultural and social context in which each encyclopedia was produced, and in the concluding chapter, I deal with the varying roles of each encyclopedia in the 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. Each chapter presents the structure of the astronomical and astrological sections, discusses their contents, uncovers the scientific sources utilized by the authors and their usage, and analyzes the Hebrew scientific terminology the writers adopted. The first of these chapters (Chapter 2 of the study) focuses on the two astronomical sections of *Midrash ha-Ḥokhmah –* one of which summarizes the astronomical work of al-Biṭrūjī, while the other recapitulates Ptolemy’s *Almagest*.In addition, the chapter focuses on the astrological section of *Midrash ha-Ḥokhmah*, 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 section of *Livyat Ḥen*, a voluminous treatise which is divided into forty chapters. Chapter 5 examines the entire astronomical section of *Sha‘ar ha-Shamayim*, which consists of no fewer than twenty chapters, the vast majority of which are missing from all printed editions of the book, and some of which are preserved only in a single manuscript. Chapter 6 deals with *Sefer ha-Kolel*, a comprehensive treatise devoted exclusively to astronomical and astrological knowledge. Since the encyclopedias differ from one another in many respects, and since each has its own distinct characteristics, these five chapters are not identical in their structure. For example, several chapters include a schematic but comprehensive examination of the contents of the sections under discussion, while in other chapters, I present an in-depth examination of select topics discussed in the encyclopedia – for example, the theory of trepidation, star catalogues, lunar spots , and various astrological doctrines. Through these analyses, I endeavor to learn more about the manner in which the author deals with various scientific topics, as well as the general character of the work.

The final chapter (Chapter 7) is dedicated to *Tractatus Particulares*, a work which incorporates various astrological notions 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 ways in which the author used his sources, since all of this has already been examined and discussed in the scholarly literature. However, the chapter addresses the manner in which the lost Hebrew original was composed, the cultural context in which it appeared, and the way in which it was disseminated in the Latin Europe.

In light of the discoveries presented 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 commonly regarded as belonging to a single literary genre – namely, the encyclopedic genre – they are, in fact, distinct from one another in the cultural role they fulfilled, and in their respective places in the process of transmission of scientific knowledge to Jewish communities in Christian Europe. I argue not only that the different encyclopedias were written for different readerships, but also that they represent distinctive stages in the reception and integration of scientific knowledge in medieval Jewish society.

The dissertation concludes with two appendices. The first appendix contains critical editions of several texts discussed over the course of the study, which I have compiled on the basis of the extant manuscripts. The second appendix includes a list of the contents of the astrological chapter of *Livyat Ḥen*, alongside the sources upon which the author drew. This list is presented in an appendix due to its length, and it follows the order in which the subject matter appears in the astrological chapter.