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Thomas Burman
Major Professor

We have read this dissertation
and recommend its acceptance:

Irven Resnick

Michael Kulikowski

Robert Bast

Denise Phillips

Accepted for the Council:

Carolyn R. Hodges,
Vice Provost and Dean of the
Graduate School

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God's Deaf and Dumb Instruments:
Albert the Great's *Speculum Astronomiae*
And Four Centuries of Readers

A Dissertation
Presented for the Doctor of Philosophy
Degree
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Scott Edward Hendrix
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Abstract

“God’s Deaf and Dumb Instruments: Albert the Great’s *Speculum Astronomiae* and Four Centuries of Readers” is a study of the reception and influence of what is perhaps the most important work dealing with astrology to be produced in the Latin West during the middle ages. In order to determine the impact and importance of the *Speculum* I have dealt with questions relating to its authorship and dating, while studying its contents in the context of Albert’s larger body of work as well as the readers who found it useful and how they approached the *Speculum*. I have studied these readers both directly, through a study of thirty-five of the fifty-nine surviving manuscripts, as well as indirectly through a consideration of the way that other writers used the *Speculum* through the end of the fifteenth century.

In the course of my research I travelled to archives in England, Italy, Switzerland, Germany, and the United States to study codices containing the *Speculum*, as well as examining microfilm copies of volumes housed in the Ambrosiana collection of Notre Dame University and in the Pope Pius XII Vatican Film Library at St. Louis University. My focus was upon the works that came to be bound with the *Speculum* and the marginalia readers left behind, as well as the accuracy of individual copies of the text. Furthermore, I have studied the writings of an array of authors, from the thirteenth-century physician Peter d’Abano, to the fifteenth-century humanist Pico della Mirandola, to determine how these scholars viewed astrology and the place of the *Speculum* in their writings.

In this way I have been able to demonstrate that astrology was central to the medieval worldview of intellectual elites. The *Speculum astronomiae*, which I demonstrate was indeed written by Albert the Great around the year 1260, served as an important component of the preservation of the study and practice of astrology as a discipline permissible to Christians. Standing as a semi-canonical defense of the science, physicians, astrologers, natural philosophers, and those interested in doctrinal purity read it with profit, while both defenders and detractors of astrology found it important to address the *Speculum* in their own work.

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Chapter I

Defending Albert's reputation? A consideration of the controversy concerning the authorship of the *Speculum astronomiae*.

Lynn Thorndike's encyclopedic 1923 *History of Magic and Experimental Science* describes the work generally known as the *Speculum astronomiae* as "one of the most important single treatises in the history of medieval astrology."¹ The existence of fifty-nine surviving manuscripts, scattered from Harvard's F.A. Countway Medical Library to the Biblioteka Jagiellonska in Krakow,² certainly supports Thorndike's assessment. Furthermore, authors from Pietro d'Abano to Pico della Mirandola cite the *Speculum* or provide indications that it influenced their own work.³ Despite such evidence of the importance of the *Speculum*, the scholarship upon this work has been comparatively sparse and of a rather limited nature. In 1910 scholars began to focus upon questions of authorship and dating, paying limited attention to the contents of the *Speculum* or its

¹ Lynn Thorndike, *History of Magic and Experimental Science* (New York: Columbia University Press, 1923), II, 692; Agostino Paravicini Bagliani *Le Speculum Astronomiae, une énigme? Enquête sur le manuscrits* (Sismel: Edizioni del Galluzzo, 2001), 81-92. Bagliani argues at length that the title *Speculum astronomiae* was but one of the titles that medieval readers applied to this work. While *De licitis et illicitis libris* may have been a more common title, as he suggests, almost a century of modern scholarship has standardized the usage of the title, *Speculum astronomiae*. Therefore it seems best to maintain that use in order to avoid confusion. Astronomy and astrology, were, in fact, only nominally separated. Such a separation as there was owed more to cultural factors in the Arabic East affecting the way the study of the heavens was treated in the Muslim world, than to any natural division between the celestial sciences. Thus, by the time the Latin West received astrology and astronomy through Arabic intermediaries, the most important of which was Albumasar, the two were treated with a distinction that Ptolemy would not have recognized. Still, by the time that the study of the heavens was revived in Western Europe, the distinction was great enough that it should be observed. See Scott Hendrix, "Reading the Future and Freeing the Will: Astrology of the Arabic World and Albertus Magnus," *Hortulus* 2.1 (2006).

² Bagliani provides a list on pages 3-4.

³ Bruno Nardi, "Intorno alle dottrine filosofiche di Pietro d'Abano," *Saggi sull'Aristotelismo Padovano del secolo XIV al XVI* (Florence: C.C. Sansoni, 1958): 19-69; 29-37; Pico della Mirandola, *Disputationes Adversus Astrologiam Divinatricem*, ed. Eugenio Garin (Florence: Vallecchi Editore, 1946), I, 66.

historical importance.⁴ The only work thus far to consider the influence of the *Speculum* in any depth is Nicolas Weill-Parot's *Les "images astrologiques" au moyen âge et à la renaissance*, and this study maintains a relatively narrow focus, as the title suggests.⁵

While the considerations of authorship and dating that have primarily occupied scholars interested in the *Speculum* up to this point have yielded much of importance and interest, there is still a great deal to be understood about this key text. This study focuses upon the reception and influence of the *Speculum*. In order to understand properly this work's place within the intellectual milieu of medieval, Renaissance, and Reformation Europe my starting point is the content of the *Speculum* as understood through the larger body of Albert's writings, in conjunction with the historical context that molded him as a writer. But this only tells the beginning of the story. For the rest, I rely upon a close examination of thirty-two of the fifty-nine extant manuscripts so that we may better understand how readers approached these texts. In this way, we shall see that the *Speculum* articulated a set of astrological theories that, at their core, medieval intellectuals universally accepted as part of Aristotelian natural philosophy. I will demonstrate this point through an examination of the writings of a number of men who referred to the *Speculum* in their own work—some in support of their acceptance of the

⁴ Pierre Mandonnet, "Roger Bacon et le *Speculum Astronomiae* (1277)," *Revue neoscholastique de philosophie* 17 (1910): 313- 335; Pierre Mandonnet, *Siger de Brabant et l' Averroisme latin au XIIIe siècle* (Louvain: Institut supérieur de philosophie, 1908, 2nd edition), I, 244-248; Lynn Thorndike, "Further Consideration of the *Experimenta*, *Speculum Astronomiae*, and *De Secretis Mulierum* Ascribed to Albertus Magnus," *Speculum* 30. 3 (1955): 413-443; Paola Zambelli, *The Speculum Astronomiae and its Enigma: Astrology, Theology, and Science in Albertus Magnus and his Contemporaries* (Dordrecht: Kluwer Academic Publishers, 1992); see also Bagliani, *passim*. Zambelli has departed from the practice of focusing upon questions of authorship and the dating of the *Speculum* in her work, *The Speculum Astronomiae and its Enigma*, which includes an excellent edition of the *Speculum*.

⁵ Nicolas Weill-Parot. *Les "images astrologiques" au moyen âge et à la renaissance: spéculations intellectuelles et pratiques magiques (XIIe-XVe siècle)* (Paris: Champion, 2002).

use of astrology, others to attack that use.⁶ But all of these men shared an acceptance of the core theories outlined in the *Speculum*, ideas that represented a unifying set of notions with important theological, philosophical, and scientific implications. By studying the contents of the *Speculum* in conjunction with the network of ideas that prompted its production, as well as appeals to it by later writers, we will be able to understand the reason the *Speculum* was copied so often and so widely.

Born out of the intense controversy over the compatibility of astrology with Christian doctrine of the thirteenth century, the *Speculum* rapidly assumed canonical status, setting the terms of debate for the intellectuals of the fourteenth century who came to accept the underlying premises of astrology. The questions of free will versus determinism and the absolute power of God that had motivated Church officials such as the Parisian Bishop Stephen Tempier (d. 1279) to attempt to eradicate the practice of astrology never fully disappeared, but within a generation of the *Speculum*'s production a notion that many had discussed and assented to in an inchoate fashion came to be universally accepted: that humankind existed within a web of celestial influence.⁷ Almost

⁶ For the purposes of this study, "astrology" indicates the theory that terrestrial creatures exist within a web of influences stretching down from the first heaven—that of God—through the various spheres and down to beings in the sub-lunar realm. Astrological divination and judicial astrology are the terms I will apply to the study of celestial motions in order to understand those influences, which indicate what is likely to come to pass in the future.

⁷ On Tempier's condemnations, see John F. Wippel, "The Condemnations of 1270 and 1277 at Paris," *The Journal of Medieval and Renaissance Studies*, 7.2 (1977): 169-201. It seems, however, that Tempier's view of astrology was a distorted one, causing him to perceive the discipline to be far more radical than did practitioners. There is no evidence that any astrologer held the deterministic beliefs that Tempier attacked, but neither is there any evidence that Tempier was aware of this. The theme of celestial influence was certainly not absent in the work of such twelfth-century writers as Bernard Sylvester (fl. 1140-1153) and Alan of Lille (1114-1202), and was particularly strong among those who studied at the school of Chartres. See M.D. Chenu, *Nature, Man, and Society in the Twelfth Century*, trans. Jerome Taylor and Lester Little (Toronto: University of Toronto Press, 1997), 4-37. However, suffering from the absence of much of Aristotle and all of the Arabic works that acted as the basis for a comprehensive theory of celestial

as widely accepted was the idea that a person with the proper training could analyze, at least in theory, the movements of heavenly bodies to determine what these influences would be in the future, thereby determining what events would be likely to occur in times yet to come. These astrological beliefs acted as a unifying theory of nature, explaining humankind's place within the universe for many generations. The usefulness of these theories made them central to the way intellectuals viewed the world well into the modern period.⁸ This worldview shaped the practice of medicine, influenced governance, and played a central role in the lives of millions of people for centuries after Albert died. While not the only factor, the *Speculum astronomiae*, in continual demand as both bibliographic guide and authenticating device, played a key role in the preservation of astrology as an admissible subject in Christian Europe.

As an authenticating device, the *Speculum* functioned as an instrument to validate the user's position without requiring extensive argumentation, definition of terms, and presentation of evidence. Such a device is meant to convey that the user has comprehensive knowledge of a particular subject while indicating agreement with a set of recognizable arguments represented by the device in question. For example, a modern

influence, these ideas lacked the development that they would attain in the thirteenth century. Nor were they as widely held, or as central to the worldview of those who held them, as they would become.

⁸ Darrel Rutkin has argued for the centrality of astrological beliefs in his excellent dissertation, "Astrology, Natural Philosophy and the History of Science, c. 1250-1700: Studies Toward an Interpretation of Giovanni Pico della Mirandola's *Disputationes adversus astrologiam divinatricem* (Indiana University: Unpublished Ph.d dissertation, 2002). Rutkin refers to natural philosophy applied to an understanding of the world as "astrologizing Aristotelianism," which effectively characterizes the importance of astrological theories to an understanding of the world for medieval, Renaissance, and Early-Modern intellectuals. This theory was so foundational that when writing about the place of humanity in the universe intellectuals universally assumed that celestial influences were at work on all sub-lunar creatures, influencing the development and actions of all terrestrial beings. I will discuss this at some length in chapter two. For a consideration of the history of astrological beliefs in the West, see S.J. Tester, *A History of Western Astrology* (Woodbridge: The Boydell Press, 1987).

scholar might refer to Derrida when mentioning the deconstruction of a text, which would indicate broad agreement with the French scholar's theoretical structures while suggesting a familiarity with post-modern theories of linguistic analysis, without explaining what those theories represent. One reason why the *Speculum* fit this role so admirably was the canonical status that it quickly assumed. This status meant that Albert's judgments about the acceptability of astrological works became enshrined as the official guide to what one could and could not read on the subject, while his delineation of the arguments supporting appeals to various forms of astrology were established as the base line for the debate. Long after Albert was dust, those who discussed astrological divination were compelled to address the *Speculum*, or at least the arguments that it promoted.

In order to substantiate these statements while establishing the importance of the *Speculum astronomiae* to the history of Western scientific development, this study will take a comprehensive look at its place within the European intellectual milieu from the time of its composition in the mid-thirteenth century until the decline of its status as an authoritative voice on the subject of astrology after 1494. The natural starting point, then, is a consideration of the controversy surrounding the authorship of the *Speculum* and its date of composition, which I will carry out in the following pages of chapter one. In the course of this analysis, I will demonstrate that prior to the modern era there were few indications that Albert had not written the *Speculum*. The weight of tradition and evidence—including the testimony of one of Albert's personal friends—supports his authorship of this text.

However, to understand why Albert wrote a work defending the study and practice of astrology, as well as the influence that this work would play, we must first understand the history of the debate about celestial divination. The debate peaked in the thirteenth century, motivated by concerns held by men such as the bishop Tempier, that a discipline promising to predict the future destroyed the concepts of humankind's free will and God's absolute power. After all, if one could predict the future, it must already be pre-ordained. This ability to predict the future would seem to mean that free will is an illusion and God cannot alter events that are already mapped out. The defense constructed by men such as Albert, drawing upon the second-century Alexandrian, Ptolemy (c.90-168) and the ninth-century Persian, Ja'far ibn Muhammad Abū Ma'shar al-Balkhī (787-886), known to the west as Albumasar, was that humans can freely choose their actions through an exercise of will, but most people do not make the effort, allowing astrological predictions to be accurate in most, but not all, instances. Astrology's defenders had great success, allowing it to attain recognition as a unifying theory of knowledge accepted as useful by almost everyone, despite recurrent calls by later writers to reject the study of predictive astrology. Chapter two considers the *Speculum* within the context of the thirteenth-century debate about astrology, a period representing a crisis point for the history of astrology as universities increased the number of those learned in celestial lore and the spread of paper production led to an ever-growing number of works on the subject.

Albert the Great was one of the foremost defenders of astrology, writing on the subject repeatedly throughout the course of his career and never wavering in his

advocacy. But whereas much of his writing includes passing statements about astrology, the *Speculum* represents his most comprehensive proclamation on the subject, assisting in the preservation of astrology as an academic discipline well into the modern period. One of the reasons why it was so influential was that it held a semi-canonical authority, produced as it was in answer to a papal mandate. But why did the pope—perhaps Alexander IV—ask Albert to write this defense of astrology? Moreover, why was the discipline so important to medieval intellectuals? In order to answer these questions we must understand Albert’s view of astrology and what this view has to tell us about his conception of humankind’s relationship to God. This is the subject of chapter three.

Armed with this knowledge, we will be ready to proceed to an analysis of how readers approached the *Speculum*. This will allow us to understand some of the facets of its influence on a number of different types of individuals: astrologers, physicians, natural philosophers, and those interested in doctrinal purity. We can see this influence first through an examination of the manuscripts containing the *Speculum*. Choices made in the assembly of codices, notes left by readers, titles appended to the *Speculum*, and even editing within the work itself can all tell us a great deal about what end users saw as the role of this work and how they applied it in their own work.⁹ In this way we can see that Albert’s defense of astrology operated primarily as an authenticating device and

⁹ I borrow the term “end user” from modern computer terminology, to refer to the individual at the end of a chain who comes into possession of a product with the intent of actively using it. My analysis focuses upon those who placed the *Speculum* within a given codex for their own use, or caused it to be done, and read it or cited it, bypassing, for the most part, scribes, and in many cases intermediary users of the text, such as in the case of copies that appear to have been removed from one codex and placed into another. It is that final product that is the focus of this study.

bibliographic guide for those who owned a copy. Chapter four will consider this evidence.

Chapter five explains the widespread following that the *Speculum* gained, considering the core set of astrological beliefs that pre-modern intellectuals held, from Pietro d'Abano in the fourteenth century to Pico della Mirandola in the last decade of the fifteenth. Few or none questioned the tenet central to astrology: the heavens impart a variety of influences to humans. However, some argued that astrology could help us to understand celestial effects upon us and therefore live a better life, while others argued that appeals to astrology threatened to endanger the mortal soul of anyone unwise enough to study such an art. The universality of belief in celestial influence explains why the *Speculum* was copied so often across such a wide geographical area well into the sixteenth century. Intriguingly, while writers primarily appealed to Albert's work as an authenticating device, this use proved to be more complex than one might expect. Writers who attacked astrology, such as Jean Gerson and Pico della Mirandola, found it necessary to establish their own knowledge of the subject in order to garner credibility, which they could do by citing Albert's apologetic on the subject. At the same time, the authoritative nature of the *Speculum* necessitated that they de-authenticate it as a source using various stratagems. An analysis of the belief system of these writers, which motivated intellectuals on both sides of the astrological debate whether they advocated or rejected its use as injurious to the Christian faith, is the subject of chapter five.

In chapter six I conclude this study with a consideration of the intellectual

worldview of a Europe that was outgrowing the *Speculum astronomiae*. In the end, we will see that the eventual demise of astrology as an academic discipline did not result from theologically motivated attacks. Rather, astrology developed a close association with civil unrest and popular enthusiasms in the seventeenth century, making it unpalatable to the intellectual elite. This left them with a need for an alternate cosmological model, a need that the Copernican vision of the world as elaborated by followers such as Johannes Kepler and Galileo Galilei would eventually meet. Adoption of the heliocentric model coupled with suspicion of predictive astrology that arose for sociological reasons eventually led to astrology's marginalization within the category of esoterica. But none of the progenitors of the Scientific Revolution—Copernicus, Kepler, and Galileo—would have had occasion to expend so much intellectual effort on their studies of planetary motion if it had not been for their own interests in astrology. Thus, to understand not only the thought of medieval intellectuals, but also the development of our modern scientific understanding of the universe, we must understand the place of medieval astrology. And for that, we must understand the *Speculum*, the most popular and most effective apologetic of the science of celestial divination written in the Middle Ages.¹⁰ Furthermore, as we shall see in the closing pages of this study, astrology has

¹⁰ I am aware that there are those who will contest my application of the word “science” to medieval astrology, wishing to term it a proto or pre-scientific mode of thought. However, just as Francesca Rochberg has convincingly argued in the case of Mesopotamian astronomy and astrology, medieval astrologers exercised a rigorous systematization of knowledge as well as providing rational explanations of phenomena and an application of the empirical method in order to make predictions about observed phenomena in a manner consistent with modern scientific approaches. See Rochberg's *The Heavenly Writing* (Cambridge: Cambridge University Press, 2004), 244-246. Science has been advanced not only, or even primarily, through a divorce between mystical modes of thought and more materialistic ways of thinking. One need only consider the role of Copernicus' Hermetic beliefs in the development of his heliocentric model of the universe, as well as the place that prophetic notions provided held in Newton's thought, to see how integral seemingly superstitious thinking has been to the development of science. For a brief overview of the literature on this subject, see: Ron Millen, “The Manifestation of Occult Qualities in the Scientific Revolution,” eds. M.J. Osler and P.L. Farber, *Religion, Science and Worldview*

proven to have a surprisingly enduring appeal, making a resurgence in the modern world despite a brief rejection of the discipline that occurred in the latter half of the nineteenth century. With a resurgence of interest in astrology, practitioners have rediscovered the *Speculum* as a source of support for their belief system.

If the *Speculum* played such an important role in the history of western astrology, what precisely did it have to say on the subject? I will address this question at length later. For now, I will content myself with a few brief remarks. Albert the Great wrote the work now known as the *Speculum astronomiae* in the early 1260s at papal urging.¹¹ Comprising only thirty-three pages of Latin text in a modern printed edition, this work provides Albert's circumscribed defense of predictive astrology and the use of astrological images designed to harness celestial influence to effect earthly changes.¹² Albert attempts to protect would-be astrologers from demonic entanglement by providing a rather comprehensive list not only of those texts permissible and useful for a Christian astrologer, but also those that readers should avoid at all costs.¹³ In the course of this work Albert deals with concerns about potential conflicts between free will and

(Cambridge: Cambridge University Press, 1985), 185-216; David C. Lindberg and Robert S. Westman, *Reappraisals of the Scientific Revolution* (Cambridge: Cambridge University Press, 1990); Barry Barnes, David Bloor, and John Henry, *Scientific Knowledge: A Sociological Analysis* (Chicago: University of Chicago Press, 1996), 149; L. Laudan, *Beyond Positivism and Relativism: Theory, Method, and Evidence* (Oxford: Westview, 1996), 85-86.

¹¹ In order to date this text I rely upon internal references to the book of Raziel and Aristotle's *Metaphysics*, which I will discuss below. For the semi-canonical nature of this work, I rely upon the evidence of Bonaventure d'Iseo's *Prooemium quarti operis* of the *Liber Compostellae Multorum Experimentorum Veritatis Fratris Bonaventura de Ysio de Ordine Fratrum Minorum*, in M. Grabmann, "Der Einfluß Alberts des Grossen auf das mittelalterliche Geistesleben," in *Mittelalterliches Geistesleben* (Munich: M.Hueber, 1936), II, 324-412. I will also discuss this work below. I acknowledge that each of the statements in the sentence I have presented in the main body of the text is contentious and will present my argument in the following pages.

¹² Albert, *Speculum*, 218-240; 240-250; 212-218, 226-240, chpts. 3-11; 11-12; 2; 6-11.

¹³ *Ibid.*, 242-246, chpt. 11.

astrological forecasting, arguing vigorously that celestial influence inclines all people toward certain actions and interests, but that one need not obey these influences.¹⁴ Therefore, free will is not compromised. In fact, Albert argues that astrological analysis perfects free will, allowing one to live a more Christian life.¹⁵ The *Speculum* drew readers for centuries—it was printed as late as 1615—feeding off, and encouraging, the fascination that so many Europeans evinced toward astrology for many generations. Thus, one can easily understand modern interest in the work.

The importance of the *Speculum* is not dependent entirely upon its Albertine authorship. However, demonstrating that he was in fact the author would allow us to understand its arguments within the context of his larger body of work. Fortunately, this is less difficult to do than the heat of the controversy might suggest: the evidence in favor of Albert's authorship is convincing. The scholarship that has fueled this debate is less than definitive; certainly not strong enough to displace a tradition assigning this work to Albert that dates back to the beginning of the fourteenth century. This is especially true given Bonaventure d'Iseo's (c.1200- 1285) testimony in favor of an Albertine provenance. As one of Albert's close friends, he was certainly in a position to know what the German Dominican did and did not write.

The beginning of the controversy over authorship is shrouded in considerable mystery. In Bodleian MS Digby 228 an anonymous hand, differing from but contemporaneous with that of the fourteenth-century copyist, appends a note above the

¹⁴ Ibid., 218-220; 234-236; 256-270, chpts. 3; 9; 13-16.

¹⁵ Ibid., 260-262: This is the main point of chapter fourteen.

incipit of this otherwise anonymous text, attributing it to “Philip the Chancellor of Paris.”¹⁶ The early thirteenth-century chancellor in question authored a surviving work, *Summa de bono*, which bears little resemblance to the *Speculum*, and no one has ever suggested that he could have actually authored the *Speculum*.¹⁷ At this remove, there seems to be no way to ascertain how this case of mistaken identity could have occurred. It may be possible that the unknown annotator was ignorant of the true author of the *Speculum*, but familiar with Philip’s considerable reputation and simply made a poorly-informed guess. Whatever the case may be, it seems reasonable to suggest that a similarly mistaken note appended to the anonymously copied fifteenth-century version of the *Speculum* contained in Bodleian MS Digby 81 may have resulted from reliance upon an older manuscript in the same collection, Bodleian MS Digby 228.¹⁸ After all, according to Bagliani, this note was not added until the seventeenth century, which could explain why the writer stated that “Albert was not the author of this book, but [rather] Philip the Chancellor of Paris, just as is made clear from the most ancient manuscript copy.”¹⁹ The fourteenth-century MS Digby 228 may well have been the “most ancient manuscript copy” available to a seventeenth-century writer at Oxford.²⁰ The only other manuscript that recognizes the tradition that Philip the Chancellor might have written the

¹⁶ Oxford, Bodleian Library, MS Digby 228, f. 76r. The note reads: “Tractatus magistri Phillipi Cancellarii Parisiensis de libris astronomie qui tenendi sunt secundum integritatem fidei catholice et qui non.” It is noteworthy that this note exhibits a perfect understanding of the *intent* of the *Speculum*, even though it is quite mistaken as to the author of the *Speculum*.

¹⁷ Philip the Chancellor, *Philippi Cancellarii Summa de bono*, ed. N. Wicki (Bern: Francke, 1985); Henri Pouillon, O.S.B., “Le premier traité de propriétés transcendentes. La ‘Summa de bono’ du Chancelier Philippe,” *Revue Néoscholastique de Philosophie*, 42 (1939):40-77. Philip (c.1160-1236) was named chancellor of the Cathedral of Notre Dame in Paris in 1217, a position he seems to have held until his death.

¹⁸ Oxford, Bodleian Library, MS Digby 81, f. 101r.

¹⁹ *Ibid.*, f. 101r: “Albertus non fuit author huius libri sed philippus cancellarius parisiensis ut ex vetustissimo exemplari manuscripto manifestum est.” Bagliani dates this note on page 36.

²⁰ Bagliani, 47.

Speculum is Milan, Biblioteca Ambrosiana, MS I 65 Inf. The otherwise unknown Jacob the Surgeon of Cordoba copied this text in 1477, attributing it to Albert, but an unknown contemporary appends a rubric stating that “a certain little book follows that some assert was written by Albert the Great, others assert that it was written by Philip the Chancellor of Paris.”²¹ One wonders if Jacob might not have also been working from MS Digby 228, which is a century older than the Milan manuscript, or if the unknown emendator had at least seen it.

Other than these three manuscripts, there is no indication that the authorship of the *Speculum* was ever in any doubt before 1493. In that year Pico della Mirandola expressed tentative doubt about Albert’s authorship of the work,²² but there is no evidence that he influenced anyone other than his religious mentor, Savonarola, and no further evidence of doubt about the identity of the author of the *Speculum* until the twentieth century. The oldest surviving manuscript of the *Speculum* is indeed anonymous, but by the fourteenth century at the latest, there is a clear tradition that

²¹ Milan, Biblioteca Ambrosiana, MS I 65 inf., f. 82r. “Sequitur Libellus quidam quem aliqui ab alberto magno aliqui a magistro filippo Cancellario parisiensi editum asserunt.” It should be noted that the copyist, Jacob the Surgeon of Cordoba, seems even less convinced of the veracity of this tradition, writing on f. 95v, “Quem librum aliqui dicere volunt non ab alberto magno sed a quodam magistro philipo cancellario parisiensi editum.” He follows with a colophon that makes no mention of any possible attribution to anyone other than Albert. The lack of conviction that this could have been produced by Philip the Chancellor is apparent.

²² Pico della Mirandola, I, 94. Pico stated “aut non scripsit [*Speculum*] Albert aut, si scripsit, dicendum est cum Apostolo: <<In iis laudo; in hoc non laudo.>>” It should be noted that not only did Pico not definitively reject Albert’s authorship of the *Speculum*, but he was writing for rhetorical effect and failed to provide any indication of familiarity with Albert’s work. For Pico’s purpose in writing this work, see Don Cameron Allen, *The Star Crossed Renaissance* (Durham: Duke University Press, 1941), 22. I discuss Pico at length below.

Albert wrote this work.²³

The earliest known concrete reference to Albert as the author of the *Speculum* is probably that found in the *Tabula Stamsensis*, composed in 1305 at the Cistercian abbey of Stams in the Tirol.²⁴ This tabula purports to list all of the works of the *magistri* and *baccalarei* of the Dominicans at the date of composition.²⁵ The list certainly appears comprehensive and includes a work authored by Albert and listed as the *contra libros nigromanticorum*.²⁶ While this is not a common title for the *Speculum*, it certainly sums up Albert's attitude toward necromantic works full of "filth" that "have presumed to usurp the noble name of astronomy for themselves."²⁷ Given the wide range of titles that the *Speculum* received at the hands of copyists, it would seem that this reference is indeed to the *Speculum*.

There is one other reference to Albert as the author of the *Speculum* that might predate the *Tabula Stamsensis*. Writing in the last decade of the nineteenth century, Leopold Delisle published a comment inserted into the catalog of the Bibliothèque

²³ Bagliani, 9,33, 43. It was not altogether uncommon for Albert, as well as other medieval authors, to produce a work without attaching the writer's name to it. See the introduction to Albert's *Summa Theologiae sive De Mirabili Scientia Dei*. Libri I, Pars I, Quaestiones 1-50A. Dionysius Siedler, P.A., Wilhelm Kubel, and Heinrich George Vogels, eds. (Monasterii Westfalorum: Aschendorff, 1978).

²⁴ G.G. Meersseman, *Laurentii Pignon catologi et chronica. Accedunt catologi Stamsensis et Upsalensis scriptorum O.P.* (Rome: Monumenta Ordinis Fratrum Praedicatorum historica, 1936); Bagliani, 109; Zambelli, *The Speculum Astronomiae*, 18. Meersseman dates this work to 1305. Meersseman, XI-XII. However, Zambelli dates this text to 1310, without explanation. Bagliani asserts, correctly I believe, that it was likely written before 1323, because it refers to "Frater Thomas," rather than "Sanctus Thomas," as Aquinas would have been known after his canonization in 1323. But it seems impossible to date this note more accurately than that.

²⁵ Meersseman, 56.

²⁶ Ibid., 57.

²⁷ Albert, *Speculum*, 240-242, 246, chpt. 11. "Isti sunt . . . quae nobile nomen astronomiae (sicut dixit) sibi usurpare praesumunt." Zambelli identifies the work listed in the *Tabula Stamsensis* as the *Speculum*, and I see no reason to disagree. Zambelli, *The Speculum Astronomiae*, 18.

Nationale in Paris, stating that the library contains “the tract of Albert about the contents of books of astronomies and their differences, which [ones] might be noxious and which ones might not be.”²⁸ This clearly refers to the *Speculum*, and Zambelli dates this comment to 1297.²⁹ However, Bagliani demonstrates that there is no evidence for this dating, and instead dates this note to the early fourteenth century.³⁰ Johannes de Polliaco, apparently working from an earlier version completed in 1290,³¹ seems to have revised the catalog in question at the Sorbonne in 1338.³² There seems to be no way to definitively resolve the debate over the dating of this manuscript inventory, but in any case, by the fourteenth century it is clear that medieval authorities attributed the *Speculum* to Albert.³³

²⁸ Leopold Delisle, *Le Cabinet des Manuscrits de la Bibliothèque impériale* (Paris: Imprimerie Nationale, 1881), III, 90. “Tractatus Albertis de continencia librorum astronomicorum et differencia eorum qui sint noxii et qui non.”

²⁹ Zambelli, *The Speculum Astronomiae*, 194, note 9.

³⁰ Bagliani, 120-121. Bagliani seems to be correct; I can find no indication where Zambelli might have gotten the date 1297. There does not, however, seem to be any evidence to substantiate Bagliani’s contention that Johannes de Poilliaco’s note stating that Albert had written on everything stands as evidence that he might then fabricate this title to fill a perceived lacuna. Meerseman notes that Johannes de Polliaco had a reputation as a meticulous researcher credited with exercising a high degree of critical analysis. It seems unlikely that he would have been guilty of such a fabrication. Furthermore, is it not more likely that Polliaco would be honest, than to embark upon such a convoluted flight of fancy based upon what the librarian might—or might not—have thought admissible in the conduct of his duties? See Delisle, II, 182-183.

³¹ Delisle, II, 160, 182; III, 8.

³² Ibid., II, 160, 182

³³ Bagliani, 12-41. Seven fourteenth-century manuscript copies of the *Speculum* bear attributions to Albert in the hand of the copyist, while another, Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplon QU. 349, bears an attribution to Albert that is contemporaneous to the copyist, but not in the same hand. See Bagliani, 21. Finally, it is worth noting the evidence of Vatican City, MS Vaticani Latini 4085. This codex appears to have been prepared for use by a physician and contains works on the medical use of astrological images, including Thabit bin Qurra’s *De imaginibus* on 101r-103r. Appended to the end of this text is an excursus that appears to be in the hand of the copyist, identified by the title “aditamentum operi thebit modernorum.” The writer appears to be drawing from Albert’s *Speculum* to construct his defense of the use of astrological images, delineating between those images that are permissible and those that are not because they employ “fumigationes” (103r-104v) in the invocation of demons. On the other hand, licit images are “sigillati” (l. 12, 104v) allowing “sapientes” to harness the “fluxum coelarum” in order to generate earthly effects (104v, ll. 15-16). In order to support his use of images, and the use of Thabit as a

This medieval tradition was by no means baseless and should not be ignored.

While scholars of the Middle Ages certainly made numerous and significant mistakes concerning the provenance of texts—Albert’s own unshakable belief that Aristotle wrote the pseudo-Dionysian *De processu et causis* is a perfect example—there were medieval scholars who had access to information and sources unavailable to us today. For example, scholars working in Cologne had access to autograph copies of Albert’s works that were destroyed by fire some time in the last two centuries.³⁴ However, it would be a mistake to accept the statements of medieval writers uncritically. Fortunately, there is considerable evidence available allowing us to evaluate the tradition supporting Albert’s authorship of the *Speculum*. As we shall see, this evidence not only supports Albert’s authorship of this text, but also explains its semi-canonical nature. This is certainly important to understanding the lasting influence of the *Speculum*. It is, after all, largely its authoritative nature that gave it lasting value in the years and centuries after its composition.

Let us turn first to the tradition supporting Albert’s authorship of the *Speculum*. It is understandable why modern historians have dismissed many of the later attestations.

The statements of Jean Gerson and Pierre d’Ailly made in the early fifteenth century can

source for such images, the scribe calls upon the authority of “Albert commentator in suo speculo dixit” that “Thebit Bencorath” was not a promoter of illicit images (105v, ll. 2-3). Still drawing on the *Speculum* the scribe argues that “recepte medicine” [with medicine admitting] the use of images, one could not prohibit it (105v, l. 3). Weill-Parot has noted the existence of this text in his own work. See, Weill-Parot, 609.

³⁴ 1774 is the last record of a visitor seeing these autograph manuscripts, which were destroyed in a fire an indeterminate time later. See K. Löffler, *Kölnische Bibliotheksgeschichte im Umriß* (Cologne: Rheinland Verlag, 1923), 11,13; H. Ostlender, “Das Kölner Autograph des Matthaeus Kommentars Alberts des Grossen,” *Jahrbuch des Kölnischen Geschichtsvereins*, 17 (1935): 129-142; H. Ostlender, “Die Autographie Alberts des Grossen,” in *Studia Albertina. Festschrift für B. Geyer* (Monasterii Westfalorum: Aschendorff, 1952): 3-21.

hardly be considered authoritative.³⁵ Separated from Albert by more than a century, such scholars as these have much to tell us about the reception and influence of the *Speculum*, but cannot be considered as providing proof that Albert wrote this particular work. Still, it is a mistake to invalidate all later testimony as evidence. Peter of Prussia's 1487 *Legenda Coloniensis* is a case in point.³⁶ Although crafted with the intent of providing evidence for Albert's eventual canonization, the work displays a great deal of analytical skill and is an invaluable source of information about Albert's life, written with far more critical acumen than Rudolpho de Novimagio's nearly contemporaneous *Legenda Beati Alberti Magni* of 1483.³⁷ Furthermore, writing at the Dominican Priory in Cologne in 1486, Peter had access to the manuscripts contained therein, including autograph copies of a number of Albert's works present at the monastery as late as 1774.³⁸ According to Peter, these included a work appearing to have been the *Speculum*:

A solemn work of his [Albert] is held in the monastery of the Preachers of Cologne, written by his own hands. Another volume from his own hands, *De naturis animalium*, is also held [by the monastery] and similarly [a copy of] the *Speculum mathematicae* from his own hand.³⁹

³⁵ Pierre d'Ailly, *Vigintiloquium de concordantia astronomicae veritatis cum theologia* (Venice: Erhardus Ratdolt, 1490), f. 3r; Pierre d'Ailly, *Apologia defensiva astronomiae ad magistrum Johannem cancellarium parisiensem* (Louvain: J. de Paderborn, 1483), 140r-143v; Jean Gerson, *Tricelogium astrologiae theologizatae*, in his *Oeuvres Complètes*, ed. Mgr. P. Glorieux (Paris: Desclée, 1962), X.

³⁶ Peter of Prussia, *Legenda Coloniensis*, ed. P. van Loe, "De vita et scriptis B. Alberti Magni," *Analecta Bollandiana*, 19 (1900): 257-284.

³⁷ Rudolpho de Novimagio, *Legenda Beati Alberti Magni*, ed. H.C. Scheeben (Cologne: Agrippinae, 1928). Consider Rudolpho's fantastic description of the Virgin Mary's personal visit to Albert in his youth, to convince him to dedicate himself to scholarship, related on pages 20-21.

³⁸ Löffler, 11,13; Ostlender, "Das Kölner Autograph des Matthaeus Kommentars Alberts des Grossen," 129-142; Ostlender, "Die Autographe Alberts des Grossen," 3-21.

³⁹ Peter of Prussia, 276-277: "In Monasterio Praedictorum Coloniae habetur opus eius [Alberti] solempne Super Matheum propriis manibus suis scriptum. Aliud etiam volumen De naturis animalium de manu sua et Speculum mathematicae similiter de manu sua."

Medieval astrologers were frequently referred to as *mathematici*, and modern scholars such as Bagliani have accepted that Peter was here referring to the *Speculum astronomiae*.⁴⁰ What Bagliani does not accept is that this reference provides any sort of proof about the authorship of the *Speculum*. However, Peter of Prussia had access to a number of autograph copies of Albert's work, and does not elsewhere make mistakes about works that are properly Albertine. Therefore, Peter's testimony that the copy of the *Speculum* available to him in 1486 appeared to be in the same handwriting as other genuinely Albertine works cannot easily be dismissed.

The earlier tradition is, however, more important. As I noted, both the *Tabula Stamsensis* and manuscript catalog edited by Leopold Delisle indicate that by the first decade of the fourteenth century Albert was recognized as the author of the *Speculum*.⁴¹ A point hitherto ignored is that at this date, some twenty to thirty years after Albert's death in 1280, there were still a considerable number of individuals alive who would have personally known Albert, not least among these his surviving students.⁴² Not only did none of these denounce the *Speculum* as a pseudo-Albertine work, but also the most

⁴⁰ As Laura Ackerman Smoller states in her work, *History, Prophecy, and the Stars: The Christian Astrology of Pierre D'Ailly, 1350-1420* (Princeton: Princeton University Press, 1994), 28, Isidore of Seville never referred to practitioners of astrology as *astrologi* or *astronomi*, but rather as *genethliaci* (a term taken from genethliology, which is the study of birth charts), *mathematici* or *magi*. For example, see Isidorus Hispalensis Episcopus, *Etymologiarum sive originum libri XX*, ed. W.M. Lindsay, 2 vols. (Oxford: Clarendon Press, 1910), book 8, chapter 9: "Primum autem idem stellarum interpretes magi nuncupabantur, sicut de his legitur qui in Evangelio natum Christum adnuntiaverunt; postea hoc nomine soli Mathematici." Bagliani, 130.

⁴¹ Bagliani 109; Zambelli, *The Speculum Astronomiae*, 18.

⁴² The most famous of these pupils who survived the thirteenth century was Johann Eckhart, who died c. 1329. See Alain De Libera, *Albert le Grand et la Philosophie* (Paris: Vrin, 1990), 32-33. It should also be noted that accorded to De Libera, an Albertine school developed at Cologne in the fourteenth and fifteenth centuries. Men who considered themselves part of this school, such as Hugh of Strasbourg and Heimeric Van de Velde, had often studied under men who had learned at Albert's knee. These men, who viewed Albert as their spiritual father, would surely have felt some responsibility to ensure the integrity of the Albertine canon, yet none of them ever rejected the *Speculum* as a genuine work of Albert.

famous of Albert's students to survive the thirteenth century, Meister Eckhart, seems to have incorporated part of it into his own work. This comes out most clearly in his exposition on the Gospel of John, wherein he writes about the outpouring of celestial influence that affects terrestrial creatures:

This is the foundation upon which wise men found natural prophecy and the foreknowledge of future things. . . on this foundation it seems that certain persons founded: aeromancy, pyromancy and its relatives, hydromancy, geomancy, and a certain part of the science of images.⁴³

As the editors of this work point out, not only does Eckhart's list follow the precise ordering of natural forms of predicting the future, as provided in the *Speculum*, but Eckhart goes on to list the science of images as a subcategory of elections, just as does the author of the *Speculum*.⁴⁴ Therefore, not only is the doctrine congruent with that contained in the *Speculum*, but the word order also demonstrates that Eckhart is drawing from the work under consideration. This suggests that Eckhart was familiar with the contents of the *Speculum*. It seems unlikely that Eckhart was not aware of the attribution to his old teacher Albert found in numerous fourteenth-century manuscripts and manuscript lists, which neither Eckhart nor anyone else saw fit to challenge.⁴⁵ If the *Speculum* had been written anonymously so that the author might avoid being the

⁴³ Meister Eckhart, "Exposition s. evangelii sec. Iohannem," *Meister Eckhart: Die deutschen und lateinschen werke*, eds. Karl Christ, Bruno Decker, Joseph Koch, Heribert Fischer, Loris Sturlese, and Albert Zimmerman (Berlin and Stuttgart: W. Kohlhammer, 1994), IV, 268. "Haec est radix, super quam fundunt sapientes prophetiam naturalem et futurorum praecognitionem iterum Avicenna in VI naturalium part 4 et Abazel in fine physicae suae fascinationem. Gal. 3: 'quis vos fascinavit veritati non oboedire?' In hac etiam radice videtur quibusdam fundari: pyromantia et eius germanae: aeromantia, hydromantia, geomantia, et aliqua pars scientiae imaginum."

⁴⁴ Albert, *Speculum*, 225, chpt. 5.

⁴⁵ There are nine extant fourteenth-century copies of the *Speculum* bearing an attribution to Albert in the hand of the copyist, as opposed to seven of the eight extant anonymously copied texts of the *Speculum*, dating to the thirteenth and fourteenth century. This count disregards the fragmentary texts, for reasons that I explain on pages 28 and 29. Bagliani, 8-43.

recipient of opprobrium from those who opposed the study of astrology—as Agostino Paravicini Bagliani has argued⁴⁶—then it would seem reasonable to suggest that one of Albert’s loyal students would have taken the opportunity to disavow that his mentor had written the text when he found cause to use it in his own work.

The argument of the preceding paragraph is certainly far from conclusive. The silence of Albert’s contemporaries and students—who surely were well placed to know what their professor had or had not written—in the face of widespread attribution of the *Speculum* to Albert can be no more than circumstantial. However, the attitude of those who knew Albert personally does indicate what the terms of the debate should be. Given the fact that they seem to have accepted him as the author of the *Speculum*—or at least they did not oppose his authorship in writing—it would seem that arguments to the contrary made by modern historians should be held to fairly high evidentiary standards. The burden of proof here rests with those who wish to overturn seven centuries of tradition establishing Albert as the author of the *Speculum*.

Still, positive evidence in support of Albert’s authorship would be useful. Fortunately, such evidence is not lacking. Bonaventure d’Iseo was a friend to Albert, and his late thirteenth-century *Proohemium quarti operis* of the *Liber Compostellae* contains a statement that not only provides strong evidence in favor of Albert’s authorship of the *Speculum*, but also gives us some indication of why the work would become so widely read and influential. Bonaventure states that

⁴⁶ Bagliani, 33, 55-56.

Indeed I, Brother Bonaventure of Iseo of the order of the minors [the Franciscans] was a close friend of Brother Albert of Germany and of brother Thomas of Aquino, of the order of preachers, who were, therefore, upright men and great compilers of the writing of the wisdom of wise men. Now Brother Albert had in the days of his own life a grace granted by the pope because of his fame of sanctity, intellect, and prudence, and he was licitly allowed to study, to know, and to examine, as well as to test, all the arts of the sciences, of the good and of the bad, praising books of truth and condemning books of falsity and of error. Whence he labored greatly in completing the books already begun of Aristotle, and he made new compilations of books about many arts of the sciences, such as astrology, geomancy, necromancy, as well as of precious stones and of the experiments of alchemy.⁴⁷

This testimony is quite important. Bonaventure refers to a “grace” that Albert received, allowing him to study “all the good and bad arts of the sciences. . . to condemn books of falsity and error . . . such as astrology, geomancy, necromancy, as well as of precious stones.” However, while Albert discusses the occult properties of precious stones in his work, *De mineralibus*, nowhere within the corpus of his collected works does he discuss geomancy and necromancy. In addition, nowhere does he suggest that he is writing for the purpose of “praising books of truth and condemning books of falsity and error.” Nowhere, that is, except in the *Speculum astronomiae*, which defines geomancy and provides an extensive list of illicit works—including necromantic works—that readers should avoid in addition to those that contain nothing injurious to a Christian. Therefore, not only does Bonaventure provide evidence that Albert wrote the *Speculum*, but he explains the circumstances of its composition: the pope asked Albert to make an

⁴⁷ Bonaventure de Iseo, 395: “Ego quidem frater Bonaventura de Ysio ordinis minorum fui amicus domesticus fratris Alberti theutunici et fratris Thome de Aquino ordinis predicatorum, qui sic fuerunt probi viri et magni compositores scripture sapientie sapientium. Nam frater Albert in diebus vite sue habuit gratiam a domino papa propter eius famam sanctitatis et intellectus et prudentie et licite potuit addiscere, scire et examinare et probare omnes artes scientiarum boni et mali, laudando libros veritatis et dampnando libros falsitatis et erroris. Unde multum laboravit in complendo inceptos libros Aristotelis et novas compilationes librorum fecit de multis artibus scientiarum ut astrologie, geomantie, nigromantie, lapidum pretiosorum et experimentorum alchimie.”

examination of both good and bad works so that he might provide guidance for fellow Christians. This also explains the mystery of why Albert provided extensive information about works that he “shrank with horror” from reading,⁴⁸ as well as why he felt comfortable with providing incipits for thirty-seven of these works at a time when papal inquisitors were actively searching out heretics.⁴⁹ Fulfilling the mandate of the papacy would have provided not only the motivation to study these horror-inducing works but also a powerful shield against any charges of heresy that might result from overly-intimate knowledge of such writings.

Bonaventure d’Iseo’s testimony not only indicates that Albert’s close friend recognized him as the author of the *Speculum*, but also explains Albert’s familiarity with necromantic texts. Richard Lemay has called Bonaventure’s testimony “conclusive” in both abolishing any doubts about Albert’s authorship of the *Speculum* as well as establishing the “semi-canonical” nature of this work written in response to a papal mandate.⁵⁰ Unfortunately, Bagliani disagrees with this contention. There is a second extant *Prooemium* that differs quite markedly from the long one quoted above:

⁴⁸ Albert, *Speculum*, 242, chpt. 11. “sed quoniam eos abhorruī, non extat mihi perfecta memoria super eorum numero, titulis, initiis, aut continentis sive auctoribus eorundem.”

⁴⁹ I will discuss the papal inquisition in chapter four, as well as evidence that an agent of this institution may have found the *Speculum* to be a useful resource.

⁵⁰ Richard Lemay, Unpublished version of his review of Paola Zambelli’s *The Speculum Astronomiae and its Enigma. Astrology, Theology, and Science in Albertus Magnus and his Contemporaries*, 4; Richard Lemay, “The Paris Prohibitions of 1210/15, the formulas of absolution by Gregory IX (1231), and the Incipit of Albertus Magnus’ *Speculum Astronomiae*. Origin and canonical character of the *Speculum Astronomiae*,” Unpublished paper, 6-7; Richard Lemay, “Les *libri naturales* proscrits en 1210 et le *Speculum Astronomiae* d’Albert le Grand, ca. 1250,” Unpublished paper, 1, 3-5, 15-17. It is not clear which pope might have authorized Albert to produce the *Speculum*, but Alexander IV (1254-1261) and Urban IV (1261-1264) are the most likely candidates. Dr. Lemay and I maintained a correspondence during 2000, leading him to mail me copies of these unpublished works. My thanks to Dr. Lemay for this assistance.

Indeed I brother Bonaventure of Iseo of the order of the minors [Franciscans] am a close friend of Brother Albert of Germany of the order of preachers; we discussed many things about sciences and about secret experiences of secret things such as necromancy, alchemy, and other things.⁵¹

Bagliani argues that the use of the past tense in the first, longer passage indicates that it was composed after Bonaventure d'Iseo's death, despite the use of the first person, and interpolated into the text, perhaps during the fourteenth century.⁵² Thus, for Bagliani this evidence is useless for establishing the authorship of the *Speculum*.

Unfortunately, Bagliani's argument is not clear, especially his assertion that this use of the past tense in the longer *Proohemium* establishes it as a product of the fourteenth, rather than the thirteenth, century. Arguing in a circular fashion, he suggests that since the *Speculum* did not come to be attributed to Albert until the fourteenth century, then this *Proohemium* must be the product of that period.⁵³ A far simpler, and more likely, explanation is that Bonaventure d'Iseo rewrote this *Proohemium* late in life. We do not know precisely when he died, only that his death occurred before the redaction of the *Chronicle* of Salimbene, completed sometime between 1284 and 1286.⁵⁴ Thomas died in 1274 and Albert in 1280. If Bonaventure had rewritten his *Proohemium* at any time after 1280, it would have been natural for him to use the past tense in referring to these two scholars. We cannot know precisely why he would have chosen to emphasize

⁵¹ Bonaventure d'Iseo, 395. "Ego quidem frater Bonaventura de Yseo ordinis minoris sum amicus domesticus familiaris fratris Alberti Theutonici de ordine predicatorum; multa contulimus de scientiis et experimentis secretis secretorum ut nigromancie, alchimie et cetera." The *Liber compostellae* that this prefaced was an alchemical work, a discipline about which Bonaventure was well versed.

⁵² Bagliani, 126-127.

⁵³ Ibid., 127.

⁵⁴ Ibid., 127; Salimbene de Adam, *Cronica*, ed. Giuseppe Scalia, Corpus Christianorum Continuatio Mediaevalis (Turnhout: Brepols, 1999), I, 384-385.

Albert's authorship of the *Speculum* in this new edition, but one might speculate that its semi-canonical nature could have prompted Bonaventure to want to associate it with his late friend. After all, the *Speculum* came to be copied far more often and distributed more widely than anything else that Albert had written, making it at the very least the most popular of his works, if not the most important.⁵⁵

Due to testimony such as that of Bonaventure d'Iseo and other evidence, pre-modern scholars saw the question of the *Speculum*'s authorship as settled. This did not change until 1910. In this year the *Revue néoscholastique de philosophie* published Pierre Mandonnet's argument that Roger Bacon was the *Speculum*'s true author.⁵⁶

Unfortunately, Mandonnet fails to offer any evidence for this conclusion beyond a presumed coincidence in interests between Bacon and the *Speculum* and a belief that Albert would not have written a defense of astrology.⁵⁷ Lynn Thorndike argued very early on that Mandonnet's assertions were based more upon his desire as a modern Dominican to reassign authorship of an embarrassing text from one of the most prominent members of the Order of Preachers to a member of that Order's chief rivals, the Order of Friars Minor.⁵⁸ Nevertheless, Mandonnet successfully influenced a host of

⁵⁵ This judgment is based upon a count of the extant manuscripts of Albertine works, discounting clearly pseudo-Albertine works such as the *Secreta mulierum*.

⁵⁶ Mandonnet, "Bacon et le *Speculum*," 313.

⁵⁷ Mandonnet attributes the authorship of the *Speculum* to Bacon, because he erroneously believed that Bacon was the only ecclesiastical author in the second half of the thirteenth century who defended judicial astrology. Mandonnet, "Bacon et le *Speculum*," 323-324. This is puzzling, given the frequency with which Albert writes of astrology, always in the most favorable of terms. Albert discusses astrology not only in works of natural philosophy, such as his commentary *De caelo et mundo*, but also in works of a more expressly theological nature, such as the final work that he penned, his *Summa theologiae*. See Albert the Great, *De caelo et mundo, Opera omnia*, edited by Paul Hossfeld (Monasterii Westfalorum: Aschendorff, 1971), I, 150; Albert the Great, *Summa Theologiae*, II, question 68.

⁵⁸ Thorndike, "Further Consideration," 413-443

scholars such as Alexander Birkenmajer,⁵⁹ in spite of the fact that Mandonnet's scholarship is neither convincing nor built upon any sort of evidentiary base and thus need not long detain us here. Both Lynn Thorndike and Paola Zambelli have effectively undercut Mandonnet's argument.⁶⁰ Its real importance rests in the lasting doubt that Mandonnet placed in the minds of scholars about the identity of the *Speculum*'s author. Given the prejudices of early twentieth-century scholarship, which viewed astrology as a "wretched subject" indeed,⁶¹ Mandonnet's reading public seems to have been quite willing to overlook his lack of evidence, so long as his argument "cleared" one of the preeminent natural philosophers of the Middle Ages—a reputation that would lead to Albert's canonization as the saint of scientists—from charges of being an apologist for astrology.⁶²

A more recent attempt to overturn Albert's authorship of the *Speculum* cannot be passed over so quickly. In 2001 Agostino Bagliani published *Le Speculum Astronomiae, une enigme? Enquete sur le manuscrits* with the intent of clearing up the "mysteries" associated with the *Speculum* once and for all. Marked by intensive scholarship, this slender volume contains much of use for any researcher interested in the *Speculum*, but its conclusions are ultimately less than compelling. Bagliani argues that the title *Speculum astronomiae* was but one of the many names under which this work was copied

⁵⁹ A. Birkenmajer, *Études d'histoire des sciences et de la philosophie du moyen âge* (Warsaw: Orsolineum 1970), 143-145.

⁶⁰ Zambelli, *The Speculum Astronomiae*, 5; Thorndike, "Further Consideration," 413-443.

⁶¹ Otto Neugebauer, "The Study of Wretched Subjects," *Isis* 42 (1951): 111.

⁶² De Libera, *Albert le Grand*, 9. Pius XI canonized Albert in 1931, completing a process that had begun in the fifteenth century. Pius XII elevated him to the status of "protector" of the natural sciences in 1941. The process of canonization took so long due to the reputation of a magician that Albert began to acquire after his death, leading many to question his orthodoxy.

and rejects Albert's authorship of the work.⁶³ Bagliani believes that the *Speculum* was written anonymously due to the author's fear of being associated with such a controversial subject as astrology.⁶⁴ In turn, Bagliani argues in favor of the thirteenth-century astronomical authority Campanus of Novara as this anonymous author, doing Paola Zambelli one better. At an earlier date, she had only suggested him as Albert's collaborator on the *Speculum*.⁶⁵

Bagliani's work cannot lightly be dismissed. In order to evaluate his conclusions, let us first consider his argument about the anonymous authorship of the *Speculum*. It appears that Pico della Mirandola's *Disputationes Adversus Astrologiam Divinatricem* suggested this idea to Bagliani.⁶⁶ It was Pico who first publicly stated that Albert might not have authored the *Speculum* and that the true author might have kept his identity concealed because the work contains much that is "unworthy [coming] from a learned man and a good Christian."⁶⁷ While Bagliani is too good a scholar to have failed to notice Pico's poor overall understanding of Albert's larger body of work, it seems that the

⁶³ Bagliani, 56-57, 81-92. Bagliani appears too quick to dismiss the importance of the title "Speculum astronomiae." Fourteen of the thirty-two manuscripts I have examined bear this title, or some variation of it. It is, in fact, the most common title to be found among the manuscripts I have studied.

⁶⁴ Ibid., 56-57.

⁶⁵ Ibid., 143; Zambelli, 48-50. Both Albert and Campanus were at the papal court at Anagni in 1256, so it is likely that they met and discussed issues of mutual interest, such as astronomy. On the likelihood that these two scholars had direct knowledge of one another, see H. C. Scheeben, *Albert der Grosse: Zur Chronologie seines Lebens*, Quellen und Forschungen zur Geschichte des Dominikanerordens in Deutschland (Vechta: Verlag, 1931), 69; Zambelli, *The Speculum Astronomiae*, 48-50. Bagliani states that Campanus and Albert did not meet at the papal court in 1256, despite the fact that they were both there, but offers no explanation for this statement. See Bagliani, 147-149. It seems unlikely that two scholars of such stature with a mutual interest in natural philosophy could have shared residence in a small Italian town, in regular attendance at the papal court, without coming into contact with one another and discussing their common passion.

⁶⁶ Bagliani, 132.

⁶⁷ Pico, I, 64-67: "existmari quidem a multis esse illud opus Alberti, sed nec ipsum Albertum, nec libri inscriptionem usquequam que hoc significare, cum auctor ipse, quicumque demum fuerit, nomen suum consulto et ex professo dissimulet. Quid? quod in eo multa leguntur indigna homine docto et bono christiano." This work seems to be very poorly understood. I will elaborate upon this below.

fifteenth-century Florentine provoked Bagliani to consider the possibility that the *Speculum* had been written anonymously and distributed surreptitiously so that the author might avoid the taint of becoming associated with such a controversial area of natural philosophy as astrology.⁶⁸

In order to sustain this argument, Bagliani undertakes a comprehensive analysis of the surviving manuscripts of the *Speculum*. Creating three categories of manuscripts arranged in an impressive set of tables,⁶⁹ labeled A, B, and C, he then attempts to explain to the reader what these groupings presumably mean about the authorship of the *Speculum*. Group A comprises anonymous texts, while B has an attribution at *either* the beginning or the end of the text. Group C has an attribution in both the incipit and explicit.⁷⁰ In the course of organizing these three subgroups of manuscripts, Bagliani makes a great deal out of the fact that some of the manuscripts have incipits attributing the text to Albert, while others do so in an explicit (some have both).⁷¹ However, he never gives any clear indication of why this fact would make any difference. While asserting that a manuscript with an attribution to Albert only in the explicit represents a scribe copying from an anonymous text, he gives no reason why this would be true.⁷² This begs the question: if the incipit and/or explicit is in the same hand as that of the copyist, what significance could there be to whether an attribution is placed before or after the body of the text? It seems far more likely that it was simply the result of the varying practices of individual scribes, rather

⁶⁸ Bagliani, 132. Pico states in his *Disputationes* that while Albert might have dabbled in astrology during his youth, he had come to reject it in maturity. See Pico, I, 529. If we are to read this as more than a rhetorical device, this would raise serious questions about Pico's familiarity with Albert's work.

⁶⁹ Bagliani, 46, 57-59.

⁷⁰ Ibid., 45.

⁷¹ Ibid., 59-64.

⁷² Ibid., 60.

than evidence about the original attribution of a manuscript. Hence, there seems to be little analytical value in differentiating between manuscripts carrying an attribution to Albert in the incipit, as compared to the explicit.

Bagliani may have been attempting to establish the importance of the three different subgroups of manuscripts in order to lend credence to his notion that the *Speculum* was originally written anonymously to protect the author. Nevertheless, it is not clear that a thirteenth-century author would have felt the need to protect himself when writing favorably about astrology. Albert certainly felt no such compulsion. Integrating astrology into almost every work that came forth from his pen, he established himself as an authority on the subject to such a degree that he found himself frequently called upon to address questions about the compatibility of astrological belief with orthodox Christian doctrine. For example, in 1271 John Vercellensi, master general of the Dominicans, sent a series of forty-three questions with which a certain lector of the order, teaching at Venice, had found himself occupied. Master John sent this list of questions to the three most prominent Dominican theologians of the day, Thomas Aquinas, Robert Kilwardby, and Albert, mandating that they respond once an evaluation of the questions can be made.⁷³ A considerable number of these questions deal with astrology, such as the second one, which asks whether the angels move all things on earth through their intermediary

⁷³ Albert the Great, "Problemata determininata," *Opera omnia*, ed. Jacob Wiesheipl (Monasterii Westfalorum: Aschendorff, 1975):XVII, 45-64. For a representative sampling of Albert's attitudes about astrology, and his employment as an expert witness, see: J. Wiesheipl, "The *Problemata Determinata XLIII* Ascribed to Albertus Magnus (1271)," *Mediaeval Studies* 22 (1960): 303-354; Ferdinand Van Steenberghen, "Le 'De quindecim problematibus' d'Albert le Grand" in *Études d'histoire littéraire et doctrinale de la Scolastique médiévale offertes à Monseigneur Auguste Pelzer* (Louvain: Bibliothèque de l'Université/Éditions de l'Institut Supérieur de Philosophie, 1947): 415-439; Albert the Great, "De quindecim problematibus," in *Opera omnia*, ed. Bernhard Geyer (Monasterii Westfalorum: Aschendorff, 1975): XVII, 31-34.

agents, the heavenly bodies, and question thirty-five, about the role of celestial influence in generation.⁷⁴

This status as an expert on astrology certainly seems to have done nothing to harm Albert's reputation in the eyes of his contemporaries. Roger Bacon, by no means friendly toward Albert, writing between 1266 and 1267 stated that a certain master, presumably Albert, is known as an authority in Paris on a par with Aristotle, Avicenna, and Averroes.⁷⁵ According to Bacon, Albert's reputation exceeded that which any other master had ever held during his own lifetime.⁷⁶ The honor that Albert's order bestowed upon him by naming him as Prior Provincial of Teutonia in 1254, or that Pope Alexander IV bestowed upon Albert by inviting him to his court in 1256 before personally naming him Bishop of Regensburg in 1260, seems to support Bacon's statements about the strength of Albert's reputation among his contemporaries.⁷⁷ Apparently Albert's persistent defense of astrology represented neither a bar to advancement nor a black mark on his reputation among his contemporaries.

As for why Bagliani maintains that the *Speculum* was in origin an anonymous work, we need to examine those manuscripts falling within category A. This category consists of anonymous texts and contains the earliest surviving manuscripts, making it

⁷⁴ Ibid., 61-62. Albert concludes that normal human generation is not possible when the ruling planets meet in Aries near the star Algol, if Jupiter is not helping and Venus is not visible. He stated that he knew this to be empirically true, because he had seen the monstrous issue of unions effected during such a time.

⁷⁵ Hackett, "The Attitude of Roger Bacon to the *Scientia* of Albertus Magnus," *Albertus Magnus and the Sciences*, ed. James A. Weisheipl (Toronto: Pontifical Institute of Mediaeval Studies, 1980): 53-72; Roger Bacon, *Opus Tertium*, in *Opera quaedam hactenus inedita*, ed. J.S. Brewer (London: Longman, 1859), 30.

⁷⁶ Bacon, *Opus Tertium*, 30. This is assuming that Hackett is correct in his identification of Bacon's "quidam magister," but his argument and command of the evidence are certainly convincing.

⁷⁷ De Libera, *Albert le Grand*, 16-17; J.A. Weisheipl, "The Life and Works of St. Albert the Great" in *Albertus Magnus and the Sciences* (Toronto: Pontifical Institute of Medieval Studies, 1980): 13-53, 33.

central to his argument. The author has assembled these texts into an impressive-looking table that seems to demand acquiescence to his conclusions, until one begins to examine the details of the manuscripts themselves more closely.⁷⁸ There are indeed fifteen anonymous texts listed. However, two of these are attributed to Albert by a marginal notation inserted by contemporaries,⁷⁹ who would in all likelihood have better access to information about the manuscript in question than is currently available to us. A third contains an attribution to Albert in the index written in a hand contemporaneous to that of the scribe who copied the text.⁸⁰ This leaves twelve manuscripts containing the *Speculum* that are truly anonymous. Of those, four are fragmentary, one being only a single chapter.⁸¹ These could have had attributions in the incipits or explicits that are now lost and thus cannot be considered as evidence of having been originally copied without an attribution to Albert. This leaves eight complete manuscripts that certainly were copied without an attribution. These are, in chronologically ascending order, a late thirteenth-century manuscript at Florence, a late thirteenth to early fourteenth-century manuscript at Paris, a fourteenth-century manuscript at Oxford, a fourteenth-century

⁷⁸ Bagliani, 46.

⁷⁹ Berlin, Staatsbibliothek, Preussischer Kulturbesitz, MS lat. F. 246; Brussels, Bibliothèque royale, MS 1022-47. Bagliani, 10, 13. The attribution in the upper margin of the first of these manuscripts is in a hand that might very well be that of the copyist, as Bagliani has noted. This copyist was Ludolphus de Borchtorpe, a physician at Brunswick who earned his MA from the University of Erfurt in 1445. He copied this codex for personal use, completing it in 1479 at his alma mater. We know the identity of the copyist thanks to the note on 1r: "In presenti volumine continentur infrascripte materiae quas omnes ego Ludolph de Borchtorpes manu propria scripsi exceptus questionibus spere et richomathie Erfordie (Erfurt) Padue et in Brunswick." The rest of this information is thanks to the description of the codex inside the front cover. Prof. Dr. Ernst Zinner from the Universitätsbibliothek of Tübingen, completed this description 19 Feb 1958. I am unwilling to make a definitive statement, but the handwriting for the marginal note certainly appears to be Borchtorpe's. For the dating of the marginal note appended to the Brussels manuscript I must rely upon Bagliani's judgment. See Bagliani, 13.

⁸⁰ Florence, Biblioteca Medicea Laurenziana, MS Asburnham 210. Bagliani, 22.

⁸¹ Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplon. Qu. 189; London, British Library, MS Harley 2378; Paris, Bibliothèque de l'Arsenal, MS 387; Krakow, Biblioteka Jagiellonska, MS BJ 1970; Bagliani, 15, 19, 26, 38. The Erfurt manuscript contains only chapter fifteen, and the London manuscript contains only chapter one and part of chapter two.

manuscript at the Vatican, a fifteenth-century manuscript in Arras, and a sixteenth-century manuscript in Darmstadt.⁸² Two other texts were anonymously copied before receiving attributions to Philip the Chancellor of Paris.⁸³ The earliest anonymous text, Florence, Biblioteca Medicea Laurenziana, MS Plut. XXX.29, is in a codex with several other texts that lack attribution, leading one to wonder if we are witnessing a scribal habit, rather than the scribe's ignorance of the true author.⁸⁴ Another of the anonymously copied texts, Vatican City, Biblioteca Apostolica Vaticana, MS Borgh. 134, is contained in a codex wherein all the other texts are irrefutably Albertine.⁸⁵ While it is possible that this grouping represents mere chance, it seems more likely that the fourteenth-century copyist believed the *Speculum* to have also been the product of Albert's pen.

What we are looking at, then, are eight anonymous manuscripts, with the earliest dating to the 1280s. On this, Bagliani tries to build a case that the *Speculum* was originally written anonymously and handed around surreptitiously,⁸⁶ but this is hardly convincing. In the first place, much of the *Speculum*'s authority seems to have been derived from its association with Albert.⁸⁷ Given the fact that Bagliani has not done a stemmatic analysis of the anonymous manuscripts that he classifies together in group A, it seems just as likely that the later manuscripts were copied from the single early

⁸² Florence, Biblioteca Medicea Laurenziana, MS Plut. XXX.29, Paris, Bibliothèque nationale de France, MS lat. 7440, Oxford, Bodleian Library, MS Ashmolean 345, Vatican City, Biblioteca Apostolica Vaticana, MS Borgh. 134, Arras, Bibliothèque municipale, MS 47 (844), Darmstadt, Hessische Landes- und Hochschulbibliothek, MS 1443 (ex 94). Bagliani, 9, 16, 18, 22, 34, 39.

⁸³ Oxford, Bodleian Library, MS Digby 81, Oxford, Bodleian Library, MS Digby 228. Bagliani, 36.

⁸⁴ Bagliani notes that this codex contains numerous works that lack attribution, but does not speculate about any possible significance that this fact might hold. See Bagliani, 23.

⁸⁵ Bagliani, 17.

⁸⁶ Bagliani, 56-57.

⁸⁷ As we will see, there are other reasons why this work would have had a great deal of authority, but for reasons that still link the text to Albert.

anonymous manuscript, as that this handful of manuscripts represents a genuine tradition. It is also possible that all the anonymous manuscripts represent the work of scribes who simply failed to include the name of the author, either due to haste or for other considerations.⁸⁸ To sum up, we cannot know why these eight manuscripts were copied anonymously until further work has been done. However, we can know that the vast majority of manuscripts that have survived, forty-one of the fifty-nine surviving, were clearly attributed to Albert by their copyists. There was no medieval debate over the identity of the author of this text: medieval intellectuals knew Albert had written it.

Finally, let us consider Bagliani's suggestion that Campanus of Novarra is the true author of the *Speculum*.⁸⁹ Although Bagliani seems initially hesitant about this idea, the ensuing argument demonstrates a greater conviction than his hesitancy might otherwise indicate. This is a tenuous contention as best, established upon a section of the fourteenth-century astronomer Nicolas of Lund's *Calendarium* that is presumably a portion of Campanus of Novarra's lost *Canon pro minutionibus et purgationibus*.⁹⁰ There is a section of the *Speculum* that appears to be drawn from this lost work by Campanus and is written in the first person singular, leading Bagliani to believe that he has found a clue to the "true" author's identity. The similarities that Bagliani notes are not in doubt. Albert states in chapter fifteen of the *Speculum* that

⁸⁸ The *Problemata determinata*, "De fato," and *Summa theologiae* are all examples of unquestionably Albertine works that originally circulated anonymously. See James Weisheipl's prologue to the "Problemata determinata," XXVIII; Paul Simon's prologue to Albert the Great's "De fato," in *Alberti Magni: Opera omnia*, ed. Paul Simon (Monasterii Westfalorum: Aschendorff, 1975): 65-78, XXXIII-XXXV; Scheeben, 40, 46, 156.

⁸⁹ Bagliani, 143.

⁹⁰ Ibid., 143; Francis S. Benjamin and G.J. Toomer, *Campanus of Novara and Medieval Planetary Theory. Theorica planetarum*, edited with an introduction, English translation, and commentary (Madison: University of Wisconsin Press, 1971), 23; Zambelli, *The Speculum Astronomiae*, 156, note 19.

I will not dare to make an incision on a member with the moon present in the sign having an influence over that member . . . I saw a man skilled both in the stars and in medicine, who, because of the danger of angina, bled him from the arm to treat that, with the moon standing among the Twins, which have power over the arms.⁹¹

Here is the relevant section of Nicolas de Lund's *Calendarium* that excerpts Campanus'

Canon:

Pain causes an excess of damp humors . . . one should be warned from an incision on a member with the moon present in a sign having signification over that member . . . Campanus himself saw a man unskilled in the stars who, in danger of angina, bled him from the arm with the moon present in the Twins, that sign that rules over the arms.⁹²

While the similarities are striking, we should remember that Campanus seemed to have no interest in judicial astrology.⁹³ Rather, he was an astronomer and mathematician, in the modern sense of those terms.⁹⁴ Furthermore, the passage from the *Speculum* indicates a past association: "I saw (in the past tense) a man skilled of the stars."⁹⁵ The use of the past perfect indicates a complete action: in other words, this was a man of Albert's past acquaintance, not a current collaborator, and this is certainly not a veiled self-referential statement. Albert surely knew Campanus, since both men found themselves together at the papal court at Anagni between 1256 and 1264.⁹⁶ We have no

⁹¹ Albert, *Speculum*, 268, chpt. 15. "non cavebo facere incisionem in membro, Luna existente in signo habente significationem super illud membrum . . . Vidi hominem peritum astrorum et medicinae, qui pro periculo squinantiae minuerat sibi de brachio, Lune existente in Geminis qui habent significationem super brachia."

⁹² Benjamin-Toomer, 23-24, note 87. "dolor causat fleuma . . . cavenum est ab incisione in membro luna existente in signo significationem habente super illud membrum . . . Campanus se vidisse hominem impertitum in astris qui in periculo squinantie minuerat sibi de brachio luna existente in geminis quod signum dominatur super brachia."

⁹³ See the Benjamin-Toomer edition of Campanus' *Theorica planetarum*.

⁹⁴ Tester, 192-193.

⁹⁵ Albert, *Speculum*, 268, chpt. 15.

⁹⁶ Zambelli, *The Speculum Astronomiae*, 111.

reason to doubt that Albert could be quoting Campanus. Although we have no clear notion of when Campanus might have written his *Canon*, Roger Bacon testifies, if grudgingly, to Campanus' reputation as a mathematician in 1267.⁹⁷ Such reputations are not earned overnight, and Campanus, born around 1202, was certainly capable of having completed the *Canon* much earlier than any reasonable date for the production of the *Speculum*.⁹⁸ In addition, we must keep in mind that large-scale borrowing, of a sort now considered plagiarism, was common, as attested by Nicolas of Lund's *Calendarium* itself—which excerpts Campanus' work without providing attribution. Thus, while it is not necessary to imagine, as Zambelli does,⁹⁹ that Campanus and Albert collaborated on the *Speculum*, there seems every reason to believe that Albert could have read the *Canon* and paid tribute to its author, with whom he was personally acquainted, by quoting his work.

Bonaventure d'Iseo's testimony is as definitive as a medieval historian can hope for when considered alongside the extensive fourteenth-century evidence of Albert's authorship. Based upon this testimony, it is logical to work under the assumption that Albert was in fact the author of the *Speculum*, unless compelling evidence to the contrary is brought forward.

Working from the assumption that Albert was indeed the author of the *Speculum*, we are left with the question of its date of composition. Relatively early on, historians noticed that Albert stated in chapter XII of the *Speculum* that the thirteenth and fourteenth

⁹⁷ Tester, 192.

⁹⁸ The *Speculum* appears to have been written after 1260. I will discuss the evidence for this below.

⁹⁹ Zambelli, *The Speculum Astronomiae*, 48-50.

books of Aristotle's *Metaphysics* had not yet been translated.¹⁰⁰ This has led scholars to suggest various dates for the composition of the *Speculum*. Lynn Thorndike argues that since Albert completed his commentary upon the *Metaphysics* in 1256, then the *Speculum* must predate this work.¹⁰¹ However, the version of the *Metaphysics* that Albert was working from did not include either the thirteenth or fourteenth books.¹⁰² Furthermore, Thérèse Bonin has pointed out that Aristotle's *Metaphysics* was commonly held to have dealt with separate substances in a highly unsatisfactory manner.¹⁰³ Therefore, even after the complete work had been translated, a suspicion persisted that a yet-to-be translated section of the *Metaphysics* was still to be found. Late in life, Thomas suggested that there were as many as ten books left to be translated.¹⁰⁴ Given this confusion in the minds of Albert and his contemporaries about the *Metaphysics*, we cannot rely upon this reference in the *Speculum* to untranslated sections of the work to establish a date of composition.

This does not mean that there are no clues in the text. In chapter XI of the *Speculum* Albert refers to the *Liber magnus Razielis*, or *Liber institutionis*, complete with its incipit: "In prima huius proemii parte de angulis tractemus."¹⁰⁵ This work appears to be a Latin translation of the work of Eleazar ben Juda Kolonimos (1176-1238), which

¹⁰⁰ Albert, *Speculum*, 252, chpt. 12.

¹⁰¹ Thorndike, *HMES*, II, 708.

¹⁰² Amable Jourdain, *Recherches Critiques sur l' Âge et l'Origine des Traductions Latines d'Aristote et sur des Commentaires Grecs ou Arabes employés par les Docteurs Scolastiques* (New York: Burt Franklin, 1960, 2nd edition), 176-178, 356-358.

¹⁰³ Thérèse Bonin, "The origin of Diversity in Albertus Magnus' *De Causis et Processu Universitatis a Prima Causa*." (Unpublished Ph.d dissertation: Notre Dame, 1993), 4, fn. 9.

¹⁰⁴ *Ibid.*, 4.

¹⁰⁵ Albert, *Speculum*, 246, chpt. 11.

had been translated into Castilian around 1259 and into Latin shortly thereafter.¹⁰⁶

Assuming that this attribution is correct, Albert could not have cited this work before it was translated into Latin, around the year 1260. Furthermore, Albert states quite clearly that he does not wish to make a determination, an official pronouncement settling a debate, such as those made by the bishop of Paris in 1270 and 1277.¹⁰⁷ Judging from this statement, it appears that Albert's work preceded any such official "determination." If one considers this fact in conjunction with the evidence of the *Liber institutionis*, then it seems that the most likely date of composition for the *Speculum* would fall between 1260 and 1270.

These dates are significant, as the debate over the permissibility of judicial astrology was growing during 1260s and 1270s, as indicated by the Parisian Condemnations of 1270 and 1277.¹⁰⁸ The *Speculum* was one of the more important responses to the mounting controversy. Widely read, quoted, and cited by writers for centuries, it set the terms of the continuing debate about astrology and provided an important source of support for its preservation as an academic discipline. This had important implications, for those progenitors of the Scientific Revolution who developed the cosmological model accepted by all modern scientists were in almost every instance practicing astrologers, from Tycho Brahe to Galileo. Therefore, the impetus for them to expend so much time and energy contemplating the motions of the heavens derived in

¹⁰⁶ Alfonso X el Sabio, *Astromagia*, ed. Alfonso D'Agostino (Naples: Liguore, 1992), Introduction. See 20-23 in particular.

¹⁰⁷ Zambelli, *The Speculum Astronomiae*, 8. Albert, *Speculum*, 250, chpt. 12: "Quoniam autem occasione eorum, ut dictum est, multi libri praeonominati et fortasse innoxii accusantur, licet accusatores eorum amici nostri sint, quoniam determinando non dico, sed potius oppenendo vel excipiendo."

¹⁰⁸ I will discuss these two events in chapter two.

large part from an interest in making more accurate astrological predictions. For this reason understanding the *Speculum* is important if we wish to understand the development of modern scientific thought. But before we consider its contents, and how Albert sought to quell the concerns about astrology, we should briefly examine the history of astrology and the roots of the conflict. This will be the subject of the next chapter.

Chapter II

Faith and Reason in Conflict: Albert and the *Speculum astronomiae*

Apart from three notes appended to manuscripts of the *Speculum astronomiae* there was no controversy over its authorship during the medieval period. This work carried with it the immense authority of Albert the Great,¹⁰⁹ giving the *Speculum* a great deal of influence in the debate about the permissibility of astrology well into the early modern period. This was a debate that had first emerged in antiquity, when intellectuals questioned the fatalistic implications inherent in judicial astrology, that part of the discipline which aimed at predicting the future. Later, Christians were even more alarmed by astrological determinism than their classical forebears, but added to this a concern about astrology's pagan connections. From the earliest Christian inheritors of the classical tradition to opponents in the struggle that split Reformation Europe, predictive astrology never lost its contentious coloring, but by the end of the thirteenth century the two sides of the debate over astrology had fairly well crystallized. On one side stood those who opposed judicial astrology based upon its presumed conflict with Christian theology, while on the other were those who supported the discipline through logic and the use of empirical evidence. To complicate matters, these two groups generally shared an understanding of the universal order predicated upon the transmission of celestial influences to the sublunar realm, a cosmological model that opened the door

¹⁰⁹ Ulrich Engelbert of Strassburg described Albert as "a man in every science so divine that he may well be called the wonder and miracle of our time," while the far less friendly Roger Bacon in his *Opus Tertium*, written between 1266 and 1267, testifies that an "unnamed master," presumably Albert, is known as an authority in Paris on a par with Aristotle, Avicenna, and Averroes. See Thorndike, *HMES*, II, 527; Hackett, 63.

wide to the theoretical use of mathematical astronomy to determine *future* patterns of influence and the resultant events that these influences might bring about.¹¹⁰ But this shared model maintained by opponents on both sides of the debate served to incense adversaries, as neither side could understand why the other disagreed over the crucial issue of appeals to predictive astrology. Opponents of judicial astrology pointed to the Bible¹¹¹ to provide evidence that God had forbidden appeals to judicial astrology, or simply stated that the overwhelming number of variables involved made it impossible in practice to predict the future.¹¹² Supporters of the use of this predictive science argued that their opponents failed to understand not only the relationship between celestial influence and the human soul but also the techniques of divinatory astrology.

¹¹⁰ Stefano Caroti, "Nicole Oresme's Polemic Against Astrology, in his *Quodlibeta*," ed. Patrick Curry, *Astrology, Science and Society* (Woodbridge: The Boydell Press, 1987): 75-93, 78.

¹¹¹ Opponents of divinatory astrology had a regular hodgepodge of Biblical passages to support their position. Examples are: Leviticus, 19:26: "Do not eat any meat with the blood still in it. Do not practice divination or sorcery;" Deuteronomy, 18: 10-12: "Let no one be found among you who sacrifices his son or daughter in the fire, who practices divination or sorcery, interprets omens, engages in witchcraft, or casts spells, or who is a medium or spiritist or who consults the dead. Anyone who does these things is detestable to the LORD, and because of these detestable practices the LORD your God will drive out those nations before you." Isaiah, 47:13-14, "All the counsel you have received has only worn you out! Let your astrologers come forward, those stargazers who make predictions month by month, let them save you from what is coming upon you. Surely they are like stubble; the fire will burn them up. They cannot even save themselves from the power of the flame. Here are no coals to warm anyone; here is no fire to sit by." Of course, as with most things that the Bible pronounces upon, these passages are open to interpretation and may be juxtaposed against other passages. For example, see Genesis 1:14: "And God said, "Let there be lights in the expanse of the sky to separate the day from the night, and let them serve as signs to mark seasons and days and years." There were some who argued that the magis' use of the star to gain knowledge of Jesus' birth was the last allowable use of astrology, as the new law of Christ replaced the old law of the Old Testament. But then there is Luke 21:25: "There will be signs in the sun, moon and stars. On the earth, nations will be in anguish and perplexity at the roaring and tossing of the sea." All quotations are from the *The Holy Bible: New International Version* (Grand Rapids: Zondervan, 1984), checked against the *Biblia Sacra juxta Vulgatam Clementinam*, eds. Alberto Colunga and Laurentio Turrado (Madrid: Biblioteca de Autores Cristianos, 1946).

¹¹² Nicole Oresme stressed the former argument, while Henry of Langenstein preferred the latter. See Nicole Oresme, in G.W. Coopland, ed. *Nicole Oresme and the Astrologers: A Study of the Livre de Divinacion* (Cambridge, MA: Harvard University Press, 1952), 54-56, 72-74; For Langenstein, see Stefano Caroti, *La critica contra l'astrologia di Nicole Oresme e la sua influenza nel medioevo e nel Rinascimento* (Rome: Accademia nazionale dei Lincei, 1979): 545-684, 628.

Of course, as far as opponents of astrological divination, such as Bishop Tempier of Paris and Nicole Oresme, were concerned, the idea that their arguments were borne of limited understanding of astrology was ludicrous. Early Christian writers such as Origen (185-255) and Augustine (354-430) had settled this issue—so far as astrology’s opponents were concerned—by building a seemingly unchallengeable bulwark that ruled out further debate on the subject, at least for those who accepted its tenets: that judicial astrology would negate the free will that God instilled in us, which would make God, not humankind, responsible for sins.¹¹³ By categorizing appeals to astrology—as well as defenses of the subject—as not just wrong but contradictory to faith, this argument threatened to rule out debate about the subject entirely.

During the early medieval period, there was little potential for a clash between astrology’s supporters and detractors. The reason for this is simple: with the disappearance of the Roman educational system in the sixth century there could be little study of learned astrology, which would of course result in correspondingly little opposition to the subject.¹¹⁴ Limited astrological knowledge would continue to preclude

¹¹³ Origen was clearly conflicted on this issue. He accepted that celestial signs, established by God at the moment of creation, included information about all future events until the end of time, a position that was compatible with Greek philosophical thought. However, Origen argued that only the angels were allowed to read these signs. See Thorndike, *HMES*, I, 456-458; Armand, 307-318, Tamsyn Barton, *Ancient Astrology* (London: Routledge, 1995, 2nd edition), 75; Tamsyn Barton, *Power and Knowledge: Astrology, Physiognomics, and Medicine under the Roman Empire* (Ann Arbor: Routledge, 1994). Augustine, on the other hand, was consistently strident in his denunciation of astrology. See Augustine, [*De civitate dei*] *The City of God Against the Pagans*, with English translation by William Green, Loeb Classical Library (Cambridge, MA: Harvard University Press, 1963), V, chpts. 1-7; Smoller, 26-27; Theodore Otto Wedel, *The Mediaeval Attitude Towards Astrology, particularly in England* (New Haven: Yale University Press, 1920), 11-12.

¹¹⁴ The history of learned astrology’s decline and its reemergence with other components of Greek learning has been analyzed at length by scholars such as Lynn Thorndike and S.J. Tester, and summarized most conveniently by Laura Smoller in her *History, Prophecy, and the Stars*. Valerie Flint has demonstrated that astrology never lost its fascination for Europe’s dwindling numbers of educated men and women. See

the practice of learned astrology until the thirteenth century, muting the controversy over the discipline.¹¹⁵ But as scholars digested the flood of Aristotelian texts reintroduced to the West in the twelfth and early thirteenth centuries, it was all but inevitable that a grappling with astrological doctrines would occur.¹¹⁶ Aristotle had little to say about astrology, though he did link terrestrial change to the motions of the sun and moon, implying a similar influence from the planets, in two key works translated between 1150 and 1160, the *De generatione et corruptione* and the *Meteorologica*.¹¹⁷ With the translation of Arabic works that applied Aristotelian principles, albeit with Neoplatonic accretions, to an exposition of astrological theory and practice, the existing European interest in this celestial discipline could be brought to fruition in a true study of the stars and their effects.¹¹⁸ As physicians integrated astrology into their treatments and some rulers began to employ astrologers as advisers,¹¹⁹ the discipline grew in profile, making it

Flint, *The Rise of Magic in Early Modern Europe* (Princeton: Princeton University Press, 1991), 93, 99. However, without the tools of the astrologer's trade—primarily Greek texts and tables drawn up for the location of any given horoscope—such interest would have been uninformed and any *practice* of astrology would have been impossible. See Hilary Carey, *Courting Disaster: Astrology at the English Court and University in the Later Middle Ages* (New York: St. Martin's Press, 1992), 27; Smoller, 29.

¹¹⁵ The Councils of Toledo (400) and Graga (560-565) condemned astrology. However, M.L.W. Laistner argues that these condemnations were aimed at the Priscillianists, for whom belief in astrology constituted a religious dogma. See Laistner's "The Western Church and Astrology during the Early Middle Ages," *Harvard Theological Review* 34 (1941): 251-275, 264, 275.

¹¹⁶ Jourdain, chapters 2 and 3.

¹¹⁷ John D. North, "Medieval Concepts of Celestial Influence: A Survey," *Astrology, Science and Society. Historical Essays*, ed. Patrick Curry (Boydell Press: Woodbridge, 1987): 5-18, 5; John North, "Celestial Influence—the Major Premiss of Astrology," in ed. Paola Zambelli, "*Astrologi hallucinati*:" *Stars and the End of the World in Luther's Time* (New York: Walter de Gruyter, 1986), 45-100; Jourdain, 31, 37, 75, 124, 173, 327.

¹¹⁸ Richard Lemay, *Abu Ma'shar and Latin Aristotelianism*, (Beirut: The Catholic Press, 1962), introduction and chapter 1; Richard Lemay, "The True Place of Astrology in Medieval Science and Philosophy: Towards a Definition," in ed. Patrick Curry, *Astrology, Science and Society: Historical Essays* (Woodbridge: Boydell Press, 1987): 57-73, 65-68.

¹¹⁹ The medical school at Padua seems to have immediately embraced Aristotle's *libri naturales* as well as the works of Albumasar, turning out physicians who were well versed in astrology. See Ferdinand Van Steenberghen, *Aristotle in the West* (Louvain: Nauwelaerts, 1955), 62-66 for information on Aristotle at Padua. For one of Padua's more notorious physician and astrologers, Guido Bonatus (died c.1300), see George Sarton, *Introduction to the History of Science* (Baltimore: Williams and Wilkins, 1931; reprinted 1961), II, 988-989. Such careers, combining astrological forecasting and advising with the practice of

a more visible target for those who viewed it with suspicion.

This suspicion reached a peak in the thirteenth century, and understanding the controversy surrounding astrology in the high medieval period is no easy task. A generalized suspicion of Aristotle as a pagan acted to complicate any discussion of astrology. Furthermore, concerns about arts masters' application of Aristotelian philosophy in the new universities in ways that seemed to intrude upon the province of their more prominent colleagues in the theology faculty created a good deal of inter-departmental rivalry. Therefore, it is not always easy to discern when opposition may be said to be aimed at astrological models of the world and when this was merely a convenient excuse for the airing of larger grievances.¹²⁰ Regardless of the exact reasons that lay behind this opposition, there can be no doubt that by the late thirteenth century astrological doctrines prompted vigorous attacks.

The most important of these attacks occurred at Paris, with the opening assault occurring on 10 December 1270. On that day, Stephen Tempier, the bishop of Paris, issued a list of thirteen condemned propositions,¹²¹ with two of the condemnations aimed squarely at astrology, at least as anti-astrological activists understood the discipline. The

medicine, were common. See Nancy Siraisi, *Medieval and Early Renaissance Medicine* (Chicago: University of Chicago Press, 1990), 68. Frederick II was one of the earliest rulers to employ an astrologer, and he in fact employed two: Michael Scot and Master Theodore. See Carey, 31.

¹²⁰ The council of the Ecclesiastical Province of Sens held in Paris in 1210 had famously prohibited the reading of Aristotle's *libri naturales*, an act reinforced by the papal legate Roubert Courcon's pronouncement in 1215, that "Non legantur libri Aristotelis De metaphysica et de naturali philosophia, neque summae de eisdem." Ferdinand Van Steenberghen maintains in his work on *Aristotle in the West* that this prohibition applied only to the teaching of Aristotle at Paris. See also Steenberghen, *Aristotle in the West*, 69-70; G. Leff, *Paris and Oxford Universities in the Thirteenth and Fourteenth Centuries* (New York: John Wiley & Sons, 1968), 193-197.

¹²¹ Wippel, 179.

condemned propositions in question are:

(4) that all that happens here below is subject to the necessity of the heavenly bodies.

(9) that free will is a passive power, not an active one, and that it is necessarily moved by the object of desire.¹²²

There is no evidence that ideas of this type, which would have provided for a truly fatalistic form of astrological doctrine, were at all widespread. In fact, the only thirteenth-century intellectual who may have espoused something approaching the belief system that Bishop Tempier attacked was the Tuscan astrologer and physician Guido Bonatus.¹²³

Furthermore, an answer to such fears as those exhibited by the Bishop of Paris had already been articulated by the two greatest scholars of the day: Albert the Great and his student Thomas Aquinas. I will develop Albert's overall position on astrology far more thoroughly in chapter three. For now, let us consider the core of his defense of the discipline, which is the soul/body distinction coupled with a belief that the soul's inherent superiority to the body leaves it free to act in opposition to corporeal impulses received from the stars.¹²⁴ These are positions that Albert clearly articulates in his *Speculum* and that his student, Thomas, also adopted.

¹²² Ibid., 179; Henri Denifle and Emile Chatelain, O.P., eds., *Chartularium Universitatis Parisiensis* (Paris: Delalain, 1889), I, 487. (4) Quod omnia, que hic in inferioribus aguntur, subsunt necessitati corporum celestium. (9) Quod liberum arbitrium est potentia passiva, non activa; et quod necessitate movetur ab appetibili.

¹²³ Sarton calls Bonatus "the foremost defender of . . . extreme astrology, without compromise," a position that led Dante to place him in the eighth circle of hell in his *Inferno*, and Pico to single him out for abuse in his *Disputationes*. See Sarton, II, 989.

¹²⁴ Albert, *Speculum*, 250; 258-264, chpts. 12; 14.

Albert maintained that the human soul was necessarily of a higher order of substance than the body.¹²⁵ This statement was undoubtedly influenced by the strains of Neoplatonism that are everywhere evident in Albert's thought, drawn largely from his mistaken belief that the *Liber de causis* was a section of Aristotle's *Metaphysics* rather than a paraphrasing of ideas drawn from Proclus and Avicbron.¹²⁶ Because of this soul/body distinction, the stars, which are corporeal bodies, influence the body directly, but can only influence the soul *per accidens*.¹²⁷ Therefore, the will, which is a component of the intellectual soul, is free to resist corporeal impulses imparted by the stars. To explain this, Albert cites the maxim, "the wise man will dominate the stars," a rationale drawn directly from Albumasar's *Introductorium maius*—though Albert erroneously attributes this concept to Ptolemy.¹²⁸ To elaborate upon this, Albert states that one learned in the influences of the heavens can avert many negative things, while maximizing positive effects—if one only makes the willed effort to do so.¹²⁹ Unfortunately, most people rarely exercise their will to oppose corporeal impulses, which means that astrological predictions are usually accurate, if performed correctly. In this way, Albert outlines a model of celestial influence that allows for judicial astrology

¹²⁵ Albert the Great, *De causis et processu universitatis a prima causa II: Opera omnia*, ed. Winfrid Fauser, s.j. (Monasterii Westfalorum: Aschendorff, 1993), XVII, 57; Albert the Great *De caelo et mundo*, V, 114; Albert the Great, *Liber de natura et origine animae: Opera omnia*, ed. Bernhard Geyer (Monasterii Westfalorum: Aschendorff, 1971), XII, 12.

¹²⁶ De Libera, *Albert le Grand*, 55-59. This was a universal mistake prior to Thomas of Moerbeke's completion of a new translation directly from the Greek in 1268. See Ferdinand Van Steenberghen, *The Philosophical Movement in the Thirteenth Century* (Edinburgh: Thomas Nelson and Sons, 1955), 40.

¹²⁷ Albert, *Speculum*, 220; 250-256, chpts. 3; 12.

¹²⁸ For Albumasar as the source of this maxim in the West, see Lemay, *Abu Ma'shar*, 42-48. Medieval intellectuals commonly, though mistakenly, cited Ptolemy as the source of this concept. G. W. Coopland attempts to trace the provenance of this term in appendix four of his work, *Nicole Oresme and the Astrologers*, 175-177. One should note that Coopland does not give any indication that this maxim had entered the vocabulary of Latin Christian writers prior to Albert's usage of the saying. Paola Zambelli notes that Albert "cherished" the dictum, quoting it repeatedly. See Zambelli's "Albert le Grand et l'astrologie," *Recherches de théologie ancienne et médiévale* 49 (1982): 141-58, 146-147.

¹²⁹ Albert, *Speculum*, 258-261, ch. 13.

without compromising the freedom of the will.

What is more, Albert attempted to establish a clear division between superstitious forms of astrology and the use of the discipline as a genuine *scientia* capable of providing certain knowledge about the workings of the universe. For Albert predictive astrology is a “great wisdom” providing “a link between natural philosophy and metaphysics.”¹³⁰

There can be no justification for viewing this discipline as superstitious, for it provides the best possible means of understanding God’s ordering of the world, through the “mute and deaf stars as if they were his instruments.”¹³¹ One can only fall into superstition through the reading of “cursed necromantic books” that mendaciously take on the name of astrology in order to “render themselves [as] slightly credible.”¹³² If one avoids the suffumigations¹³³ and demonic invocations that such superstitious works encourage, the

¹³⁰ Ibid., 218-221, ch. 3. “Secunda magna sapientia, quae similiter astronomia dicitur, est scientia iudicorum astrorum, quae est ligamentum naturalis philosophiae et metaphysicae.”

¹³¹ Ibid., 220-221, ch. 3. “Si enim sic ordinavit Deus altissimus sua summa sapientia mundum istum . . . per stellas surdas et mutas sicut per instrumenta . . . quid desideratius concionatori quam habere mediam scientiam, quae doceat nos qualiter mundanorum ad hoc et ad illud mutatio caelestium fiat corporum mutatione?”

¹³² Ibid., 222, chpt. 4. “Sed isti parti associantur illi libri maledicti necromatici, de imaginibus . . . mutant quasdam observations astronomicas, ut sic se reddant aliquatenus fide dignos.” Albert is here writing about the construction of astrological images meant to harness celestial influence to effect terrestrial changes. This is a sub-discipline of a form of astrology known as “elections,” the choosing of propitious times for a given activity. Therefore, Albert’s comments about this form of astrological practice, which can devolve into superstition through the use of improper books and passages, tell us much about Albert’s view of proper astrology.

¹³³ This is an archaic term, used, for example by King James I (1603-1625) in his *A Counterblaste to Tobacco*, first printed in 1604. It has essentially the same basic meaning as “fumigation,” that is, to apply smoke, vapor or gas. However, “fumigation” connotes an act intended to disinfect or to destroy pests. Historians of pre-modern magic have chosen to use the archaic “suffumigation.” For a description of such an application, see Henry Cornelius Agrippa, *Three Books of Occult Philosophy*, John French, trans. (London: Printed by R.W., 1651), 89. For a variant, though related definition, “the conveying of smoke up into the body,” see Elisha Cole, *An English dictionary explaining the difficult terms that are used in divinity, husbandry, physick, philosophy, law, navigation, mathematicks, and other arts and sciences, containing many thousands of hard words, and proper names of places, more than are in any other English dictionary or expositor: together with the etymological derivation of them from their proper fountains, whether Hebrew, Greek, Latin, French, or any other language: in a method more comprehensive than any that is extant* (London: Printed for Peter Parker, 1677), 139.

result is the practice of a truly noble *scientia*.¹³⁴

Fortunately, Albert makes it easy for the practicing astrologer to avoid the pitfalls of superstition, by providing comprehensive lists both of books appropriate for a Christian interested in astrology, as well as those that would put one's soul into jeopardy.¹³⁵ The net effect, then, is a well-developed exposition of two forms of astrology: Christian and superstitious.¹³⁶ The widely-read *Speculum* spread this understanding of astrology across Europe, in so doing "popularizing," so to speak, Albert's view of astrology as expounded in works not only of natural philosophy but also of theology.¹³⁷ No doubt a great deal of this popularity came from the work's semi-canonical nature—which the papal mandate that drove its production could have augmented—as well as its effectiveness as a bibliographic guide and authenticating device.¹³⁸ Thus, born out of the dispute waged between opponents to astrology, who were typically driven by theological concerns, and their scientifically-minded rivals, the *Speculum* became the single most important work of a Christian author to deal with this controversy, both setting the terms of debate as well as outlining the tenets and texts of

¹³⁴ Ibid., 240-247.

¹³⁵ Ibid., 212-218, 226, 240-250, chpts. 2, 6, 11, et alia. Albert sprinkles the *Speculum* with the titles and incipits of works both useful and injurious to the proper practice of astrology. The pages listed represent sections that are solely bibliographic.

¹³⁶ It is no stretch to refer to astrology, as presented by Albert, as a Christian form of knowledge, allowing one to live life more in keeping with God's wishes for humankind through avoidance of corporeal impulses, while provoking "man toward a more ardent love of God" through an understanding of the beauty of His creation. See Albert's *Speculum*, 220, 228, 262, chpts. 3, 7, 14.

¹³⁷ For example, see Albert the Great, *De caelo et mundo*, I, 151, 153, 154; Albert the Great, "De quindecim problematibus," 31-34.

¹³⁸ Richard Lemay, "Libri Naturales. Their Relationship to Aristotelian Tradition in Thirteenth Century Scholasticism and to Albertus Magnus' *Speculum Astronomiae*," 23; Richard Lemay, "The Paris Prohibitions of 1210/15," 1-7. On the importance of bibliographic guides in the days before card catalogs, see Anthony Grafton, *New Worlds, Ancient Texts* (Cambridge, MA: Harvard University Press, 1992), 15-16.

Christian astrology for generations of scholars.¹³⁹

To use that term, Christian astrology, for the science as Albert envisioned it is no exaggeration or unconscious use of language. Albert maintained that the study of astrology was not only harmless—but could indeed lead one to be a better Christian. Albert’s argument rests in part upon the idea that a study of celestial influences would allow us to avoid sinful acts resulting from corporeal impulses, which are themselves the product of heavenly influences.¹⁴⁰ But more importantly, astrological study brings about a greater understanding of God, which in turn strengthens humanity’s faith. After all

if God . . . has ordered this world . . . as to operate in created things . . . through stars . . . as if through instruments . . . what could be more desirable to the thinking man than to have a middle science [between natural philosophy and metaphysics] that may teach us how this and that change in the mundane world is effected by the changes in the heavenly bodies.¹⁴¹

This “middle science” would allow the “thinking man” the best possible avenue to experience the “creator of creatures” through a study of the way God works His will upon

¹³⁹ I will discuss this at length in chapters four and five through an analysis of the manuscripts of the *Speculum* as well as a consideration of the way that other writers used the *Speculum* in their own works. As Richard Lemay was quick to point out when I was discussing this subject with him in 2000, Albumasar’s *Introductoriam maius* was more popular even than the *Speculum*. But then, Albumasar was a Muslim and as such, while his work could influence Christian authors, it could provide neither a definition of Christian astrology, nor a full defense of the study of the subject within a Christian milieu.

¹⁴⁰ I discuss this in chapter three.

¹⁴¹ Albert, *Speculum*, 220, chpt. 3 “si . . . ordanavit Deus . . . mundum istum . . . velit operari in rebus creatis . . . per stellas . . . sicut per instrumenta . . . quid desideratius concionatori quam habere mediam scientiam, quae doceat nos qualiter mundanorum ad hoc et ad illud mutatio caelestium fiat corporum mutatione.”

the earth through His agents, the stars.¹⁴²

This study of celestial influence, then, is in fact an important component of an engaged Christian faith. The science of astrology proves that the heavens and the earth function according to the same immutable law,¹⁴³ which “provokes man to more ardent love toward God”¹⁴⁴ through proof that there is only “one God, glorious and sublime in heaven and on earth.”¹⁴⁵ The resulting love for God occurs through understanding Him “by what is posterior, namely by His glorious effects” which are arrayed “in the order of the universe up to Himself.”¹⁴⁶ And of course, since these effects are written out on the “vellum of heaven” then “no human science attains this order of the universe as perfectly as the science of the judgments of the stars.”¹⁴⁷ Albert is unequivocal in his opposition to those who would argue that a study of these celestial influences and affects—past, present, and future—might contradict the doctrine of free will. The advice that astrology provides does not destroy free will, rather it directs and rectifies it.¹⁴⁸ Therefore, “to destroy such things [as the various forms of astrology] would be a decision . . . against free will . . . because to have to take advice” demonstrates that not all things occur “due

¹⁴² Ibid., 220, chpt. 3.

¹⁴³ It is interesting to note that this hints at one of the most revolutionary aspects of Newtonian physics, that the same physical laws bind the heavens and the earth.

¹⁴⁴ Albert, *Speculum*, 220, chpt. 3. “provocat hominem ad Deum ardentius diligendum.

¹⁴⁵ Ibid., 220, chpt. 3. “Quod non sit nisi unus Deus gloriosus et sublimis in caelo et in terra, si videlicet motus inferior motui superiori oboedit?”

¹⁴⁶ Ibid., 220, chpt. 3. “Cognoscetur per prius, neque per seipsum . . . restat ergo quod per posterius, per suos gloriosos effectus. Hi sunt . . . ordinatio universi ad ipsum.”

¹⁴⁷ Ibid., 220, chpt. 3. “Quam universi ordinationem nulla scientia humana perfecte attingit, sicut scientia iudicorum astrorum.”

¹⁴⁸ Ibid., 262, chpt. 14. “quid melius fieri conveniat, hoc an illud. Et illae quae sunt consilii, non destruunt. . . rectificant . . . arbitrii consilii.”

to necessity, but that some things happen by chance.”¹⁴⁹

We can well imagine that Albert would have approved of the positive reception that the *Speculum* received across Europe for centuries after its production. Astrology was central to his understanding of humankind’s place in creation¹⁵⁰ and his persistent references to the subject, in everything from his *De anima* to his “De fato,” had established him as an authority on the subject by the 1270s—especially in questions dealing with the relationship between Christian theology and astrological beliefs. It was his status as an authority that would draw Albert out of retirement to turn his pen to writing about the permissibility of astrology once again, and it would be one of his intellectual “grandchildren,” so to speak, who would draw him back into this debate. In other words, he would enter the ideological fray at the behest of a man studying under his own star student, Thomas Aquinas (1224-1274).

This request should come as no surprise to those intimately familiar with Thomas’ work, as he was an important proponent of Albert’s view of astrology. For Thomas, as with Albert, the stars are corporeal bodies, capable of influencing a human body directly, but influencing the incorporeal soul only indirectly through the bodily sensory powers that produce “phantasms” in the intellect.¹⁵¹ In this way, celestial influence might “incline” a person toward a certain action, but since it is always possible to resist such

¹⁴⁹ Ibid., 262, chpt. 14. “Talia destruere plus esset contra liberum arbitrium quam pro eo, quia oportere consiliare . . . ostenditur non omnia esse ex necessitate.”

¹⁵⁰ I will discuss this at length in chapter three.

¹⁵¹ Thomas Aquinas, *Summa theologiae* (Cambridge: Blackfriars, 1964), IIa IIae q. 95 a. 5; Ia q. 115 a. 3; John R. Bowlin, *Contingency and Fortune in Aquinas's Ethics* (Cambridge: Cambridge University Press, 1999), 59; Norman Kretzmann, “Philosophy of Mind,” eds. Norman Kretzmann, Eleonore Stump, *The Cambridge Companion to Thomas Aquinas* (Cambridge: Cambridge University Press, 1993), 148.

inclinations through an exercise of the will, the stars impart no necessity upon human action.¹⁵² Reiterating the dictum passed on by his master, Thomas notes that the “wise man is master of the stars,” but since most people are ruled by their passions, rather than their wisdom, astrological predictions are normally efficacious.¹⁵³

In truth, it appears that Thomas had little interest in questions relating to astrology, which explains why he followed Albert’s understanding of the subject so closely. Thomas’ lack of interest in astrology is apparent in spite of the fact that he wrote of it in some one-hundred and thirty passages, as compiled by Thomas Litt.¹⁵⁴ Such frequent references by Thomas say more about the vigor of the debate swirling around him in the thirteenth century, than any particular interest that he held. This debate caused the topic to intrude constantly upon him, whether he sought out the controversy or not.¹⁵⁵ And of course one must wonder if Thomas was not inspired to mention the topic by his master, Albert. Given the frequency with which the elder Dominican wrote on the subject, it is inconceivable that he did not discuss it with his star pupil. But whether or not such discussions occurred, Thomas apparently never felt inspired enough to apply his prodigious talents to the subject in earnest, for he never wrote on astrology either in depth or with an eye toward innovation.

¹⁵² Thomas, *Summa*, Ia, q. 115, a.3.

¹⁵³ Ibid., Ia, q. 115, a.3. “Unde et ipsi astrologi dicunt quod sapiens homo dominatur astris . . . plures hominum sequuntur passiones . . . Et ideo astrologi ut in pluribus vera possunt predicare, et maxime in commune.”

¹⁵⁴ Thomas Litt, *Les corps célestes dans l’univers de Saint Thomas d’Aquin* (Paris: Publications Universitaires, 1963).

¹⁵⁵ For example, in 1271 John Vercellensi, master general of the Dominicans, sent Thomas the same list of forty-three questions that had arisen to plague the local lector of the order at Venice that he sent to Albert and Robert Kilwardby. Albert the Great, “Problemata determininata,” xvii, xxvii, 45-64.

Thomas's writings on astrology were nonetheless important for the promotion of Albert's definition of "superstitious" versus licit astrology, a view that Thomas presented with even greater clarity than had his master. As Laura Smoller has pointed out, Thomas expressed concern that attempts to predict the future with too great an accuracy or specificity could lead men to mingle with demons, thus indulging in "superstitious" forms of astrology.¹⁵⁶ On the other hand, he did allow that one might predict general events caused by celestial influence, such as weather patterns.¹⁵⁷ In this manner, Thomas sought to preserve a worldview derived from Aristotelian physics and cosmology that took celestial influence as a given,¹⁵⁸ while leaving the door open for a form of judicial astrology that did not compromise the Christian faith.¹⁵⁹ Given the weight of Thomas' reputation, especially after his canonization in 1323, his arguments about the permissibility of certain forms of astrology would prove to be quite influential. After all, few or none denied the central premise of astrology, that heavenly bodies influenced terrestrial creatures, a belief that fueled a continuing interest in analyzing and understanding this influence.¹⁶⁰

It is clear that this interest was very much alive at Paris, despite Bishop Tempier's condemnations of 1270, which were partly directed at astrological beliefs. It is also clear

¹⁵⁶ Smoller, 31; Thomas, *Summa*, IIa IIae q. 95, a. 5. I must point out that this definition came straight from Albert's *Speculum astronomiae*, 240, chpt. 11.

¹⁵⁷ Smoller, 31; Thomas, *Summa*, IIa IIae q. 95, a. 5.

¹⁵⁸ This was, after all, the unifying theory that infused the medieval view of the cosmos. See North, "Celestial Influence," 45-100.

¹⁵⁹ Tester, 182-183.

¹⁶⁰ Stefano Caroti, "Nicole Oresme's Polemic Against Astrology," 75-93, 78. Even zealots who opposed astrological forecasting, such as Bernardino da Siena, did not question this. See Eugenio Garin, *Astrology in the Renaissance: The Zodiac of Life*, translators Carolyn Jackson and June Allen (London: Routledge and Kegan Paul, 1983), 31-32. I use the term "creature" in its original meaning, as that which was created by God, including animate as well as inanimate objects.

that some scholars at Paris found the condemnations to be less than agreeable, and this is where we come to what may well be the last words that Albert wrote on the subject. Sometime between 1272 and 1276, Giles of Rome (c.1246-1316) wrote to Albert, now living in retirement at Cologne, providing the elder man with a list of fifteen questions on which the younger scholar asked his opinion.¹⁶¹ Giles, the future general of the Augustinians and bishop of Bourges, studied under Thomas Aquinas from 1269 to 1272.¹⁶² Giles was either a student of Thomas' at the time that he wrote this letter or had been so in the recent past. Embroiled in the debate raging over astrological and philosophical doctrines, complicated by the interdepartmental disputes between the masters of arts and of theology,¹⁶³ Giles may have fallen under suspicion of heresy while opposing the Condemnations of Paris of 1277.¹⁶⁴ It is no stretch of the imagination, then, to imagine that Giles could well have spoken with his master, Thomas, about the controversial issues in the air in Paris in the 1270s. And it is no more of a stretch to imagine that Thomas might have directed Giles to address his questions to his own master, Albert, a recognized authority on astrology, who wrote on it almost every time that his pen touched paper.¹⁶⁵

Of the fifteen questions that Giles put to Albert, thirteen of them reproduced the Condemnations of Paris of 1270.¹⁶⁶ Four of the questions concern ideas central to

¹⁶¹ Steenberghen, *Aristotle in the West*, 212; Steenberghen, "Le 'De quindecim problematibus' d'Albert le Grand," 415-439; Albert the Great, "De quindecim problematibus," xxi, 31-34.

¹⁶² R. Lezcano, *Generales de la Orden de San Agustín. Biografías, Documentación, Retratos* (Rome: Institutum Historicum Augustinianum, 1995), 30-50.

¹⁶³ L. Bianchi, *Censure et liberté intellectuelle à l'université de Paris (XIII-XIV siècles)* (Paris: J. Vrin, 1999), 206-207; Leff, 193-197.

¹⁶⁴ *Ibid.*, 38-44.

¹⁶⁵ I will discuss this in chapter three. For now, suffice it to say that besides the *Speculum* and the "De fato," which were entirely about astrology, Albert wrote on the subject in works ranging from his *De anima* and *De mineralibus* to his *Summa theologiae*.

¹⁶⁶ Albert, "De quindecim problematibus," 31.

astrological doctrine: whether human will desires and chooses from necessity, whether all inferior things are moved by celestial influence through necessity, whether free will is an active or a passive potency, and whether human action is ruled by the providence of God (rather than by heavenly influence).¹⁶⁷ For our present purposes, the most important point about this list of fifteen questions that Giles composed at Paris is that it provides evidence about the ongoing dispute at the University. This was a debate that Albert seems quite perturbed to have been called upon to address. Writing to Giles he stated:

What those say in the third place, that the will of man wishes and chooses from necessity, no man is ever able to say such a thing unless he is deeply illiterate, because every argument as well as the every debate of all of ethics, whether of the Peripatetics or of the Stoics, cry out that we are the lords of our acts.¹⁶⁸

Albert could be referring to those whom the theology masters accused of denying freedom to the human will, but this seems unlikely. The charge would have been directed toward masters in the arts faculty, who would hardly be “deeply illiterate” and unknowledgeable about the works of the Stoics and Peripatetics, which “cry out” that we are “lords of our actions.” Rather, it appears that Albert is lashing out at those who *attribute* this position to astrologers—in other words, Tempier and his followers.

Whether or not we can definitively state that this is what Albert intended, it is clear that he found the debate itself to be distasteful and idiotic.

¹⁶⁷ Ibid., 31. The points in question are: “III: Quod voluntas hominis ex necessitate vult et eligit. IV: Quod omnia quae in inferioribus aguntur, subsunt necessitati corporum caelestium. IX: Quod liberum arbitrium est potentia passiva, non activa quod de necessitate movetur ab appetibili. XII: Quod humani actus non reguntur providentia dei.”

¹⁶⁸ Ibid., 35. “Quod autem tertio dicunt, quod voluntas hominis ex necessitate vult et eligit, numquam potuit dicere nisi homo penitus illiteratus, quia omnis ratio et omnis ethicorum schola tam Stoicorum quam Peripateticorum clamat nos dominos esse actuum nostrorum.”

After all, why would he not hold this view? He had already settled these questions in works written throughout the course of his scholarly career, as well as in the authoritative *Speculum astronomiae*. We can well imagine his train of thought from there: had he not written the *Speculum* at papal behest? Who were these upstarts at the University of Paris to attempt to call into question a set of philosophical principles that he had been developing before they were born? Such could have been the attitude of this elderly man who had settled into retirement after a long and fruitful career, with no desire other than to write, but constantly interrupted by outside matters.¹⁶⁹

Despite his irritation Albert conscientiously answered the questions that Giles posed, for the most part anyway. Drawing upon sources familiar to readers of the *Speculum*, Albert appealed to Hermes Trismegistus, Aristotle, and Ptolemy to explain the differing forms of causes, as well as Ptolemy's definition of fate. But Albert noted that "fate"

does not impose necessity due to three causes. One of these is, because it [fate, divine influence] is not passed [to the native] directly but through a medium, and [fate] will be able to be impeded by its [the medium's] inequality [to God]. Then there is the second [reason], that it [fate] is not effected in natives [meaning those born under a given set of celestial influences] in and of itself, but through accidental characteristics; [3]it is effected through primary qualities, which do not receive the powers of the stars in and of themselves, because matter –in the diversity and power of the matter of natives –is not able to receive the powers of the heavens uniformly just as they are in the heavens.¹⁷⁰

¹⁶⁹ I will discuss Albert's career in the next chapter. Suffice it to say that his "retirement" was anything but peaceful. Between peace-making and such ceremonial duties as the dedication of churches and altars, Albert complained that he had little time for study. Weisheipl, "The Life and Works of St. Albert the Great," 40.

¹⁷⁰ Albert, "De quindecim problematibus," 36: "quod fatum, quod ex constellatione est, necessitatem non imponit propter tres causas. Quarum unus est, quia non immediate, sed per medium advenit, cuius inaequalitate impediri poterit; secunda autem, quia per accidens, sed non per se operatur in natis; operatur enim per primas qualitates, quae non per se virtutes stellarum accipiunt, in diversitate et potestate materiae

In other words, fate is imparted through the celestial medium, rather than directly, and is therefore impeded by the inequality of the matter of the heavens to God's divine perfection. Furthermore, creatures receive this influence—their fate—in their material beings, rather than their incorporeal souls. The final result is that the fate of creatures is enacted through their “primary qualities”—their souls. The soul does not receive divine influence directly, but rather *per accidens*, imparted by corporeal impulses that are derived from the heavens. Thus, fate, for Albert is a term for the combinations of influences and willed actions that determine a creature's future,¹⁷¹ but is not based solely upon celestial influences driving change in the sublunar realm. Even in the absence of willed acts, earthly matter lacks the perfection of heavenly quintessence, making it incapable of receiving celestial influences “uniformly.” Albert has little patience for anyone who might disagree with this argument, saying “those who say otherwise are in every way ridiculous.”¹⁷²

Albert did not deal with each question posed to him in such detail. For example, addressing those who would conjoin “choice” to desire and inclination, *voluntas*, rather than to free will, *liberum arbitrium*, he simply states: “That is absurd and is not dignified by a response.”¹⁷³ This provides us with a clue to the structure of the *De quindecim*

natorum, quae materia uniformiter et, prout sunt in caelis, recipere non potest caelorum virtutes.” Albert expresses a similar view of the importance of the qualities of the intervening and receiving matter, and how such matter can affect the transmission of influence, in his *Speculum*, 258, chpt. 13: “Ego autem dico, quod omnis operatio causae agentis supra rem aliquam est secundum proportionem materiae recipientis ipsam operationem.”

¹⁷¹ See Albert's “De fato” for an exposition of this understanding of fate. Of course only human beings act in a manner inconsistent with their corporeal impulses, and then only when exercising freedom of the will. Only humans have will in the terrestrial realm, because it is a characteristic of the rational soul. See chapter three for a discussion of relationship between celestial influence, causality, and willed actions.

¹⁷² Albert, “De quindecim problematibus,” 36: “Omni ergo modo ridiculosum est, quod dicunt.”

¹⁷³ Ibid., 35. “Absurdum est illud, quod non est dignum responsione.”

problematibus. Steenberghen has referred to it as uneven and not always clear, suggesting that these characteristics are indicative of Albert's failing mental abilities.¹⁷⁴ However, roughly contemporaneous with this work, around 1274, Albert was writing the second half of his *Summa theologiae*.¹⁷⁵ No one who reads the *Summa* can accept that it is the product of a failing mind. Therefore, it is clear that Albert was in complete command of his faculties when writing the *De quindecim problematibus*, which means that the frequent—and uncharacteristic on the part of Albert—terms of abuse that litter the work are the product of an aging man grown irascible with unwanted demands intruding upon his time and with little patience left for small-minded assaults upon a discipline that he has persistently defended throughout his career. For Albert the issue is settled, for “if the sixth book of the first philosophy [meaning the *Metaphysics*] is read, it is easily clear to what an extent those things which are effected in inferior things are subsumed to the rule of the superior,” clear that is, to all except those who display complete ignorance.¹⁷⁶ In other words, for Albert the acceptability of astrology was not in doubt, and to continue the debate was, in his opinion, stupid.

Regardless of how Albert felt about the debate, it was far from settled. Bishop Tempier was surely angered by the continuation of discussion on topics such as certain astrological beliefs that he had officially pronounced to be off limits, making repeated pronouncements in the years after 1270 demanding renunciation of the propositions he

¹⁷⁴ Steenberghen, “Le ‘De quindecim problematibus’ d’Albert le Grand,” 415-439.

¹⁷⁵ Albert the Great, *Summa Theologiae*, i-iv. The editors date this work by an intratextual reference to the Second Council of Lyons, which occurred in 1274.

¹⁷⁶ Albert, “De quindecim problematibus,” 36. “Si enim VI liber Primae Philosophiae legitur, facile patet, qualiter ea quae in inferioribus aguntur, superiorum subsunt regimini.” For those who do not understand that which is “easily understood” from a reading of “book VI of the first philosophy [Aristotle’s metaphysics]”? “omnino pateat eorum ignorantia.”

had condemned.¹⁷⁷ When Pope John XXI requested on 18 Jan 1277 that Tempier investigate rumors of heresy at Paris, the Parisian bishop hurriedly formed a commission and overstepped his mandate to issue a list of 219 disorganized and poorly thought out condemnations on 7 March 1277, less than two months after the pope issued his request.¹⁷⁸ While the good bishop did not entirely, or even primarily, direct these condemnations at astrology, they did represent a thorough assault on the discipline. Rejecting the notion that celestial influences dispose people to have differing personalities and gifts, that anyone's health or sickness is dependent upon the locations of heavenly bodies, or even that the stars might indirectly affect an individual's soul, it is clear that Tempier would brook no sympathy toward astrological beliefs.¹⁷⁹

Fortunately for this study, whatever the other effects of the Condemnations of Paris of 1277, the death of astrology was not one of them.¹⁸⁰ If anything, just the opposite was the case. As the number of university graduates multiplied in medieval Europe—all of whom would have had some familiarity with Aristotelian physics as well as the basics

¹⁷⁷ Steenberghen, *The Philosophical Movement in the Thirteenth Century*, 96. In the years after 1270, Tempier made repeated pronouncements demanding renunciation of the condemned propositions.

¹⁷⁸ For Pope John XXI's request, see Denifle and Chatelain, I, 541. On Tempier's commission and the resultant condemnations, see Etienne Gilson, *History of Christian Philosophy in the Middle Ages* (New York: Random House, 1955), 405-406; Leff, 231-238. An example of the type of contradiction that can be found among Tempier's condemned propositions are those numbered 93 and 102. The first asserts that some things occur through chance, even in regard to the first cause. The second asserts that nothing happens through chance. See Wippel, 190. The poorly worked out condemnations did not escape the notice of contemporaries, such as Godefroid de Fontaines, who complained that some articles contradicted one another, some were dubious, and others were simply "impossible and irrational." Even a member of Tempier's commission, Henry of Ghent (c.1217-1293), expressed "great embarrassment" over some of the condemnations. See Roland Hissette, *Enquête sur les 219 articles condamnés à Paris le 7 mars 1277* (Louvain: Publications Universitaires, 1977), 9.

¹⁷⁹ Denifle-Chatelain, I, 551-555.

¹⁸⁰ Some grand claims have been made about the importance of the Condemnations of Paris of 1277. Pierre Duhem sees them as the beginning of modern science. Other scholars, such as L. Bianchi, have maintained a far more limited impact for the Condemnations. See Pierre Duhem, *Le Système du Monde. Histoire des Doctrines cosmologiques de Platon à Copernic* (Paris:Hermann, 1913-1959), VIII, 7; IX, 374; X, 27.

of astronomy and its sister science astrology—it only makes sense that there would have been a concomitant increase in the number of people with both the knowledge base and the interest to promote the study of astrology. Of the roughly 750,000 students who entered European universities between 1350 and 1500, all who progressed to a study of the quadrivium would have garnered some knowledge of the celestial sciences, not only from Aristotle and Ptolemy, but also from such works as John of Sacrobosco's *Tractatus de sphaera* and Gerard of Cremona's *Theorica planetarum*.¹⁸¹ Some of these university-educated men would have found themselves employed as chantry priests, saying masses for the dead, or in minor orders and acting as church lectors and doorkeepers, among other functions.¹⁸² Such occupations took up very little time, leaving the individual in question with plenty of opportunities to dabble in occult disciplines, including astrology.¹⁸³

Scholars did not just practice astrology: they also wrote about it. M.T. Clanchy has shown that the late thirteenth and early fourteenth centuries saw an explosion in the number of written records of all sorts, including books.¹⁸⁴ This expansion in the production of written materials is due in large part to the increasing use of relatively low-cost paper in place of expensive vellum for book production, as entrepreneurs established

¹⁸¹ Edward Grant calculates the number of students who attended European universities between 1350 and 1500 in his work, *The Foundations of Modern Science in the Middle Ages* (Cambridge: Cambridge University Press, 1996), 37-38, 44-45; Alan Cobban, *English University Life in the Middle Ages* (Columbus: Ohio State University Press, 1999), 158-160; Tester, 192-193.

¹⁸² Wayne Shumaker, *The Occult Sciences in the Renaissance: A Study in Intellectual Patterns* (Berkeley: University of California Press, 1978), 153.

¹⁸³ *Ibid.*, 154. Richard Kieckhefer, *Forbidden Rites: A Necromancer's Manual of the Fifteenth Century* (University Park, PA: Pennsylvania State University Press, 1998); Kieckhefer, *Magic in the Middle Ages*, 151-172.

¹⁸⁴ M.T. Clanchy, *From Memory to Written Record*, 2nd edition (Malden: Blackwell Publishing, 1993), 60-61.

paper mills across Europe in the fourteenth and fifteenth century.¹⁸⁵ Such inexpensive writing material allowed the growing number of university-educated scholars found across Europe to apply themselves to expositions on virtually any subject that grasped their attention, including astrology.

But while the growing number of university-educated scholars in conjunction with an expansion in the book trade explains the increasing pool of people who might be interested in learned astrology, in order to comprehend the continuing fascination that astrology held for European intellectuals in the teeth of the opposition of men such as Tempier, it is necessary to understand *why* the discipline was so important to the medieval intellectual worldview, not just as a peripheral concept but as a centrally unifying theory of knowledge. A comprehensive answer would require a considerable research effort that would fill hundreds of pages of densely interwoven analysis. The complexity of this problem is because all medieval intellectuals who wrote in the wake of the twelfth-century renaissance embraced the central tenet of astrology—that humankind exists within a web of celestial influences affecting the terrestrial realm, which presents the possibility of predicting future events through a study of the motions of heavenly bodies. This was a concept accepted not only by those who embraced astrology, such as Pietro d’Abano (c.1250-1318), but even by those who opposed its study, such as Jean Gerson (1363-1429). I will consider the opposing viewpoints of the pro and anti-astrological camps in chapter five, but we need not exhaustively analyze the work of

¹⁸⁵ Christopher de Hamel, *Medieval Craftsmen: Scribes and Illuminators* (London: British Museum Press, 1992). Paper mills existed in Spain and Italy by the thirteenth century, spreading to France in 1340, Germany in 1390, and England by the late fifteenth century.

these various writers to understand astrology's importance to the medieval worldview.

To get at why and how it held such a central role, we need look no further than the work of one of the most influential intellectuals of the medieval period: Albert the Great. His writings provide us with a case study of the place of astrology in the medieval intellectual landscape, thereby providing significant insights into its importance for writers in general during this period. Therefore, let us proceed to an analysis of the place of celestial influence and astrological divination in Albert the Great's thought.

Chapter III

The Link Between Natural Philosophy and Metaphysics: The Place of Astrology in

Albert the Great's System of Thought

Having established that Albert the Great authored the *Speculum astronomiae* in answer to papal urging sometime after the year 1260 let us now move on to one of the key elements in his body of work as a whole: his conviction that humankind exists within a web of celestial influences. There is no doubt that Albert maintained a consistent interest in astrology throughout his scholarly career, though this has not always been fully appreciated. So why did this master of theology and bishop of Regensburg apply himself so assiduously to such a subject? And what did he have to say about the implications of the heavenly forces that affected humans? In short, Albert maintained that celestial forces transmitted God's divine power, though informed and altered in the process of transmission. Thus, understanding the influences the heavens impart allows us to understand better the divine plan of creation, while simultaneously allowing us to resist the negative impulses that heavenly bodies inject during the process of transmission. Therefore, an understanding of astrological principles enhances our knowledge of God, while allowing us to live in greater accord with His dictates and at the same time standing as proof of God's existence. These are the reasons why astrology acted as a central tenet in Albert's thought, driving him to establish himself as an authority on the subject over the course of decades of scholarship. This is the reputation that would have made Albert an ideal candidate to create a guide for the study and application of astrology divorced from heretical ideas, making it essential to understand his astrological theories if we are

to properly understand why Albert was chosen to write this semi-canonical work delineating what constituted licit astrology within a Christian context. But before I turn to an analysis of Albert's understanding of celestial influence and the place of this within his thought, I should first briefly consider Albert's life.

Born sometime around 1200 into the family of one of the lesser nobles who served the Count of Bollstadt in the small town of Lauingen on the Danube, Albert left Germany as a youth to attend the University of Padua.¹⁸⁶ There he gained an intimate

¹⁸⁶ There is considerable controversy over the date of Albert's birth. For example, see Ferdinand Van Steenberghen, "Le 'De quindecim problematibus' d'Albert le Grand," 41; Steenberghen, *Aristotle in the West*, 121; and Pierre Mandonnet "La date de naissance d'Albert le Grand," *Revue Thomiste* 36 (1931): 233-56. Both of these scholars suggest the years 1206 or 1207 for Albert's birth. The source for this statement is Henry of Hereford's *Chronica*, which contends that Albert was sixteen at the time of his entry into the Dominicans, in 1223. However, this is below the minimum age of eighteen that Dominic had inscribed into the Rule of the Dominicans, a discrepancy which is not explained. While a dispensation could have been granted, it seems unlikely that this would have passed unmentioned. It should also be noted that Henry wrote his *Chronica* around 1355, some 155 year after Albert's birth. See Henricus de Herford, *Chronica seu Liber de rebus memorabilibus*, ed. A. Potthast (Göttingen: Societate Literarum Regia Gottingensi, 1859), 201. On the other end of the chronological spectrum, Thorndike accepts 1193 as Albert's date of birth, based upon Luis of Valladolid, who reported in 1414 that Albert had died at about (*circiter*) 87 years of age. See Luis of Valladolid, *Brevis historia de vita et doctrina Alberti Magni*, in *Catalogus Codicum Hagiographicorum Bibl. Regiae Bruxellensis* (Brussels: Société des Bollandistes, 1889), II, 96. I follow Weisheipl on this, who bases his argument on the single contemporary account of Albert's death that is available to us. Tolemeo of Lucca states that Albert was over eighty at his death on 15 November 1280. While Tolemeo wrote this in 1317, he was himself more than eighty at the time and could reasonably be expected to have known Albert personally. Weisheipl argues that Albert's dates of study at Padua combined with Tolemeo's statement indicate that Albert was born either in 1199 or 1200. See Weisheipl, "The Life and Works of St. Albert the Great," 16. For a consideration of Albert's family background, see De Libera, *Albert le Grand*, 16 and Paulus Von Loe, "De vita et scriptis B. Alberti Magni," *Analecta Bollandiana* 19 (1900): 272-284; 276. Thorndike states that Albert was the eldest son of the Count of Bollstadt, but his reason for this is unclear. In the absence of any tradition of resistance to Albert's enlistment into the Dominicans, it seems safer not to assume that Albert was the eldest son, and therefore heir to his father's titles and lands. If he had been, Albert might have faced resistance to his entry into this newly formed, and still relatively obscure, mendicant order similar to that which Thomas Aquinas faced from his own noble family when joining the order some twenty years later, in spite of their wish that he become a member of the more prestigious Benedictines. See Thorndike, *HMES*, II, 523; John F. Wippel, *The Metaphysical Thought of Thomas Aquinas* (Washington, D.C.: The Catholic University of America Press, 2000), xiii. For an understanding of why Albert attended the University of Padua, see John B. Freed, *The Friars and German Society in the Thirteenth Century* (Cambridge, MA: Mediaeval Academy of America, 1977), 24; James H. Overfield, *Humanism and Scholasticism in Late Medieval Germany* (Princeton: Princeton University Press, 1984), 4. The thirteenth century saw a rapid rise of relative levels of urbanization in Germany, but the region remained an intellectual backwater throughout the thirteenth century with limited population density and no significant educational opportunities. The

familiarity with Aristotelian natural philosophy as well as Sacrobosco's *De sphaera* before Jordan of Saxony recruited him for the Dominicans in 1223.¹⁸⁷ Thereafter serving out his novitiate at Cologne, where he studied theology for four years, Albert acted as lector at several Dominican priories from 1228 to 1242, providing his brethren with Biblical instruction alongside the theological apparatus used to interpret it.¹⁸⁸ Although Albert had long demonstrated a fascination for Aristotle, it would not be until the Master General of the order, John Wildeshausen, sent him to Paris in 1242¹⁸⁹ that his Aristotelianism truly blossomed—as well as his interest in astrology.¹⁹⁰ After leaving

first German university would not be established until the fourteenth century, and Albert himself established the first *studium generale* at Cologne.

¹⁸⁷ Betsey Parker Price, "The Physical Astronomy of Albertus Magnus," in *Albertus Magnus and the Sciences*, ed. James A. Weisheipl, O.P. (Toronto: Pontifical Institute of Mediaeval Studies, 1980): 155-185, 157; De Libera, *Albert le Grand*, 18. Weisheipl has questioned the familiarity with Aristotle that Albert would have gained at Padua. I do not find this compelling; both Steenberghen and Siraisi contend that Aristotle was the basis of the arts curriculum at Padua by the early thirteenth century. See Weisheipl, "Albert the Great and Medieval Culture," 487; Steenberghen, *Aristotle in the West*, 62-66; Lynn Thorndike, *The Sphere of Sacrobosco and its Commentators* (Chicago: University of Chicago Press, 1949), 14, 21; Nancy Siraisi, *Arts and Sciences at Padua* (Toronto: Pontifical Institute of Mediaeval Studies, 1973), 94. *Jordani de Saxonia Epistulae*, ed. A. Walz (Rome: S. Sabina, 1951), 24. Jordan refers to the recruitment of ten young men, one of whom was noble in body and mind. Thanks to the testimony of Gerard of Frachet we can identify this young man as Albert with some degree of certainty. Writing between 1254 and 1258, Gerard relates the story of Albert's entry into the Order of Preachers, presumably as told to him by Albert. See Gerard of Frachet, *Vitae fratrum ordinis praedicatorum*, ed. B. Reichert (Louvain: Typis E. Charpentier & J. Schoonjans, 1896), 188. The date for Albert's entry into the Dominicans is somewhat controversial. Simon Tugwell has resurrected an argument first presented by H.C. Scheeben in 1931, that Albert entered the Dominicans in 1229. See Simon Tugwell, *Albert and Thomas: Selected Writings* (New York: Paulist Press, 1988), 6-7.

¹⁸⁸ See Weisheipl, "The Life and Works of St. Albert the Great," 19.

¹⁸⁹ In the thirteenth century only the Master General of the order could authorize members of the order to attend the University of Paris. See Weisheipl, "The Life and Works of St. Albert the Great," 20-21. It should come as no surprise that John of Wildeshausen, former bishop of Bosno and Master General of the order from 1241-1252, would have deemed it essential that one of the order's brilliant Aristotelians attend the University of Paris, the intellectual center of Europe. John had attended both the universities of Paris and Bologna. Therefore, he would have known what the Parisian masters had to offer Albert. See Antoine Tournon, *Hommes Illustres de l'Ordre de Saint Dominique* (Paris: Quillan, 1743), 1, 95 ff. It is intriguing to consider how it might have affected Albert's intellectual development that he did not apply himself to a systematic study of Aristotle until he was a mature man of forty-two or three.

¹⁹⁰ His substantial, six-part *Summa parisiensi*, in which he applied Aristotelian philosophy to an analysis of the Incarnation and Resurrection of Christ, the four coevals (of primal matter, time, the heavens, and the angelic intelligences), human nature, and the nature of the good, is a product of this period, as is his comprehensive commentary on the *Sententia*. See J. Aertsen, "Albertus Magnus und die mittelalterliche Philosophie," in *Allgemeine Zeitschrift für Philosophie* 21 (1996): 111 – 128. Albert the Great, *Super*

Paris in 1248, Albert held a number of important posts, from his opening of the first German *studium generale*¹⁹¹ to acting as Prior Provincial of *Teutonia* from 1254-57, all while engaged in an ambitious program of study and scholarship.¹⁹²

The most important event of Albert's provincialate occurred in October of 1256. Summoned to the papal court at Anagni, Albert stood shoulder to shoulder with the Dominican Master General, Humbert of Romans, against William of St. Amour's attack on the mendicants enacted on behalf of his Parisian faction.¹⁹³ This attack was primarily politically motivated, in part resulting from the anger of Parisian masters resentful of the refusal of mendicants to send their students through the normal arts courses that all other students were required to attend. The manner in which mendicant masters appealed to papal privileges to enable them to ignore university statutes only aggravated this

Ethica: Commentum et Quaestiones, ed. Wilhelm Kubel (Monasterii Westfalorum: Aschendorff, 1968), 83. This work, written around 1250, contains clear statements of both Albert's view of the importance of the heavens in the creation of terrestrial life and the influence of the heavens over events here on the earth. See his discussion of the human soul, which is drawn "de radiis diversarum stellarum." This makes sense, because Scholasticism typically considered that all terrestrial life owes its generation to celestial influences, see *Ibid.*, 93: "Ex imperfecto non procedit perfectum, nisi agat per virtutem perfecti, sicut semen imperfecti generat animal perfectum, cum agat virtute perfecti, scilicet caeli et animae et elementi secundum triplicem calorem, qui est in ipso." Albert draws this from Aristotle's *De Generatione et Corruptione*. See John D. North, "Celestial Influence," 45. Albert emphasized this position more strongly than most Scholastics, due to his misattribution of the *Liber de causis et processu* to Aristotle. Although Proclus wrote the *Liber de causis*, it was normally deemed an Aristotelian work until Thomas Aquinas acquired a new translation made directly from the Greek by William of Moerbeke in 1268. Weisheipl mistakenly states that Albert realized that the *Liber de causis* was not Aristotelian. However, in Albert's final work, his *Summa theologiae*, he still attributes it to Aristotle. See Weisheipl, "The Life and Works of St. Albert the Great," 41; Albert the Great, *Summa theologiae*, 60. "dicit Philosophus in Libro de Causis, quod prima causa regit res omnes." In all likelihood Albert wrote this after Thomas' death, indicating that Albert never accepted his pupil's demonstration that the *Liber de causis* was not Aristotelian. Given the fact that this demonstration occurred when Albert was already over fifty-nine years of age, we should not be surprised at the elder scholar's reluctance to accept this new evidence, especially since Thomas made this demonstration soon after leaving Albert's tutelage. See Gulielmo di Tocco, *Hystoria beati Thomae de Aquino*, ed. A. Ferrua (Alba: Ed. Domenicane, 1968), 44.

¹⁹¹ Steenberghen, *Aristotle in the West*, 122.

¹⁹² Weisheipl, "The Life and Works of St. Albertus Magnus," 27.

¹⁹³ Bagliani, 147.

tension.¹⁹⁴ For the purposes of our study, the most significant point is that it brought Albert to the attention of Pope Alexander IV (1254-1261) while giving him the opportunity to address this very influential audience.¹⁹⁵ Besides acting as an advocate on behalf of his order, Albert preached on the Gospel of John and the epistles of Paul,¹⁹⁶ and in all likelihood spoke on a subject quite dear to his heart: astrology.

According to a note appended to one of the extant manuscripts of Albert's *De fato*, completed before the end of 1257 as a reasoned defense of astrology, he began this work during his nine-month stay at Anagni in 1256.¹⁹⁷ Richard Lemay has argued that Gregory IX's mandate of 1230 to expurgate Aristotle's *libri naturales* of anything injurious to the Christian faith was later passed on to individual masters of theology following the failure of the original commission to achieve results.¹⁹⁸ Albert may have been one of these so commissioned, and if so it would make sense that he would have been asked either to lecture on the subject of astrology—a subject strongly associated with Aristotelian natural philosophy¹⁹⁹ and of increasing controversy—or to hold a series

¹⁹⁴ This is, of course, a simplification of a complex issue, but a more in-depth analysis is beyond the bounds of this study. For such analyses, see Andrew G. Traver, "Secular and Mendicant Masters of the Faculty of Theology at the University of Paris, 1505-1523," *Sixteenth Century Journal* 26.1 (1995): 137-155, 137-138; Mary M. McLaughlin, "Paris Masters of the Thirteenth and Fourteenth Centuries and Ideas of Intellectual Freedom," *Church History* 24.3 (1955): 195-211.

¹⁹⁵ Scheeben, 40, 46, 156.

¹⁹⁶ *Ibid.*, 40, 46.

¹⁹⁷ Paul Simon, introduction to Albert's "De fato," xxxiii-xxxv.

¹⁹⁸ Richard Lemay, *Abu Ma'shar*, XXIII, Richard Lemay. "Libri Naturales", 23.

¹⁹⁹ John D North, "Celestial Influence," 46. For Aristotle, the motion of the sun fulfilled the role of efficient causation, explaining why the element fire, which naturally tends upwards, had not completely escaped the terrestrial realm. Aristotle explained that there is a natural interchange between the sun and fire that replenishes fire at regular intervals. To some extent he held this process to affect all elements, and even time itself, which is in some unexplained way dependent upon the sun's motion. The sun also acted as the efficient causative force for all upper-atmospheric phenomena, which for Aristotle included wind, rain, thunder, and lightning, as well as comets and the Milky Way. Finally, the celestial motions greatly affected generation and corruption—birth and death—here in the terrestrial realm, which did not go unnoticed by Albert. See Albert the Great, *Problemata determinata*, 61-62; Albert the Great, "De fato," 70-71.

of disputations on the subject while at the papal court. The *De fato*, written as a series of pro and con arguments in good scholastic fashion,²⁰⁰ could have easily grown out of a series of such debates. Such a public display of Albert's knowledge of astrology may have led Alexander IV to issue the mandate that led to the writing of the *Speculum astronomiae*, designed to protect good Christians from involvement with works injurious to their faith.²⁰¹ The likelihood of Albert having addressed this controversial subject while at the papal court is increased because we know that Albert did not waste his opportunity at Anagni to enter into public discourse on sensitive issues of the day. According to his own testimony, he actively engaged those who maintained the Averroistic doctrine of a unified agent intellect.²⁰² He may, in fact, have been the first to take up the fight against this notion that would generate such heated debate at Paris and elsewhere before the century had ended.²⁰³ Given Albert's deep interest in astrology, coupled with the likelihood that he was composing a tract defending astrology while at Anagni, it seems only logical that he would not have confined himself to this attack on a position of far less importance to him.

²⁰⁰ Ibid., 65-78.

²⁰¹ Chapter 1; Bonaventure de Iseo, 395.

²⁰² Albert the Great, *De unitate intellectus contra Averroistas*. The point of contention was that the Muslim philosopher Abu'l-Walid Muhammad ibn Rushd (1126-1198), known in the West as Averroes, had interpreted Aristotle's statements about the agent intellect, that part of our active mind that grasps ideas, to mean that there was but one such intellect in the universe. Therefore, each individual human being possessed only a passive intellect, which might be said to correspond to our capacity for memory. Of course since this separated the components of our consciousness wherein our free will and capacity for rational thought resides, this doctrine seemed to invalidate any notion of individual immortality of the soul. See Oliver Leaman, *An Introduction to Classical Islamic Philosophy*, 2nd edition (Cambridge: Cambridge University Press, 2002), 117-120.

²⁰³ Marcia Colish, *Medieval Foundations of the Western Intellectual Tradition* (New Haven: Yale University Press, 1998. 2nd printing), 291. One should note, however, that it is not entirely clear that any medieval scholar ever truly held this position. It is altogether possible that conservative theologians misunderstood the positions of the cutting-edge philosophers of the day, charging them with positions that were not fully representative of their beliefs, but rather a philosophical debating point.

Albert was allowed to resign his position as provincial at the closing of the chapter of Florence in 1257 in order to return to his true loves: teaching, writing, and disputation at Cologne.²⁰⁴ Unfortunately, Pope Alexander IV cut this respite short in January of 1260 by appointing him to the bishopric of Regensburg.²⁰⁵ Despite the protest of the Master General of the Dominican order, Humbert of Romans, Albert took up the task of reforming his “ruined” charge.²⁰⁶ Traveling back and forth across his province—always on foot—he managed to restore order within the year.²⁰⁷

By the end of December 1260, Albert set out from his newly reorganized province to the papal court in residence at Viterbo in order to tender his resignation.²⁰⁸ Unfortunately, Pope Alexander IV died unexpectedly, forcing Albert to await the election of a replacement.²⁰⁹ While we have no concrete record of Albert’s movements before 8 March 1263, when Pope Urban IV tasked Albert with the preaching of a new crusade,²¹⁰ given the demands of travel as well as the lack of responsibilities that Albert faced, it makes sense that Albert would have remained at the papal court. This means that Albert spent time first at Viterbo then at Orvieto, among some of the most prestigious intellectuals of the day.²¹¹ In particular, such a stay could have allowed Albert to

²⁰⁴ Steenberghen, *Aristotle in the West*, 122.

²⁰⁵ De Libera, *Albert le Grand*, 17.

²⁰⁶ Ibid., 37. Humbert feared the precedent this elevation might set for Albert’s fellow Dominicans, as well as the dishonor it would do to Albert’s religious fervor and nobility of mind. Of course John Wildeshausen, the Dominican Master General who sent Albert to the University of Paris, was a former bishop. But he had held this post prior to his entry into the order.

²⁰⁷ Ibid., 37. This earned Albert the affectionate sobriquet of “boots the bishop” from his flock.

²⁰⁸ Sheeban, 68-69.

²⁰⁹ Bagliani, 148; Sheeban, 69.

²¹⁰ Sheeban, 69.

²¹¹ M. Grabmann, “Ist das ‘philosophische Universalgenie’ bei Magister Heinrich dem Poeten Thomas von Aquin?” *Historisches Jahrbuch* 88 (1917), 315. Besides Albert, Campanus of Novarra and Thomas Aquinas were also present in Orvieto, along with a number of less well-known figures. I must mention that

encounter another of the towering minds of his day: Giovanni Campano, better known as Campanus of Novara (1220-1296). We know that Campanus spent time at the papal court between December 1263 and March 1264, and there is no reason to believe that he had not arrived earlier. If so, Campanus undoubtedly spent time in Albert's company, where he would have surely discussed his work with the German Dominican, possibly influencing the production of the *Speculum astronomiae* in the manner I detailed in chapter two.

During his stay at the papal court Albert clearly impressed the august assemblage.²¹² It is no wonder that he did so: his reputation as a philosopher was unparalleled among his contemporaries.²¹³ Leaving Orvieto in February of 1263 Albert traveled through the German-speaking lands preaching Pope Alexander IV's crusade²¹⁴ before finally settling down to a well-earned retirement in the Dominican house at Wurzburg in March of 1264.²¹⁵ Unfortunately, the life of contemplation, prayer, and scholarship for which he longed was continually interrupted by demands to consecrate churches, mediate disputes, and perform other services in the local area.²¹⁶ It was not

Parvacino Bagliani completely rejects the notion that Campanus and Albert ever met. See Bagliani, 149. However, neither Bagliani's evidence nor his argument is completely clear.

²¹² Henry of Wurtzburg wrote a glowing description of the papal court, singling out Albert for special praise. See Grabmann, "Ist das 'philosophische Universalgenie' bei Magister Heinrich dem Poeten Thomas von Aquin?" 315-20

²¹³ Ibid., 316-318, 320. During Albert's lifetime his reputation, especially among his fellow Germans, was that of a philosopher rather than a theologian, despite the fact that he was a master of theology. Furthermore, Albert's reputation eclipsed that of his justly-famed pupil during Thomas' lifetime, a fact that is not well appreciated given the reversal of fortunes that has occurred in relation to the two Dominicans over the centuries.

²¹⁴ Sheehan, 69.

²¹⁵ Albert the Great, *Metaphysica, Opera omnia*, ed. Bernard Geyer (Monasterii Westfalorum: Aschendorff, 1960)16, vii-viii.

²¹⁶ Weisheipl, "The Life and Works of St. Albert the Great," 40. Albert complained, in fact, that he had time to do little else.

until 1269 that the master general of the order, John of Vercelli, sent Albert to Cologne to act as lector emeritus.²¹⁷ There he spent the last years of his life, consecrating the occasional church but primarily writing²¹⁸ and occasionally corresponding upon difficult theological problems, particularly questions involving natural philosophy, such as the *Quindecim problematibus* that I discussed in chapter one. Albert's continuing work and scholarship is indicative of a man with continuing mental acuity.²¹⁹ Unfortunately, that creeping thief, time, cannot be eluded indefinitely. Sometime during the last fifteen months of his life, a certain archbishop Siegfried came to Cologne to visit the living legend, Albert the Great. According to Henry of Hereford's *Chronica*, the confused elder scholar replied to Siegfried's greeting by stating: "Albert is not here."²²⁰ And thus we see the failure of one of the greatest minds of his, or any, time, described lovingly by one of his students, Ulrich of Strasbourg, as "a man so superior in every science, that he can fittingly be called the wonder and miracle of our time."²²¹ Perhaps it was a kindness when death finally came for Albert on 15 November 1280.

This was Albert the man. But what role did astrological beliefs play in Albert's writings and worldview? To begin with, he was committed to careful observation of the

²¹⁷ Ibid., 41.

²¹⁸ Ibid., 42. Albert completed his commentary on Job between 1272 and 1274, revised his commentaries on Mathew, Mark, and Luke sometime prior to 1275, and wrote his *De sacrificio missae* and his *De sacramento* in the mid 1270s.

²¹⁹ Albert involved himself in at least six complex negotiations between 26 September 1277 and 18 August 1279, as evidenced by dated documents bearing his name. Furthermore, the second half of Albert's impressive, though unfinished, *Summa theologiae* could not have been begun before 1274, as I noted in chapter two. Finally, as late as January of 1279 Albert testified that he was of sound mind and body when making his brother, Henry of Lauingen, the executor of his will. See Scheeben, 123-127; Albert the Great, *Summa theologiae*, introduction.

²²⁰ Henry of Hereford, *Liber de rebus memorabilibus sive Chronicon ad a. 1266*, A. Potthast, ed. (Göttingen: Societate Literarum Regia Gottingensi, 1859) 202.

²²¹ J. Daguiillon, *Ulrich de Strasbourg, La "Summa de bono."* Livre I (Paris: Vrin, 1930), 139.

world around him,²²² combining first-hand knowledge with an application of the best philosophical principles available to him in order to understand the world as it existed in reality, not in some idealized Platonic form. The explanation for this commitment goes beyond his identity as an Aristotelian philosopher. For Albert, the world was God's divinely ordered machine²²³ and any analysis of His creation must focus upon the world as it existed, in all its constituent parts, without succumbing to fear that what one might find could conflict with a Christian view of the world. After all, how could a proper understanding of His creation conflict with our understanding of God's majesty?

As for astrology, this was a subject that fascinated Albert throughout his scholarly career.²²⁴ And throughout his career, his understanding of astrology and its importance to a complete comprehension of humankind's place in God's creation remained consistent, making the *Speculum astronomiae* a single part of a broader project aimed at understanding the web of celestial influence that humankind is embedded within, and the implications of such a worldview for the relationship between humanity and God. But for all that I have said about this work, I have yet to consider Albert's motivations for writing the text, and why it was important. The evidence that Albert wrote it at papal behest is compelling, but that still begs the question: what does he say about his reasons

²²² Pearl Kibre, "Albertus Magnus on Alchemy," *Studies in Medieval Science: Alchemy, Astrology, Mathematics, and Medicine* (London: Hambledon Press, 1984), 195; Thorndike, *HMES*, II, 595; Price, 158-159; Edward A. Synan, 6.

²²³ This would become a commonplace among the more philosophically minded theologians of the middle ages. For example, the Norman Bishop of Lisieux, Nicole Oresme (1320-1384), often compared the cosmos to a mechanical clock. See John North, *The Norton History of Astronomy and Cosmology* (New York: W.W. Norton, 1995), 265.

²²⁴ Any list of Albert's references to celestial influence would quickly grow to unmanageable proportions, as he wrote on the subject almost every time that he put pen to paper. For a representative view of his thoughts on celestial influence, see: Albert the Great, *De caelo et mundo*, I, 150, 151, 153, et alia; Albert the Great, "De fato," 65-78; Albert the Great, "Problemata determininata," 48-50; Albert the Great, "Questiones," ed. Albert Fries, *Opera omnia* (Monasterii Westfalorum: Aschendorff, 1993), 59; et aliter.

for composing this text? The proem of the *Speculum* explains that the author writes

on the occasion of those books, that the root of certain knowledge is not to be found among, which have been suspected with merit by lovers of the universal faith, [because] it pleased some great men that they should accuse those very works, and perhaps some that are innocent.²²⁵

One should not reject “noble works” simply because others, making a “lying profession of astronomy,” in fact “conceal necromancy” within their pages.²²⁶ But how is one able to separate “licit” from “illicit” works of astronomy? For this a guide is necessary, and this is what the author, a “man zealous for faith and philosophy,” has set out to provide, applying his talents so that he might make a “commemoration of each sort of the books, expounding [their] number, titles, beginning and the contents of each of those in general, as well as who the authors have been, so that the licit may be separated from the illicit.”²²⁷ The books that he refers to all deal with “two great wisdoms” both of which

²²⁵ Albert the Great, *Speculum*, 208, prooemium. “Occasione quorundum librorum, apud quos non est radix scientiae . . . catholociae fidei amatoribus merito sunt suspecti, placuit aliquibus magnis viris, ut libros quosdam alios, et fortassis innoxios accusarent.” This is an odd phrasing, where Albert does not include a plural nominative verb, allowing the opening clause to apparently stand in as the subject.

²²⁶ Ibid., 208, prooemium. “Quoniam enim plures ante dictorum librorum necromantiam palliant, professionem astronomiae mentientes, libros nobiles de eadem fetere fecerunt apud bonos.”

²²⁷ Ibid., 208, prooemium. “quidam vir zelator fidei et philosophiae. . . applicuit animum ut faceret commemorationem utrorumque librorum, exponens numerum, titulos, initia et continentias singulorum in generali, et qui fuerunt eorundem auctores, ut scilicet licit ab illicitis separentur.” This is the phrase, “quidam vir,” that has caused no small amount of controversy, suggesting to Zambelli that Albert had a collaborator: Campanus de Novara. See Zambelli, *The Speculum astronomiae*, 111. Conversely, Bagliani has pointed to this passage as illustrative of the author’s intent to remain anonymous. See Bagliani, 132. However, as Richard Lemay has pointed out, the failure of an individual to attach his own name to a work written at the behest of the pope should not elicit surprise. Such a work would automatically carry a semi-canonical authority and share the character of official documents, habitually produced without identification of the author. See Richard Lemay, Unpublished Review of Paola Zambelli’s *The Speculum Astronomiae and its Enigma. Astrology, Theology, and Science in Albertus Magnus and his Contemporaries* (Unpublished manuscript: obtained through personal correspondence in 2002), 8. Furthermore, Albert was a committed Dominican whose humility was well known. With this being the case, it should be no surprise that he would not always draw attention to himself as the author of a given work. My thanks to Dr. Lemay for all of his assistance.

may be considered as a form of astronomy.²²⁸

The first “type” of astronomy that Albert deals with would not have suffered condemnation at the hands of thirteenth-century theologians. Although Albert never referred to it as such, some authors called this type “theoretical” astrology, which would be considered pure astronomy by modern standards, as opposed to the “science of the judgments of the stars.”²²⁹ It is the latter form of astronomy—that which can properly be referred to as astrology—that many Christian intellectuals viewed suspiciously while accepting “theoretical” astronomy. The theoretical form will hereafter be referred to as astronomy to differentiate it from its “applied” form, astrology.

Albert spends two pages in an exposition of the functions of a medieval astronomer. This discussion is fascinating in terms of the history of science and does indeed involve certain functions that a modern astronomer would disavow, such as the measurement of epicycles. Nevertheless, there is certainly nothing that could arouse the wrath of any but the most ardent zealot.²³⁰ Albert handles both the technical language and various methodological considerations in such a way as to make it obvious that he has an intimate grasp of the subject matter and thus speaks authoritatively when he asserts “this is one great

²²⁸ Albert the Great, *Speculum*, 208, prooemium: “duae . . . magnae sapientiae.”

²²⁹ Ibid., 208: “scientia iudiciorum astrorum.” Derek and Julia Parker, *A History of Astrology* (London: Andre Deutsch Ltd., 1983), 94-95; Albert, *Speculum*, 218, 222, chpts. 3, 4. Albert later categorizes predictive astrology, the “science of judgments of stars,” as elections (the method of determining suitable times for any given event), nativities (the method of forecasting one’s future based upon their birth), interrogations (the method of finding an answer to a specific question), and revolutions (which deals with the motions of the planets and the potential influence of such motions).

²³⁰ Ibid., 208-210, chpt. 1. An epicycle was the perfect circle that medieval cosmographers believed each planet made around a point that it orbited as the planet then orbited around the earth.

wisdom. . . and it cannot be contradicted, save by someone who opposes the truth.”²³¹

He further emphasizes his knowledge of the subject by providing an extensive bibliographic section in chapter two on works that are important to astronomy. This begins with the “book that Nemroth the giant wrote” and goes on to include such better-known authors as Ptolemy and Aristotle.²³² In other words, the reader encounters the type of thorough consideration of the subject that one would expect from Albert the Great. Such a treatment not only amply displayed that the author was knowledgeable in his chosen subject matter, but it also laid the foundation for others interested in the study of astronomy by providing a comprehensive list of the most important works in the field.²³³ Assuming that Albert wrote the *Speculum* at papal behest, then these bibliographic sections would have been invaluable to anyone wishing to apply themselves to the celestial arts without involvement with questionable texts.

Understanding the context that led to the composition of the *Speculum* promises to enlighten us about the role of religious authority and science, the worldview of

²³¹ Ibid., 212, chpt. 2. “Haec est una magna sapientia . . . et huic non contradicit nisi qui fuerit contrarius veritati.” Some of the technical language Albert uses may be seen in his discussion of the “elevatio . . . motus latitudinis . . . atque dustoriah” in the motion of the planets (the latter refers to a planet that is to the right of the sun in the east and of the moon in the west) on page 210 of the *Speculum*. One of the technical considerations of the craft of the astronomer he considers in the same passage is the “descriptio locorum quae sunt post climata . . . quorum . . . habent unum diem longiorem una revolutione caeli aut pluribus et unam noctem similiter.”

²³² Ibid., 212-219. The “liber quem edidit Nemroth gigas.” This refers to Nimrod, the ruler found in Genesis 10:8-10:12. Stephen Liverey, “Nimrod the Astronomer,” *Traditio* (1981): 203- 266. My thanks to Laura Smoller for pointing this article out.

²³³ The *Speculum*’s value as bibliographic guide to students of astrology and astronomy has not gone without notice. See Caroti, *La critica contro l’astrologia di Nicole Oresme*, 555-556. Anthony Grafton has illustrated the attraction of access to an encyclopedic compendium in an age when libraries were poorly catalogued, if at all, lacking any process whereby one could readily research the sorts of books available on a given subject. See his *New Worlds, Ancient Texts* (Cambridge, MA: Harvard University Press, 1992), 15-16.

medieval scholars, and the model of humanity's place within God's creation held by at least one important and influential academic of the day. But Albert's bibliographic compendium provides us with yet another important insight: the extent of the debt that western scholarship owed to the Arabic world. It should come as no surprise to historians that the influx of Muslim thought greatly influenced western intellectuals in the twelfth century and beyond. However, astronomy was one science that went beyond a mere influence. Rather, judging from the *Speculum*, this science was based almost entirely on the work of scholars of the Arabic speaking world.

Marcia Colish states that medieval astronomy "cut its teeth" on Ptolemy, who provided the basis for this science.²³⁴ Strictly speaking, Albert does not directly oppose that notion, but he does modify it by implying that one need not read Ptolemy's *Almagest*. Rather the student of astronomy may find this dense and lengthy work "conveniently summarized by Azerbeel the Spaniard, known as Albategni" who provides further benefit to the reader by offering corrections to errors found in the *Almagest*, in Albert's estimation.²³⁵ Thus, the German Dominican directs his reader not to that Greek father of astronomy, but rather to this Arabic natural philosopher who both used and corrected Ptolemy.²³⁶

²³⁴ Colish, 324.

²³⁵ Albert the Great, *Speculum*, 212, chpt. 2: "commode restringitur ab Azerbeel hispano, qui dictus est Albategni." According to Albert, Albategni states that these errors are due to the interpolation of material taken from another Arabic intellectual, Abracaz, whom Albert equates with Hipparchus. This appears to be a mistake on Albert's part as Hipparchus was in actuality a Hellenistic astronomer and mathematician who died around 120 B.C., known for impressive empirical standards that led to the development of sophisticated star charts and measurements of the distances between the earth and the sun and moon. See G.J. Toomer, "Hipparchus," in the *Dictionary of Scientific Biography*, ed. Charles Coulston Gillespie (New York: Charles Scribner, 1978), vol. 15, 207-224.

²³⁶ Mary Ellend Snodgrass, *Who's Who in the Middle Ages* (London: MacFarland and Company, 2001), 13. Abu Abdullah Al-Battani (858-929) from Battan in present-day Iraq, corrected Ptolemy on a number of

Albategni was certainly not the only Arabic scientist to influence Albert's discussion of astronomy. In fact, the *Speculum* refers to only one other non-Arabic source for astronomy: "Herman of the paupers of Christ."²³⁷ However, the pages of the work refer repeatedly to learned Arabic authors such as Geber of Seville and Thabit ibn Qurra.²³⁸ Albert makes it quite clear that Arabic scholars did far more than simply pass Greek texts on to the West. Without the original contributions of the Arabic world, thirteenth-century western astronomy would have been a vastly different discipline. That is, if it had even existed as a discipline.

Despite the care that Albert takes in developing this discussion of astronomy it only takes up the first two chapters of the *Speculum*. The next fourteen are devoted to an exposition of the second of Albert's "two great wisdoms."²³⁹ The reader quickly becomes aware that, for the author, astrology is certainly the most important of these "wisdoms" for it "is the link [between] natural philosophy and metaphysics."²⁴⁰ This is important for

points dealing with planetary movement. These corrections allowed for more accurate modeling of planetary motion in the heavens. He also made original contributions to the science, particularly in his work known by the Latin title *De scientia stellarum: de numeris stellarum et motibus*, which exercised a great influence upon Copernicus.

²³⁷ Albert the Great, *Speculum*, 218, chpt. 2. "Hermannus Christi pauperum" in all likelihood was Hermann of Reichenau (1013-54), a Benedictine monk who wrote on astronomy and mathematics, with works that included *De mensura astrolabii* and *De utilitatibus astrolabii*. Albert also refers to a possible "pseudo-Ptolemy" but provides little information on this source. See J. Drecker, "Hermannus Contractus über das Astrolab," *Isis* 16 (1931): 200-219.

²³⁸ Albert the Great, *Speculum*, 214, chpt. 2; Snodgrass, 95, 223. Geber, or Abu Musa Jabir Ibn Haiyan (d. 803) was primarily an alchemist, now known as the father of modern chemistry. However, while working as a protégé to the Barmaki Vizier after 776 he wrote over one-hundred works of science and commentary, presumably including the commentary on the *Almagest* cited by Albert. Thebit, or Thabit bin Qurrah (836-901) held the position of royal astronomer and expert on Hellenistic philosophy to the Caliph al-Mu'tadid in Baghdad. He wrote on a wide range of subjects and made important contributions to mathematics and astronomy that refuted many Greek theories and anticipated the work of Brahe on planetary motion.

²³⁹ Albert the Great, *Speculum*, 208, prooemium.

²⁴⁰ It "est ligamentum naturalis philosophiae et metaphysicae." Ibid. chpt. 3, 218-220.

if God . . . has ordered this world . . . as to operate in created things . . . through stars . . . as if through instruments . . . what could be more desirable to the thinking man than to have a middle science [between natural philosophy and metaphysics] that may teach us how this and that change in the mundane world is effected by the changes in the heavenly bodies.²⁴¹

Therefore, if the “thinking man” wishes to experience the creator there is no better way to do so than through a study of the way God works his will upon the earth through His agents –the stars.²⁴²

On the face of it, this is a rather startling claim. How are we to understand the *Speculum*’s claim that astrology can lead us to a better understanding of God? Albert’s corpus of writings provides the answer. While the explanation is somewhat lengthy and technical, it is worthwhile to pause in our direct analysis of the *Speculum* and undertake that effort. Those who have studied the science of the Middle Ages have come to recognize that medieval astrology was a useful belief system, functioning as a compensatory mechanism to reduce the stresses inherent in living in an otherwise largely inexplicable and dangerous world.²⁴³ The role that such beliefs can play as a stress reduction mechanism explains the inherent usefulness of the pronouncement of the medical faculty of the University of Paris made in 1348: the Black Death resulted from

²⁴¹ Ibid., 220, chpt. 3: “si . . . ordnavit Deus . . . mundum istum . . . velut operari in rebus creatis . . . per stellas . . . sicut per instrumenta . . . quid desideratius concionatori quam habere mediam scientiam, quae doceat nos qualiter mundanorum ad hoc et ad illud mutatio caelestium fiat corporum mutatione.”

²⁴² Ibid., 220, chpt. 3.

²⁴³ Stanley Jeyaraja Tambiah discusses the ways in which premodern people appeal to systems such as magic and astrology as rational methods of fitting themselves into a world that can otherwise seem capricious and appositive to the individual. See his *Magic, Science, Religion, and the Scope of Rationality* (Cambridge: Cambridge University Press, 1990), 66-67, 72. The anthropologist Bronislaw Malinowski developed the concept of a compensatory mechanism and coined the phrase in his *Magic, Science, and Religion*, (Norwich: Fletcher and Son, 1925).

an inauspicious celestial conjunction.²⁴⁴ Such an explanation for the great dying would have had no value in halting its spread, but by making it seem explicable some of the fear and helplessness would have been lessened. However, sociological explanations explaining the attraction—and utility—of astrological belief can carry us only so far. The most prominent intellectuals of the day, from the aforementioned medical faculty of Paris to Albert the Great, Thomas Aquinas, and Pierre d'Ailly to name only a few, all accepted the tenets of astrology. None of them would have explained their beliefs in terms of sociological or psychological need. So what was the importance of astrological belief for such scholars?

To understand the important place that astrology held for Albert the Great, we should start with his commentary on Aristotle's *De anima*. Although he does not immediately mention astrology, a careful reading of this text demonstrates why he held the predictive science of astral motion in such esteem. Albert asserts the preeminence of any science dealing with knowledge about the soul.²⁴⁵ He held knowledge about higher order substances to represent a more advanced form of knowledge than any measure of understanding about lower order substances.²⁴⁶ In the best Scholastic tradition of his day, he believed non-corporeal things to be substantively superior to corporeal things.²⁴⁷ Thus, the soul was of a higher order than the body, and the highest form of soul in the sub-lunar

²⁴⁴ Tester, 185.

²⁴⁵ Albert the Great, *De anima* I, *Opera omnia*, ed. C. Stroik (Monasterii Westfalorum: Aschendorff, 1968), 2.

²⁴⁶ This is perfectly consistent with Aristotelian thought. See Steenberghen, *Aristotle in the West*, 14.

²⁴⁷ Albert, *De Causis*, 57; Albert, *Liber de Natura*, 12; Albert, *De caelo*, 114; et alia.

realm is the intellectual soul.²⁴⁸

However, with the soul lacking any accidental or corporeal characteristics, one cannot use corporeal organs to gather information about it. Nevertheless, there is a method whereby one can gain knowledge of the soul: through exercise of the “mathematical sciences.”²⁴⁹ It may not be immediately clear how a study of mathematics can provide knowledge about the soul. Today few of us are accustomed to thinking of the study of mathematics as a pathway for spiritual enlightenment. So what did Albert mean when he pointed to mathematics as a means of gaining knowledge about the soul? The answer, though lengthy, will explain why the *Speculum* portrays astrology as the “link between natural philosophy and metaphysics.”²⁵⁰

On one level, mathematical knowledge can be argued to be a higher order of knowledge in and of itself. This was Albert’s view, for he asserts that mathematics holds a privileged place because it provides conclusions that are “certain” since they are self-demonstrable.²⁵¹ However, the “nobler” of the mathematical arts, as well as the most

²⁴⁸ Albert, *De anima*, I 253. In Aristotelian terminology *anima*, or soul, is a life force. There are three types: vegetative, responsible for the basic functions of life and shared by plants, animals, and humans; sensitive, indicative of the ability to sense things external to the body through corporeal organs, shared by animals and humans; finally, the intellectual soul, comprising agent and possible intellects (representing reasoning and understanding) and the will. In the terrestrial realm, only humans possess the intellectual soul. It is not entirely clear if Albert follows this system. He does speak of the different types of soul, but it is possible he is referring to differing aspects of a single soul. This would be congruent with Thomas Aquinas, who flatly denies these three types of soul, instead stating these are three aspects of a single soul. See Thomas Aquinas, *Summa Contra Gentiles, II: Creation* (Notre Dame University Press: Notre Dame, 1956), 173-177.

²⁴⁹ Albert, *De anima*, 167.

²⁵⁰ Albert, *Speculum*, 218-220, chpt. 3: “Secunda magna sapientia, quae similiter astronomia dicitur, est scientia iudiciorum astrorum, quae est ligamentum naturalis philosophiae et metaphysicae.”

²⁵¹ Albert, *De anima*, 2: “mathematicus est certus, facit de suis conclusionibus demonstrationes firmissimas.”

difficult due to the “remote causes” it deals with, is astronomy.²⁵² The noble nature of astronomy is due to its subject—the incorruptible heavens, that region in which the planets, composed of unchanging matter surpassing all terrestrial things in both the substance of the heavenly bodies as well as the regularity of celestial motions,²⁵³ proceed in “natural and everlasting”²⁵⁴ fashion, to borrow a phrase from the *Speculum*. Thus, since astronomy deals with a more perfect subject matter, Albert holds this science to excel all other mathematical sciences.²⁵⁵ However, this statement about the excellence of astronomy still does not answer the question of how celestial knowledge can provide greater understanding of the soul.

Albert’s concept of causality holds a key to this mystery. As with any good Aristotelian, for Albert causes begin with the unmoved mover. This mover—seen as God in the Christian tradition—is an incorruptible intelligence that orders the changeable universe beneath it.²⁵⁶ Such a cause is, of necessity, unmoved and unmovable or it would not be more perfect than the universe it orders, thus being unable to bring about change in that universe.²⁵⁷ This unmoved mover, meaning God, affects matter, acting through the prime heaven, “whose light is like [its] instrument.”²⁵⁸ The phrasing here is striking, for it is almost a word-for-word reiteration of the *Speculum*’s statement that “God . . .

²⁵² Albertus, *De anima*, 2. Astronomy and astrology were terms used almost interchangeably in this period.

²⁵³ Ibid., 2.

²⁵⁴ Albert, *Speculum*, 252, chpt. 12. The *Speculum*, quoting Albumasar, states that “Planetae non corrumpuntur, neque recipiunt augmentum, neque diminutionem, neque effectum, neque detrimentum.” Rather, the influence of each of the planets is eternally consistent because “Efficitur ex motibus planetarum naturalibus atque durabilibus.”

²⁵⁵ Albert, *De anima*, 2

²⁵⁶ Albert, *De causis*, 121.

²⁵⁷ Ibid., 121.

²⁵⁸ Albert, *De caelo* I, 114.

glorious and sublime” operates through the stars “as through instruments.”²⁵⁹ Thus, for Albert, light functions as the instrument of God, who does not immediately order the universe.²⁶⁰ Rather, He exerts His influence through created bodies. Understanding this, according to the *Speculum*, inspires greater love of God in human hearts. For “He who is the living God, the God of the unliving heaven,” works “through created things. . . . using the mute and deaf stars as His instruments,”²⁶¹ thereby allowing us to know Him “by what is posterior, that is by his glorious effects.”²⁶² Otherwise, God, unknowable in his essence, would be unloved because man cannot love that which he does not know.²⁶³

As Albert informs us in his commentary on *De caelo*, the highest level within the hierarchy of the universe is the orb of the celestial bodies. Thus, God acts first on these bodies, which then influence all things beneath them.²⁶⁴ Albert is very clear about how this causal chain functions. Ordering causes flow from the first principle to the first heaven.²⁶⁵ As God’s power flows outward from His being and through the lower levels of reality, the impact of this divine power is altered, making the motive process the primary affective force, as opposed to the substance of the influencing “ray” itself.²⁶⁶ Below the sphere of the first heaven the levels of ordering causes are the second sphere (where the

²⁵⁹ Albert, *Speculum*, 228, chpt. 7. “Deus gloriosus et sublimis,” “per stellas sicut per instrumenta.”

²⁶⁰ There were two forces of terrestrial influence flowing from the celestial realm for most astrologers: light and an unspecified and invisible “celestial influence.” See Grant, “Cosmology,” 289-290. However, Albert seems to ignore any undifferentiated celestial influence, relying solely upon light for the transmission of influences from the celestial to the terrestrial realm.

²⁶¹ Albert, *Speculum*, 220, chpt. 3: “Ipse qui est Deus vivus, Deus caeli non vivi, velit operari in rebus creatis . . . per stellas surdas sicut per instrumenta.”

²⁶² Ibid., 220, chpt. 3: “Restat ergo quod per posterius, per suos scilicet gloriosos effectus.”

²⁶³ Ibid., 220, chpt. 3.

²⁶⁴ Albert, *De caelo*, I, 56.

²⁶⁵ Ibid., 56. “fluunt a primo principio ad caelum primum.”

²⁶⁶ De Libera, *Albert le Grand*, 116-118. This is what the author refers to as Albert’s “metaphysic of flows,” to emphasize the important role of the “flowing” of divine influence from point to point in creation, rather than the simple power of the light involved.

zodiacal signs and the fixed stars are to be found), the seven spheres containing the planets of Saturn, Jupiter, Mars, the sun, Venus, Mercury, and the moon, and then finally the sphere of “active and passive things,” which represents the sublunar realm.²⁶⁷

Thus, inferior motions and compositions are always determined through the influences of a superior point (or points) in creation through an outpouring of influence from God, who comprehends Himself through His own essence.²⁶⁸ Consequently, His understanding is higher than that of anything in the natural universe, giving Him the understanding necessary to act upon the universe.²⁶⁹ The ordering of each sphere is then effected through the light of the sphere above, reaching down to the earth, where celestial light is diffused as an actuating force upon terrestrial souls.²⁷⁰ Thus, it “illuminates” the souls of men.²⁷¹ This light force impels souls to receive their individuating characteristics and bodies to conceive, or generate in scholastic terms, and then dissolve into corruption.²⁷² In this way Albert utilizes a Neoplatonic emanatory aspect of light, modified as an actively willed instrument, in a system that is otherwise Aristotelian.²⁷³

²⁶⁷ Albert, *De caelo*, I, 56. The most concise description of Albert’s ten-sphere system of the universe is found in his *Problemata determinata*, 48. “His [the nine upper spheres] coniungunt ad sphaeram activorum et passivorum, et est orbis quattuor essentialium simplicium, quae dicuntur esse elementa.” The sublunar sphere is not often included in the cosmologies of medieval thinkers, making Albert’s system stand out somewhat from the nine-sphere model found among other writers, a point that escaped Pico della Mirandola in his *Disputationes*, II, 246.

²⁶⁸ *Ibid.*, 57.

²⁶⁹ *Ibid.*, 57.

²⁷⁰ *Ibid.*, 57.

²⁷¹ *Ibid.*, 57. “super animas hominum illustrat.” This illumination is the force whereby men possess reason. This seems to pose a problem, for elsewhere Albert seems to hold that the celestial bodies, acting through light as their instruments, cannot directly influence the soul.

²⁷² *Ibid.*, 57. Through “cuius virtutes [illuminati] concipiuntur in seminibus generatorum et corruptorum.”

²⁷³ Albert’s system of thought appears broadly Aristotelian, yet instances such as this one reminds us that his philosophical system contains a larger Neoplatonic element than might be immediately evident. For an exploration of some important examples of Neoplatonism in Albert’s thought, see Therese Bonin’s

This model, with its Neoplatonic element, is representative of Albert's system of thought as a whole. He derived the idea that God's influence flows as a stream of light through each of ten heavens downward to the terrestrial realm from *De causis et processu universitatis a prima causis*.²⁷⁴ This text, written in Baghdad in the early ninth century, was a reworking of parts of Proclus' *Elements of Theology* combined with Plotinian material.²⁷⁵ This Neoplatonic work, translated sometime prior to 1187 by Gerard of Cremona, was held to be a third section of Aristotle's *Metaphysics* until the late thirteenth century.²⁷⁶

This text presented theological problems of its own. It details a system whereby God creates celestial intelligences directly, and the intelligences are responsible for all sub-lunar creation.²⁷⁷ Many twelfth and thirteenth century intellectuals considered the work to be obviously heretical, but Albert disagreed.²⁷⁸ He interpreted it, in his commentary written between 1264 and 1271, as indicating that God is ultimately responsible for all creation through His intermediaries, the celestial bodies.²⁷⁹ These intermediaries receive God's influence differently because the recipients are increasingly imperfect the further they are from God.²⁸⁰ Nevertheless, all aspects of creation are ultimately from God, as He is involved in each stage of the projection of influence.

Creation as Emanation (Notre Dame: Notre Dame University Press, 2001).

²⁷⁴ Ibid. 1-3.

²⁷⁵ Ibid., 3, 79.

²⁷⁶ Ibid., 3.

²⁷⁷ Ibid., 2-3.

²⁷⁸ Ibid., 3.

²⁷⁹ Ibid., 5, 54. The late date of this commentary should not be taken to indicate that Albert had been ignorant of the *De causis* up to that point. In fact, his earliest work, *De natura boni*, hints at a model of celestial influence apparently based upon the *De causis*.

²⁸⁰ Ibid., 56.

However, this system should not be seen as one in which the force of the prime mover is simply transmitted unchanged from agent to patient. The process of movement through the heavens and down to the sub-lunar realm affects this light and its corresponding power in two ways. Both the strength and character of the luminary power are altered on the long passage from the prime mover to the terrestrial realm.²⁸¹

In discussing potency, Albert describes a system in which influences emanate from an all-powerful God, yet do not necessitate human behavior. God is obviously the most powerful causal agent in the universe, as well as the most intelligent and purest of form.²⁸² However, effects lack the full strength of the agent that caused the effect to occur. Thus, celestial bodies are less perfect than God, having a perfect corporeal substance but lacking God's immobile nature.²⁸³ Similarly, angels possess a lesser share of perfection than God, and humans are even less perfect than angels. Albert explains that these diminishing levels of perfections are what Isaac of Israel²⁸⁴ were referring to when he said that "the soul is made in the shadow of intelligence, calling the diminution of power, shadow."²⁸⁵

Albert states that a posterior effect is generated in the "shadow" of the preceding

²⁸¹ Vide Alain De Libera's concept of Albert's "metaphysic of flows," in De Libera's *Albert le Grand*, 116-119.

²⁸² Albert, *De causis*, 128.

²⁸³ Ibid., 128.

²⁸⁴ This is the Jewish physician and Neoplatonic philosopher, Ishaq b. Sulaymān al-Isrā'ili, known to the West as Isaac Israeli (855-955). See A. Altmann and S. M. Stern, *Isaac Israeli, a Neoplatonic Philosopher of the Early Tenth Century: His Works Translated with Comments and an Outline of His Philosophy* (London: Oxford University Press, 1958), introduction; A. Bar-Sela and H.E. Hoff, "Isaac Israeli's Fifty Admonitions to the Physicians," *Journal of the History of Medicine* 17(1962): 245-57. My thanks to Dr. Irven Resnick for pointing this out to me.

²⁸⁵ Albert, *De causis*, 128. "anima creatur in umbra intelligentiae, umbram vocans diminutionem potestatis."

effect. He explains that this shadow is what we refer to as “a differentiation.”²⁸⁶ In other words, when divine power flows through each of the celestial spheres, it is altered and diminished by the characteristics of the heavenly bodies, as well as through the interaction of bodies with one another. This process of the downward flow of God’s power, with each level of creation receiving His power imperfectly and passing it along in combination with changes wrought by the impurities of the created world—all of this explains why the influence passed down to the sublunar realm lacks the purity imparted by God’s perfection of being. As God’s divine power is diminished through interaction with the imperfect heavenly bodies, the force that these bodies exert in the sublunar realm are then unable to impart necessity.

The character and nature of the luminary power passing through the celestial orbits and bodies is changed, just as we have seen with changes caused to God’s divine power on its downward journey. Celestial power can make itself felt in two ways:

through application, which is called influence, and through something that is like generation, which is called a going out from potential to act and a certain motion or change.²⁸⁷

In other words, the characteristics of heavenly bodies affect the power that is transmitted through them, “influencing” the nature of the power that is passed on. A large part of the change comes about through the agency of this influence upon the heavenly bodies themselves, reducing potency contained within them to act in a process that “is like

²⁸⁶ Ibid., 48.

²⁸⁷ Ibid., 128. “per applicationem, quod vocatur influentia et per quondam quasi generationem, quod vocatur exitus de potentia ad actum et motus quidam vel mutatio.”

generation.” Thus, this influence flows in the form of light, effecting change in each of the heavenly bodies, which in turn alters the light that is then passed on to the next sphere.²⁸⁸

In this way the superior celestial bodies influence the inferior, never conversely.²⁸⁹ Thus, superior power always has a stronger influence than inferior, but that does not mean the inferior powers have no effect upon the process. As each inferior body receives celestial light from its superior it “forms and determines as well as distinguishes the superior [power].”²⁹⁰ Thus the light is received and altered before it is passed on. The key to this operation, according to the *Speculum*, is the capacity of materials to receive celestial influence, which alters the received power in accord with the particular balance of elements found in any given object.²⁹¹ The end effect, then, is like a waterfall. As the water cascades down from on high, the flow and force of the water is altered in various ways when it strikes rocks. The change in the course of the flow is dependent upon the rocks’ positions, the angle that they present to the flowing water, their size, and a host of other factors. The weight of thousands of gallons of water may be what is most important in determining the effects of the waterfall, but the result at the bottom of the fall is determined in large part by the aggregated influences of every obstacle along the way.

²⁸⁸ Albert, *Liber de Natura et Origine Animae*, 6.

²⁸⁹ Albert, *De Causis*, 128.

²⁹⁰ Ibid., 128. “format et determinat et distinguit superiorem.”

²⁹¹ Albert, *Speculum*, 258, chpt. 13. Albert notes in the *Speculum*: “Caeterum naturae planetarum in semetipsis, secundam quas dicuntur calidi, frigidi, humidi, sicci, fortunae, et infortunae, hoc est operantes iussu Dei effectum et destructionem, masculini, foemini, diurni, nocturni.”

Albert provides one of his most thorough discussions of the complex influences that such a system can ultimately impart to the terrestrial realm in his work *De fato*.²⁹² Here he discusses some of the possible influences of the heavenly bodies on conception, infant mortality, and the characteristics a developing infant can acquire through celestial interaction with terrestrial elements.²⁹³ Each of the planets has a different dominant nature; for example, Saturn has a “cold and dry” nature.²⁹⁴ Furthermore, planets also have differing influences, which act upon the development of bodily organs and humors.²⁹⁵ In this way celestial bodies influence both an individual’s health and personality.²⁹⁶ Albert’s belief in the secondary influences of celestial bodies upon a person’s inner being explains why he might contend that one wishing to understand the functions of the soul should begin by studying the interactions and influences of celestial bodies. All things are from God, but by “influencing [man] through the motion of heaven [He] regulates and causes the intellectual operations of the soul” and impresses change “on the rational soul.”²⁹⁷ In this manner, through a celestial body such as Saturn, God can generate a host of different characteristics in an individual born with this planet in a dominating position. For Saturn

²⁹² Albert, “De fato,” 49.

²⁹³ Ibid., 49.

²⁹⁴ Ibid., 49.

²⁹⁵ Edward Grant, *Planets, Stars, and Orbs* (Cambridge: Cambridge University Press, 1994), 204, 227, 467-469. Grant discusses the different properties and natures of the planets. These varying characteristics did present an apparent conflict. The planets were held to be composed of a perfect substance (quintessence) and thus could not have accidental properties. Therefore, it seems as if they should have had perfectly uniform influences, rather than differing from one planet to the next. Medieval scholars held the differentiation in influence to be explainable partly through the orbital positions of these planets. Some scholars argued that all earthly effects, such as hot or cold, came from celestial influences, but that these effects only existed as manifested in the patient. By the fourteenth century the characteristics that were seen to incline a terrestrial patient toward a certain result, such as being hot-tempered or sickly, existed virtually (*virtualiter*) in the celestial region but not formally (*formaliter*). See Edward Grant, “Cosmology” in *Science in the Middle Ages*, ed. David C. Lindberg (Chicago, University of Chicago Press, 1978), 287.

²⁹⁶ Albert, “De fato,” 49.

²⁹⁷ Ibid., 47. “[Deus] influens per motum caeli regulat et causat operationes intellectuales animae.” “sic est in omnibus moventibus et motis quae distant invicem. similiter est intelligentia et anima: quoniam intelligentia distat, et imprimit in animam rationalem secundum locum distans ab eo.”

these effects can range from cowardice to ignorance.²⁹⁸ These celestial influences must be considered in conjunction with a large number of variables, but the result is a system that promises to enhance individual understanding of the human soul through an analysis of influencing variables.

However, this system promises more than simply a method of understanding the soul as it is. If celestial motions have such a strong influence on people and terrestrial effects in general, could one not receive foreknowledge of events by understanding these motions? After all, medieval scholars considered the motions of celestial bodies perfectly uniform, and the characteristics of these incorruptible bodies were likewise consistent.²⁹⁹ Therefore, it seems all one would need to do would be to understand the interactions between celestial bodies and the resultant effects on the sub-lunar realm. Thereafter, predicting the future positions of these bodies in relation to one another would be nothing more than an exercise in mathematical astronomy. Once these positions were known, which may be calculated for any given time in the future, could one not then predict future events as caused by these celestial agents?

In order to understand why one could not make perfectly accurate predictions, we need to turn to Albert's discussion of causality and fate in his commentary on Aristotle's *De physica*.³⁰⁰ In this work he explains that "there seem to be three modes of causal

²⁹⁸ For a clear and relatively concise introduction to the principles and elements of medieval and Renaissance astrology, see J.C. Eade, *The Forgotten Sky: A Guide to Astrology in English Literature* (Oxford: Clarendon Press, 1984).

²⁹⁹ Albert, "De fato," 49.

³⁰⁰ Albert the Great, *De physica*, pars I, ed. Paul Hossfeld (Monasterii Westfalorum: Aschendorff, 1987), IV, 116-118.

agents in nature and in the will, namely, the constant, the frequent, and the seldom.”³⁰¹

All effects that are present in the universe may then be classified under one of these three headings.

If something occurs with absolute regularity, then it must occur from a necessary cause.³⁰² Such a cause must have incorruptible substance and lack movement. The only example of such a necessary cause is God acting on the “motion of the stars,” as

they are from necessary causes [God’s actions] and are always moving similarly, and they have an incorruptible moved substance. . . . therefore they are unable to have a contrary [element] impeding in their own causality.³⁰³

Thus, celestial bodies are less perfect than God, in that they are composed of incorruptible substance but lack God’s spatial immobility. However, they do have perfectly regular motion, so the motions of the celestial bodies are considered as necessarily occurring. Turning for a moment to the *Speculum*, we find an explanation of this necessity of motion clearly laid out:

The necessity of this [that is, celestial motion] is apparent from what has been said, meaning that motion of inferior things derives from obedience to the motion of superior things. The necessity of this has nothing whereby it may be impeded, since it may not be subject to free will, but only to the will of its Creator, who provided it thus from the beginning, and from Him alone is it able to be turned aside, since the plenitude of power is held by Him alone. While He nevertheless does not

³⁰¹ Ibid., 118. “tres sint modi causae agentis in natura et voluntate, scilicet semper et frequenter, et in paucioribus.”

³⁰² Ibid., 116.

³⁰³ Ibid., 116. “Ea autem quae semper similiter fiunt, sunt a causis necessariis et eodem modo semper moventibus et habent substantiam incorruptibilem motam et ideo non possunt habere contrarium impediens in causalitate sua.”

wish to avert it, because His plan is not changeable such as one from children or servants; rather, he wishes that [plan] to endure until the end imposed upon it by Himself.³⁰⁴

Since this necessary form of causation and effect is obviously existent only in the supralunar realm we can ignore this form as our discussion moves to terrestrial modes of causality.

As one should expect from the earlier discussion of the way in which any force or being is diminished in comparison to that which precedes it, the next level of causality is that which occurs regularly, or “frequently.”³⁰⁵ These are effects that may be opposed or impeded at any time since “they have an ordered, not a necessary, cause.”³⁰⁶

Furthermore,

if the two [effects] are compared, then those things that are necessary and constant are moving and regulating those things that occur frequently, but they [the affected objects] do not take on the complete order [of the agents] of themselves,³⁰⁷

thus maintaining a greater or lesser degree of irregularity. This divergence in regularity and perfection between those things that occur necessarily and those that occur frequently is brought about “because of the inequality of their matter” between those things

³⁰⁴ Albert, *Speculum*, 250, chpt. 12. “Cuius necessitas ex praedictis apparet, videlicet ex obedientia motus inferiorum ad motum superiorum, nec habet unde impediatur eius necessitas, cum neque libero arbitrio sit subiecta, sed soli voluntati sui conditoris, qui ab initio providit sic, et ab ipso solo averti potest, ut apud quem solum plenitudo potestis habetur, cum tamen nolit avertere, non est enim eius consilium mutabile sicut unius ex pueris aut ancillis, sed vult illud durare usque ad terminum ab ipso ei impositum.”

³⁰⁵ Albert, *De physica*, I, 116.

³⁰⁶ Ibid., I, 116 “habent causam ordinatam non necessariam.”

³⁰⁷ Ibid., I, 117. “si ista duo comparantur, tunc ea quae sunt necessaria et semper sunt moventia et regulantia ea quae sunt frequenter, sed non excipiunt in toto regulam ipsorum, propter hoc quod materia ipsorum est cum privatione et forma non in toto vincit eam, quod enim ea quae sunt frequenter, deficiunt ab his quae sunt semper.” The next note explains why.

possessing necessarily occurring causal agents, in opposition to those whose causal agents are only frequently regular.³⁰⁸ Or to express this principle through somewhat more poetic imagery drawn from the *Speculum*:

I say that every operation of a cause acting upon something is according to the proportion of the matter receiving that very operation, just as one and the same fire is at work in drying clay as well as in melting wax.³⁰⁹

Clearly, it is not just the affecting force for which one must account when considering potential outcomes. Qualities of matter and their elemental interactions have important roles to play as well.

Elemental characteristics and their interplay are not the only factors that bring about the reduction to actuality of the potentialities imparted by celestial influence. Within the realm of frequently effective modes of causality, actions initiated by a creature are successful only in relation to circumstance. All things being equal, an animal might “eat according to the ability for eating,” meaning that the animal can be expected to act merely according to circumstance.³¹⁰ For the lower animals, circumstance always explains their behavior, even though one viewing the animal from without might not be able to discern what motivates the beast to action. It could be something as obvious as a lion reacting to an external threat from a hunter, but action could also be precipitated through the internal relationship of humors. The invisible influences of the celestial

³⁰⁸ Ibid., I, 117. “ea quae sunt frequenter, deficiunt ab his quae sunt semper, hoc est propter materiae eorum inaequalitatem.”

³⁰⁹ Albert, *Speculum*, 258, chpt. 13. “Ego autem dico, quod omnis operatio causae agentis supra rem aliquam ist secundam proportionem materiae recipientis ipsam operationem, ut unus idemque ignis operatur in luto arefactionem atque liquefactionem in cera.”

³¹⁰ Albert, *De physica*, I, 117. An animal might eat “per comparationem ad potentiam comedendi.”

bodies affecting the sensible appetites of the beast are an important, but not the only, factor.³¹¹ Regardless, for Albert any action carried out by a sensible animal is necessarily the result of some natural influence. Such a creature, being possessed only of vegetative and sensible souls, is completely lacking in any faculty of will, and thus can never be said to act in a willed manner.³¹²

But what about those celestial influences that externally motivate an animal to act? This influence functions by affecting the corporeal sense organs of an animal, which then generate the sensible appetite. This form of causation can influence the soul only *per accidens*. Albert and his student Thomas agreed that the stars, as corporeal bodies, could not influence the soul directly, since it is a non-corporeal body.³¹³ This would hold true for any type of soul, whether sensible or intelligible or even vegetative, for it is the non-corporeal nature of the soul that precludes it from receiving celestial influence directly. Although Albert does not explicitly state this idea, one may see his position in a discussion of the way in which light, as a non-corporeal body, can influence the body. Albert argues that light “is an instrument of a heavenly body,” and, thus, when this light

³¹¹ In scholastic terminology, “sensible” refers to an action associated with the “sensible soul;” in other words that aspect of a creature that allows it to sense the world around it. This is the only means whereby brute animals may function in the world. However, as I explain below, humans also possess an intellectual soul in addition to the sensible and vegetative souls. This allows one to exercise the intellect through an action of the will to achieve understanding. Thus, brute animals are referred to as “sensible” animals, while humans are “intelligible” or “intellectual” animals.

³¹² Albert, *De anima* I, 234. “quoniam voluntas, quae solius rationis est, est appetitus rationalis . . . et si aliquando dicitur bruti animalia volentia, abusus fit vocabuli.”

³¹³ Albert, *De anima*, I, 114. See Thomas Aquinas, *Summa Theologiae*, Ia, q. 115, a. 3 and 4, “motus horum inferiorum corporum, qui sunt varii et multiformes, reducuntur in motum corporis caelestis sicut causam. Sciendum est tamen quod indirecte et per accidens impressiones corporum caelestium ad intellectum et voluntatem pertinere possunt, inquantum scilicet tam intellectus quam voluntas aliquo modo ab inferioribus viribus accipiunt, quae organis corporeis alligantur . . . nam intellectus ex necessitate accipit ab inferioribus viribus apprehensivis;” Iia, q. 95, a. 5, “Nullum autem potest imprimere in rem incorpoream. Unde impossibile est quod corpora caelestia directe imprimant in intellectum et voluntatem.” See also Grant, *Planets, Stars, and Orbs*, 569-570.

affects a corporeal object, it is not a “body that is affected by a non-body, but by a heavenly body through an instrument that is not a body, *but has within itself the virtue of a body.*”³¹⁴ It would seem that if Albert wishes to maintain his logical consistency, he cannot have it both ways. Therefore, if the non-corporeal light of the celestial bodies influences the corporeal world by having within itself the virtue of the corporeal celestial bodies, then this light cannot directly influence the non-corporeal soul. Therefore, it can only influence the soul to act as a consequence of influencing the body, by, for example, creating a “superfluity of heat and dryness from the operations of the heavens,” thereby indirectly motivating a creature, as Albert explains in the *Speculum*.³¹⁵ For animals—and Albert recognizes humans as falling within this category—the soul is inclined toward an act through the motivation of a sensible appetite generated by the corporeal organs. Thus, celestial influence may affect the soul indirectly, by influencing these organs. Thomas promotes this explanation later.³¹⁶

But while Scholastics, such as Albert, recognized that humans are animals, they are categorized as more complex than lower-order brutes.³¹⁷ Humans, as intellectual creatures, possess the intelligible soul in addition to the sensible soul common to all animals.³¹⁸ The intelligible soul provides a human with the ability to reason and contains the rational appetite, which for Albert is that which enables a human to incline himself

³¹⁴ Albert, *De anima*, I, 114. “est instrumentum corporis caelestis. . . et sic corpus non efficitur a non-corpore, sed a corpore caelesti per instrumentum, quod non est corpus, *sed habet in se virtutem corporis*” (emphasis added).

³¹⁵ Albert, *Speculum*, 258, chpt. 13.

³¹⁶ Thomas Aquinas, *Summa theologiae*, Ia, q. 115, a. 4: and IIa, q. 95, a. 5.

³¹⁷ In scholastic terminology a human is a substance composed of the necessary natures of intellect and animal. See Thomas Aquinas, *On Free Choice* as included in *Selected Writings of St. Thomas Aquinas*, trans., Robert P. Goodwin (New York: Bobbs-Merrill Co., 1965):117-155.

³¹⁸ *Ibid.*, 117.

toward an object through a cognitive choice.³¹⁹ This ability to incline oneself is synonymous with the will. The sensible soul, which humans and animals possess in common, enables a person to receive the sensory input of the five senses from the sensible world.³²⁰ This aspect of the soul contains the sensible appetite, which inclines one toward an object of desire without the use of cognition.

But the sensible appetite that is paramount in brute animals is not powerless to affect humans. The sensible appetite generates corporeal desires within a person, such as concupiscence or rage. Thus, in a human the will is a faculty just as any other.³²¹ This being the case, will only functions when actively applied. Therefore, a person can be motivated through a “fancy” or “desire” to do something involving no exercise of the will.³²² In this way, a person might eat a chocolate cake merely because he or she is driven by a desire to do so; in effect a lust for chocolate provides the motivation. One should be mindful of such a human potential to act according to impulse, rather than will. Although all humans possess will, it is possible—perhaps even normative—to act according to an impulse of the sensitive appetite without exercising the will.³²³ And since all people may “be judged to be chaste or impure, wrathful or patient” according to their natural inclinations—or aptitudes as Albert calls them in the *Speculum*—then an understanding of the inclinations that celestial influence impart to us, gleaned from a study of astrology, may allow the will to function more in

³¹⁹ Albert, *De anima*, I, 241.

³²⁰ Ibid., 241.

³²¹ Ibid., 241.

³²² Ibid., 241; Albert, *Questiones*, 219-220. Desires “non sint per essentiam de natura rationis, participant tamen cum ratione.”

³²³ The sensitive appetite, in scholastic terminology, is the force that provokes an agent to action through the corporeal senses. Properly speaking, the will is associated only with the intellectual appetite.

accord with the precepts God has handed down.³²⁴

The form of natural causation resulting from some force in nature rather than an act of will is always present in creatures that are not self-generating. Other than the actions of animals, naturally occurring events include such things as an olive tree springing from an olive seed, or a man springing from the seed of man.³²⁵ Although these actions normally occur in a predictable fashion, they are always contingent upon external or internal factors. Thus, in the examples above, secondary agents acting from outside the creature in question may affect the generative process. For example, if an olive seed lacks the necessary water, it will not generate a new olive tree, despite conditions that would otherwise lead to generation.³²⁶ Insufficient water may also cause the generation of a sickly and stunted tree, which bears little resemblance to the tree that generated the seed from which it sprang. Furthermore, internal factors may affect the process of generation. For instance, if a woman has a humoral imbalance at the time of conception, it could lead to either a failure of generation, or the generation of a sickly child.

Even in the case of a willed action, the result is only usually effective.³²⁷ If a willed agent should direct the will upon a desired effect that is normally within the

³²⁴ Albert, *Speculum*, 260, chpt. 14. “Sed quid de moribus animi respondum, nisi quia non iudicatur natus castus, aut incestus, aut iracundus, aut patiens et talia, nisi secundum aptitudinem et ineptitudinem? Inde nihilominus eliget hoc aut illud, sed ex opere caeli est quod, ad eligendum id ad quod aptus est, citius inclinetur.” After a long consideration of the ways one might use astrological forecasting to determine a proper course of action, Albert proclaims: “Talia destruere plus esset contra liberum arbitrium quam pro eo.” See *Ibid.*, 262.

³²⁵ Albert, *De physica*, 117. The generation of a human being proceeds, of course, from either an action of the will or from an impulse. However, since a person can have no control over the actual generation of a new person, there is no question of this generation being a willed act.

³²⁶ *Ibid.*, 117.

³²⁷ *Ibid.*, 117. The rest of the information in this paragraph comes from the same source.

agent's power, such as walking or eating, then one can expect that the desired result will normally come to pass. However, an internal or external impediment can still oppose the desired result. An example would be a person who tries to eat, but is too ill to tolerate the taste of food.

Our discussion of the “coming to be” of events, in scholastic terminology, now reaches the causal level of things that occur rarely. One example that Albert provides is of a person born with a six-fingered hand. In the course of generation this is not the normal effect.³²⁸ However, the rarity of the event does not change the fact that it is still a natural occurrence. It is still an event that is referred back to the “giver of forms,” and such an effect “will not be beyond the intent of the nature of the prime agent [God].”³²⁹ Thus, even an occurrence with no clear cause comes to pass through a complex chain of causality involving celestial influence and the interaction of the elements. All these factors are ultimately moved through God's power, though He normally³³⁰ applies His power through the mediating elemental and celestial forces.

Likewise, in events within the realm of human affairs nothing occurs without the involvement of preceding causes. Thus, when a man finds a buried treasure this discovery is predicated upon the earlier burial of the treasure in a particular location coupled with his own decision to dig, though such a confluence of causes would

³²⁸ Ibid., 117. “Est in operibus naturae, quoniam in paucis est, quod ex materia manus fiunt sex digiti; materia ergo manus plus se habet ad non esse digitos sex ex ipsa quam ad esse sex digitos ex ipsa.”

³²⁹ Ibid., 118. It is still referred “ad datorem formarum” and “non erit extra intentionem naturae primae agentis.”

³³⁰ Unless of course God chooses to intervene directly, in a miraculous fashion.

constitute a very rare event.³³¹ Therefore, even though the individual who buried the treasure had done so without prior intent of its later discovery, that does not alter the fact that his actions did indeed lead to the later discovery. Within this realm of causality, the level of those events that occur very infrequently, Albert locates the idea of fortune and misfortune. Not because Albert believes that such events occur without a cause, but rather because they occur in a seemingly unpredictable fashion due to influences that may not be noticeable or from preceding events that may be unknown. Thus, for Albert fortune and misfortune are merely names people apply to very rare events.³³²

Consequently, by understanding this causal chain we may discern how Albert viewed fate. In his view, fate is the pattern of influence as it exists in its pure form in the celestial spheres. Therefore, it is a “necessary cause,” meaning that the combination of perfectly incorruptible material with perfect motion in the celestial realms provides necessarily predictable influences. Thus, a motion or an effect has an unchanging and invariable nature.³³³ However, this perfection of order cannot be received “in generated things, on account of their mutability, being is received mutably and contingently.”³³⁴ Celestial bodies do have a necessary nature and

therefore it should be said, that the cause of fate is necessary; but from this nothing else follows except that being itself is necessary, but it does not follow that it imposes necessity upon things: because [necessity] does not inhere in things according to the power of the heavens, which [i.e., the heavens] are necessary, but according to the

³³¹ Albert, *De physica*, 121.

³³² Ibid., 121.

³³³ Albert, “De fato,” 48.

³³⁴ Ibid., 48. “in rebus autem generatis, propter mutabilitatem ipsarum esse, est recepta mutabiliter et contingenter.”

power of inferiors, which are completely contingent and mutable.³³⁵

Thus, by the time these celestial bodies communicate their influence into the terrestrial realm, the result is not something that *must* happen, but merely something that is *likely* to happen.³³⁶ For Albert this understanding of causality is perfectly logical; otherwise, inferior sub-lunar creatures would behave as predictably as those creatures in the supra-lunar realm.

Since the motions of the celestial bodies are uniform and predictable, then Albert felt it was logical that one could use astrology to foresee future events.³³⁷ The *Speculum* goes so far as to say that “it is clearly proven by means of that science [astrology] that the obedience referred to [of terrestrial objects to their celestial influences] exists and perseveres without change,”³³⁸ setting up the preconditions that would allow for successful astrological predictions. Although such predictions could only provide information about probable events, Albert felt that such knowledge could be quite beneficial. It is through the benefits that Albert predictive astrology promised that we can begin to understand the importance of this celestial science in Albert’s thought. Anyone armed with such information who understood celestial effects could then make decisions

³³⁵ Ibid., 48. “ergo dicendum, quod fati causa necessaria est; sed ex hoc non sequitur aliud nisi quod sit necessarium ipsum esse, sed non sequitur quod necessitatem rebus imponit: quia non inhaeret eis secundum potestatem caelestium, quae necessaria sunt, sed secundum potestatem inferiorum, quae omnino mutabilia et contingentia sunt.”

³³⁶ Ibid., 49. Necessary modes of causality cannot exist within the sub-lunar realm. Thus all terrestrial effects are the result of causalities representing varying levels of likelihood that these effects will come to pass. See above, 16-17.

³³⁷ Ibid., 48.

³³⁸ Albert, *Speculum*, 220, chpt. 3: “Nunc autem ex ista scientia convincitur evidenter, quod dicta oboedientia stet atque immutabiliter perserveret.”

more wisely,³³⁹ such as the man who changes his diet to overcome a future “superfluity of heat and dryness,” in an example provided in the *Speculum*.³⁴⁰ As we have already seen, celestial influences could affect the soul only indirectly, and thus one could always overcome such influences through an exercise of the will.³⁴¹

However, the human ability to overcome celestial influence did not invalidate the usage of astrology to predict human action. According to Albert only when a person is acting in a purely logical fashion can an individual be free of outside influence, including that exerted by celestial bodies.³⁴² However, humans rarely act in such a purely logical fashion. People are more commonly motivated by “fancies and physical impulses.”³⁴³ Although celestial influence may not move the soul, it may certainly act upon the body. Through the corporeal intermediary, one may be moved by sensible appetites, or bodily impulses, to behave in a certain way.³⁴⁴ Thus, as we saw earlier, a person may be motivated to eat a chocolate cake through just such impulses. A person’s will could be used to resist the impulse, but few people regularly act in such a willed fashion. Thus, people are carried along by their impulses so frequently that one may make accurate predictions for most of these people based on celestial observations.

Nevertheless, citing pseudo-Ptolemy, Albert emphasizes that “the wise person

³³⁹ Albert, “De fato,” 48.

³⁴⁰ Albert, *Speculum*, 258, chpt. 13.

³⁴¹ Albert, *De anima*, I, 234.

³⁴² Ibid., I, 234.

³⁴³ Ibid., 234.

³⁴⁴ Albert, “De fato,” 48.

dominates the stars.”³⁴⁵ It is possible to master celestial influences, because the heavenly bodies “impose nothing of necessity upon things, but incline [a creature] toward a heavenly effect.”³⁴⁶ Therefore, a person may exercise his or her will to overcome motivations of the sensible appetite, which are susceptible to celestial influence. Of course this mastery of desires imparted by our appetites is easier to accomplish if one fully understands why one is motivated in a certain way and reflects upon the right or wrong nature of an impulse before acting upon it. In this way, the wise person may dominate celestial influences in a fashion similar to a doctor, who uses his art to restore health to a patient made feverish through similar influences.³⁴⁷ According to the *Speculum*, astrology provides many practical benefits to people concerned with their health because, for instance, if one were to learn about an impending illness from a study of the stars, due to occur in some future summer, then a change in diet might be enough prevent such a sickness.³⁴⁸ In this way a “foreseen impediment could be removed. . . and yet the operation of heaven is not frustrated, but is perfected.”³⁴⁹ But it is not only in the realm of health care that astrology can act as a useful aid in directing the wise man to change his actions; understanding celestial influences allows one to live in closer accord with God’s will, rather than the impulses imparted by the intervening celestial medium. By mastering those impulses that the impurities of the celestial medium impart, the one knowledgeable in astrological lore will be able to live as a better Christian.

³⁴⁵ Ibid., 48. “sapiens homo dominatur astris.”

³⁴⁶ Ibid., 48. “nullum necessitatum imponit rebus, sed inclinat ad effectum caelestium.”

³⁴⁷ Ibid., 48. Albertus cites Averroes, “the commentator,” for this example.

³⁴⁸ Albert, *Speculum*, 258, chpt. 13.

³⁴⁹ Ibid., 258, chpt. 13. “Hac ergo via potuit removeri . . . impedimentum praescientiam; nec tamen frustrata fuit caeli operatio, sed perfecta.”

Albert is referring to the way in which one can use astrology to live more in accord with God's dictates, when he states in the *Speculum* that astrological divination does "not destroy the freedom of the will, but . . . rectifies and directs it."³⁵⁰ The idea that anyone would prohibit this use of astrology flies in the face of reason, as far as Albert is concerned, for "to destroy such things [as astrology] would be more opposed to free will than for it. . . because it is fitting to take advice" for this shows that "not all things come to be from necessity," but rather that some things happen by chance.³⁵¹ Albert's argument here is certainly a key point. While opponents of astrology attacked it on the basis that they perceived prognosticative arts to call free will into question, Albert reversed the opposing position by arguing that celestial divination allowed one to act in accord with reason and free will, rather than being moved by mere chance. For as he said in his *Questiones*, an undated though early work, predictions may rightly be made based upon dispositions and inclinations of bodies, "which incline and pull upon free will, just as the body draws the spirit."³⁵² Understanding heavenly influences allows humans to better counteract them and in this manner to live as more fully actualized humans and good Christians.³⁵³

³⁵⁰ Albert, *Speculum*, 262, chpt. 14. "quid melius fieri conveniat, hoc an illud. Et illae quae sunt consilii, non destruunt . . . rectificant . . . arbitrii consilii."

³⁵¹ Ibid., 262, chpt. 14. "Talia destruere plus esset contra liberum arbitrium quam pro eo, quia oportere consiliare . . . ostenditur non omnia esse ex necessitate."

³⁵² Albert the Great, *Questiones*, 59. "astronomi non dant principia, ex quibus contingit prognosticari aliquid de his quae subsunt libero arbitrio, secundum quod subsunt illi, sed coniecturantur de dispositionibus corporum, quae inclinare et retrahere liberum arbitrium, sicut corpus trahit animam."

³⁵³ A full understanding of Albert's concept of human versus animalistic action would require a substantial diversion. For now, we should refer to his discussion of the issue in Albert the Great, *Super Ethica*, I, 9-10. The ultimate end of man is to live as a good Christian. That which enables him to do so is the highest science. Therefore, astronomy and the mathematical arts are component parts of such knowledge, just as those arts that allow an equestrian to ride well, such as the use of the bridle, are subordinate to the actual art of riding. It is clear that for Albert the proper end of humanity is only to be understood through an analysis

Albert believed that without astrology we often lapse into a condition of servitude to our passions,³⁵⁴ and in fact our ability even to do good is compromised. Good action can only result from good intent; if celestial influences drive us to perform an ostensibly good act, rather than occurring through a consciously willed choice, then the result is an animalistic response, rather than a truly good act.³⁵⁵ Astrology is the key to understanding celestial influences, allowing us to function as free agents. This explains why Albert has so little patience with those who attack it.³⁵⁶ Furthermore, sensible desires ultimately derive from celestial influence—whether directly imparted or through interaction with an animal’s humors. Lust, greed, avarice—most of the seven deadly sins could be attributed to celestial influences. Therefore, far from compromising the freedom of the will or representing an impious and hubristic search for knowledge, understanding celestial influences and the myriad causal relationships that they establish aids in resisting base drives, thereby allowing one to live more in accord with the precepts of Christ.

of human desire informed by an understanding of choice. Thus, choice is absolutely essential to obtaining man’s true end, but choice is only possible through the exercise of an informed potentiality. Otherwise, humans tend to be driven by longing or desire (*desiderium*), which is empty (“vacuum est desideratum.”) This is a development of Aristotle’s concept of *desiderium*, which “esset vacuum et inane desiderium,” from the Philosopher’s *Ethica* 1094 a 18. But Aristotle does not explicitly refer to “voluntas,” nor does he distinguish the two substantially. Albert seeks to clarify this. For him, “voluntas” is, by necessity, a willed act and cannot be the result of a corporeal impulse, such as that provided by a longing or “desiderium.” As such, an action that is the result of such an impulse is an animalistic action, not the action of a human at all, for that which makes us human are our intellect and will—the essential characteristics of “voluntas.” Albert’s development of this notion of “voluntas” versus “desiderium” is a good example of why Weisheipl’s characterization of Albert’s commentaries as “paraphrases” is inaccurate. Albert frequently develops Aristotle’s ideas in new and innovative directions, taking issue with Aristotle where he finds the Philosopher to be wrong or unclear, and expounding his own concepts as adjuncts to Aristotle.

³⁵⁴ Ibid., 224.

³⁵⁵ Ibid., 348. “aliquis operatur iustum secundum ignorantiam vel violentiam aut a casu, et a tali operatione non efficitur iustus, et ideo oportuit addere ‘secundum electionem,’ quia nullum opus virtutis est sine electione.” Celestial influences were not, of course, limited to motivations to perform bad actions,

³⁵⁶ As I have noted, this was the source of Albert’s wrath in his work, “De quindecim problematibus.”

Understanding the place that astrology holds in Albert's worldview is important if we are to understand the medieval worldview. Celestial divination had been a component of Greek thought since antiquity and had proven attractive to Christian thinkers educated in that tradition since the time of Origen in the mid-third century. Unfortunately, astrology had been controversial for just as long. Albert managed to present the celestial science as an attractively elaborate model of the world that convincingly explained why things occur, which was not only consistent with Christian beliefs, but also complementary to them. In this way, astrological study served as a pathway to understanding the relationship between knowledge of physical and metaphysical things, of the human and divine realms, in a way that allowed one to better understand his or her place in the world, as well as how to live in closer accord with God's wishes. Through an analysis of the various forces working upon a person—celestial as well as terrestrial—one learned in the lore of astrology could hope to live a life more in keeping with God's commandments and less in line with the corporeal impulses that drive people to sin.

Just as importantly, for Albert astrology provided proof of God's existence and governance of the world, provoking not only belief in the hearts of man, but also a more ardent love of their creator.

Is this not one of the primary proofs that there is only one God glorious and sublime in the heaven and in the earth, that is if inferior motion obeys superior motion? . . . Now however it is clearly proven that the aforesaid obedience stands and perseveres unchangeably, whereby this provokes man to such a more ardent love of God . . . for He is not loved, if not known, [and] since he is first, he cannot be known by what

is prior, not by his own being, which is incomprehensible. . . . no human science touches upon [the effects that provide insight into God's being] as perfectly as the science of the judgments of the stars.³⁵⁷

Therefore, for Albert astrology provided a means by which humans could understand their place within God's creation, as well as providing the proof of His existence and governance of the world that inspires men to greater love of His sublime being.

Astrological beliefs held such a prominent place in Albert's worldview because of the insight they offered into humankind's place in creation, allowing people to live as better Christians. The centrality of astrological beliefs, and the promise that astrology presented in bettering human life, explains why this belief system not only survived, but also thrived, through the end of the Middle Ages and beyond.³⁵⁸

Albert did not hold all forms of astrology to be equal. According to the *Speculum*, there are four prognosticative forms of astrology. "The first is about revolutions,"³⁵⁹ which concerns what "God, glorious and sublime will work in a given year through the stars as through instruments."³⁶⁰ "The second [form] is about nativities,"³⁶¹ which deals with natal, or birth, horoscopes cast to determine a child's

³⁵⁷ Albert, *Speculum*, 220, chpt. 3. "Numquid et haec una est ex praecipuis probationibus, quod non sit nisi unus Deus gloriosus et sublimis in caelo et in terra, si videlicet motus inferior motui superiori oboedit? . . . Nunc autem ex ista scientia convincitur evidenter, quod dicta oboedientia stet atque immutabiliter perseveret: quare tanto provocat hominem ad Deum ardentius diligendum . . . Non enim diligetur incognitus, neque cum sit primus, cognoscetur per prius, neque per seipsum, cum sit incomprehensibilis. . . . nulla scientia humana perfecte attingit, sicut scientia iudicorum astrorum."

³⁵⁸ As late as 1799 the professor of *astronomia* at the University of Bologna was still required to produce an annual almanac for medical use. Tester, 184.

³⁵⁹ Albert, *Speculum*, 222, chpt. 4. "Prima est de revolutionibus."

³⁶⁰ Ibid., 222, chpt. 4. "Indicatur (astrologia) quid operetur Deus gloriosus et sublimis in eodem anno per stellas sicut instrumenta."

³⁶¹ Ibid., 222, chpt. 4. "Secunda de nativitatibus."

future prospects.³⁶² “The third [form] is about interrogations,”³⁶³ which is meant to provide a means for determining the answer to simple questions.³⁶⁴ “The fourth [form] is about the elections [meaning, the choosing] of favorable hours, to which part is added that part which is about images.”³⁶⁵ Though each of these forms of astrology could rouse the ire of conservative theologians, that last component of the fourth type may have been the most problematic: the art of images.

What did this art involve? According to the description contained in chapter eleven of the *Speculum*, the images in question were amulets or similar objects created at propitious times, inscribed with astrological symbols and constructed in accord with other ritual considerations, all designed to give the possessor the ability to harness and channel celestial energy into desired patterns, actively changing events here on earth rather than simply predicting them.³⁶⁶ Properly constructed images were thought to be useful in various ways, such as banishing vermin from an area protected by the image or gaining love or money for the holder of the image.³⁶⁷

Objects meant to bring about a change in the world through the manipulation of occult properties were patently magical.³⁶⁸ Albert recognizes that such things have

³⁶² Ibid., 232-234, chpt. 8.

³⁶³ Ibid., 222, chpt. 4. “Tertia de interrogationibus.”

³⁶⁴ Ibid., 234-236, chpt. 9.

³⁶⁵ Ibid., 222, chpt. 4. “Quarta de electionibus horarum laudibilium, cui parte supponitur pars illa quae est de imaginibus.”

³⁶⁶ Ibid., 240-249, chpt. 11.

³⁶⁷ Ibid., 248, chpt. 11.

³⁶⁸ For a discussion of this definition of magic, see Tambiah, 7-11; Marshall Clagett, *Greek Science in Antiquity* (New York: Abelard-Schumann, 1955); G.E.R. Lloyd, *Magic, Reason, and Experience* (Cambridge: Cambridge University Press, 1979); Christina Larner, *Enemies of God: The Witch-Hunt in Scotland* (Baltimore: The Johns Hopkins Press, 1981), 9; R.A. Horsley, “Who Were the Witches?: The

substantial potential for leading Christians astray, yet he avers that such is the case only if one deals with the wrong sort of images.³⁶⁹ In order to protect Christians, which was after all the intent behind the composition of the *Speculum*, Albert divides the various types of images into three categories: abominable, detestable, and permissible.³⁷⁰ The first of these forms employs suffumigations and demonic invocations, while the second resorts to foreign terms that may—or may not—involve the summoning of demons. The final, permissible, form avoids any such ambiguities.³⁷¹ The use of a magical amulet to bring about earthly effects seems to be at something of a remove from astrology's promise to provide guidance in relation to questions about the future, or about celestial influences upon a patient's body. So how did image magic fit within the astrological model of the universe, and why was Albert interested in this blatantly magical art?

Nicolas Weill-Parot has exhaustively studied the influence of the *Speculum's* section on images. He has argued persuasively that the *Speculum* originated the term “imago astronomica,” disseminating knowledge about such images and their applications throughout the West.³⁷² Weill-Parot also amply demonstrates that the *Speculum's* introduction of image magic to the West would alone have insured this work's important

social roles of the accused in European Witch Trials,” *Journal of Interdisciplinary History*, 9 (1979), 696. For an alternative view of magic as inherently malefic, see F.E. Lorint and J. Bernabe, *La Sorcellerie paysanne* (Brussels: De Boeck, 1977), 25. For a consideration of the difficulties involved in understanding the usage of the term magic, as well as an analysis of the way medieval peoples applied and understood it, see Richard Kieckhefer, “The Specific Rationality of Medieval Magic,” *American Historical Review* 99.3 (1994): 813-836, specifically 819-820.

³⁶⁹ Charles Burnett, “Talismans: magic as science? Necromancy among the Seven Liberal Arts,” *Magic and Divination in the Middle Ages* (Aldershot: Variorum, 1996): 1-15, 3-4.

³⁷⁰ Albert, *Speculum*, 240, chpt. 11; Burnett, 3-4.

³⁷¹ Albert, *Speculum*, 240, chpt. 11.

³⁷² Weill-Parot, 28.

place within the tradition of European intellectual history. Although the author overstates the centrality of the place of images in the *Speculum*,³⁷³ his analysis of the influence the work had in spreading their use to even the highest levels of society³⁷⁴ is invaluable. Yet he fails fully to address the reason why Albert, or any Christian, would have found belief in the efficacy of astral images to be useful within the context of their worldview. Now, we might presume that the inherent usefulness that images promised, in everything from curing kidney stones to destroying vermin,³⁷⁵ would be enough of an explanation. But there is more to the story that we would miss by settling for this type of utilitarian explanation.

Let us begin with a consideration of the sources that provided the basis for the use of images. Weill-Parot rightly points to the ninth-century Jewish astrologer Zahel's *De electionibus* as containing the link between astrological elections and the use of images to control celestial influences.³⁷⁶ In this work Zahel argues that a house built at an astrologically inauspicious time can concentrate celestial energies, creating harmful living conditions for the inhabitants. By extension, the creation of an object at an auspicious time can channel these same celestial influences in such a way as to produce good effects.

However, a far more important source is Thabit ibn Qurra's *De imaginibus*, first

³⁷³ Ibid., 218, chpt. 2. The discussion of images in the *Speculum* is, in fact, more of an afterthought, taking up only two of sixteen chapters in the modern printed edition of this text.

³⁷⁴ In approximately 1301 Arnold of Villanova prescribed the use of an astrological image for Pope Urban VIII's kidney stone. Despite the protest of a number of cardinals, Urban followed this prescription and praised its efficacy.

³⁷⁵ Albert, *Speculum*, 248, chpt. 11.

³⁷⁶ Weill-Parot, 390.

translated into Latin by John of Seville sometime after 1133.³⁷⁷ Thabit, though a writer of the Arabic world, was no Muslim. Rather, he was a committed Sabien, a polytheistic religion that maintained a system of worship centered on the seven planets whose seven ruling angels acted as mediators to earthly concerns.³⁷⁸ According to early tradition, Thabit worked as a moneychanger in the market of Harran while writing philosophy in his spare time.³⁷⁹ An intensive education nourished his interest: we know he was fluent in Greek, Syriac, and Arabic. His coreligionists excommunicated him in 872, although there are no clues as to what transgression Thabit might have committed among the Sabiens.³⁸⁰ Thereafter, Thabit traveled to Baghdad, where he lived until his death in 901. During the course of his life he wrote 150 books in Arabic on logic, mathematics, astronomy, and medicine, as well as another fifteen texts in Syriac.³⁸¹

Thabit describes the *De imaginibus* as being on the “more valuable astronomy . . . the science of images.”³⁸² The images in question are charms made from “tin, lead, silver, or gold” with the name of the ascendant, the sign rising over the horizon at the moment of one’s birth, and its corresponding lord, or planet associated with that sign, as well as the lord “for the hour and the day,” carved upon them.³⁸³ One then places the

³⁷⁷ Lynn Thorndike, “John of Seville,” *Speculum* 34.1 (1959):

³⁷⁸ M. Tardieu in “Sabiens Coraniques et <Sabiens> de Harran,” *Journal Asiatique*, 274 (1986): 1-44. Muslim religious leaders granted this Northern Mesopotamian religious community tolerance by associating them with the unidentified “sabiens” of the Qu’ran.

³⁷⁹ De Lacy O’Leary, *How Greek Science Passed to the Arabs* (London: Routledge and Kegan Paul, Ltd., 1951), 173.

³⁸⁰ *Ibid.*, 173.

³⁸¹ See the introduction to Frances J. Carmody’s *The Astronomical Works of Thabit b. Qurra* (Berkeley: University of California Press, 1960).

³⁸² Thabit bin Qurra al-Harrani, *De imaginibus*, as included in Carmody’s *The Astronomical Works of Thabit b. Qurra*, 180.

³⁸³ Thabit, 181. “Cum ergo volueris de ea aperari, incipies sub ascendente . . . et figurabis imaginem . . . ex . . . stanno vel plumbo vel argento vel auro. Et sculpas super imaginem nomen ascendentis et domini

inscription beside the sign of the planet from which a beneficial influence is desired.

With the properly constructed charm one might be able, for example, to rid an area of vermin, ward off the effects of a malefic planet, affect the judgment of kings, or even bring ruin to a city.³⁸⁴

Moving back to the *Speculum*, the inclusion of a section on images has given some scholars pause in identifying Albert as its author. As Lynn Thorndike points out, Albert stated in his commentary on the *Sententia* that such an image “inclines [men] to idolatry by imputing divinity to the stars and . . . is employed for idle or evil ends.”³⁸⁵ But this warning seems to be directed more at the misuse, rather than use, of images. This is clarified by Albert’s arguments in favor of the channeling of celestial influence through the manipulation of natural occult properties present in gems.³⁸⁶ Furthermore, concerns about the misuse of images are not incongruent with the treatment of the subject one finds in the *Speculum*. A disclaimer suggests that one should refrain from using images.³⁸⁷ But we should note that this disclaimer is singularly lacking in force. A lone sentence at the end of two chapters featuring the application and benefits of images suggests that the author did not find concerns about their usage credible. So what is the message that Albert was trying to convey about images in his commentary on the

eius et domini hore et domini diei et nomen.” For Sabiens, construction of images allowed one to directly influence the actions of the ruling angels. This was effectively a form of ritual prayer. See H. Corbin, *Temple et Contemplation: Essais sur l’islam iranien* (Paris: Flammarion, 1980), 143-170; Z. Vesel, “Reminiscences de la magie astrale dans les *Haft Peykar* de Nezami” in *Studia Iranica*, 23 (1994): 1-11.

³⁸⁴ Thabit, 181, 182, 188.

³⁸⁵ Thorndike, *HMES*, II, 557.

³⁸⁶ Weill-Parot states that Albert’s consideration in his *De mineralibus* of the use of minerals to manipulate celestial influences represents a complement to the *Speculum*’s treatment of the construction of images intended for the same purpose. See Weill-Parot, 280.

³⁸⁷ Albert, *Speculum*, 270, chpt 16.

Sententia and through the disclaimer included in the *Speculum*? The explanation is simple: Albert did not intend to warn his readers away from the use of images, but rather from their misuse. Albert makes his intent clear by his statements that images function “from the celestial virtue by the command of God” and only present a problem to the practitioner “if the conditions [upon which the construction of the image is based] are secretly necromantic.”³⁸⁸

As Weill-Parot has noted, image magic represents a “bad graft” onto the science of astrology; after all, few astrologers would have possessed the metallurgical skills necessary to construct such an image in the first place.³⁸⁹ So why include it at all? Is the inclusion of a discussion of the use of such images in the *Speculum* indicative of poor structure? I think not, and understanding why it is not completes our understanding of Albert’s model of celestial influences and interactions. Writing at a time when intellectuals across Europe hotly debated the permissibility of astrological beliefs³⁹⁰ and practices among Christians, Albert, the former Dominican lector and Parisian professor of theology, was surely cognizant of the presumed threat to free will that many saw in astrology. Yet he did not share these concerns. Maintaining the permissibility of image

³⁸⁸ Ibid., 248-250. “Habebit effectum iussu Dei a virtute caelesti. . . quod si tacite conditiones necromanticae sunt, intolerabilis est.”

³⁸⁹ Weill-Parot, 435-437.

³⁹⁰ As I have pointed out, Stephen Tempier anathematized not only those who used astrology to forecast the future, but also anyone who merely *believed* in the possibility. The University of Oxford soon appropriated the ideas behind the Condemnations of 1277, issuing a similar list before the end of the year, which provoked a great deal of debate on both sides of the issue. The question of the role of the heavens in terrestrial events had troubled and intrigued writers for generations, with the debate gaining a great deal of energy in the twelfth century through the work of such writers and Adelard of Bath and Thierry of Chartres. For a consideration of some of the issues involved, see Richard C. Dales, “The De-Animation of the Heavens in the Middle Ages,” *Journal of the History of Ideas* 41.4 (1980): 531-550; David C. Lindberg, “Medieval Science and its Religious Context,” *Osiris* 10 (1995): 60-79; Pierre Duhem, *Études sur Léonard de Vinci* (Paris: Hermann, 1906), I, 412.

magic strengthened the overall argument for the value of astrology as a science that did not conflict with free will. If one could counteract the influences of the stars, or change them to suit the will of man, then this would seem to negate any idea that celestial influence interfered with the freedom of the will.³⁹¹ We need not take astrological images utility within the debate about free will to mean that Albert's defense of images was disingenuous, but the usefulness of image magic in "saving the phenomenon" of astrological divination would have increased the attraction of this subcategory of elections for a writer intent upon defending the science. Therefore, Albert would have had good reason to consider the doctrine of astrological images and would have had considerable motivation to view this application of astrological theory with favor. This favor could have motivated him to develop Thabit's ideas into the full-blown theory of image magic that Albert introduced to the West.

Before closing the book, so to speak, on the *Speculum's* discussion of images, it would be worthwhile to make special mention of the bibliographic component of this section of the work. Throughout the text one may find extensive lists of acceptable, and unacceptable, works containing information for astronomers and astrologers.³⁹² The list of unacceptable necromantic works dealing with images that falsely seek to appeal to the authority of astrology is especially comprehensive.³⁹³ In order properly to protect his readers from such works, Albert provides details about the forbidden books, despite the fact that he "shrank with horror from them" and did "not have perfect memory regarding

³⁹¹ Weill-Parot suggests, but does not develop, this idea. See Weill-Parot, 390.

³⁹² Albert, *Speculum*. See pages 212-218, chpt. 2, as well as chapters six and eleven in their entirety.

³⁹³ This section takes up all of chapter eleven.

their number, titles, incipits, or contents, or their authors.”³⁹⁴ Yet, despite his bad memory, he manages to provide a list of thirty-seven works that should be avoided, while providing the incipits for most as well as discussing the contents of several.³⁹⁵ Albert explains that he was driven in his research by a desire that he “might not be ignorant of how to ridicule the wretched believers . . . and repel their excuses” and most importantly so that similar works would not serve as a temptation.³⁹⁶

The comprehensive nature of the listing of works to be avoided raises an interesting question in the mind of the modern researcher: if these works are so injurious to the Christian faith, how is it that the author has such an in-depth knowledge of them? In a day seeing the first papally appointed inquisitors of heretical depravity,³⁹⁷ it seems peculiar to find someone openly admitting to a comprehensive familiarity with texts that the writer himself is acknowledging to be dangerous to Christians. However, the difficulty in this is only an apparent one, for it reinforces the semi-canonical nature of the *Speculum* as a work written at papal behest.³⁹⁸ This is comparable to the way in which Albert and forty of his colleagues at Paris participated in Odo of Châteauroux’s investigation of the Talmud in 1247, leading to its condemnation on 15 May 1248.³⁹⁹ In accord with the papal order establishing this commission, these scholars had familiarized

³⁹⁴ Ibid., 242, chpt. 11. “sed quoniam eos abhorruī, non extat mihi perfecta memoria super eorum numero, titulis, initiis, aut continentiis sive auctoribus eorundem.”

³⁹⁵ Ibid., 241-251.

³⁹⁶ Ibid., 242, “ut saltem non ignorarem qualiter est miseris eorum sectatoribus irriendum, et haberem de suo unde repellerem excusationes eorum . . . ut super consimilibus de caetero non tentarer.”

³⁹⁷ James B. Given, *Inquisition and Medieval Society* (Ithaca: Cornell University Press, 1997), 13-14. Pope Lucius III created the papal inquisition in 1189 with the issuance of the bull, *Ab abolendum*. By the end of the thirteenth century the Church possessed a well-developed body of law aimed at the extirpation of heresy and possessed the machinery to enforce these laws.

³⁹⁸ Lemay, “*Libri Naturales*,” 23.

³⁹⁹ Irven Resnick, “Talmud, *Talmudisti*, and Albert the Great,” *Viator* 33 (2002): 69-86.

themselves with the Talmud in order to condemn it for blasphemy. A similar mandate commanding Albert to investigate astrology would have required the thorough knowledge of illicit texts that the author of the *Speculum* displays.

The closing chapter of the *Speculum* supports the usefulness that a list of illicit texts would have had. Albert states: “but about those necromantic books it seems better, without prejudice to a better opinion, that they should be put aside rather than be destroyed.”⁴⁰⁰ But why should such works not be destroyed? “Because the time is perhaps near, in which, because of certain reasons about which I am now silent, it will profit to have inspected those at least occasionally.”⁴⁰¹ What profit could there be in the examination of works injurious to the Christian faith, especially when “their inspectors should nonetheless take care as to the use of those books.”⁴⁰² The answer, of course, is that there were individuals who would have found it useful to acquaint themselves with the contents of heretical works, so that they might better be able to recognize and combat heresy when it stared them in the face: inquisitors. As we shall see in chapter five, some such men found the *Speculum* useful as a guide to understanding the distinction between licit and illicit forms of astrology. Albert could not have been unaware that the *Speculum* would represent a useful resource for inquisitors. Many of them came from within the ranks of his own order, the Dominicans.

⁴⁰⁰ Albert, *Speculum*, 270, chpt. 17. “De libris vero necromanticis sine praeiudicio melioris sententiae videtur, magis quod debeant reservari quam destrui.”

⁴⁰¹ Ibid., 270, chpt. 17. “Tempus enim forte iam prope est, quo propter quasdam causas modo taceo eos saltem occasionaliter proderit inspexisse.” While the “time is perhaps near” comment seems suggestive of apocalyptic thought, there is no other such suggestion in either the *Speculum* or the larger body of Albert’s work. Thus, there seems no reason to suspect that Albert concerned himself with apocalypticism.

⁴⁰² Ibid., 270-272, chpt. 17. “nihilominus tamen ab ipsorum usu caveant sibi inspectores eorum.”

In the final analysis, the *Speculum* presents a model for understanding astrology as not simply a useful form of knowledge to be tolerated, so long as one is careful about what forms one might employ, but as a science capable of aiding in humanity's obedience to the dictates of Christ. Startling as this argument might seem to a modern reader, it made perfect sense to Albert, whose works demonstrate a persistent interest in understanding the influence of heavenly bodies upon bodies as a means of living better, healthier, and more Christian lives. As far as Christian writers in the Middle Ages were concerned, the goal of all people was to live in accord with God's will,⁴⁰³ and the twelfth and thirteenth centuries saw an evolving understanding of the role of speculative contemplation in the sacred life.⁴⁰⁴ What better tool to understand creation and humankind's place within it than a science that outlined the interactions of influences as set into play by the Creator, stretching down to us at the center?⁴⁰⁵ No wonder a slender handbook that explained and defended this discipline while providing a comprehensive list of the works an astrologer might need would be popular across Europe for centuries. In the next two chapters let us examine how some of the *Speculum's* readers approached it and put its arguments to work.

⁴⁰³ Gerhart B. Lader, "Homo viator: Mediaeval Ideas on Alienation and Order," *Speculum* 42 (1967): 235-259.

⁴⁰⁴ Andre Vauchez, "The Saint," in *The Medieval World*, ed. Jacques Le Goff, trans. Lydia G. Cochran (London: Parkgate Books, 1997, 2nd English edition), 324.

⁴⁰⁵ Albert, *Super ethica*, 7, 9, 10, 15, 17-22. Albert's hierarchical classification of knowledge is key to what he means when he refers to a wise man, as in the wise man who dominates the stars. Those "qui sunt excellentes, scilicet sapientes, qui sequuntur bonum rationis." *Super ethica*, 21. Naturally, the "good of reason" is based upon the highest forms of knowledge because, although we have a certain innate ability to perceive the truth of the universe directly, this ability functions more readily the less it is submerged in things of the body—in other words, the corporeal universe. Thus, by aspiring to the highest forms of knowledge, we can know being *qua* being much more readily than through an analysis of lower forms of knowledge. In a true Aristotelian sense, there can be no higher order of knowledge than knowledge about the Prime Mover, which for Albert is equated with God. We can attain this knowledge most immediately through His acts on the highest plane, which then flow downward through the spheres, informing the universe as a whole. See *Super ethica*, 19. I intend to develop the implications of Albert's thinking on the hierarchy of knowledge, and astrology's place within it, more fully in a future study.

Chapter IV

Coming to terms with the work of “the wonder and miracle of our time.”⁴⁰⁶

Readers and their approach to the *Speculum astronomiae*

The papacy could not have picked a better scholar to write an authoritative guide to an approach to astrology that would not conflict with Christian beliefs than Albert the Great. A former lector of the Dominicans and Master of Theology at Paris—the leading center for theological study in Europe—no one could question his knowledge of Christian theology. But despite his theologian’s credentials, Albert maintained a reputation as Europe’s premier philosopher during his own lifetime, with a particularly strong grounding in natural philosophy recognized as unmatched among the “moderns” even by his enemies, such as Roger Bacon.⁴⁰⁷ And as we have seen, astrology was a central tenet in his philosophical belief system, acting as a unifying theory to tie together such otherwise disparate subjects as physics and metaphysics. Because of the important place that astrology held in his philosophical system, Albert had written on it for decades, gaining a familiarity with the sources that could only come through long and intensive

⁴⁰⁶ Thorndike, *HMES*, II, 527. Ulrich Engelbert of Strasborg, a contemporary and pupil of Albert the Great, described his master as a man “in every science so divine that he may well be called the wonder and miracle of our time.”

⁴⁰⁷ *Ibid.*, II, 527. The “moderns” is a term that medieval writers used to refer to their contemporaries, beginning in the twelfth century, to distinguish them from classical authorities such as Aristotle and Cicero.

research. Pope Alexander IV had particular knowledge of this, having witnessed Albert speaking on the subject at his court at Anagni. All of this explains why the pope turned to the Dominican Universal Doctor to write a guide distinguishing licit from illicit forms of astrology, but it does not adequately explain why scribes across Europe bent their pens to copying the *Speculum*, turning it into the most popular work on astrology to come out of the Middle Ages.

In large part the *Speculum*'s usefulness sparked this interest. In order to clearly separate the licit from the illicit in the field of astrology Albert had first to define the field, creating a useful précis for anyone interested in astrology's various applications. More importantly, in an age when libraries lacked card catalogs and bibliographic compendia were nonexistent, Albert provided a comprehensive list of which works were useful to the astrologer. As a bonus, he was equally comprehensive in his treatment of the works that could land one interested in the celestial sciences in trouble with his peers, the Church, or the new papal inquisitors. Therefore, this guide could keep one from inadvertently dabbling in heresy while proclaiming to anyone who might have occasion to gain knowledge of the contents of the owner's library that he was a man who took his commitment to orthodoxy quite seriously, simply by the mute testimony of the presence of this semi-canonical work. That aspect of the *Speculum*, as an authenticating device capable of validating one's knowledge in the field of astrology as well as one's orthodoxy—without necessitating the need of complex, time-consuming, and original arguments—made this work particularly attractive. While the waves of anti-astrological rhetoric peaked in the fourteenth century and the discipline finally established itself as an

important and largely uncontroversial discipline by the century's end,⁴⁰⁸ the

Speculum continued to protect the subject and promote interest in it, setting the terms for the debate that would ebb and flow until well into the modern period.

Albert set the terms of this debate by promoting a definition of celestial influence that could directly affect humankind's body, but could influence the soul only indirectly. But he also established limits to acceptable astrological belief. To a significant extent the *Speculum* shut down certain avenues of debate and research. How can we know this? Of all the works Albert lists as illicit, not a single one of those treatises is to be found bound together with the *Speculum* in any of the codices I have examined, while many works that did come to be bound with it are those works that Albert lists as useful and licit for a Christian astrologer. Given the dozens of objectionable works that he lists in chapter eleven alone, one could well expect to find at least one of these bound into a codex containing the *Speculum*, but this is not the case. In fact, some works Albert rejects have lapsed into such obscurity that their continued existence is in serious doubt.⁴⁰⁹ The

⁴⁰⁸ Pico's attack on astrology in the late fifteenth century was important, as I myself have pointed out, and there was certainly the potential for one to get into a great deal of trouble through association with astrology. In 1494, the faculty of theology of the University of Paris successfully prosecuted Simon of Phares (1444-c.1499) for the possession of astrological works in his personal library that were deemed overly deterministic in their approach to the subject. However, it must be noted that not all of Simon's books aroused the wrath of the theology faculty, with astrological works by authors such as Peter d'Ailly being treated as acceptable. Furthermore, there is reason to believe that Simon's prosecution resulted due to political considerations in the wake of him acting as an advisor to King Charles VIII in 1490. See Jean Patrice-Boudet, *Lire dans le ciel: La bibliothèque de Simon de Phares, astrologue du XVe siècle* (Brussels: Centre d'Études des Manuscrits, 1994); Steven Van den Broecke, *Pico, Louvain, and the Crisis of Renaissance Astrology* (Leiden: Brill, 2003), 10-11; Thorndike, *HMES*, IV, 559-563. Regardless of the circumstances of Simon's condemnation, many of Pico's contemporaries rejected his arguments and there certainly was nothing approaching an institutional retreat from the subject in the many universities, including Paris, that included it in the curriculum.

⁴⁰⁹ *Ibid.*, 246. A perfect example is the pseudo-Aristotelian *Mors animae*, which Albert blasts as the "omnium [librum] pessimum." This work appears to have been lost in the succeeding years. See Lynn Thorndike, *Traditional Medieval Tracts Concerning Engraved Astrological Images* (Louvain: Bibliothèque de l'Université, 1947), 255.

obscurity of some of the works the *Speculum* condemns raises the question: did Albert's dismissal of certain works as illicit lead to a decline in their use and copying? An answer will have to await future research, but the possibility is intriguing.

To understand this process, we should ask ourselves what sort of people found the *Speculum* interesting and useful. One way to address this question is to consider who owned and studied it. Sometimes the owner was considerate enough to inscribe his name and profession in the work. More often we are left to a consideration of indirect evidence, but this can be quite revealing. Choices made when binding manuscripts into a codex and the marginalia left behind by past readers can provide compelling evidence as to what types of people found the *Speculum* useful, if not always precisely who these people might have been. Even the titles applied to this work and considerations of editing frequently have something to tell us about those who read the *Speculum*. By examining these characteristics it gradually becomes clear that people from various walks of life had occasion to find the *Speculum* useful. Astrologers, natural philosophers, physicians, and even preachers and those interested in doctrinal purity could be found with a copy of the *Speculum* in their library.

This ability to attract a wide audience explains why the *Speculum* was able to hold the interest of scholars across the centuries. Modern scholars judge the level of interest a medieval work generated among contemporaries through an assessment of the number of copies that have survived into the modern period.⁴¹⁰ The fifty-nine surviving manuscript

⁴¹⁰ Of course it is not always this clear cut. Reputations of authors grow and wane, and in some cases

copies of the *Speculum* give it the character of a medieval best seller, so to speak.

While this supports Lynn Thorndike's estimation that the work was "one of the most important single treatises in the history of medieval astrology,"⁴¹¹ it does little to enlighten us as to how readers approached the *Speculum*. For this we need to turn first to the manuscripts themselves, the subject of this chapter, before moving on to a consideration of how other scholars made use of the *Speculum*, which I shall take up in the concluding chapter.

In considering the manuscripts, my data rests upon an evaluation of thirty-three of the fifty-nine surviving manuscripts. These manuscripts are preserved in various archives in the United States and Western Europe.⁴¹² I have attempted to avoid the sort of biases that might arise in the data through regional concentration by drawing from manuscripts produced in a number of countries. Of the texts I have considered, the majority of them appear to be archived within the geographic area of production, as evidenced by notes within the works, markings upon the binding, and through other clues, as I have indicated in Appendix A. The only region containing a sizeable number of manuscripts that I have

manuscript survival can be affected by the indifference of later generations to authors who were revered in their life times. Albert is a prime example if one considers the seventeenth century and beyond. For a brief, but enlightening, consideration of these issues, see Paul Oskar Kristeller, "The Search for Medieval and Renaissance Manuscripts," *Proceedings of the American Philosophical Society*, 120.5 (1976): 307-310. For a good introduction to the problems and issues associated with manuscript work, see: Laurel Nichols Braswell, *Western Manuscripts from Classical Antiquity to the Renaissance: A Handbook* (New York: Garland, 1981).

⁴¹¹ Lynn Thorndike, *HMES*, II, 692.

⁴¹² The manuscripts I have examined are contained in the following archives, grouped here by nation: (Germany) Munich, Bavarian StaatsBibliothek; Erfurt, Wissenschaftliche Bibliothek der Stadt; Berlin, StaatsBibliothek; (Great Britain) Cambridge, Trinity College Library; London, British Library; London, London Institute of Electrical Engineers Library; Oxford, Bodleian Library; (Italy) Bergamo, Biblioteca Civica Angelo Mai; Bologna, Biblioteca Universitaria; Florence, Biblioteca nazionale centrale; Florence, Biblioteca Medicea Laurenziana; Vatican City, Biblioteca Apostolica Vaticana; Venice, Biblioteca Nazionale Marciana; Venice, Museo Civico Correr, Fondo Cicogna; (Switzerland) Bern, Civic Bibliothek; St. Gallen, KantonsBibliothek; (United States) Cambridge, F.A. Countway Medical Library.

not yet studied is France. My research indicates that we may divide the surviving manuscripts we into four categories, which I have created to clarify the relationships between the various texts.

The largest number were intended for astrologers, which I have grouped together into Category A. But following closely behind are those grouped into Category B, compiled for physicians. This leaves two smaller groupings: Category C, containing those codices intended for use by natural philosophers, and Category D, for those primarily interested in questions of doctrinal purity. Many of the codices I have examined represent compilations of works that someone removed from older manuscripts and rebound together into a single volume, but that is not relevant to this study. I am interested in how end users approached the codices in question. Thus, if a professional astrologer compiled a codex containing works that were originally bound for use by a physician or natural philosopher, but that had been cut out and reassembled, it is still the final product as embodied in the manuscript as it has come down to us that is the object of my study. To see how men with various professional interests related to astrology made use of the *Speculum* and why it maintained its importance for centuries after its completion, let us turn to an examination of the manuscripts. A summary of the manuscripts under consideration is included as Appendix A. In this chapter I will use this data to demonstrate the way in which readers used these copies of the *Speculum*, applying themselves to a study of the model of astrology that it presents as well as how to apply it to their own work.

Let us begin with those codices assembled by or for the use of astrologers.

There was no shortage of professional astrologers on the European continent by the thirteenth century, and indeed, they held an important place within society. Astrologers functioned as advisors to the nobility at all levels, from crowned heads of Europe who maintained astrologers as advisors,⁴¹³ to local nobles scattered across the continent. Perhaps the court where astrologers maintained the highest reputation, for the longest time, was that of the Holy Roman Emperor, where astrologers acted as respected advisors, from Michael Scot at the court of Frederick II (1220-1250)⁴¹⁴ to Johannes Kepler (1571-1630) at the court of Rudolf II (1576-1612).⁴¹⁵ It is likely that astrologers advised members of the increasingly numerous merchant class as well, or that physicians provided such advice to these nascent capitalists emerging in the wake of the commercial revolution. After all, astrological guides imported from the Arabic world described how to apply astrology in order to answer questions ranging from how to determine the most propitious time for a journey to a variety of questions related to commerce.⁴¹⁶ One can well imagine that those among the growing ranks of the mercantile class would have been willing to pay quite well for such advice. Unfortunately, the possible relationship

⁴¹³ Hilary M. Carey, "Astrology at the English Court in the Later Middle Ages," *Astrology, Science and Society*, ed. Patrick Curry (Woodbridge: The Boydell Press, 1987): 41-56, 53-55. However, Carey also notes that astrologers advised their patrons when to do a thing, far more often than what should be done. See Carey, *Courting Disaster: Astrology at the English Court and University in the Later Middle Ages*, 15. The status of astrologers remained high for centuries. One of the reasons why King Frederick II of Denmark granted Tycho Brahe estates upon the island of Hven and funded his construction of Uraniborg was to insure that Tycho would be able to act as his personal astrological advisor. See Victor E. Thoren, *The Lord of Uraniborg: A Biography of Tycho Brahe* (Cambridge: Cambridge University Press, 1991), 81-83.

⁴¹⁴ Charles H. Haskins, "Michael Scot and Frederick II," *Isis*, 4.2 (1921): 250-275.

⁴¹⁵ James Connor, *Kepler's Witch: An Astronomer's Discovery of Cosmic Order Amid Religious War, Political Intrigue, and the Heresy Trial of His Mother* (New York: HarperCollins Publishing, 2004), 159-181. For an in-depth examination of Kepler's astrological beliefs, and his career as an astrologer, see Gerard Simon, *Kepler: Astronome, astrologue* (Paris: Gallimard, 1979).

⁴¹⁶ For an example, see Masha 'allah's, *Tres libri* as translated by John of Spain (Nuremberg: Printed by Ionnem Montanum, 1449).

between astrologers and these early capitalists has yet to be examined.

It should come as no surprise that a work such as the *Speculum*, written to delineate licit from illicit forms of astrology and containing extensive bibliographic information and summaries of astrological practice that would have been of use to practicing astrologers, would have found its way into their libraries. In fact, seventeen of the thirty-two codices I have examined were designed for such use. Assuming that my sampling is representative of the overall character of these texts, we can expect that the majority of the extant copies of the *Speculum* are to be found in volumes compiled for the use of astrologers. I group these codices into Category A.

But of course this begs a question that is important for all of my categories: how is one to determine who would have found any particular codex useful? And how is one to determine that the individual in question was an astrologer, rather than someone with a related professional interest in astrology, such as a physician? In fact, it is quite possible that some of the texts included in Category A would have been in the possession of physicians. As Nancy Siraisi has pointed out, medieval physicians often acted as astrological advisors in addition to their medical duties—a practice that continued for centuries.⁴¹⁷ But the evidence contained in these manuscripts does not carry us far enough to support the notion that a physician or any other type of professional could have been responsible for their compilation. Judging strictly by the evidence, we can say no

⁴¹⁷ Siraisi, *Medieval and Early Renaissance Medicine*, 68. For a late example demonstrating the long-term strength of this tradition, consider the life of Simon Forman (1552-1611), London physician, astrological advisor, avid theater goer, and diarist. See Lauren Kassell, *Medicine and Magic in Elizabethan London: Simon Forman, Astrologer, Alchemist, and Physician* (Oxford: Oxford University Press, 2005).

more than that they were compiled with an eye toward the needs of a professional astrologer.

I will demonstrate the characteristics of a text belonging to Category A through an examination of two representative codices: Vatican City, Vatican Library, MS Pal. Lat. 1445 and Florence, Biblioteca Nazionale Centrale, MS Magliab. XI 121 (Strozz 1127). These two manuscripts allow us to see both ends of the temporal spectrum in which professionals found the *Speculum* to be useful. MS Pal. Lat. 1445 is a product of the late fourteenth or early fifteenth century, while a certain Abbot Luigi Strossi of San Carlo compiled MS Magliab. XI 121 during astrology's twilight as an academic discipline, in 1677. It is also clear that compilers of these two codices shared a common characteristic: they were practicing astrologers, more concerned with the usefulness of the codices in question than their aesthetics. A complete analysis of my sample group as a whole would be inappropriate in these pages, but the interested reader may turn to Appendix A for more details. In the following pages I will consider the two manuscripts I have chosen as representative of Category A as a whole, before moving on to an analysis of some of the more interesting characteristics of other texts within the group in conjunction with what this has to tell us about the way readers approached the *Speculum*. I will then follow this plan for each of the categories in turn, expounding upon representative texts followed by a closer consideration of certain points pertaining to other manuscripts within the category.

MS Pal. Lat 1445 is an interesting codex with numerous characteristics that

demonstrate how a researcher is able to determine what sort of individual assembled a particular volume. The date of composition is clear from the Gothic hand that is used throughout the text. Writing at the end of the fourteenth or the beginning of the fifteenth century the scribe appears to have been more concerned with a quick finish than with the production of a beautiful text. The frequent mistakes he makes on every page of the text indicates his carelessness, the importance of which I consider within the larger context of the body of manuscripts I have examined as a whole, as well as the scrawled nature of his handwriting. Quickly copying out the work he referred to as the “book of Albert, bishop of Ratisbon, about the two parts of astronomy or about a recapitulation of all of the books of astronomy,” this text represented one component of a larger codex intended to provide the bases for the practice of astrology.⁴¹⁸ The volume opens with Albumasar’s *Flores*, a very useful little book collecting some of the more important parts of the Arabic scholar’s work, helpfully indexed in the margins so that one might quickly find information on how to cast elections in order to determine the most propitious time to do a wide array of common tasks, from setting out on a journey to selling of goods or sowing a field.⁴¹⁹ Thereafter the reader finds Haly’s guide to the practical aspects of astrology, Leopold of Austria’s guide to astrological forecasting, meteorology, and the creation of images—all supported by extensive detailed figures—as well as other guides dealing with various aspects of astrology, such as a work on the various influences of the heavenly constellations, as well as important astrological texts by Hermes, Zael, and

⁴¹⁸ Vatican City, Biblioteca Apostolica Vaticana, MS Pal. Lat. 1445, 178v. “Explicit liber Alberti Magni Episcopus Ratisboni de duabus partibus aut de recapitulatione omnium librorum astronomiae.”

⁴¹⁹ For the guide to the use of astrology for common tasks, see Ibid., 2v-4r.

Guido Bonatus.⁴²⁰ At the end of the codex one finds a large number of astrological tables, many of which are designed to aid in the construction of images.⁴²¹ There is nothing in this volume strictly on mathematical astronomy, medicine, or any form of natural philosophy other than astrology. In particular, the three works defending various applications of the celestial science⁴²² coupled with tables valuable to an observer of the heavens included at the end of the text, are all indicative of a work useful to a practicing astrologer but not to anyone else. Among the various texts providing detailed descriptions of how one might effect a variety of astrological forecasts the *Speculum* was likely most useful as a bibliographic guide to the literature in the field. The usage of the *Speculum* as a guide to astrological literature is reinforced by the marginal notes running throughout the text, highlighting sources contained such as Geber, Thebit, and Albumasar, noted in the text.⁴²³

Turning to MS Magliab. XI 121, preserved at the Biblioteca Nazionale Centrale in Florence, we can see how the concerns and interests that motivated astrologers remained constant across the centuries. Unusually, we know from a note written on folio 2r who compiled this volume. This note states in Italian that the work contains “writings on astronomy, astrology, geomancy and the sphere,” compiled by Abbot Luigi Strossi of

⁴²⁰ For Haly, see Ibid., 4r-9r. For Leopold see Ibid., 10r-145r. The “*Compilatio Leupoldi ducatus Austrie filii de astrorum scientia*” is a product of the the second half of the thirteenth century. According to George Sarton Leopold was a poor theorist whose greatest influence was through the sixth book of this *Compilatio*, devoted to astro-meteorology. It was due to this influence that he was most often quoted as well as printed twice, in 1489 and 1520. See Sarton, II, 996. For the work dealing with the influence of constellations 147v-154r. Hermes is found on 138v-161r, while Zael is on 162v-165v and Guido Bonatus’ work is on 165r-175r. It is interesting to note that Sarton has called Guido the foremost defender of the most extreme form of fatalistic astrology. See Sarton, II, 989.

⁴²¹ Ibid., 219r-250v.

⁴²² These are: the *Speculum*, Guido’s 121 *Considerationes*, and an anonymous work, the *Tractatus de significationibus* on 189r-252v.

⁴²³ Ibid., 177r, 179r, et alia.

San Carlo in 1677.⁴²⁴ It is somewhat unusual to find a monk, much less an Abbot, involved in the production of an astrological text. However, given the tradition of scholarship associated with monastic orders dating back to Benedict it is certainly not beyond the bounds of reason.⁴²⁵ Abbot Strossi compiled this codex by gathering works cut out of older texts and adding them together with his own notes, all written in Italian, that leave no doubt of his personal interest in and practice of astrology.

This codex is even more clearly the product of a practicing astrologer than MS Pal. Lat. 1445. Only five writings are included: an Italian “geomantia,”⁴²⁶ an anonymous Latin text in a fifteenth-century hand labeled “astronomia et astrologia,”⁴²⁷ describing the various influences and motions of the planets; a fragment of the “Work on geometry of master Paul of Abaco” dated to 1339;⁴²⁸ another anonymous work in Latin entitled “On the constellations of heaven and the significations according to those;”⁴²⁹ and a fourteenth-century fragment of the *Speculum*.⁴³⁰ These works would all have been useful to a practicing astrologer, but what really clinches the argument that such a man compiled this codex are the extensive notes in Italian and the tables and other material of

⁴²⁴ Florence, Biblioteca nazionale centrale, MS Magliab. XI 121 (Strozz 1127), 2r: “Scritture d’astronomia, astrologia, gementia, e sphara, conforme la nota sequente e professie nell’ Abbate Luigi Strossi, del San Carlo 1677.”

⁴²⁵ In the context of our current discussion, one is immediately reminded of the Venerable Bede (c. 672-735) who wrote upon the astrolabe, among many other things, and the mystic Giordano Bruno (1548-1600), who argued for the plurality of inhabited worlds. For a consideration of some of Bede’s wide-ranging intellectual interests, including astronomy, see: Robert B. Palmer, “Bede as Textbook Writer: A Study of His De Arte Metrica,” *Speculum* 34.4 (1959): 573-584; Jennifer Moreton, “Doubts about the Calendar: Bede and the Eclipse of 664,” *Isis* 89.1 (1998): 50-65. On Bruno, see the still very useful essay by Thomas Whittaker, “Giordano Bruno,” *Mind* 9.34 (1889): 236-264 as well as Giuseppe Candela’s “An Overview of the Cosmology, Religion and Philosophical Universe of Giordano Bruno,” *Italica* 75.3 (1998): 348-364.

⁴²⁶ Florence, Biblioteca nazionale centrale, MS Magliab. XI 121 (Strozz 1127), 1v-21v.

⁴²⁷ *Ibid.*, 155r-157r.

⁴²⁸ *Ibid.*, 155r-157r.

⁴²⁹ *Ibid.*, 193r-206v: “De figura coeli et significatione per eas.”

⁴³⁰ *Ibid.*, 222r-226r. This fragment is almost complete, missing only the proem and part of chapter one.

interest to an astrologer included throughout the codex. These include celestial charts detailing the motion of planets through the heavens,⁴³¹ Italian notes and illustrations on the correct methods for accurately determining the positions of celestial bodies,⁴³² considerations of the lunar eclipse of 1377⁴³³ and what may have been a solar eclipse on 12 Dec. 1394,⁴³⁴ and paper equatories useful for determining the locations of any of the planets or zodiacal signs on a given date.⁴³⁵ These items are tools that would be equally useful to a mathematical astronomer or an astrologer, but the chart of man's microcosmic relationship to the heavens,⁴³⁶ as well as the lists and treatises detailing what sorts of influence are derived from various celestial bodies and configurations,⁴³⁷ leave no doubt as to why the compiler was so interested in the heavens: he was a practicing astrologer. Judging from the material included within this codex, he was also one possessing no small amount of expertise at the mathematical and observational skills that are part of an astrologer's craft.

⁴³¹ Ibid., 21v-22r, 60v-61v, 115r-132v, 133r-144v, 149-154v.

⁴³² Ibid., 68r-78v.

⁴³³ Ibid., 64r-67r.

⁴³⁴ Ibid., 79r.

⁴³⁵ Ibid., 145r and 147r. Equatories are circles instruments with a number of smaller circles of decreasing size affixed to them. For example, the one for the planets has seven circles of decreasing size affixed to the larger one through a hole in the center. Each circle represents one of the orbs of the planets, and by manipulating the circles in accord with positions noted by degrees on the larger circle the user would have quickly been able to determine the locations of each of the planets for any given time. Of course one would have to correct for location, or it would have been created for a specific place, such as Florence. The equatories contained in MS Magliab. XI 121, but most surviving instruments of this type are constructed of metal.

⁴³⁶ Ibid., 191r. This is a drawing of the human body with notes detailing which celestial body primarily influences which part of the human body. Such a figure is normally associated with physicians and surgeons. However, there is nothing else in this codex to indicate any interest in or knowledge of medicine. Given the considerable evidence within the text for an interest in judicial astrology, this single figure is suggestive that the owner is a physician, but is far from conclusive. Thus I have categorized this manuscript among those compiled by and for astrologers.

⁴³⁷ In addition to those I have already noted there is a list detailing general effects of celestial bodies and configurations upon a person's life and fortune found on 191v-192v.

So, given the important and prestigious place that astrologers held in the society of medieval, Renaissance, and early-modern Europe, we still must ask ourselves: how did they make use of the *Speculum*? There is little in the text that could act as a guide to the production of astrological judgments, so why would astrologers have been attracted to this work? Nowhere within its pages will the reader find a mathematical formula, a diagram of the heavens, or a chart allowing one to calculate the location of planets and stars on given dates. Therefore, we must look elsewhere to determine the attraction that the *Speculum* held for professional astrologers. Rather than a guide to the practice of astrology, Albert's work most often acted as a bibliographic reference guide that served the dual purpose of authenticating both the owner's knowledge of astrology as well as his orthodoxy.

We find a clue to this in the titles scribes applied to the *Speculum*. The habit wherein an author names his or her work is a product of the modern era. Works such as the *Speculum* would receive a title at the hand of the scribe copying the text, and a single book, such as the one here under consideration, might be known by numerous, widely varying, titles. Individuals inscribing the text would often apply titles of their own devising, and it is not unreasonable to suggest that such choices were driven by the interest that the scribe had in the text upon which he was working. Since it was not uncommon for an individual to copy out a text for personal use,⁴³⁸ many of these copies

⁴³⁸ Examples of works where we can concretely identify the scribe as the original compiler of the text through a note left in the text are: Munich, Bavarian StaatsBibliothek, MS CLM 27; Munich, Bavarian StaatsBibliothek, MS CLM 267; London, British Library, MS Harley 2378; Berlin, StaatsBibliothek, MS lat f 246; St. Gallen, KantonsBibliothek, Vadianshe Sammlung, MS 412. However, it is altogether likely that many of the other works were compiled and copied by individuals for their personal use. For example, the individual who copied Vatican City, Biblioteca Apostolica Vaticana, MS Vat. Lat. 4275 almost

of the *Speculum* were the product of the pen of the professional who wanted it in his library. In such cases the choice of name for the work would have been doubly significant.

Among those copies of the *Speculum* included within codices aimed primarily at astrologers, the most common title was, in fact, *Speculum astronomiae*, or a variant such as *Speculum mathematicae*.⁴³⁹ This is unsurprising, notwithstanding the doubt that some scholars have sought to cast upon the importance of this title,⁴⁴⁰ as it is the most common title overall to be found among the manuscripts that I have studied. What is more interesting in this case, however, is the second most common title to be found among manuscripts in Category A: “On licit and illicit books.”⁴⁴¹ When a scribe chooses this

assuredly did so for his own use. The codex in question contains works written for someone with an interest in the legalities involved with heresy, who was perhaps an inquisitor, in addition to astronomical works. This volume is copied in the same hand throughout. It seems exceedingly unlikely that such an individual, who may well have been a mendicant, would have employed another to copy this codex out for him. The likelihood that the scribe was also the end user of the codex is increased still further since the volume contains an imagined epistolary conversation between the author and Albert that seems to be a highly personal work.

⁴³⁹ Five of these manuscripts bear such a title: Oxford, Bodleian, MS Digby 81; Cambridge, Trinity College, MS 1185 0.3.13; Munich, Bavarian Staatsbibliothek, MS CLM 221 (*Speculum mathematicae*); Bergamo, Biblioteca Civica Angelo Mai, MS MA 388 (1177; EII 2); Bologna, Biblioteca Universitaria, MS 1609 (3649) inf. 11. Furthermore, another manuscript bears this title in addition to “De libris licitis et illicitis.” London, Institute of Electrical Engineers, MS Thomson Collection 5. We should note that astrologers were also known as “mathematici,” and as such, the title *Speculum mathematicae* would have been interchangeable with *astronomiae*. It appears that the term derives from Julius Firmicus Maternus’ work on astrology completed circa 337, bearing the name *Mathesis*. This is the Greek term for “learning,” and was originally applied by Latin authors for knowledge of the liberal arts, particular the mathematical sciences of the quadrivium, but came to be restricted to the study of *astrologia*. See Tester, 133-134.

⁴⁴⁰ Bagliani, 81-92.

⁴⁴¹ Four manuscripts in Category A bear a title that is some variant of “De licitis et illicitis libris.” Oxford, Bodleian, MS Digby 228; London, Institute of Electrical Engineers, MS Thomson Collection 5; Venice, Museo Civico Correr, Fondo Cicogna, MS 1097; Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplona, QU 348. One of these manuscripts, MS Thomson Collection 5, also bears the title “Speculum astronomicum.” Four other manuscripts bear titles that are descriptive, but otherwise value neutral, such as, “liber Alberti Magni Episcopus Ratisboni de duabus sapientiis aut de recapitulatione omnium librorum astronomiae,” appended to Vatican City, Vatican Library, MS Palitani Latini 1445. These are, in addition to this Vatican City codex: Florence, Biblioteca Medicea Laurenziana, MS Plut. XXX.29; Bern, Civic Bibliothek, MS 483; Munich, Bavarian Staatsbibliothek, MS CLM 27.

title, or some variant, it is reasonable to assume that he was primarily interested in the *Speculum* as a guide to the works a good Christian should either use or avoid. If not, it would seem that he was at least interested in making a profession of interest in avoiding the taint of heresy that illicit forms of astrology could impart. After all, if he went to the effort of copying out a semi-canonical guide to doctrinally pure astrology⁴⁴² then he could reasonably argue that this act demonstrated his commitment to avoiding problematic forms of this science. Therefore, the act of owning a copy of the *Speculum* served as an authenticating device in its own right, though in this case it was authenticating the orthodoxy of the owner.

Furthermore, it is worth noting that this title, “De licitis et illicitis libris,” is only to be found in astrological codices, at least among the sampling that I have examined. And it is perhaps significant that two of the four manuscripts bearing this attribution are products of the fourteenth century,⁴⁴³ while a third dates to the early fifteenth century.⁴⁴⁴ Given such a small sampling, it is possible that the date of production is irrelevant—possible, but unlikely. The fourteenth century saw a growing concern about magic and associated forms of occult arts on the part of religious officials.⁴⁴⁵ In 1258 and 1260 Pope Alexander IV declared that inquisitors should not pursue reports of magic unless heresy

⁴⁴² I have presented my argument that this is what the *Speculum* represented in chapter II.

⁴⁴³ Oxford, Bodleian, MS Digby 228 and Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplona, QU 348. MS Digby 228 contains the title written in the header of 76r, partially obscured by a missing corner of the page. Bagliani seems to have missed this. Some of the manuscripts he examined were microfilm copies, and this is perhaps how he missed this title. See Bagliani, 36.

⁴⁴⁴ Venice, Museo Civico Correr, Fondo Cicogna, MS 1097.

⁴⁴⁵ Richard Kieckhefer, *Magic in the Middle Ages* (Cambridge: Cambridge University Press, 2000, 5th printing), 185-192.

seemed involved.⁴⁴⁶ However, in the early fourteenth century Pope John XXII (1316-1334) reversed this policy, directing papal inquisitors actively to search out necromancers and other magicians due to their practical heresy, even if they did not hold inherently heretical beliefs.⁴⁴⁷ In other words, John XXII was concerned that an individual could perform an act constituting heresy without being consciously aware that this action was in any way heretical. An example would be a magician who used words in an unknown language in the course of casting a spell, unaware that the words in question represented a demonic invocation.

The importance of growing concerns about heresy and the development of a belief that heresy can occur unintentionally to our present study is to be found in the connections between astrology and magic that existed in the minds of medieval scholars.⁴⁴⁸ While modern scholars have documented these connections in a general sense, we also have clear indications of the strong association between magic and astrology present in the minds of medieval scholars. Pierre d'Ailly refers to the *Speculum* in his *Vigintiloquium de concordantia astronomicae veritatis cum theologia*, written at Cologne in 1414, when he states:

Albert the Great produced a useful tract, in which he distinguished books of true astronomy and of the art of magic by their principles and boundaries, so that he might distinguish true astronomy and empty magic from one another.⁴⁴⁹

⁴⁴⁶ Ibid., 191.

⁴⁴⁷ Ibid., 192. Practical heresy represented a concern unknown before the fourteenth century.

⁴⁴⁸ Ibid., 190; Brian P. Levack, *The Witch-Hunt in Early Modern Europe* (New York: Longman, 1995, 2nd edition.), 7, 38; Shumaker, 111. See also Dov Schwartz, *Studies on Astral Magic in Medieval Jewish Thought*, translators David Louvish and Batya Stein (Boston: Brill, 2005).

⁴⁴⁹ Pierre d'Ailly, *Vigintiloquium*, 3r: "Albertus Magnus perutilem etiam tractatum edidit, in quo verae

It makes perfect sense that astrologers would be interested in the *Speculum* for the protection it might provide them against charges of heresy. With the association between magic and astrology that existed, and the growing opposition evidenced not only by papal pronouncements, but also in the sharp rise of prosecution associated with a shift from accusatorial to inquisitorial procedure⁴⁵⁰ that occurred during the papacy of John XXII, concern on the part of practicing astrologers is quite understandable. It is unlikely that any astrologer would have missed the implications of Cecco d'Ascoli's astrological works being condemned to the flames alongside their author, at Florence in 1327.⁴⁵¹

But were astrologers simply copying the *Speculum* into their works to provide a sort of mute shield to charges of heterodoxy, or were they actively using this work? One can well imagine that should an astrologer be accused of heresy, he would be glad enough of the opportunity to hand a copy of the *Speculum* to an inquisitor investigating his case. After all, the pope commissioned the writing of this text in order to protect Christians. Possession could reasonably be argued to represent a genuine concern on the

astronomiae et artis magicae libros per eorum principia et fines distinxit, ut astronomicam veritatem et magicam vanitatem ad invicem sequestraret.”

⁴⁵⁰ Kieckhefer argues that inquisitors operated under a new mandate in the fourteenth-century to seek out heresy, rather than waiting for charges to be brought to them. This procedure greatly increased the number of prosecutions because they were now actively looking for heretics. Kieckhefer, *Magic in the Middle Ages*, 193.

⁴⁵¹ Thorndike, *HMES*, II, 952-953. The precise details of Cecco's condemnation are not entirely clear. He could have been the victim of his own arrogance and lack of tact in conjunction with his ability to garner powerful political enemies, as Thorndike suggests. However, it is unlikely that astrologers would have found great comfort in this possibility. Not only did the authorities burn Cecco's books along with him, but they ordered anyone owning copies of Cecco's books to turn them over or face excommunication.

part of the owner to avoid works that are necromantic in nature.⁴⁵²

Some copies of the *Speculum* were likely intended for just this sort of use. MS Thomson Collection 5 at the London Institute of Electrical Engineers appears to be this sort of copy. This pocket-sized volume was bound in 1517, including a copy of the *Speculum* alongside a copy of Thabit bin Qurrah's *De imaginibus*. The forty-three folio leaves of this codex contain neither decorative elements nor marginal notations, providing no proof of use. Most of the volumes I have examined contain numerous marginal notations, appearing like the footprints of past readers, but this codex contains not a single mark. This lack of evidence left behind by previous readers leads one to suspect that it was bound in this format for one reason: to provide an easily transportable defense against charges of heresy. One can readily see why this might be necessary, for Thabit's work provides the basis for one of the most problematic applications of astrology.

I discussed Thabit and his work *De imaginibus*, which was on the “more valuable astronomy . . . the science of images,”⁴⁵³ in chapter three along with the reasons why Albert would have found this work and the discipline it supported useful for his own astrological beliefs. However, beyond being a useful component of an astrological belief system that rejected determinism, image magic was attractive for its own sake: rather than simply studying the heavens for predictive signs of the future, use of astrological images represented a means by which one might harness the power of the heavens to alter

⁴⁵² Albert, *Speculum*, 240-242, 246, chpt. 11.

⁴⁵³ Thabit, 180.

reality and bring about good results for the user. Of course, this was the art of a magician, and the use of images in such a manner often raised considerable ire among Church officials. Nevertheless, the potentially useful nature of astrological images guaranteed that they would continue to present attractions to many –particularly to physicians who saw their use as a form of universal prophylaxis.⁴⁵⁴

We cannot know precisely who owned MS Thomson Collection 5, bound in Venice in 1517 and coming to rest at the Institute of Electrical Engineers in London more than four centuries later. However, we may surmise that whomever it was found himself called upon to use astrological images on a regular basis, and thus found it prudent to keep a copy of the *Speculum*, bound in an easily transportable format with the most important source for understanding the use of images, Thabit's *De imaginibus*. If so, this then this copy of Thabit's work was strictly a reference work, as it is as unmarked as the *Speculum*. By binding these two works into a pocket-sized volume, the owner would have been able to keep not only his copy of the *De imaginibus* nearby for ready reference, but also be ready to produce the *Speculum* should anyone question his orthodoxy.

Furthermore, an interesting bit of textual evidence present within this copy of the *Speculum* provides a measure of insight into its intended usage. If we examine the manuscript closely, throughout the majority of the text we find a carefully done copy that

⁴⁵⁴ Weill-Parot, 457. Weill-Parot well illustrates the conflicted nature of the attraction that many felt toward image magic, such as in the case in which Arnold of Villanova prescribed the use of an astrological image to Pope Urban VIII, which I mentioned earlier. For more on the controversial nature of image magic, and Albert's status as an authority on the subject, see Frances Yates, *Giordano Bruno and the Hermetic Tradition* (Chicago: University of Chicago Press, 1991), 71-75.

conforms in almost every way to the received text as edited in Paola Zambelli's edition. In almost every way that is, save one revealing passage in the twelfth chapter on images, which is the eleventh chapter as numbered by our scribe. The manuscript reads:

there is a third method of the images of the stars, which eliminates those filthy things, has neither suffumigations [to propitiate demons] nor invocations [of demons], nor does it admit exhortations or the inscriptions of characters, but it [this third manner of image construction] attains power only from the figure of heaven [meaning the configurations of the stars].⁴⁵⁵

It seems clear from this passage that Albert perceives “the inscription of characters” of any sort to be suspect to the point of being inadmissibly dangerous. The reason for Albert's concern is that such characters were typically inscribed in languages unknown to the individual creating the image, and therefore might conceal invocations to demons.⁴⁵⁶

However, this section places the *Speculum* at odds with its main source on image construction, Thabit's *De imaginibus*, which is bound with this particular copy of the *Speculum*. Thabit strongly emphasizes the importance of sigils carved onto images constructed to harness celestial influence, as in section one where he states that, in order to construct an effective image, “you should sculpt on that [image] the name of the ascendant and of its lord and the name of the lord of the hour of the day.”⁴⁵⁷ This is a

⁴⁵⁵ Ibid., 246. “Tertius enim modus est imaginum astronomicarum, qui eliminat istas spurcicias, suffumigationes et invocationes non habet, neque exorizationes aut characterum inscriptiones admittit, sed virtutem nanciscitur solummodo a figura caelesti.”

⁴⁵⁶ Ibid., 246-248.

⁴⁵⁷ Thabit. 164: “Sculpes in ea [image] nomen ascendentis et domini eius et dominum horae diei.” The ascendant is the zodiacal sign ascending over the eastern horizon at a given point in time. In this case, that would be the moment at which the astrological image is being finished. The lord of the hour and of the day are the “ruling,” meaning the most influential, planets at the hour in which the image is being constructed, and of the day on which it is being constructed, respectively. Fred Gettings, *The Arkana Dictionary of Astrology* (New York: Penguin, 1991), 42

practice that the *Speculum* seems to condemn.

This apparent contradiction between the *Speculum* and Thabit's *De imaginibus* would likely go unnoticed in most cases. But apparently the scribe of MS Thomson 5 found it to be unacceptable. Copying both works into this codex, contradictions might have stood out more strongly due to the slender nature of this volume. Furthermore, if it was intended primarily for those interested in image construction, as I have suggested, then the passage in the *Speculum* contradicting one of Thabit's directives could have detracted from the value of Albert's work. Whatever the case might have been, the scribe arrived at an effective and creative solution: he changed the *Speculum* to conform to *De imaginibus*. In the version present in Ms. Thomson 5, the critical passage reads:

there is a third method of the images of the stars, which eliminates those filthy things, it does not admit suffumigations and changes [the meaning of this is unclear] of characters nor does it admit exhortations or inscriptions of characters; it attains a character only from the figure of heaven.⁴⁵⁸

Given the otherwise close adherence that the scribe shows in following the received version of the text—which is congruent with the edited version—the differences between these two sections seem to lack the nature of changes wrought by scribal error. While it is possible that the scribe accidentally substituted “mutationes” for “invocationes,” confusing the five minims of “mu” and “inv,” this would have required overlooking the o in “invocations” while simultaneously mistaking the letter c for the letter t. The

⁴⁵⁸ London, Institute of Electrical Engineers, MS Thomson 5, 33v: “Tertius enim modus est imaginum astronomicarum qui eliminat istas spurcitas suffumigationes et mutationes karacterum non habet neque exorizationes aut karacterum inscriptiones admittet karacturem nanscitur solummodo a figura caelesti.”

likelihood of such an inadvertent mistake is decreased by another change in the text:

the insertions of the oddly spelled “karacterum” and “karacterem” three times, instead of the single instance where the term is used in the received version of the text in its more common spelling. This repeated usage of the term in combination with the other changes to the text, suggests an intentional alteration of Albert’s message rather than a scribal accident.

The careful reader is left with the impression that this scribe intentionally commented upon the use of characters, that is, inscribed sigils of power on images. Whereas the received text simply states that this “third mode” of images does not admit “inscriptions of characters,” which is what most manuscripts affirm, our scribe makes a different statement. To clarify the statement quoted above, this copy of the *Speculum* states that the acceptable form of image construction “admits [the use of] a character [which derives its power] only from the figure of heaven.” Thus, rather than forbid the use of inscribed sigils altogether, as Albert seems to have intended, our scribe opens the door for their use when they function by the “natural” means of manipulating celestial influence.

If this copy of the *Speculum* was intended more to act as an authenticating device demonstrating the orthodoxy of the owner in the face of inquisitors or others who might suspect the doctrinal purity of one interested in the use of image magic, other copies bear evidence of inspiring more direct interest in their contents. Many versions bear corrective notes, made either by the scribe who copied the text in the first place, or by a

later reader who recognized that errors of transcription had crept in. For example, MS MA 388 (1177; EII 2) at Bergamo's Biblioteca Civica Angelo Mai has a section of the text in the margin of 50v that has been written in by someone other than the scribe, representing a portion that had been mistakenly omitted from the main body.⁴⁵⁹ Such corrections are not uncommon in surviving manuscripts of the *Speculum*, and not just those copies included in astrological codices. Fondo Cicogna, MS 1097 at Venice's Museo Civico Correr; Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplona, QU 349; Oxford, Bodleian, MS Canonici Misc. 517; Munich, Bavarian Staatsbibliothek, MS CLM 267; Berlin Staatsbibliothek, MS lat f 246; Harvard, F.A. Countway Medical Library, Ballard MS 1; St. Gallen, Kantonsbibliothek, Vadianische Sammlung, MS 412; and Vatican City, Biblioteca Apostolica Vaticana, MS Vat. Lat. 4275—all contain corrective marginal notes.

Such corrective marginalia have something to say to us: it was important to owners of these texts to have accurate copies of the *Speculum* at their disposal. While such a statement may seem eminently prosaic, we should not miss the underlying significance involved. In order to secure a correct text these readers painstakingly read through the *Speculum*, comparing it word for word and line by line with a proof text to insure accuracy, making corrections to the copy where necessary. Such an exercise must have been tedious, and it is doubtful if anyone would have gone to such effort unless

⁴⁵⁹ The note reads: "super almagesti de eodem agitur satis late et compendiosius in libro messehalla." At first glance, it is not apparent why the note is present. There is nothing indicating where it should be inserted and the text on the page is grammatically coherent. However, when read carefully, one discovers an omission: in the text, it reads "in commento Geber de scientia motus orbis qui sic incipit incipiam et dicam quod orbis etc." *De scientia motus orbis* is not, however, a commentary, but rather Messahalla's work on celestial motion. A comparison of the text as written with the received text as printed by Zambelli makes this clear. See Albert, *Speculum*, 212, chpt. 2.

accuracy was deemed important. It seems perfectly reasonable to view such effort as proof that these copies of the *Speculum* were valuable texts and useful to the owner.

Otherwise why bother with insuring the accuracy of the text? If the *Speculum* was meant to serve as an authenticating device, then it would seem hardly worth the effort to insure that it was copied with a high degree of accuracy. To authenticate one's knowledge base of astrology and astronomy, possession of a copy, any copy, of the *Speculum* would seem to suffice, allowing the owner to cite a choice passage to indicate his familiarity with the work, or to hold it under the nose of a rival in a debate. Such would be the case if it were his orthodoxy that he wished to authenticate as well. But the existence of so many carefully edited copies of the *Speculum* demonstrates that many readers were quite intent upon being actively able to engage and *use* their copy of the text.

The fact that not every copy of the *Speculum* bears witness to equal care in its production only reinforces the importance of these corrective efforts as well as the fact that for some uses to which this work was put, accuracy was not a requirement. For comparison with those works containing careful corrections, we will turn back to one of the codices I used as representative of those useful for astrologers: Vatican City, Biblioteca Apostolica Vaticana, MS Pal. Lat. 1445. As I noted, the fourteenth-century copy of the *Speculum* contained herein displays hurry and carelessness on the part of the scribe, with no attempt to clean it up after the fact. The scribe frequently transposed lines, left out key terms, and made other mistakes that either altered the meaning of the text, or left it difficult to discern. Perhaps the most egregious example is to be found on 179v. Whereas the modern edited version of the text reads “hoc est operantes iussu Dei

effectum et destructionem,”⁴⁶⁰ our scribe writes: “hoc est operantes iussu Dei defectum et destructionem.” While the copying of “defectum” for “effectum” is certainly more understandable than the dropping of lines that make a hash out of the text, such as occurs elsewhere,⁴⁶¹ nevertheless this seemingly simple error substantially changed the meaning of the text in ways could have been quite confusing later readers, where a more obvious mistake would likely have been passed over for what it is. A hand other than the copyist’s has left a bit of marginalia next to this passage on 179v, noting that “through an unformed division of some sort, that (referring to planetary influences in the sublunar realm that bring about beneficent or maleficent effects, as detailed in the text) brings about destruction, by the will of God.”⁴⁶² Apparently he has missed the positive generative effects that can result from certain planetary interactions, an error that is understandable in light of the seriously flawed text that he is relying upon. Fortunately the confused mass of mistakes present throughout the work does not mar the bibliographic sections of the text too greatly, allowing this copy of the *Speculum* to maintain its value as a bibliographic resource. One wonders if this might not be the result of greater care on the part of the scribe when copying the sections that may have represented his primary interest in the text.

⁴⁶⁰ Ibid., 224, chpt. 5. This is the reading that is present in the other manuscript copies of the *Speculum* that I have examined.

⁴⁶¹ See Vatican City, Biblioteca Apostolica Vaticana, MS Pal. Lat. 1445, 177r where the scribe has written “qui in commento Geber prolixè dictum est commode restringitur ab Azarbiel hispano,” instead of the version printed by Zambelli on 212, and present in other manuscripts I have examined: “in commento Geber super *Almagesti* de eodem agitur satis late, et compendiosus in libro Messehalla *De scientia motus orbis*, qui sic incipit: *Incipiam et dicam quod orbis etc.* Quod autem in *Almagesti* diligentiae causa prolixè dictum est, commode restringitur ab Azerbel hispanio.” It is clear that the scribe simply skipped over a section following “Geber,” failing to copy two full lines of text in the modern printed edition, instead writing out a sentence that not only lacks any clear meaning, but in which grammatical coherence is nowhere to be found.

⁴⁶² Marginal note on 179v of Vatican City, Biblioteca Apostolica Vaticana, MS Pal. Lat. 1445: “informe divisa aliqua qui iussu dei operat destructionem.”

Besides the ways in which readers used a text, sometimes it is important to consider how a text was *not* used. In this case, astrologers did not use the *Speculum* as a technical manual. Since it lacks anything that would be of concrete use to an astrologer in the application of his or her art, beyond a rather complete point-by-point guide to the elements of astrological judgments, this should come as no surprise.⁴⁶³ Albert's discussion is very general, dealing with nothing more complex than the basic relationships between celestial objects for which a successful astrologer must account in order to perform his work, including such things as understanding the "natures of the planets in themselves" and how these planets might affect the health or fate of individual, or the effects that the conjunctions of planets might have upon the weather.⁴⁶⁴ Furthermore, there are no tables included, which were necessary to make accurate astrological judgments. This section assuredly struck professional astrologers as rather basic and lacking in depth, much the same way as *Astronomy for Dummies* would fail to be of intrinsic use to a modern astronomer.

Such statements are not simply educated guesswork. When astrologers read texts that were directly applicable to them, they often left their mark on these works in a quite literal fashion. An excellent example is MS 483 at the Civic Bibliothek in Bern. On 52r-61v, this codex contains Sacrobosco's *De sphaera*, under the title "Tractatus de Sphaera eorum capitalis." Drawn into the margin of folio 55r, we find a diagram showing epicycles, as well as an illustration of how a man on a ship's mast will perceive the horizon differently than a man on the ship's deck. Similarly, we find notes on the

⁴⁶³ Albert, *Speculum*, 218, 222, chpts. 3 and 4.

⁴⁶⁴ Ibid., 224. "Naturae planetarum in semetipsis."

mechanics of a solar eclipse filling the bottom margins of folios 61r-62v. Likewise, in the next included work, “liber Alkindi de pluviis et ventorum mutatione,” on folios 63r-69r, we find extensive marginal notes detailing the specific influences of each of the twelve signs on terrestrial weather, summarizing and clarifying information drawn from the text.

This is certainly not an uncommon practice of those reading astrological treatises. These works dealing with highly complex issues that are often made more comprehensible through visual diagrams, or through the working out of mathematical formulae, seem to have invited scribbling in the margins. Bavarian Staatsbibliothek CLM 221 displays such diagrams on the leaves of Haly’s “De Proprietatibus lunae” contained on 228r-229v. Leopold of Austria’s *Compilatio de scientia astrorum*,⁴⁶⁵ included on 10r-145 of MS Pal. Lat. 1445, preserved at the Biblioteca Apostolica Vaticana in Vatican City, contains various illustrations drawn from information in the text,⁴⁶⁶ as well as astrological horoscopes, each labeled “exemplum,” drawn into the margins.⁴⁶⁷ However, I have not examined a single copy of the *Speculum* including marginal notes of this nature. We are left to conclude that readers were not approaching the text as a technical guide.

So just how was the *Speculum* directly useful to astrologers? Turning yet again to MS Pal. Lat. 1445 we find a clue to its intended use in its title: “the book of Albert,

⁴⁶⁵ For a discussion of this late thirteenth astrologer and his work, see Sarton, II, 996.

⁴⁶⁶ Such as that on 23r demonstrating how to determine the positions of each of the planets, using the epicycles of Mars and Mercury as examples.

⁴⁶⁷ For an example, see 45r.

Bishop of Regensburg, about the two parts of astronomy, or about a recapitulation of all of the books of astronomy.”⁴⁶⁸ The use of such a title suggests that the scribe had some agenda in mind when he decided to include the *Speculum* within the codex. The phrasing is value neutral, with no theological implications or implications of judgment, in contrast to a title such as “On the licit and illicit sciences.”⁴⁶⁹ The most important parts of the *Speculum* for people such as the scribe of MS Pal. Lat. 1445 would have been the bibliographic sections. Albert systematically lists the foundational works in mathematical astronomy⁴⁷⁰ as well as those works useful to a practicing astrologer, both within an individual bibliographic chapter, six, as well as scattered throughout his chapters⁴⁷¹ on an astrologer’s four principle functions: analyzing revolutions, constructing nativities, performing interrogations, and making elections. Of course, he also lists works that one should avoid, thirty-seven of them in fact, along with incipits and a brief exposition of the contents of many of them.⁴⁷²

Anthony Grafton has illustrated the attraction of having access to an encyclopedic compendium in an age when one could expect libraries to be poorly catalogued, if at all, and there was no process whereby one could readily research the sorts of books available on a given subject.⁴⁷³ Of course a bibliographic guide of which works one should *not* read would have been equally useful, which Albert provides in his list of “filthy”

⁴⁶⁸ Vatican City, Vatican Library, MS Palitani Latini 1445, 176r: “liber Alberti Magni Episopus Ratisboni de duabus sapientiis aut de recapitulatione omnium librorum astronomiae.”

⁴⁶⁹ Venice, Museo Civico Correr, Fondo Cicogna, MS 1097. The title is on 1r: “Albertus de scientis licitis et illicitis.”

⁴⁷⁰ Albert, *Speculum*, 212-218, chpt. 2.

⁴⁷¹ Ibid., 212, 214, 218, 226, chpts., 2, 6, et alia.

⁴⁷² Albert, *Speculum*, 240-250, chpt. 11.

⁴⁷³ Grafton, *New Worlds*, 15-16.

books.⁴⁷⁴ This list would allow a researcher coming across an unknown work to determine quickly whether it might represent a danger to his immortal soul, without having to expose himself to its potentially harmful ideas. Therefore it is easy to see how individuals copying the *Speculum* for inclusion in a codex intended for use by an astrologer could have viewed the text in relatively value neutral terms, as a useful resource for the study and practice of astrology, with limited theological implications beyond those inherent in a guide meant to steer readers away from heretical works.

This brings us to the *Speculum*'s primary role among astrologers: that of a bibliographic guide. There is no shortage of evidence in the marginalia to support this application of the work. Some of the codices compiled for use primarily by astrologers, such as MS Plut. XXX.29 and MS Ashburnham 210 at Florence's Biblioteca Medicea Laurenziana, have each of the works that Albert mentions underlined. Such underlining would have made it easier to find these references. But the system used by readers of manuscripts such as Venice, Biblioteca Nazionale Marciana, MS Lat. Z. 337 and Vatican City, Biblioteca Apostolica Vaticana, MS Pal. Lat. 1445⁴⁷⁵ would have made access to Albert's bibliography even easier: names of authors included in Albert's bibliographic sections are listed in the margins.⁴⁷⁶ Other scribes chose an alternative approach to highlight Albert's bibliographic sections. In MS 1609 (3649) inf. 11, contained in the Biblioteca Universitaria at Bologna, the scribe has created subject headings for each chapter. Chapter eleven, listing thirty-seven books that Albert deems

⁴⁷⁴ Albert, *Speculum*, 240-250. chpt. 11.

⁴⁷⁵ The inclusion of lists of names in the margins of this work reinforces the importance of its title.

⁴⁷⁶ Venice, Biblioteca Nazionale Marciana, MS Lat. Z. 337. Many pages have marginal notes listing authors, such as those on 3r and 3v, as does Vatican City, Biblioteca Apostolica Vaticana, MS Pal. Lat. 1445 on 177r and 179r.

injurious to the Christian faith, receives the label that would have made finding the list of heretical works easy in this future: “on prohibited and frivolous arts as well as books.”⁴⁷⁷ Likewise, Venice, Biblioteca Nazionale Marciana, Lat. Z. 337 (1582) employs subject headings such as “on the books as well as the authors of the first science of astrology.”⁴⁷⁸

Such a bibliographic guide would have been useful in a variety of ways to a practicing astrologer. For a beginner the lists of licit works on astrology would provide a study guide coupled with a brief précis of the various components of astrological forecasting, representing almost a Cliff’s Notes of astrology. For the more experienced astrologer, a bibliographic guide of this sort would direct the scholar toward works that might allow him to expand his knowledge in any of a number of astrology’s sub-specialties, while steer him clear of those works containing matter harmful to a Christian. Furthermore, the bibliographic information would serve as an authenticating device for the scholar, allowing him to drop the names of the fundamental works on astrology into his own work, suggesting a familiarity with the literature in the field, without having to bother himself with actually reading the works in question. Finally, the bibliographic sections, divided between licit and illicit works, would have served to authenticate the owner’s orthodoxy. Simply by owning the *Speculum* and mentioning its existence, the practicing astrologer could evoke the arguments contained therein supporting the practice of astrology. This would help to reassure others of the author’s orthodoxy through

⁴⁷⁷ Bologna, Biblioteca Universitaria, MS 1609 (3649) inf. 11, 53v. “De vetitis et frivolis artibus ac libris.” The writer is not quoting Albert, who never uses the terms “vetitis” or “frivolis.”

⁴⁷⁸ Venice, Biblioteca Nazionale Marciana, MS Lat. Z. 337 (1582), 3r. “De libris primae scientiae astrologiae ac auctoribus.”

association with Albert's authoritative study of the subject, produced at papal behest and clearly outlining the boundaries of Christian astrology.

A sizeable number of the manuscripts of the *Speculum* contained in codices compiled for astrologers show signs of use as bibliographic guides. However, there is yet another way that astrologers appear to have used the *Speculum*: as a text that stimulated critical thought about astrology. In Venice, Biblioteca Nazionale Marciana, MS Lat. Z. 337 (1582), we see notes in a sixteenth-century humanist hand reflecting upon the relationship between Christ—and by extension the Christian faith—and astrology. This reader must have been struck by Albert's argument that celestial influence is obviously part of the natural order of the universe, supposedly confirmed by the ninth-century Arabic scholar Albumasar, who Albert maintains stated that the heavens proclaimed Christ's birth.⁴⁷⁹ Our reader writes: "note that the nativity of Jesus Christ is outlined in the heavens."⁴⁸⁰ Furthermore, he clearly finds it interesting that scholars presumably not only knew that the heavens had proclaimed Christ's birth, but also which celestial configuration was the dominant influence upon the son of God—Virgo.⁴⁸¹ Other readers found Albert's argument fascinating that astrology is an essential tool of medicine and cannot be forbidden on this account. One such reader, stimulated by Albert's argument

⁴⁷⁹ Albert, *Speculum*, 254, chpt. 12. Abu Ma' shar Ja'far bin Muhammad al-Balkhi, known to the West as Albumasar, was born in Khurasan in 787 and died in Iraq in 886. He argued that astrology was superior to all other forms of natural philosophy, providing the basis for the other sciences, while such fields as medicine merely expanded its principles in a narrowly utilitarian fashion. Lemay, *Abu Ma'shar and Latin Aristotelianism in the Twelfth Century*, introduction and chapter one; David Pingree, "Astrology," in *Religion, Learning, and Science in the 'Abbasid Period*, eds. M.J.L. Young, J.D. Latham, and R.B. Serjeant (Cambridge: Cambridge University Press, 1990): 290-299, 290.

⁴⁸⁰ Venice, MS Biblioteca Nazionale Marciana, MS Lat. Z. 337 (1582), 13v. "Nota quod in coelo figurata est nativitas Iesu Christi."

⁴⁸¹ Ibid., 14r. "Ascendens sub quo natus est Christus."

that astrological forecasting can in fact perfect free will, states that “Haly said that the science of astronomy is not proscribed by the authority of medicine, with Hippocrates acting as an authority.”⁴⁸²

This last note brings us to Category B, comprising texts intended for use by medical professionals. As I outlined in chapter two, the status of medieval physicians was waxing along with that of the discipline of astrology in a symbiotic relationship that is still not fully understood. During the fourteenth century the holder of the chair of astrology, who was often a physician, at many major universities was required to cast judgments, free of charge, for university scholars, as well as to cast a more general annual judgment, in addition to holding regular disputations and lectures.⁴⁸³ Ultimately, astrology came to be so important to medicine that by 1405 the University of Bologna insisted that all medical students take a four-year course in astrology.⁴⁸⁴

Why was astrology deemed so important to medicine in the Middle Ages? I have already mentioned its value as a stress reduction mechanism, offering an explanation for otherwise incomprehensible but deadly events, such as the Black Death.⁴⁸⁵ But why was it convincing, and deemed useful by sophisticated intellectuals such as physicians? In large part this was due to the theoretical basis that informed the practice of medicine.

⁴⁸² Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplona, QU 348, 115r: “Scientia astronomiae non est proscripta auctoritate medicinae dixit haly auctoritate yppocrate.” Albert argues that celestial influences can have a negative effect upon a patient’s health, and that by studying what these effects might be, one can stave off future illness. Therefore, the use of astrology perfects free will by allowing one to act without the negative celestial influences that would otherwise impact the body, and by extension, the soul. See Albert, *Speculum*, 258, chpt. 13.

⁴⁸³ Carey, *Courting Disaster*, 52. This was the case at Bologna, Padua, Erfurt, Leipzig, Cracow, and Vienna, but not at Cambridge or Oxford.

⁴⁸⁴ *Ibid.*, 52.

⁴⁸⁵ See chapter two.

Humans were widely held to be a microcosm of the universe as a whole,⁴⁸⁶ a concept developed from the Platonic and Pythagorean philosophy of Greek Antiquity.⁴⁸⁷ In essence, this model sought to explain repeating patterns in a universe seen to be a tightly-interwoven entity, with parts on the smaller scale corresponding to the larger reality. From a Neoplatonic perspective this made perfect sense, with all things envisioned as the product of “The One,” derived from the same source.⁴⁸⁸ Astrological theory increased the internal logic of a belief that smaller parts of the universe experienced change as a reflection—or product—of change in the universe as whole. The stars and other celestial bodies transmitted their influence through “rays,” communicating changing patterns in the heavens to the distant terrestrial realm.⁴⁸⁹

Another reason why medieval physicians found themselves so attracted to astrology was its value as a diagnostic tool. A physician could wait until a disease made

⁴⁸⁶ Roger French, “Foretelling the Future: Arabic Astrology and English Medicine in the Late Twelfth Century,” *Isis* 87.3 (1996):453-480, 454.

⁴⁸⁷ For an in-depth consideration of this concept, see G. P. Conger, *Theories of Macrocosms and Microcosms in the History of Philosophy*, 2nd printing (New York: Russel and Russel, 1967).

⁴⁸⁸ Medieval medicine was a discipline where Neoplatonism had made many inroads that were often unrecognized by physicians, who thought of themselves as primarily Aristotelian Galenists. This was due in large part to the influence of Avicenna (980-1037), the Arabic physician whose *Canon*, and all of its Neoplatonic accretions, played such an instrumental role in the development of Western medicine. See Roger French, “Astrology in Medical Practice,” in *Practical Medicine from Salerno to the Black Death*, eds. Luis Garcia-Ballester, et alia (Cambridge: Cambridge University Press, 1994): 30-59, 38-39; J. Weisheipl, “Aristotle’s Concept of Nature: Avicenna and Aquinas,” in *Approaches to Nature in the Middle Ages*, ed. L.D. Roberts (New York: Center for Medieval & Early Renaissance Studies, 1972): 161-169.

⁴⁸⁹ John D. North, “Celestial Influence,” 50, 62. There was no general consensus opinion as to the nature of these rays. In many optical writers of the Middle Ages there is a distinction between *lux*, the brightness that an object has, and *lumen*, the light that it passes to other objects to illuminate them and make them visible, and *radii*, that rays that appear around bodies, as an aureole or nimbus. Albert’s understanding of this issue was complex, stating “lumen dupliciter potest considerari: aut secundum quod est causa cognitionis, et hoc convenit sibi, secundum quod est incorporatum colori . . . aut secundum quod est causa essendi, et hoc convenit sibi, secundum est comparabile bono, quod est universalis causa essendi et omnium divinarum processuum in omnibus causatis.” Albert, *Super Dionysium*, I, 156-157. The light of the prime mover is invisible, in and of itself. Visible light is an accretion occurring during the transmission of this prime influence, informed by the impurities that are everywhere present in created things. Still, it is the underlying, invisible *radii*, rather than *lumen*, that represents the actuating agent that influences the terrestrial realm.

itself manifest, diagnosing it as symptoms presented themselves. Such an exercise would never be satisfying to a professional dedicated to healing his patients, based as it is upon an analysis of bodily ills, representing a “reading” of unhealthy characteristics “written” across the body.⁴⁹⁰ The problem with this is that by the time gross physical symptoms show themselves, the disease in question has already progressed to the point where the patient’s well being, if not life, is already compromised. This is one of the most important reasons why modern physicians rely so heavily upon diagnostic tests, which can, at least in part, serve a prognosticative function, identifying an illness and determining its potential for harm before it has progressed to the level where those affects become apparent.⁴⁹¹

Rather than wait until a disease had progressed to this point, medieval physicians preferred the use of analytical tools that freed them from the necessity of waiting until an illness progressed to the point that it had left clear marks upon the body. The best-case scenario would be to understand an ailment before it had become fully manifest, and for this he had two basic diagnostic tests: urinoscopy and astrology. Urinoscopy was considered a highly refined technique, with experts claiming to be able to distinguish between as many as twenty different shades of urine.⁴⁹² Each shade was presumed to be related to a specific health characteristic of the patient. However, these two diagnostic

⁴⁹⁰ Michel Foucault, “The Body of the Condemned (from *Discipline and Punish*),” trans. Alan Sheridan, *The Foucault Reader*, ed. Paul Rabinow (New York: Pantheon, 1984):170-178, 173. This is analogous to the process of transmitting a message to potential criminals, which Foucault terms “reading the text” of the body, inscribed in this case by the punishment inflicted by authorities.

⁴⁹¹ Deborah Lupton, *Medicine as Culture: Illness, Disease, and the Body in Western Societies* (London: Sage, 1994), 98; Claudine Herzlich and Janine Pierret, *Illness and Self in Society* (Baltimore: Johns Hopkins University Press, 1987), 76-82.

⁴⁹² Faith Wallis, “Signs and Senses: Diagnosis and Prognosis in Early Medieval Pulse and Urine Texts,” *Social History of Medicine* 13.2 (2000):265-278.

tools were not seen as mutually exclusive. Around 1217 Guillelmus Anglicus, or William the Englishman, wrote *De urina non visa* in Marseilles.⁴⁹³ In this work, William addresses the vexing question of how a physician might accurately diagnose a patient, when the patient's urine is unavailable for study. The answer he provides: map out the celestial influences affecting the patient, which will then tell you what the patient's urine would look like, if it were available.⁴⁹⁴

This is not the only way in which astrology could be applied to medicine. The pseudo-Ptolemaic *Centiloquium* was addressed as much to physicians as to astrologers and astronomers, and by the twelfth century it seems clear that medical treatments regularly incorporated astrological prognostication.⁴⁹⁵ By the late thirteenth century physicians such as Pietro d'Abano (c. 1250-1318) began aggressively to defend the use of astrology in medicine,⁴⁹⁶ as vital both to diagnoses as well as to treatments.⁴⁹⁷ This position became well entrenched, among both physicians and surgeons,⁴⁹⁸ with Marsilio Ficino (1433-1499) being a strong proponent of medical astrology in the fifteenth century,⁴⁹⁹ a tradition maintain by Giambattista della Porta (c. 1537-1615)⁵⁰⁰ well into

⁴⁹³ Michael R. McVaugh, "Bedside Manners in the Middle Ages," *Bulletin of the History of Medicine* 71.2 (1997): 201-223; 205.

⁴⁹⁴ Ibid., 205.

⁴⁹⁵ French, "Foretelling the Future," 454.

⁴⁹⁶ Graziella Fredirici Vescovini, "Peter of Abano and Astrology," in *Astrology Science and Society*, ed. Patrick Curry (Woodbridge: The Boydell Press, 1987): 19-40, 20-21.

⁴⁹⁷ Pietro d'Abano, *Conciliator Controversiarum quae inter philosophos et medicos versantur* (Mantua: Ludovicho de Gonzaga, 1477), 20v-20r. Pietro goes on to state, "qui diligenter inspiciunt concedunt hanc scientiam astronomiae non solum utilem sed et necessariam maxime medicinae," 22r. I will discuss d'Abano at length in the next chapter.

⁴⁹⁸ Ballard MS 1, at Harvard's F.A. Countway Medical Library, contains a detailed diagram of the human body appended to a copy of the *Speculum*, complete with the various celestial bodies that govern the bleeding of various body parts. The library catalog dates this manuscript to 1370.

⁴⁹⁹ Cameron, 8. Ficino developed numerous pharmaceutical recipes that typically included directions for admixture and administration according to astrologically propitious times; he also advocated the use of

the early-modern period.

All of this supports the importance of astrology to pre-modern physicians, but none of it explains why the *Speculum* would have been useful to these professionals. After all, if it contains little in the way of detailed astrological information, it contains far less that would be directly useful to a physician. Nevertheless, nine of the manuscripts I have examined show evidence of having been owned—and used—by physicians.⁵⁰¹

How are we able to tell that a particular codex was intended for use by a physician in his medical role? This is a particularly valid question, because in my estimation merely demonstrating that a medical professional owned a particular copy, or even had a hand in its production, is not enough to place the codex into Category B, those intended to aid in the practice of medicine. For example, I have placed MS I 65 Inf. residing in Milan's Biblioteca Ambrosiana, into Category A—containing those manuscripts intended for use in the practice of astrology—despite the fact that a surgeon personally copied the *Speculum* into the codex.⁵⁰² However, this volume contains four works on astrology, including Albert's, and nothing that could have been of direct use to the practice of medicine.⁵⁰³

So, if proof of ownership by a physician is not enough to put a manuscript into

astrological images as a form of medical treatment.

⁵⁰⁰ Io. Baptista Porta, *Magiae naturalis libri viginti* (Rouen: Ioannis Berthelin, 1650), I, 2v-2r.

⁵⁰¹ The manuscripts in question are detailed in Appendix A.

⁵⁰² Milan, Biblioteca Ambrosiana, MS I 65 Inf., 94v. This information is contained in the explicit: "Explicit Liber Seu Speculum Alberti Magni de secretis librorum astronomie approbandis vel reprobandis laus Deo amen Petrus domini iacobi de Corduba chirurgicus exscripsit anno M CCCC LXXVII."

⁵⁰³ Ibid. The works included are: two works by Zael on judicial astrology and elections, respectively, Albert's *Speculum*, and an anonymous work titled: "de qualitate lunae et eius effectibus."

Category B, how have I determined which works belong here? A high level of clarity is necessary if we are going to be able analyze the way that medical professionals used the *Speculum* as a text central to their work, rather than as something ancillary to their professional interests. Therefore, I have restricted this category to codices containing a substantial collection of works that would be of direct use to a physician or surgeon in the practice of his profession. In order to demonstrate what this means I have chosen two of the nine manuscripts within this category to act as representative texts: Munich, Bavarian Staatsbibliothek, MS CLM 267 and Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplona, MS QU 349. These two manuscripts provide a useful demonstration of the way in which physicians' approach to the *Speculum* and the application of astrology in their work remained constant for centuries. The former volume is a fourteenth-century codex, which later came into the possession of Hartmann Schedl, the Nuremburg physician who died in 1514.⁵⁰⁴ Dr. John Covell, an early sixteenth-century master of Christ's Church Oxford and doctor turned priest, compiled the latter volume, though it was rebound in the seventeenth century and contains notes in a later hand.⁵⁰⁵

MS CLM 267 is a beautifully bound volume, covered in tooled leather with fittings for clasps that are now missing, and written in a clear fourteenth century hand on vellum throughout. It is also one of the best examples available of a codex compiled for use in a medical practice. The thirteen works on medicine that it contains range from

⁵⁰⁴ This codex is copied in a fourteenth-century-hand throughout. However, a fine humanist hand has appended the following note alongside a cartoon drawing of a man with rosy cheeks and dark hair: "Liber doctoris hartmanni schedel de nuremberg." Munich, Bavarian StaatsBibliothek, MS CLM 267, f. 90r.

⁵⁰⁵ Dr. Covell provides identifying information in a note on the inside front cover. London, British Library, MS Harley 2378.

William the Englishman's well-known *De urina non visa*⁵⁰⁶ to pharmacological⁵⁰⁷ and dietary works,⁵⁰⁸ as well as a discourse specifically on apoplexy.⁵⁰⁹ In short, it provides a handy guide to almost every aspect of medicine that a medieval physician would need. And this physician's confidence in the importance of understanding celestial influences when treating patients is in no doubt. Several of the medical works deal specifically with the interactions of heavenly bodies and human health, with the most significant being that of Alkindi (c. 801-873)⁵¹⁰ on "astrology to the principles of medicine."⁵¹¹ This demonstrated interest in the application of astrology in medicine explains the presence of both the *Speculum*⁵¹² and Albumasar's *Flores*,⁵¹³ as well as a horoscope lacking dates but replete with data on celestial conditions and an analysis of the impact of those conditions.⁵¹⁴

MS Harley 2378 is an equally good example of a codex assembled for use by a

⁵⁰⁶ Ibid., 46r-48v. "Gulielmus Anglius de urina non visa."

⁵⁰⁷ Ibid., 118r-131r, 136v-144v. These works are both anonymous: "De simplicibus medicinis" and "Modus medendi."

⁵⁰⁸ Ibid., 145r-147r. "Incipiunt flores dietarum magistri johanis de sancto paulo."

⁵⁰⁹ Ibid., 102r-116r. This is an anonymous work, the "Practica fratris de modo curationis apoplexie." It does have an explanatory note in the explicit explaining something of its origin: "Explicit practica fratris compilata de diversis auctoribus memoriae a quodam cardinale in curia."

⁵¹⁰ Ya'qūb ibn Is'haq al-Kindī, known to the West as Alkindi or Alkindus, was one of the leaders of movement to introduce Greek philosophy to the Arabic language world. A true polymath, he was an astronomer, physician, musician, and mathematician who played a prominent role in the House of Wisdom in Baghdad. In particular, he was a firm believer in applying Greek philosophical learning to the study of Islamic theology, in addition to all other forms of learning. One area of natural philosophy that was important for Alkindi was astrology. He believed that celestial bodies acted as God's intermediaries in His management of the world, transmitting His divine influence through rays. See Peter Adamson, *Al-Kindi* (Cambridge: Cambridge University Press, 2006), particularly 33-47.

⁵¹¹ Ibid., 84r-88r. "Alkindi tractatus de astronomia applicata ad principia mediciniae." While this is the most well-known astro-medical work included in this codex, three of the thirteen medical works fall into this category. Only the four works on urine outnumber those on astrological applications to medicine in this volume.

⁵¹² Ibid., 91r-94v. "Incipit liber fratris Alberti de recapitulatione omnium librorum astronomiae."

⁵¹³ Ibid., 95r-101r. "Albumazar flores de electionibus."

⁵¹⁴ Ibid., 1r-1v.

physician. Enclosed in a seventeenth-century leather binding, this volume contains a wide array of medical material, from a physician's personal notes written in English⁵¹⁵ to treatises on diseases ranging from the Black Death⁵¹⁶ to the "Fyere of Helle"⁵¹⁷—a skin rash—and even lesser problems, such as "a man that spekethe in his sleepe."⁵¹⁸ In total this rather weighty tome holds twenty-three medical works between its covers. One thing that sets it apart from MS CLM 267 is the paucity of information it contains about astrology. The only astrological work contained is the *Speculum* itself, and that in a very fragmentary form. Ending abruptly in the middle of chapter two, the only information it contains is Albert's statement that some necromantic works have blackened the name of astronomy, as well as a short description of what constitutes mathematical astronomy, as opposed to astrology, and part of a list of works that one might consult in order to learn more about astronomy.⁵¹⁹ This fragment comes is in a fifteenth-century hand, having been removed from an older codex and rebound into this volume. That might arouse suspicions that the person compiling this codex had simply failed to remove the entire work, but since the writing on the last folio leaf ends roughly two-thirds of the way down the leaf it appears that it was never finished in the first place.

This raises another question. Why bother to remove such a fragmentary copy of the *Speculum* and rebind it into this work? The end user of this work was interested in

⁵¹⁵ London, British Library, MS Harley 2378, 1v-4r.

⁵¹⁶ Ibid., 21r-36v. This is an interesting treatise that combines historical description of events that occurred in Europe during the course of 1348 with a medical analysis of the disease. Since the Black Death flared up periodically in England until the Great London Fire of 1666, an early-modern physician would have viewed such a work with an immediacy lacking among medical professionals today.

⁵¹⁷ Ibid., 37r-41v.

⁵¹⁸ Ibid., 70r-92v.

⁵¹⁹ Ibid., 331v-332r.

astrology, just as most, if not all, of his colleagues would have been. We know this because the English medical notes that open this work contain references to other sections of the codex that address the medical significance of celestial events.⁵²⁰ In addition, there is one important astro-medical work contained in the codex, “The book of Ypocras. Incipit: In this book he techyth for to know the planets, seknesse, lyf & Deth, and the times thereof.”⁵²¹ So, was it mere curiosity that drove the compiler of this text to include a fragment of the *Speculum*? Possibly, but it could have been a useful text to have even in its fragmentary form. The value of an authenticating device is in the name recognition that it invokes. Such recognition assures listeners—or readers—that the speaker is knowledgeable about the subject under discussion and invokes a host of arguments on behalf of that subject without need of elaboration. In the case of the *Speculum*, it would also authenticate the owner’s orthodoxy, inasmuch as possession or reference to it would testify to the owner’s orthodoxy. For purposes such as these, one would hardly need a complete text. It would be sufficient to possess enough of a fragment to allow one to cite a few recognizable lines or to wave in the face of a religious official would suffice.

This establishes that physicians owned copies of the *Speculum* and has something to say about the manner in which they found it useful. The manuscripts do, however, allow us to expand on the uses to which they applied it. For the most part, it appears that physicians used the *Speculum* in a fashion similar to their astrologer counterparts, as a

⁵²⁰ Ibid., 2r.

⁵²¹ Ibid., 8v-18r. This is a pseudo- Hippocratic work concerning the influence of celestial objects on the body.

bibliographic guide and an authenticating device simultaneously pronouncing upon their knowledge of astrology as well as their orthodox approach to the subject. This similarity of use should not be particularly surprising: not only did they apply astrology to their medical practice, but also many physicians found employment as astrologers, acting primarily as advisors, rather than healers.⁵²² Furthermore, even for those who chose to focus upon medicine, a bibliographic guide to the astrological literature could still be of immense use, as could the possession of a work representing authenticating both their knowledge as well as their desire to avoid heretical ideas.

The manuscripts attest to each of these usages. In some, we may determine the primary intended use from the incipit or explicit. For example, the late fifteenth-century manuscript, MS Amplona, QU 349, contained in the Wissenschaftliche Bibliothek der Stadt in Erfurt, includes the scribe's title for the work in the explicit: "the book about the names of the books of astronomy."⁵²³ In other copies of the *Speculum* the scribe, or a later reader, underlined incipits that Albert provides in red, making it easy to find this information.⁵²⁴ In the first example the title indicates that the most important usage of the text, as far as the scribe is concerned, is as a bibliographic guide. The latter

⁵²² Siraisi, *Medieval and Early Renaissance Medicine*, 68. There are many famous examples, ranging from Michael Scot (c 1175-1232) at the court of Emperor Frederick II (1220-1250) to Michel de Nostredame (1503-1566), who after 1550 virtually abandoned his medical practice in order to write almanacs and act as an astrological advisor. See Pierre Brind 'Amour, *Nostradamus Astrophile* (Ottawa: Les Presses de l'Universit  d'Ottawa, 1993). Of course, as Amour details (432-434) Nostradamus, as Michel took to calling himself, was a poor astrologer, at best, by the professional standards of the day. He relied instead upon what he perceived as a personal gift of prophecy. However, it is unlikely that his clients would have been so clear on what separated Nostradamus from his more technically skilled competitors.

⁵²³ Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplona, QU 349, 108r. "Explicit liber de nominibus librorum astronomiae." Oxford, Bodleian, Canonici Misc. 517 and Bavarian StaatsBibliothek, CLM 267 contain similar titles.

⁵²⁴ Bavarian StaatsBibliothek, MS CLM 267 and Harvard, F.A. Countway Medical Library, Ballard MS 1 both contain this sort of underlining.

example shows us that someone had gone to considerable effort to highlight the bibliographic information in the *Speculum*, making this information easier to access.

Finally, there is evidence that some readers of these copies of the *Speculum* were interested in the work as a means of avoiding problems with those who found astrology to be theologically suspect. For example, turning back to MS CLM 267, we find that the fifteenth-century copy of the work contained therein carries the following explicit: “The [book] of Lord Albert on the defense of astrology.”⁵²⁵ Other copies of the *Speculum* contain notes indicating that readers were motivated to consider what forms of astrological practices were, or were not, permissible. For example, an unknown reader of Preussischer Kulturbesitz. MS Lat. f. 192, contained in Berlin’s Staatsbibliothek, notes that “chiromancy is neither a form of mathematics nor of mathesis.”⁵²⁶ While this may indicate simple reflection upon the point, a longer note in the same hand, further down the page, states:

It is agreeable that Master Gaufredus maintains in question eight that the faithful person is allowably able to speak about a future disposition and not making it necessary [that is, making a definite pronouncement about the future], he may say that in this manner: that [event] should

⁵²⁵ Bavarian StaatsBibliothek, MS CLM 267, 94v. “Explicit dominus Albertus de defensione astrologiae.” This copy of the *Speculum* bears the incipit: “Incipit liber fratris Alberti de recapitulatione omium librorum astronomiae.” This indicates that the scribe also valued the *Speculum* as a bibliographic guide. There is no reason to think that the two usages are mutually exclusive.

⁵²⁶ Berlin StaatsBibliothek, Preussischer Kulturbesitz. MS Lat f. 192, 147r. “Chiromancia non est mathematicae neque mathesis species.” Chiromancy is more commonly known as palm reading. Albert noted that this form of divination could be related to physiognomy, based upon an analysis of physical characteristics affected by celestial influence, and thus referred to it as questionable, but ultimately reserved judgment on it. See Thorndike, *HMES*, II, 702. Mathesis had once been a general term for the mathematical sciences—see Julius Firmicus Maternus work on astrology, completed c.334, entitled *Mathesis*. Later writers pronounced that there were actually two terms, with identical spelling but differing pronunciation, in which one represented a true *scientia*, while the other was an illicit form of number magic. See Tester, 133-142.

come to pass unless God should avert it, because this preserves the natural influence [of celestial power].⁵²⁷

This note expresses the concept that Albert weaves through so much of his writing, considered more fully in chapter three: celestial influence is an influence only, that may normally bring about a given effect, unless counteracted through an act of will or by divine intervention.⁵²⁸

Such philosophical considerations did not seem to make it onto the pages of the three copies of the *Speculum* contained in codices within Category C, those compiled for individuals interested in natural philosophy. This term refers to an interest in a systematic, or at least a logical, study of the natural world in general. Astrology and astronomy were sub-disciplines of this larger metacategory. The three volumes grouped together in Category C contain works on a broad array of subjects in whole or in large part dedicated to various aspects of natural philosophy. Since no one topic is dominant

⁵²⁷ Berlin Staatsbibliothek, Preussischer Kulturbesitz. MS Lat f. 192, 147r, “Magister Gaufredus in questione 8 tenet quod fidelis dicere potest licite futura dispositione et non necessitando in hunc modum dicat istud eveniat nisi deus avertat quia sic conservit naturalem influentiam.” The Master Gaufred in question may be the thirteenth-century author of the *Documentum de modo et arte dictandi et versificandi* (c.1210), better known as Gaufred de Vinsauf. This work is on the composition of poetry, which became widely known in England by the end of the thirteenth century and apparently influenced Geoffrey Chaucer. Thus, it is on neither astrology nor free will, but does contain illustrative aphorisms, one of which might have inspired the note found in this copy of the *Speculum*. See K. Young, “Chaucer and Geoffrey of Vinsauf,” *Modern Philology* 41 (1944): 172-182; J. D. Burnley, “Chaucer, Usk, and Geoffrey of Vinsauf,” *Neophilologus* 69 (1985): 284-93. However, as Tom Burman has pointed out, the beginning of this note sounds as if it may be citing question eight of Magister Gaufred’s *quodlibetal* questions. However, if this is the case, this work is currently unknown.

⁵²⁸ For Albert’s attitude about celestial influences, and an example of the way in which harmful effects that they threaten to produce may be avoided, see Albert, *Super Dionysium*, I, 154. “inferiora sunt in superioribus corporibus sicut in signis, quae sunt causae, et dico signum, quod est causa causam remotam, cuius effectus non necessario consequitur ad ipsam, quamvis ipsa moveat ad hoc, propter impedimentum in causis secundis, quae sunt causae proximae rei; et sic dicimus, quod effectus talis non necessario invenitur in inferioribus propter inequalitatem materiae, et dico inaequalitatem materiae, quando est contraria dispositio inventa vel inducta in re ei ad quod ordinat corpus caeleste, sicut si ordinat ad mortem propter abundantiam caloris, aliquis evitabit, si utatur dieta frigida, et similiter in locis vehementer frigidis non poterit accidere, et huiusmodi dicuntur a Philosopho ‘digniores incohesiones.’”

among these works, it is impossible to establish a more narrowly focused category than the general one under which I have grouped them. Nevertheless, this very generality suggests a reason why one would have wished to own one of these works: as general reference volumes in a personal or institutional library.

One of the codices in Category C is particularly limited in the hints that it provides as to its intended use. This is MS Borgh. 134 preserved at the Biblioteca Apostolica Vaticana in Vatican City. This is a rather plain fourteenth-century volume containing six works, three of which are Albertine. Other than the *Speculum*⁵²⁹ these range from Albert's *De animalibus*⁵³⁰ to an anonymous work on physics⁵³¹ and one about the causes imparting properties to physical objects.⁵³² However, the most interesting thing about this codex is that it is the only one I have studied that contains absolutely no marginalia of any kind. This is, perhaps, suggestive that it might have been a library copy, for the volume is far too plain to have been a presentation copy. However, with no more to go on, further speculation about its use would be inadvisable.

However, the other two copies of the *Speculum* within Category C seem to have been used primarily as bibliographic guides, though each evidences a concern to avoid works that might be injurious to the Christian faith. The first of these, Vadianische Sammlung, MS 412, found at St. Gallen in the Kantonsbibliothek, contains this rather lengthy incipit:

⁵²⁹ Vatican City, Biblioteca Apostolica Vaticana, MS Borgh. 134, 224v-230v. This copy of the *Speculum* is included anonymously and without a title.

⁵³⁰ Ibid., 134, 1r-36v.

⁵³¹ Ibid., 75v-84r. "Incipit liber artium de motu."

⁵³² Ibid., 160r-168r.

Speculum of Albertus Magnus in which he distinguishes astronomical books [from one another] by considering their titles and contents with brief extracts of their authors so that the licit and the illicit may be discerned and separated, by the will of God and from a love of truth.⁵³³

This indicates that the author of the incipit viewed the primary importance of the text to be that of a guide to the literature of astronomy and astrology. This is supported by the fact that the numerous incipits that Albert provides are all underlined, which would make them easier to find. However, it is also clear that whoever penned this note was further interested in being able to readily recognize works opposed to “truth,” as he so states in the incipit.

In this case, such a concern might have been a product of the owner of the codex: Joachim von Watt, better known as Vadian (1484-1551).⁵³⁴ This sixteenth-century humanist was a physician, poet, and mountaineer, in addition to the driving force behind the establishment of the Reformation in his home town, St. Gallen.⁵³⁵ Being born into a prosperous mercantile family gave Vadian the opportunity to study at the Latin grammar school in St. Gallen in preparation for attendance of the University of Vienna, where he earned his M.A. in 1508. The following years would see him holding a position in the Arts faculty, during which time the Emperor Maximilian I would honor him with the title *poeta lauretus* (1514) before Vadian decided to apply himself to the study of medicine.

⁵³³ St. Gallen, KantonsBibliothek, Vadianshe Sammlung, MS 412, 1r. “Speculum Alberti Magni in quo distinguit libros astronomicos ponendo eorum titulos et continentias cum auctorum eorum notibus ut scilicet liciti ab illiciti discernetur et separantur nutu dei et veratis amore.”

⁵³⁴ The following thumbnail biography of Vadian is derived from Hans J. Hillerbrand, ed. *The Oxford Encyclopedia of the Reformation* (New York: Oxford University Press, 1996), vol. IV, 221; Conradin Bonorand, *Vadians Weg vom Humanismus zur Reformation und seine Vorträge über die Apostelgeschichte* (St. Gallen: Verlag der Fehr’schen Buchhandlung, 1962), 56-65.

⁵³⁵ Dr. Rudolf Gomper of the KantonsBibliothek is currently preparing a study of Vadian, and relayed this information to me through a personal conversation on 28 April 2006. My thanks to Dr. Gomper for this assistance.

Earning his doctorate in 1517, he then returned to St. Gallen where he obtained appointment as city physician in 1518, and began a close study of Scripture in the early 1520s, inspired by his correspondence with Huldrych Zwingli. This was a pivotal period in his life: in 1522 he turned to the composition of a number of works on Reformed theology, and after his election as mayor of St. Gallen in 1526 he led the conversion of the city. He was notably successful, managing to maintain his city's Protestant status following the victory of the Catholic Cantons in the Second War of Kappel. Upon his death in 1551, he donated his library to the city, which now forms the Vadiana collection of the St. Gallen Kantonsbibliothek.

It is rather rare for us to know exactly who owned any given codex containing the *Speculum*. While it is not entirely certain that Vadian copied this volume out in his own hand, it is altogether likely, according to Dr. Gomper of the Kantonsbibliothek, that Vadian was involved in the production of the codex. Therefore, it is logical that his theological interests would have affected the choice of texts included. This makes the incipit quoted above even more interesting. It is well known that many Protestants maintained an interest in astrology,⁵³⁶ but this note at least suggests that Protestant concerns about astrology's possible conflicts with the Christian faith were not dissimilar to those held by Catholics. Furthermore, the inclusion of the *Speculum* in a volume owned by a noted Protestant reformer certainly confirms the appeal that this text

⁵³⁶ John Dee (1527-1608) and William Lilly (1602-1681) are two well-known English examples, while Johannes Kepler provides an example of a German Protestant who both worked as a practicing astrologer and defended this science against detractors. See Peter J. French, *John Dee: The World of an Elizabethan Magus* (London: Routledge & Kegan Paul, 1972); Derek Parker, *Familiar to All: William Lilly and Astrology in the Seventeenth Century* (London: Cape, 1973); Sheila J. Rabin, "Kepler's Attitude Toward Pico and the Anti-Astrology Polemic," *Renaissance Quarterly* 50.3 (1997): 750-770.

maintained across confessional lines.⁵³⁷

The rationale behind the *Speculum*'s inclusion in the other natural philosophy codex I have examined is even clearer. The fourteenth-century volume preserved in Munich at the Bavarian Staatsbibliothek, MS CLM 8001, includes a brief extract of chapter seventeen of the *Speculum*. The section included provides a list of the different illicit forms of divination, as well as the texts that contain information on these forbidden arts. The incipit on 144r seems to indicate that this list of forbidden books is the reason for the inclusion of this portion of the *Speculum*: "The letter about certain names of books of astronomy."⁵³⁸ Since this section contains no useful information beyond the names of these forbidden works, we are left to assume that it is included to provide a handy guide for students of natural philosophy, in order that they might be able to avoid such works. Since many astrological works were owned by libraries,⁵³⁹ it is reasonable to believe that a volume, such as this one, with the appearance of a general reference work on natural philosophy, may have been intended for students. Thus, steering these young scholars away from works injurious to the Christian faith could have been a real concern for

⁵³⁷ I should note that the *Speculum* may be found in a 1615 book printed in London, included with a number of pseudo-Albertine texts on occult arts. This text is *Alberti Magni Speculum Astronomiae: Nunc primum M.S. codice in lucem editum. Praemittuntur autem eiusdem athenis libelli, De Virtutibus Herbarum; Lapidum, & animalium quorundam, item de mirabilibus mundi, & de quibusdam effectibus causatis a quibusdam animalibus* (London: unknown printer, 1615). I have chosen not to discuss this copy among the manuscripts. Bound in leather with an embossed sigil on the front and back, in a pocket-sized volume, it may be the result of a private printing, since no other copy is known to exist. I will discuss the implications of the existence of this volume in my concluding chapter.

⁵³⁸ Bavarian, StaatsBibliothek, MS CLM 8001, 144r. "Incipit epistola de aliquibus nominibus librorum astronomiae."

⁵³⁹ Carey, *Courting Disaster*, 45-51.

whoever assembled this codex.⁵⁴⁰

But if the owner of this codex was concerned about the possible theological conflicts that astrology might pose, there were others for whom theological concerns would have been an issue of deeper concern. The last set of manuscripts that I will consider, Category D, is one for which I have two exemplars. Each of these clearly represents a codex compiled by individuals who would have had good reason to be deeply concerned with issues of doctrinal purity. Since this sampling is so small, I will consider each of these codices in some detail, which will clarify why the codicological reality with which we are dealing demonstrates such a concern.

The first such manuscript is MS CLM 18175, a mid-fifteenth-century codex preserved in Munich at the Bavarian Staatsbibliothek. This is an odd volume in a number of ways. Large and bound in tooled white leather, it resembles nothing so much as the family bibles that are so common in homes in certain areas of the U.S. This is apropos, for the monk Oswald Nott of Tegernsee abbey of Bavaria penned this volume.⁵⁴¹ This is

⁵⁴⁰ We should keep in mind that the typical medieval student who entered a university library was much younger than a modern freshman. Most university undergraduates began their studies at the age of fourteen or fifteen, and could be expected to be seen as quite impressionable and in need of special protections. See Cobban, Robert S. Rait, *Life in the Medieval University* (Cambridge: Cambridge University Press, 1931); Stephen C. Ferruolo, “‘Quid dant artes nisi luctum?’: Learning, Ambition, and Careers in the Medieval University,” *History of Education Quarterly* 28.1 (1988): 1-22.

⁵⁴¹ The explicits on ff. 134r, 145r, and 163v provide this information. Folio 184r has this explicit: “Explicit secunda apologetica defensio astronomiae scripsit per me fratrem Oswaldem Nott qui [illegible word] in tegernsee.” 185r states “Iste liber attinet monasterio Tegernsi,” referring, so it seems, to the volume as a whole. Oswald Nott had been a regular canon at Indersdorf, before transferring to Tegernsee in 1449 during a period in which the monastery underwent a vigorous reform as part of the Melker Reforms instituted in the wake of the Council of Constance. It appears that Tegernsee served as something of a home for children of the nobility prior to the Melker reforms. Nott’s arrival at the monastery occurred a generation after the beginning of the reform of this abbey in 1426, and his copying activities may have been in support of the changes implemented at the abbey, which were meant to provide a greater focus upon traditional Benedictine spirituality to the inhabitants of Tegernsee. During Nott’s time at the monastery, he was a

in fact the only codex containing the *Speculum* that I have come across that identifiably once belonged to a monastic library. Furthermore, it is the only one that I have found that seems to have been assembled for the benefit of preachers.

There are eleven theological tracts included in this codex, with a bias toward works that would be useful to a preacher. In fact, five of these eleven works are sermons by Peter Damian and Bernard of Clairveaux, with another work being Augustine's "De catechizandis rudibus," written as a guide for preachers and catechists.⁵⁴² Furthermore, the other five works are biased heavily toward the sort of practical theological guides that would be of direct benefit to preachers. For a monk in need of reinforcing his commitment to his cloistered calling or who needed a solid basis to recruit others into the fold, there is Augustine's "De opere monachorum."⁵⁴³ For well-reasoned explications of the proper life of a Christian and the beliefs that such a person should hold, written in a style that combines rhetorically beautiful models for sermons with Neoplatonic erudition, there are Augustine's tracts "De quarendo deo" –helpfully indexed for ease of access⁵⁴⁴—and "De libero arbitrio voluntatis."⁵⁴⁵ For the preacher in need of some background to address certain aspects of his parishioners' lives, there are Augustine's "On the good of

prolific copyist, completing editions of such works as Jerome of Mondsee's *De contemplatione*, as well as a translation of the Old Testament into German. See Dennis D. Martin, *Fifteenth-century Carthusian reform: the World of Nicholas Kempf* (Leiden: E.J. Brill, 1992), 110-112; Virgil Redlich, *Tegernsee und die deutsche Geistesgeschichte im 15. Jahrhundert* (Munich: Neudr. d. Ausg., 1931; reprint, Darmstadt: Scientia, 1974), 136-137, 142, 146-147, 184.

⁵⁴² For complete details on this manuscript, see Appendix A. Most of the works attributed to Augustine in this manuscript are easily identifiable as one of his known works.

⁵⁴³ *Ibid.*, 5v-17v.

⁵⁴⁴ *Ibid.*, 26r-31v. The index to this short treatise explains what is to be found in each individual paragraph, covering an entire folio leaf, front and back, inserted between 25v and 26r. Throughout the text red numbers have been placed next to each chapter corresponding to this index. In the time that I had to study this manuscript, I was unable to solidly identify this as one of Augustine's known works, but it appears that it may be one of his sermons.

⁵⁴⁵ *Ibid.*, 61r-63v.

marriage,” “on the preservation of virginity,” and for women who have decided to remain unmarried after the death of a husband so that they might devote their lives to God there is “on the profession of widowhood.”⁵⁴⁶ And no guidebook to preaching would be complete without a theological guide or two.⁵⁴⁷ In short, practically everything that a conscientious preacher might need in order to tend his flock and address their concerns is to be found in this rather substantial tome, leaving us with little doubt that this volume must have been compiled for those with an interest in preaching and ministering to their flock.

Considering that this volume appears to have been intended for preachers, the four astrological works appended to the end of the codex, constituting almost a third of it, might seem an odd inclusion. However, when one begins to consider what these works have in common, the reason for inclusion begins to become clearer. Three of the four texts are by Pierre d’Ailly, all dealing with questions of theological issues related to astrology.⁵⁴⁸ Two of these include information provided by the scribe that tells us a good bit about why he chose to include them. One of these works bears the title: “The tract about the concord of theology and of astronomy.”⁵⁴⁹ Here, he follows Pierre d’Ailly’s usage,⁵⁵⁰ in that the “astronomy” in question is what we would refer to as astrology. The

⁵⁴⁶ These three works are to be found on ff. 32r-61r.

⁵⁴⁷ These are by Alain de Lille (c.1114-1202). The first is his *De regulis sanctae theologiae*. Ibid., 91r-115v. 115r-115v contains a very detailed table of contents labeled “Tabula super praecedens opum libri alani de maximis theologiae.” Each paragraph of the preceding work has a number in red next to it, with a corresponding number in this table next to a brief sentence detailing the main idea of the paragraph in Alain’s work. The second theological guide is Alain’s “Liber primus de arte fidei catholicae.”

⁵⁴⁸ These are, using the titles that Nott uses in this volume: “Vigintiloquium Petri cameracensis,” “Tractatus de concordantia theologiae et astronomiae,” “Tractatus Petri de Concordia astronomiae cum theologica et historica veritate.” Ibid., 133v-184r.

⁵⁴⁹ Ibid., 133v. “Tractatus de concordantia theologiae et astronomiae.”

⁵⁵⁰ Smoller, 27.

second bit of relevant information is to be found in the explicit for the latter work.

Nott provides the title, “The tract of Pierre about the concord of astronomy with theological and historical truth,”⁵⁵¹ then appends a secondary title in the explicit, “The second apologetic defense of astronomy,”⁵⁵² with the first likely being the work already mentioned.⁵⁵³ It seems clear that for Nott these works were useful as guides to doctrinally correct astrology.

The *Speculum* could have played a similar role in the eyes of the scribe, outlining doctrinally correct astrology as well as providing a précis of astrological language and practice useful to a preacher addressing the subject. The title Nott appends does not offer conclusive proof on this issue, “The Speculum of Lord Albert about the names of astronomy,”⁵⁵⁴ clarified in the explicit as “the book about the names of the books of astronomy produced by Lord Albert of Cologne, which is his Speculum.”⁵⁵⁵ As I have demonstrated, such a title is frequently appended to copies of the *Speculum* intended as a bibliographic guide, and this copy of the *Speculum* could have served that purpose for one interested in preaching about astrology just as easily as it could have for those with an authorial interest in the subject.

It requires no guesswork to establish that some preachers demonstrated an interest

⁵⁵¹ MS CLM 18175, 163v. “Tractatus Petri de Concordia astronomiae cum theologica et historica veritate.”

⁵⁵² Ibid., 184r. “secunda apologetica defensio astronomiae.”

⁵⁵³ Pierre d’Ailly composed a letter known as the *Apologia defensiva astronomiae ad magistrum Johannem cancellarium parisiensem*, to which this note could be referring. However, this seems unlikely to me, given that the *Apologia* is not included in this volume, which would make the secondary title unclear to readers if that were the intent.

⁵⁵⁴ 125r, “Incipit Speculum de nominibus astronomiae domini Alberti.”

⁵⁵⁵ 133v, “Explicit liber de nominibus librorum astronomiae edita a domino alberto coloniensi et est speculum eius.”

in astrology. Pierre d'Ailly provides an account of a sermon that would have been roughly contemporaneous to the assembly of Munich CLM 18175. Writing in his "Apologetic defense of astrology to the Parisian Chancellor, John," d'Ailly relates a brief description of an interesting sermon Henry of Langenstein delivered to students and faculty at the University of Paris. In this sermon Henry sought to undermine the belief that celestial influence could determine a patient's character traits⁵⁵⁶ through the example of the birth of the Virgin Mary. Henry reportedly began his sermon thus:

The most high one Himself established her. When he said from the first how much the constellation which was in relation to her birthday in the hour in which she was born [would influence her development.] Slow Saturn would not bestow a body of sluggishness to her, nor would Jupiter giver of substance bestow a love of avarice upon her.⁵⁵⁷

Henry then goes on to discuss each one of the most important of the heavenly influences that might have acted upon Mary—or any other human—including each one of the seven planets with the negative characteristics they were considered most likely to bestow, as well as the head and tail of the dragon, which would not act to "exalt this offspring [Mary] by making her fortunate, or humiliate her by making her unfortunate."⁵⁵⁸ Even in

⁵⁵⁶ Pierre d'Ailly, *Apologia defensiva*, 140r-143v. This *might* represent an example of an individual rejecting celestial influence over a person's inward development altogether. However, since d'Ailly's description of this sermon is very brief and written as an unsympathetic source, it would be impossible to establish this.

⁵⁵⁷ Ibid., 140r. "Ipse fundavit eam altissimus. Ubi quantam ad natalem constellationem primo dicit qui in hora nascebatur non influxit ei ille tardus Saturnus corporem ignavie. Nec Iupiter dator substantie ardorem avaricie." We should note that Henry appears to be specifying that God put limits upon the influence that the heavens would bestow to Mary, rather than completely rejecting such influence.

⁵⁵⁸ Ibid., 140r. "Nec caput draconis hanc prolem fortunando exaltavit, nec cauda infortunando humiliavit." The head of the dragon represents the northward point at which the moon crosses the ecliptic of the sun in the sky, which is the apparent path of the sun around the earth. The ecliptic represents an imaginary line drawn around the earth, separating the sky (both night and day) into two halves, based upon perceived solar motion. The tale of the dragon is the southern point at which the moon crosses the sun's ecliptic again. As with most things, there was no complete agreement among astrologers, but the head was generally seen as

the concise description of Henry's sermon that d'Ailly provides, it is clear that it was built around a technical exposé of astrology, using terminology that would have been familiar to anyone versed in the subject. Such use of technical terms would also have acted to validate the speaker's knowledge to his audience, even among those who might not have had a ready grasp of what the terminology actually meant.

D'Ailly does not dwell upon the composition of Henry's audience, since his primary aim is to refute Henry's assumptions. This refutation centers upon the notion that the Virgin Mary was possessed of a special "grace" that God had granted from the time of her birth,⁵⁵⁹ setting her apart from the mass of humanity as a special example who did not conform to the normal rules of celestial influence. Whether the Parisian audience would have found Henry's arguments persuasive, or would have preferred something closer to d'Ailly's position, those listening to the sermon would surely have appreciated Henry's apparent command of the subject matter. In addition, the possession of a handy reference guide to astrology would have facilitated the composition of any sermon upon astrological themes, in the same way that a modern concordance of Biblical commentary acts as an aid to busy preachers. For a preacher with interests similar to Henry, a work such as Pierre d'Ailly's "Concord of astronomy with theological and historical truth," included in Munich MS CLM 18175, would have provided a consideration of the concerns that astrology raised in the minds of many theologians, while the *Speculum* presented a much more concise overview of the same subject. It is also worth noting that

beneficent, thus bestowing good luck, while the tail was seen as malevolent. See Gettings, 161.

⁵⁵⁹ Ibid., 140r. "Licet autem haec conclusio ex speciali gratiae privilegio de beatae huius virginis natavitate concedatur."

all of the works on astrology included in MS CLM 18175 were written with the expressed intent of resolving presumed conflicts between theology and astrology.

A modern reader might wonder if Munich MS CLM 18175 can be seen as representative, or as an anomaly. It is unlikely that it was overly anomalous, for sermons dealt not infrequently with the subject of astrology in the fifteenth century. I have shown that Henry of Langenstein, preaching in the late fourteenth century, found it advisable to address the subject of astrology, in a way that demonstrated considerable understanding of the technicalities of the subject. This would not have seemed odd to many fifteenth-century preachers. Some found occasion to weave astrological beliefs into their sermons in a favorable way, with Pierre d'Ailly doing so before no less an audience than the Council of Constance.⁵⁶⁰ Other fifteenth-century preachers would have agreed with Henry of Langenstein, that astrology represented a threat to traditional Christian beliefs. Girolamo Savonarola (1452-1498) promoted this view before meeting his fiery doom in a Florentine square. His 1497 work, entitled the *Compendio di Rivelazioni*,⁵⁶¹ based upon Pico's *Disputationes adversus astrologiam divinatricem*,⁵⁶² was intended to convince the illiterate—meaning unlettered in Latin—of the superstitious nature of divinatory astrology, in a complementary fashion to Pico's program for those steeped in Latin.⁵⁶³ Savonarola intended his Italian *Compendio* to serve as an accessible source for preachers,

⁵⁶⁰ Smoller, 6.

⁵⁶¹ Girolamo Savonarola, *Compendio di Rivelazioni: testo volgare e latino e Dialogus de veritate prophetica*, Edizione Nazionale delle Opere di Girolamo Savonarola, ed. Angela Crucitti (Rome: A. Berardetti, 1974).

⁵⁶² R. Catani, "Girolamo Savonarola and Astrology," *The Italianist* 18 (1999): 71-90.

⁵⁶³ Shumaker, 42. Savonarola apparently draws on Thomas Aquinas's definition of superstition, that included divination for violating the precept that man should learn from and trust in God. See the *Summa theologiae*, secunda secundae, 92.1.

containing ready arguments in the language of the common people, in order to assist in the fight against interest in astrology. It requires no stretch of the imagination to conceive of Savonarola's near-contemporary, Brother Oswald Nott, copying the *Speculum* into a codex dominated by theological works and those designed for preachers, in order to provide an accessible guide for preachers ministering to their flock.

Preachers were not the only individuals interested in combating theologically suspect forms of astrology who may have found the *Speculum* useful. In at least one case, it seems that someone—possibly an inquisitor—with a deep interest in the legalities of heresy drew upon Albert's text in the course of his work. While intriguing, upon reflection this should not be surprising. The fourteenth-century codex, MS Vat. Lat. 4275 preserved at the Biblioteca Apostolica Vaticana in Vatican City, was the product of a time in which prosecutions for heresy were increasing.⁵⁶⁴ Furthermore, in 1398 the theological faculty of the University of Paris⁵⁶⁵ redefined heresy to include illicit forms of magic.⁵⁶⁶ Such a definition spelled problems for astrologers, because Isidore of Seville, relying upon Varro (115-27 B.C.), had established a link between divination—including astrology—and magic that had never been broken.⁵⁶⁷ Supporters of astrology protested that their discipline was a form of natural philosophy that could help one to lead

⁵⁶⁴ Kieckhefer, *Magic in the Middle Ages*, 193. This may have been, in large part, due to a shift from "accusatorial to inquisitorial procedure," in Kieckhefer's phrase. Informants no longer had to take on the responsibilities of making a formal accusation, which meant that they could act without revealing their identity to anyone other than the inquisitor. This made accusations much more common.

⁵⁶⁵ This was particularly significant because, in 1292 Pope Nicholas IV (1288-1292) had declared the University of Paris to be a theological authority that should be recognized as such everywhere. See Jacques Verger, *Les universités françaises au Moyen Âge* (Leiden: Brill, 1995), chapter 1.

⁵⁶⁶ Levack, 34. Pierre d'Ailly's pupil, Jean Gerson (1363-1429), was primarily responsible for the movement at the University of Paris that led to this denunciation of magicians.

⁵⁶⁷ Kieckhefer, *Magic in the Middle Ages*, 11.

a more moral life, bearing no relationship to magic.⁵⁶⁸ Nevertheless, there were always those who refused to accept such a position, instead insisting that any use of astrology necessitated involvement in such forbidden arts as necromancy.⁵⁶⁹ For those who saw astrology as theologically problematic, their concerns could have only increased during the fourteenth century as interest in this science grew, as I demonstrated in chapter two.⁵⁷⁰ With a growing number of practitioners and an increasing number of texts on the subject,⁵⁷¹ it is no wonder that the fourteenth-century—the century in which MS Vat. Lat. 4275 was produced—saw a growing opposition to astrology.⁵⁷² Under these circumstances it would have been natural for nervous churchmen to call for the power of the Church to be brought to bear against this perceived threat.

⁵⁶⁸ A.C. Crombie, *Medieval and Early Modern Science*. Vol. I, *Science in the Middle Ages, V-XIII Centuries* (Cambridge, MA: Harvard University Press, 1963), 52; Patrick Curry, *Prophecy and Power: Astrology in Early Modern England* (Cambridge: Polity Press, 1989), 3. Supporters defended the “natural” form of astrology for centuries. In the fifteenth century Giovanni Pontano (1429-1503) strongly argued this point in his *De rebus coelestibus*. See Allen, 39. In the sixteenth century Philip Melanchthon (1497-1560) just as strongly defended the study of astrology, defined by him as the *scientia* of determining celestial influences on the earth, in his preface to his edition of Sacrobosco. Melanchthon felt that it was unreasonable to believe that the stars were created for no purpose, and that the study of celestial influence derived from the heavens could provide insight into God’s providential government. See Sachiko Kusakawa, *The Transformation of Natural Philosophy: The Case of Philip Melanchthon* (Cambridge: Cambridge University Press, 1995), 130-131.

⁵⁶⁹ This was Savonarola’s position. See Shumaker, 42. Others, such as Nicole Oresme (1323-1382), seemed to oppose astrology because they viewed it as based upon flawed principles that negated any possibility of accuracy, despite acceptance that celestial objects influenced the terrestrial realm. See Stefano Caroti, “Nicole Oresme’s Polemic Against Astrology,” 75-93; Coopland, 23.

⁵⁷⁰ Jean-Patrice Boudet, “Simon de Phares et les Rapports entre astrologie et prophétie à la fin du Moyen Âge,” *Les textes prophétiques et la prophétie en Occident (XII^e-XV^e siècle)*. *Colloque de Chantilly*, 30-31 mai 1988. *Mélanges de l’Ecole Française de Rome, Moyen Âge-Temps Modernes*, 102 (1990): 617-648, 627-652, 638-643. The multiplication of chairs of astrology in almost every European university, as well as the rapidly expanding number of astrological works written in the fourteenth century, supports this growth in popularity.

⁵⁷¹ Boudet, 638-643. Of course this was a period in which paper was becoming an increasingly accessible—and less expensive—alternative to vellum, which meant that there were more books of all types being produced. By the end of the thirteenth century paper mills had been established in Italy and Spain, with France following suit in 1340 and Germany in 1390. See Hamel, 11-30. Such an explanation would not have lessened the anxiety that those opposed to astrology felt in the face of a growing number of such works.

⁵⁷² This growth of opposition was linked to the increasing tendency to associate magic with heresy, which culminated in the 1398 Parisian denunciation that I have already mentioned. See Edward Peters, *Inquisition* (London: Collier Macmillan Publishers, 1988), 93.

However, as the work of scholars such as Richard Kieckhefer and Edward Peters has made clear, the Church lacked an organized enforcement arm for the pursuit and punishment of heretics.⁵⁷³ Even after the 4 March 1231, when Pope Gregory IX (1227-1241) commissioned inquisitorial tribunals to pursue charges of heresy independently of local bishops,⁵⁷⁴ the “system” so established was one that functioned in complementary fashion to that of episcopal investigators⁵⁷⁵ and secular officials. Individual tribunals acted independently, with the judge delegates who acted as inquisitors answerable directly to the papacy but without an overarching institutional formation.⁵⁷⁶ Papal inquisitors were part of a highly decentralized entity lacking any organizational or bureaucratic structure.⁵⁷⁷

This very lack of a core set of structures and institutional relationships would have left individual inquisitors with minimal direction from above, which must have increased the attraction of the expanding number of inquisitorial handbooks available in the fourteenth and fifteenth centuries.⁵⁷⁸ This was part of the general trend of the thirteenth and later centuries that saw the proliferation of guide and how-to books across

⁵⁷³ R. Kieckhefer, *Repression of Heresy in Medieval Germany* (Philadelphia: University of Pennsylvania Press, 1979), 3-7; Peters, *Inquisition*, 1-7.

⁵⁷⁴ Henri Maisonneuve, *Études sur les origines de l'Inquisition* (Paris: Librairie Philosophique J. Vrin, 1960, 2nd edition), 248.

⁵⁷⁵ Kieckhefer, *Magic in the Middle Ages*, 190. It is worth noting that Richard Lemay believes Gregory IX may have been the pope who commissioned Albert to write the *Speculum*. See Lemay, “*Libri Naturales*,” 23; Lemay, “The Paris Prohibitions of 1210/15,” 1. However, Lemay also suggests Alexander IV as a possible candidate, which I believe is far more likely to have been the case. Based upon the evidence I presented in chapter two, Gregory IX died too early to have been the catalyst for the writing of the *Speculum*.

⁵⁷⁶ Given, *Inquisition and Medieval Society*, 15.

⁵⁷⁷ *Ibid.*, 15.

⁵⁷⁸ James Given, “The Inquisitors of Languedoc and the Medieval Technology of Power,” *The American Historical Review* 94.2 (1989): 336-359.

Western Europe.⁵⁷⁹ One reason for this was the increasing availability of relatively inexpensive paper, decreasing the cost of such works,⁵⁸⁰ while the growing number of educated persons coming out of the rapidly expanding university system increased the audience for such literature.⁵⁸¹ Inquisitorial manuals were a rather diverse sub-genre of this category of guide books, with some functioning primarily as formularies providing examples of documents that an inquisitor might have to issue, while others described heretical beliefs in detail,⁵⁸² with well-written and comprehensive inquisitorial manuals achieving wide-spread distribution.

The most famous such manual was that written by Bernard Gui (c.1261-1331) around 1323.⁵⁸³ The *Practica heretice pravitatis* contained five parts covering everything from the *sermones generales* where condemned heretics received their sentences, to the powers, rights, and privileges of inquisitors, as well as the six types of individuals employed by the papacy that Gui had encountered in his own work.⁵⁸⁴ In writing this text, Gui, a Dominican, drew upon his own experiences working in Toulouse between 1307 and 1323, during which time he states that he produced over 900 guilty verdicts and

⁵⁷⁹ Ibid., 44.

⁵⁸⁰ M. T. Clanchy has detailed this trend for the papacy in the later thirteenth century. Innocent III (1198-1216) sent an average of 303 extant letters per year, while Boniface VIII (1294-1303) issued an average of 50,000 surviving letters per year. See Clanchy, 60-61.

⁵⁸¹ Carey, *Courting Disaster*, 48. Professor Carey is here considering the fifteenth century, but there is no doubt that the thirteenth and fourteenth centuries were also periods of expanding literacy. Between 1350-1500 some 750,000 students attended European universities. While the average length of time of enrollment was only two years—not long enough for a degree—this was certainly long enough to insure comprehensive literacy and a smattering of knowledge in a wide area of subjects. See Grant, *The Foundations of Modern Science in the Middle Ages*, 37-53.

⁵⁸² Given, *Inquisition and Medieval Society*, 45.

⁵⁸³ Ibid., 46.

⁵⁸⁴ Bernard Gui, *Manuel de L'Inquisiteur*, edited and with translation by G. Mollat (Paris: Société d'Édition "Les Belles Lettres," 1927).

presided over the convictions of 42 contumacious heretics leading to their executions.⁵⁸⁵ His work represents a virtual summa for inquisitors, and as such, became widely read,⁵⁸⁶ acting as the basis for inquisitorial procedure for an untold number of individuals over the centuries that followed.

Gui's guidebook clearly lays out the interests, concerns, and attitudes of a man who spend years acting as a papal inquisitor. As we shall see, MS Vat. Lat. 4275, kept in the Biblioteca Apostolica Vaticana, demonstrates some of these same concerns. Bernard Gui's *Practica heretice pravitatis* contains a chapter "on sortileges and invokers of demons"⁵⁸⁷ directed at the different forms of interrogations that individuals knowledgeable in occult matters might make to discover the course of future events. He includes this section because, in accord with his experiences as an inquisitor, he understands that many common people, concerned about the possible fates of themselves, their spouses, children or other members of their family, find the attractions of predictive arts to be overwhelming.⁵⁸⁸ He includes a list of possible interrogations that individuals might commonly wish to make, ranging from "[learning] about the concord or discord of spouses,"⁵⁸⁹ to "uncovering hidden thefts or about making secretive things manifest."⁵⁹⁰ This list is dominated by question about what sort of future knowledge one can obtain through the use of divination. It should be noted, as the examples above indicate, that the questions listed are banal and not inherently evil. Yet it is not the question asked that

⁵⁸⁵ Given, "The Inquisitors of Languedoc and the Medieval Technology of Power," 340.

⁵⁸⁶ Given, *Inquisition and Medieval Society*, 45.

⁵⁸⁷ Gui, 20-24. "De sortilegis et invocatoribus demonum."

⁵⁸⁸ Ibid., 20. "Aliter interrogantur viri et aliter mulieres, poterunt formari interrogatoria . . . videlicet quid sciunt . . . de pueris seu infantibus fatatis seu defatandis."

⁵⁸⁹ Ibid., 20, "Item, de concordia seu discordantia conjugatorum."

⁵⁹⁰ Ibid., 22, "Item, de inveniendis furtis factis seu rebus occultis manifestandis."

invites condemnation—it is the method of discovery. A learned astrologer might well resent being included in a discussion of divination that includes “invokers of demons,”⁵⁹¹ but this did not stop inquisitors—and others—from including the use of astrology to forecast the future among necromantic arts.

This was due in large part to the close association between magic and astrology that had developed in the minds of many theologians by this time. This led many to believe that magic—and astrology—worked through the secret aid of demons.⁵⁹² It was for this reason that charges levied against those accused of heresy, or even secular crimes, sometimes combined astrology and necromancy as if they were natural corollaries of one another. For example, in 1441 officials convicted Thomas Southwell and Roger Bollynbroke, masters of Oxford, of necromancy and astrology on behalf of Eleanor Cobham, duchess of Gloucester, to cause the death of the King. Southwell died in the Tower while Bollynbroke was hanged, drawn, and quartered on 18 Nov. 1441.⁵⁹³ It did not help that the fourteenth century saw a rise in the number of practicing necromancers with a corresponding rise in prosecutions for the crime.⁵⁹⁴

I have previously stressed the value that the *Speculum* would have had to those interested in astrology, by allowing them to avoid theologically suspect works on the

⁵⁹¹ This would have been considered necromancy by the time that Bernard was writing. Originally a term that meant the practitioner was discoursing with the dead, it came to include any contact with spirits—including incorporeal demons. See Burnett, 2-3.

⁵⁹² Kieckhefer, “The Specific Rationality of Medieval Magic,” 817; Levack, 37. Jeffrey B. Russell, *Witchcraft in the Middle Ages* (Ithaca: Cornell University Press, 1972), 144; Norman Cohn, *Europe’s Inner Demons* (London: Chatto-Heinemann, 1975), 176.

⁵⁹³ A.B. Emden, *A Biographical Register of the University of Oxford to AD 1500* (Oxford: Oxford University Press, 1957-1959), I: 214-215; III: 1734-1735.

⁵⁹⁴ Levack, 36; Kieckhefer, *Magic in the Middle Ages*, xi, 155, 180, 191.

subject or to authenticate their adherence to a form of astrology congruent with orthodox belief. But there were also those who devoted years of their lives to the pursuit of individuals practicing forbidden, illicit, arts, as well as others—such as judges—who were interested in the topic for professional reasons. These men with a professional interest in various heresies could have found Albert’s list of “filthy” to be a valuable resource in the conduct of their duties. We seem to encounter such a person in the pages of MS Vat. Lat. 4275 contained in the Biblioteca Apostolica Vaticana. In particular, he had a clear concern about heretical views associated with astrology, perhaps inspired by an interest in mathematical astronomy.

MS Vat. Lat. 4275 is a rather plain, leather-bound volume, appearing to have been envisioned as a single work by someone who copied it out for personal use. The hand of the scribe is consistent throughout this codex and the nature of several of the works makes it unlikely that someone compiled this codex at the direction of another. This is especially true for an interesting work that appears to be an epistolary conversation between the writer and the author of the *Speculum*, which I will discuss later. The volume contains two astrological works: the “Speculum of Albert about the books of astronomy,” also referred to in the explicit as “the little book of the most glorious man, Lord Albert, which he produced about the books of astronomy,”⁵⁹⁵ as well as Nicole Oresme’s (1323-1382) “Tract against astrologers.”⁵⁹⁶ These are bound with two

⁵⁹⁵ Vatican City, Biblioteca Apostolica Vaticana, MS Vat. Lat. 4275, 19v, 29r. “Speculum Alberti de libris Astronomiae.” “Explicit libellus gloriosissimi viri domini Alberti quem edidit de libris astronomie.”

⁵⁹⁶ Ibid., 35r-40r. “Tractatus contra astrologos.”

astronomical works—Oresme’s “On the Vision of the Stars”⁵⁹⁷ and Thabit’s “On the Motion of the Eighth Sphere.”⁵⁹⁸ Each of these works shows signs of having been read closely by a skilled astronomer, with diagrams of planetary positions and mathematical formulae in the margins of Oresme’s work,⁵⁹⁹ as well three folio leaves covered with notes on the technical aspects of mathematical astronomy following Thabit’s text. This work has detailed drawings illustrating planetary motion in its margins that indicate—when taken in conjunction with the in-depth nature of the extensive mathematical notes following the text—that the reader was someone with no small amount of knowledge about medieval astronomy. Beyond these works on the celestial sciences, there are three treatises on mathematics and one on physics included in this codex.⁶⁰⁰ All of this makes it clear that an individual with a comprehensive knowledge of mathematical astronomy compiled and used this volume.

However, the owner of this codex was not merely a man skilled in mathematical astronomy. Besides these works of natural philosophy we find works more directly applicable to the work of a member of the clergy. The first of these is *De sufficientia legis Christiana*, a confessional manual written by Johannus Cusinus.⁶⁰¹ Such a volume

⁵⁹⁷ Ibid., 41v-51v. “De Visione Stellarum.” Nicole Oresme, *Nicole Oresme’s De visione stellarum (On Seeing the Stars)*, edited by Dan Burton (Leiden: E.J. Brill, 2006).

⁵⁹⁸ Ibid., 84v-90v. “De motu sphere octave.”

⁵⁹⁹ All notes within this text are in the hand of the scribe. When taken in conjunction with the apparently identical hand that composed each text, this suggests that an individual compiled this text for his own use, personally copying the chosen texts and drawing illustrative diagrams into the margins.

⁶⁰⁰ Tract one is titled “Arithmetica,” on 60r-70r; the second tract is “Jordanus de numerorum Arithmetica” on 70r-84v, followed by the “Tractatus de additione et subtractione proportionum” on 90r-102v. These mathematical works are followed by a text on Aristotelian physics, with the incipit: “Omnis rationalis opinio de velocitate motuum” on 102r-127r.

⁶⁰¹ For information on this manuscript, see the catalog compiled by Bernard de Monfaucon, a copy of which is held by the Pope Pius XII Vatican Film Library in St. Louis. This is the *Bibliotheca Bibliothecarum Manuscriptorum Nova* (Paris: Guérin, 1739; reprint, Hildesheim: Georg Olms Verlag,

could have been of obvious use to any priest, and in a century in which a growing number of university-educated men entered the priesthood—a surprising number of whom may have even held advanced degrees—⁶⁰² it is not entirely unexpected to encounter a priest with a thorough command of astronomy and mathematics, even if this would never have been common.⁶⁰³ However, the person who compiled this codex was not just any priest—he had a deep interest in the legal issues of heresy, and may have been an inquisitor. The second text in this volume carries the incipit: “The following cases touch upon the observation and power of the overseer as well as the consuls.”⁶⁰⁴ This work is a guide for inquisitors⁶⁰⁵ outlining a variety of crimes that they might be called upon to investigate, from “monks cloistered in a monastery holding arms” to “the Religious nurturing Beguines,”⁶⁰⁶ and includes information on how to set up and manage trials. In the eventuality of a conviction, the work ends with a consideration of punishments, up to and including rendering contumacious heretics over to secular authorities, where they will then be consigned to the flames.⁶⁰⁷

1982), 116.

⁶⁰² Leonard Boyle, “The Constitution “Cum ex eo” of Boniface VIII: Education of Parochial Clergy,” *Mediaeval Studies* 24 (1962): 263-302. John R. Shinnars, Jr. presents an interesting case study of the diocese of Norwich in the early fourteenth century, determining that 20% of the priests appointed between 1325 and 1335 held some level of university education, with 25% of these men holding the M.A. See his “University Study Licenses and Clerical Education in the Diocese of Norwich, 1325-35,” *History of Education Quarterly* 28.3 (1988): 387-410. Such numbers do not indicate a flood of university-trained men into the priesthood during the fourteenth century, but they certainly suggest that it would not have been too surprising to encounter well-educated priests in fourteenth-century dioceses.

⁶⁰³ Cobban, 157-160. We should note that these two subjects constituted one half of the traditional quadrivium, and as such any student who moved beyond the trivium would have encountered them.

⁶⁰⁴ Vatican City, Biblioteca Apostolica Vaticana, MS Vat. Lat. 4275, 17v: “Casus sequentes tangunt speculationem rectoris et consules et potestatem.”

⁶⁰⁵ *Ibid.*, 17v. The intended purpose, as stated in the text, is to outline how to deal with “qui Inquisitoribus opposuerint in negando fidem.”

⁶⁰⁶ *Ibid.*, 18v. “Monaci saepti [cloistered monks] monasterii arma tenentes;” “Religiosi foventes Beginas.”

⁶⁰⁷ *Ibid.*, 18r.

This short work is not a comprehensive inquisitorial handbook. It is, rather, a summary focusing upon trials and punishments. However, it is clear that the individual who composed this work had a particular interest in “inquisitors of heretics.”⁶⁰⁸ This individual could have been someone attached to a bishop, who were men bound by canon law to pursue heresy even if the actual work of pursuit increasingly fell into the hands of inquisitors. Alternatively, it could have been a jurist or a student of law: this work does focus on trial and punishment after all. Or it may be that this work was compiled for someone who served as an inquisitor at some point in his career. Whoever he was, it is clear that he expressed more than a passing interest in heresy. This legalistic interest in astrology is strengthened by the existence of a short, and apparently unique, work that appears later in the codex—discussed below—in which the writer completely rejects judicial astrology. The entire codex is copied in a single hand, including the marginal notes that are found throughout. It is foliated consecutively with no breaks to indicate that quires were moved about or that sections were taken from other manuscripts for inclusion within this one. In every way, MS Vat. Lat. 4275 appears to have been conceived as a single unit, copied and bound for the use of a particular user. Whether or not that is the case, it is clear that the end user of this manuscript was someone with an interest in heresy, as well as a high level of education, which in the late fourteenth century means that he was almost certainly a university graduate.

Training in astronomy could have led such a person to develop a particular interest in illicit astrological beliefs, the sister science of astronomy. For example, there

⁶⁰⁸ Ibid., 17v. “Inquisitoribus hereticorum.”

is some reason to believe that Cecco d'Ascoli may have been consigned to the stake in Florence on 16 September 1327 for casting the nativity of Christ, implying that Jesus, as a man, was subject to astral influences just as other men.⁶⁰⁹ Training in astronomy certainly would have enabled one to understand the intricacies involved in astrology far more thoroughly than most could have achieved without the knowledge that the scribe who of this codex demonstrates. Nothing in the work on the trial and punishment of heretics confirms this, for there is no mention of determinism, astral fatalism, suffumigations, or any of the other heretical beliefs or acts sometimes associated with astrology. However, following this work we find the *Speculum astronomiae*. This begs the question: how would someone concerned with heretical forms of astrology use Albert's work? Let us consider that question before I move on to the other evidence that this reader was particularly concerned with astrology and its misuses.

Our first clue about the way the scribe who compiled this codex intended it to be used is the title chosen for this copy of the *Speculum*. The title of this work is: "The Speculum of Albert about the Books of Astronomy."⁶¹⁰ A "speculum" in medieval

⁶⁰⁹ This is the position of Tester, 193. Cecco also could have had an unhealthy interest in necromancy, as evidenced by the numerous references to necromantic works in his *Commentary on the Sphere*. Kieckhefer, *Magic in the Middle Ages*, 160; Thorndike, *HMES*, II, 966. Or, it may have been that he simply accumulated too many politically powerful enemies among those whom he was accustomed to insulting. Lynn Thorndike, "Relations of the Inquisition to Pietro of Abano and Cecco d'Ascoli," *Speculum* 1.3(1926): 338-343, 340. However, Cecco's previous conviction, in 1324, had led to the confiscation of all his astrological works as well as a permanent injunction against his ever teaching astrology again. When condemned in 1327, his astrological book in Latin was also burned, and all those owning copies were ordered to destroy them or be excommunicated. Thorndike, *HMES*, II, 952-953. The fact that the inquisition could condemn him and plausibly blame it on astrological doctrines indicates that there was a great deal of concern about forms of astrology that presumably stood in opposition to the Christian faith. This perception of a problem could have motivated men such as the compiler of MS Vat. Lat. 4275, whether or not the problem actually existed.

⁶¹⁰ Vatican City, Biblioteca Apostolica Vaticana, MS Vat. Lat. 4275, 19v. "Speculum Alberti de libris astronomiae." Bagliani suggest that this title was added at a later date by someone other than the scribe. An

literature indicates an instructional tool, reinforcing the idea that the scribe who appended this title saw its primary use as a guide, in this case to “the books of Astronomy.” Some astrologers would have viewed the importance of this text in much the same way, as indicated by such titles as “The book about the names of the books of astronomy, both the demonstrative [books] as well as those concerning judgments.”⁶¹¹ But the similarities between the uses intended for these texts might be more superficial than a comparison of titles would indicate. I have argued above that astrologers would have found the *Speculum* to be a useful guide to acceptable literature in the field—books that should be used, as well as those that should be avoided. However, there is every indication that astrologers were primarily interested in the *Speculum* as a guide to those texts that could assist them in their work.⁶¹² In all likelihood, the lists of “illicit” works that Albert provides were of secondary importance. In large part, the importance of these lists lay in the measure of protection to be derived by demonstrating that the owner did in fact know which books to avoid.

Our reader, however, likely saw Albert’s lists of “filth-ridden” works⁶¹³ to be more valuable than those of works safe for Christians. Albert composed these lists of necromantic works full of “filth” that “have presumed to usurp the noble name of

examination of the manuscript reveals that while the title may, or may not, be in the hand of the copyist, it is certainly contemporaneous with the production of the text, being in a clear fourteenth-century hand. See Bagliani, 15. Furthermore, the incipit on 29v includes a similar title: “Explicit libellus gloriossimi viri domini Alberti quem edidit de libris Astronomie.”

⁶¹¹ Bern, Civic Bibliothek, MS 483, 132r. “Liber de nominibus librorum astronomiae tam demonstrativorum quam judicialium.”

⁶¹² As seems to have been the case with Biblioteca Apostolica Vaticana MS Pal. Lat. 1445. As I have noted, in this codex there are marginal notes running throughout the pages of the *Speculum*, indicating sources from the text, such as Geber, Thabit, and Albumasar. See ff. 177r, 179r. All of the sources noted in the margins are those of which Albert approves, with no attention drawn to illicit sources.

⁶¹³ Albert, *Speculum*, 246, chpt. 11.

astronomy for themselves”⁶¹⁴ in order to properly protect his readers. But the compiler of MS Vat. Lat. 4275 likely had a different application in mind: he could use the *Speculum* to identify illicit works, which could have held great utility in building a case against a heretic. Henry Ansgar Kelly convincingly demonstrates that inquisitorial tribunals were, to a large degree, bound by evidentiary and procedural rules that could lead to the overturning of convictions by the pope if ignored.⁶¹⁵ The need to build a case that would both be convincing and proof against appeals would have meant that prosecutors would have welcomed the opportunity to prove that the accused possessed a work forbidden in an authoritative tract such as the *Speculum*, which could not help but strengthen any resultant convictions.

We have some evidence that the owner of this text used it as a guide to illicit astrological literature. Folio 21r contains Albert’s discussion of “abominable” images—those that involve suffumigations and intercourse with demons. Drawn into the margin is a hand pointing at this section, with the word “nigromantic” written beneath it.⁶¹⁶ Such a device would have made it easy to find the list of forbidden works that Albert provides, making one suspect that the reader placed it here due to a perceived need to refer to this section repeatedly. One cannot state with complete assurance that this person is to be equated with the scribe who penned the text, but this single word appears to be in the same hand as the main body of the text. Therefore, it is at least likely that we are

⁶¹⁴ Ibid., 240-242, 246. “Isti sunt . . . necromanticarum, quae nobile nomen astronomiae (sicut dixit) sibi usurpare praesumunt.”

⁶¹⁵ Henry Ansgar Kelly, “Inquisition and Prosecution of Heresy: Misconceptions and Abuses,” *Church History*, 58, 4 (1989): 439-451, 449-451.

⁶¹⁶ MS Vat. Lat. 4275, 21r.

witnessing evidence of the compiler's interest.

Should we conclude that the compiler shared Albert's attitude toward astrology? After all, in this section Albert is specifying a form of astrology that a Christian is required to reject. Overall, the Dominican saint of scientists supports the notion that "the wise man dominates the stars." Therefore, the study of astrology perfects free will, by allowing one to understand better celestial influences that might otherwise compromise one's freedom of action.⁶¹⁷ The *Speculum* does not reject astrology. Rather, it rejects astrological belief that is predicated upon an enslavement of the will to the power of the stars. Is this, then, the form of astrology that our reader set himself against?

The answer is no. The compiler of this codex is far more sweeping in his denunciation of astrology than Albert was. Moving past the *Speculum*, we find an interesting work that begins: "It was a failing of writers [to state] that future events may be able to be foreknown in the present by astronomical interrogations [cast] by astronomers."⁶¹⁸ This anonymous text addresses the question of whether it is possible to know the future through interrogations. On the one hand, there is a "certain man"

⁶¹⁷ Albert's notion of the wise man is predicated upon one acting "rightly," in a reasoned manner, rather than allowing one's impulses to be the motivating force. Thus, for Albert, a "wise man" is a person who is behaving in a fully human fashion, through engagement of one's rationality, rather than in response to sensible impulses. As such, an "unwise man" would be one who is not acting human at all, driven as he is by his sensible, animalistic, impulses. To properly understand this would require a more lengthy discussion of Albert's distinction between "voluptas" and "voluntas" than is possible here. See Albertus Magnus, *Super Ethica*, part I, 7, 22, 25, 40, 60, 61, 65, 66, 81; Albert *Speculum*, 258, chpt. 13. This phrase, "the wise man will dominate the stars," is drawn from the pseudo-Ptolemaic *Centiloquium*, appearing to have been originated by Albumasar. See Lemay, *Abu Ma'shar and Latin Aristotelianism in the Twelfth Century*, 84. Albert "cherished" this notion, in Zambelli's terminology. See Zambelli, "Albert le Grand et l'astrologie," 146-147.

⁶¹⁸ Vatican City, Biblioteca Apostolica Vaticana, MS Vat. Lat., 4275. 29r. "Defectum fuit scriptorum per interrogationes astronomicas per astronomos praesentia possint praesciri futura."

identified by the writer as “recently a chancellor of Paris” who argues that it is possible to know the future “by the art of astrology” just as Haly and Zahel have described.⁶¹⁹ This “certain man” is not directly identified, but the writer states that the man in question has frequently described the benefits of astrological judgments in his writings.⁶²⁰ Who is this, and what sort of text are we dealing with here?

First of all, it seems clear that the addressee is the author of the *Speculum*, Albert the Great. As Zambelli has pointed out, the only reference that the author gives to himself within the body of the text is as a “certain man zealous for both faith and philosophy.”⁶²¹ Furthermore, there is a slender tradition attributing the *Speculum* to “Phillip the Chancellor of Paris,” as I have detailed in chapter one. Finally, the arguments put forth in defense of astrology in this anonymous tract, as well as the sources used, are all closely in line with those used in the *Speculum*, on topics covering various aspects of astrology, from nativities to images and interrogations.⁶²²

So what sort of text is this short work contained in MS Vat. Lat. 4275? Written as a narrative, it appears to be an epistolary conversation between the author, presumably the compiler of this codex, and the author of the *Speculum*. Our fourteenth-century writer was a rough contemporary of Petrarch (d.1378), who famously carried on his own epistolary conversations with absent authors. For example, he wrote: “Long before your letter reached me I had formed an intention of writing to you, and I should really have

⁶¹⁹ Ibid., 29r. “Quidam vir nuper cancellarium parisiensis dicit [illegible] praesceri futura astrologiae arte.”

⁶²⁰ Ibid., 29r. “Descripsit bona astrologiae in multis libris suis.”

⁶²¹ Zambelli, 48; Albert, *Speculum*, 208, proemium.

⁶²² Vatican City, Biblioteca Apostolica Vaticana, MS Vat. Lat., 4275, 33r; 34r; 35v.

done it if it had not been for the lack of a common language.”⁶²³ Petrarch found himself faced with a language barrier because the author whom he addressed was none other than Homer. Separated by at least two thousand years the Italian sonneteer nevertheless chose to address the presumed author of the *Iliad* directly. In light of Petrarch’s literary efforts, while our letter writer’s choice to debate Albert in a letter might be unusual, it is certainly not unique.

And debate him he does. While his addressee defends interrogations and nativities as containing nothing false or injurious to Christians,⁶²⁴ the author of this epistolary conversation gives very little ground. Refuting his opponents’ arguments, seem to mimic to those found in the *Speculum*, he states that “astrological rationales are radical [meaning dangerously innovative] and feeble,”⁶²⁵ for either “astrologers are unable to know future events” or astrology “is not allowed to a Christian.”⁶²⁶ The reason is simple: “false astrology turns men into heretics and idolaters.”⁶²⁷ However, our writer is careful to note that while the “fruit of astrology” must be repudiated, mathematical astronomy should be retained.⁶²⁸ Furthermore, he indicates a detailed understanding of what this latter discipline entails. In a lengthy discussion of astrology’s weaknesses, the writer takes on the primary sources that the *Speculum* cites. In particular, he argues that

⁶²³ James Harvey Robinson, ed. and trans., *Petrarch: The First Modern Scholar and Man of Letters* (New York: G.P. Putnam, 1898), 253.

⁶²⁴ Vatican City, Biblioteca Apostolica Vaticana, MS Vat. Lat., 4275, 35v.

⁶²⁵ Ibid., 30v. “Ridiculum et debiles rationes astrologicas sunt.”

⁶²⁶ Ibid., 29r. “astrologiae non possunt praescire futura vel non est licit Christiano.”

⁶²⁷ Ibid., 35v. “falsa astrologia mutit homines hereticis et idolatris.” It is quite clear that, for this author, all astrology is “falsa astrologia.”

⁶²⁸ Ibid., 35v. “Fructus astrologiae.” It is worth noting that the author of this source consistently uses the term “astrology,” although the *Speculum* never does so, instead referring to the “science of the judgments of the stars.” See Albert, *Speculum*, 218, chpt. 3.

Albumasar is a poor guide to measuring the degrees of motion of the ascendant while differing with Ptolemy to such an extent that the two present incompatible methods for constructing tables.⁶²⁹ The reader is left with the inescapable conclusion that the author of this epistolary conversation has considerable knowledge of both astronomy and the contents of the professional literature. Assuming that this is the same man who chose the collection of astronomical works also included in this codex, which appears to be the case, this level of knowledge is not at all surprising.

What it appears that we have here, then, is a codex assembled by someone with a professional interest in astrology, who may well have been an inquisitor.⁶³⁰ Being opposed to all predictive forms of astrology, it is likely that he used the *Speculum* as a guide to the literature, though not because he wanted to practice this discipline. Rather, when interrogating or investigating astrologers, the details on the contents and incipits of the works constituting the technical literature of astrology would have been valuable, especially those sections that detailed treatises that even a defender of astrology such as Albert labeled “filth.”

What we see in this analysis of the manuscripts is that the meaning and importance of the *Speculum* was discursively constructed through interaction between text and reader.⁶³¹ As such, it proved useful to physicians, astrologers, and students of

⁶²⁹ Ibid., 33v.

⁶³⁰ MS Vat. Lat. 4275 is an interesting codex, worthy of further research. At this time, it would be impossible to establish its provenance.

⁶³¹ For a useful overview of the different ways in which meaning can derive from discursive interaction between reader and text, or listener and speaker, see Jan Blommaert and Chris Bulcaen, “Critical Discourse Analysis,” *Annual Review of Anthropology*, 29 (2000): 447-466.

natural philosophy, as well as those preoccupied with doctrinal purity, but in different ways for these various professional groups. The same work that could serve as a guide to the essential works in the field for an astrologer could be used by a physician as a defense of his use of images.⁶³² Many professionals found the *Speculum* useful as a guide to theologically unproblematic astrology, but others, such as the compiler of Vatican City, Biblioteca Apostolica Vaticana, MS Vat. Lat. 4275, rejected all forms of astrology and may have used it to root out and prosecute what he deemed as particularly egregious abuses committed by astrologers.

Ultimately, in order to understand the various meanings that the *Speculum* held for differing professionals, we must be willing to move beyond the words on the page. As we have seen, an examination of choices made when copying the *Speculum* into a codex can inform us about its intended use. Even the title that a scribe chose to apply to the text can enlighten us about this. As for the way in which readers applied themselves to the text, marginalia can often demonstrate how they found it to be useful. This can be true even when the “marginalia” in question are no more than a series of underlinings or a hand drawn into the margin pointing at a particular section of the text. Through an analysis of these components, we can determine how, and why, the *Speculum* managed to maintain its usefulness to various readers for centuries. Often, the seemingly mute elements of a work have the most to tell us.

⁶³² As seems to have been the case with Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplona QU 189.

Chapter V

Whether for it or against it, you can't ignore it:

Readers and the *Speculum astronomiae*

It certainly made sense for the pope—probably Alexander IV—to ask Albert the Great to compose authoritative guide to astrology permissible to Christians. Moreover, given Albert's personal interest in natural philosophy—and the importance he placed upon astrology—it is likely that he received the commission quite favorably. But why was the *Speculum* received with approval and interest? Why was it so popular across Europe? Sought after by readers from a variety of backgrounds across Europe who eagerly added it to their libraries, it was one of the most popular works on astrology to be produced during the Middle Ages. However, this popularity was not based upon any originality of thought to be found in the *Speculum*, or in Albert's rather dull and pedantic prose style. Rather, the *Speculum* garnered and retained interest largely because it tapped into the widespread belief of European intellectuals that humans existed within a web of celestial influences, making astrology central to the thinking of many writers. It is an examination of the importance of astrological belief to a wide variety of intellectuals, all of whom found the *Speculum* to be attractive, that is the goal of chapter five, for such an overview will demonstrate the centrality of astrology to the thought of premodern writers.

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⁶³³ Some modern historians, such as Weill-Parot, still mistakenly characterize astrology as irrational and marginal during the middle ages. See Weill-Parot, 557.

The central premise of astrology—the impact of celestial influence on the sublunar realm—was accepted by both those who embraced the possibility of predicting the future through divinatory astrology as well as those who absolutely rejected any such attempt. The study of astrology held out the promise of increased knowledge not just to natural philosophers, but to theologians as well. After all, this flow of influence was held to begin with God. In fact, astrology attracted so many supporters who would elaborate its systems while seeking evidence of its validity that its rationality came to appear impervious to attack. After all, once one accepted Ptolemy's geocentric model of the universe, which provided the structure upon which astrology was built—further elaborated by later applications of the model of Plato's *Timaeus*, there was very little room left for skepticism.⁶³⁴

It is for this reason that Albert is able to state that

all philosophers have agreed on this, that when we might know the hour of impregnation of some woman, then we will know from that what will come to be concerning the fetus until it is quickened, and what will come about with it having been delivered from the uterus, and perhaps what will happen [to the person] up until death.⁶³⁵

Here Albert is not exaggerating about the universality of the belief that humanity exists within a web of active celestial influences. One will search in vain for an intellectual in

⁶³⁴ Kieckhefer, *Magic in the Middle Ages*, 128-130. Astrologers and their supporters regularly cited horoscopes that had presumably predicted shipwrecks and other events, in order to support the accuracy of the science. In the case of one pseudo-Aristotelian text, the author cites a compilation of twelve thousand supposedly accurate predictions.

⁶³⁵ Albert, *Speculum*, 266, chpt. 15. "In hoc concordati sunt omnes philosophi, quod cum sciverimus horam impregnationis alicuius mulieris, sciamus per eam quid fiat de foetu donec inspiretur et quid usquequo egrediatur ab utero, et quid forte usque ad obitum."

the Middle Ages who did not adhere to this unifying theory of nature.⁶³⁶ Because of the universal acceptance of the basic tenets of celestial influence, a comprehensive evaluation of astrology in the work of medieval and Renaissance intellectuals would require more space than I am here permitted. However, we can consider why the *Speculum* was so popular by examining those who cited it or used it in more substantive ways in their work, following that application through to the end of the fifteenth century in order to understand why astrology was such an important thread in the mental fabric of pre-modern Europe.

In so doing we will look into the work of such men as Pietro d'Abano (c. 1250-1318), for whom the *Speculum* appears to have acted as an indispensable handbook to astrological practice when writing his own works designed to promote the use of astrology in order to improve human life, as well as those such as Pico della Mirandola (1463-1494), who has come to be seen as a standard bearer in an anti-astrology movement based upon a reasoned rejection of superstition. Perhaps the latter case allows me to deliver the most startling insights, for what we will find in examining the work of those who rejected appeals to astrology—either wholesale or in circumscribed ways—is that they did not do so based upon the reasoned skepticism that modern historians such as Eugenio Garin have desired to find in the work of subjects such as Pico. Rather, when viewed within the proper socio-historical framework, “rejections” of astrology display more of the characteristics of modern intra-disciplinary disputes in which everyone agrees on the basic theory—just not its interpretation. A comparison can, perhaps, be

⁶³⁶ As Nancy Siraisi has noted: “the heavenly bodies were universally believed to influence human as well as all other sublunar bodies.” See Siraisi, *Medieval and Early Renaissance Medicine*, 67-68.

made to intra-disciplinary conflicts that occur within scientific disciplines today. For example, while a modern biologist might critique a colleague's model of evolutionary theory,⁶³⁷ such a challenge does not indicate a rejection of the theory itself—merely the way in which it is understood and applied.

By considering the place of astrology in the intellectual milieu of Europe, from the high Middle Ages until the late Renaissance, through the work of those who found the *Speculum* to be a valuable source, we have a fascinating opportunity to observe the way pre-modern readers approached this important text. In this way, rather than the dark and indirect image of those who read Albert's defense of astrology gleaned from a consideration of manuscripts, we are able to delve much more deeply into the minds of those who thought enough of the *Speculum* to address it directly in their own work. From the thirteenth through the fifteenth century a number of writers did just this. Most used it primarily as an authenticating device functioning due to its recognizability, transmitting a body of implicit associations requiring neither explanation nor elaboration to establish the wielder's knowledge, much as a modern evangelist might wave a King James' Bible in support of a point without directly quoting or even mentioning it. The *Speculum*, widely read and backed by the authority of Albert the Great,⁶³⁸ was ideal for this use. While its

⁶³⁷ There are probably few disputes among scientists more acrimonious than that waged between proponents of Stephen J. Gould's punctuated equilibrium model of evolution and its detractors. For a sample of this debate, see Stephen J. Gould, "Evolution's Erratic Pace," *Natural History*, 86 (1977): 12-16; E. Mayr, "Speciational Evolution or Punctuated Equilibria," in *The Dynamics of Evolution*, eds. Albert Somit and Steven Peterson (New York: Cornell University Press, 1992): 21-53; Michael Shermer, *The Borderlands of Science* (New York: Oxford University Press, 2001).

⁶³⁸ We should note that it would hardly have mattered were Albert not the author of the *Speculum*. It was almost universally attributed to him, and therefore would have carried the weight of his reputation even if he had not actually written it. Furthermore, if I am correct that Albert wrote the *Speculum* in answer to a papal mandate, its resulting semi-canonical nature would not have been overlooked by medieval and early-modern readers.

widespread distribution would have insured broad familiarity with its contents, Albert's reputation would have accorded considerable weight to its arguments and value as source.

These appeals to the *Speculum* as a source continued until as late as the last decade of the fifteenth century. As we have seen from the manuscripts, interest in the *Speculum* remained high for a century beyond Pico della Mirandola's death in 1494, but his *Disputationes adversus astrologiam divinatricem* published in 1495 is the last concrete evidence we have that Albert's defense of astrology still commanded respect while influencing credible scholars, and as such the publication of this work will provide the end point for my study of the influence of the *Speculum*. The study and practice of astrology would continue, but in the sixteenth century scientists such as Nicholas Copernicus (1473-1543) were laying the groundwork for alternative cosmological model that would prove more attractive to intellectuals in the seventeenth century, who came to equate astrology with civil unrest and popular enthusiasms. In the concluding chapter I will consider this context in relation to the changing status of the *Speculum* that led to its relegation in the following centuries to the realm of pseudo-scientific esoterica, rather than science.⁶³⁹

But before we consider that momentous change, let us turn back to a study of how the universal belief in astrology affected the work of writers in Europe. This belief fed the

⁶³⁹ A quick browsing of the Internet will turn up hundreds of modern adherents to astrology who cite, and in some cases quote, the *Speculum* in order to support their beliefs. I will briefly discuss this in my concluding chapter.

Speculum's popularity while being reinforced by the weight of its authority.

We begin this study barely a generation after Albert's passing with an examination of the work of the Italian physician, Pietro d'Abano, who, as we will see, leaned more heavily than most upon the *Speculum*. Writing in the early fourteenth century when natural philosophy was still rather new and exciting to Italian physicians,⁶⁴⁰ Pietro joined the ranks of those such as the pioneering Paduan, Taddeo Alderotti, who saw the use of Aristotelian logic as in medical discussions as a tool to enhance the status of the medical profession.⁶⁴¹ This approach led fourteenth-century physicians to appeal to Aristotle's *libri naturales* for an understanding of physiology—sometimes even in preference to Galen or other medical authorities.⁶⁴² This reliance upon Aristotle naturally enhanced the appeal of astrology, given the Philosopher's support of the theory of celestial influence found in his *De generatione et corruptione* and *Meteorologica*, reintroduced to the West in the period between 1150 and 1160.⁶⁴³ These works directly linked terrestrial change to the motions of the sun and moon while implying a similar influence from the planets.⁶⁴⁴ For these Aristotelianizing physicians celestial motion was assumed to provide the motive force for conception—the generation of life—, which meant that it logically followed that the movements of the heavens

⁶⁴⁰ Nancy Siraisi, *Taddeo Alderotti and his Pupils. Two Generations of Italian Medical Learning* (Princeton: Princeton University Press, 1981). Siraisi suggests that Taddeo may have introduced Aristotelian natural philosophy into Italian medical learning in the 1260s.

⁶⁴¹ Roger French refers to this as the process whereby physicians created their image as the "learned and rational doctor." See Roger French, *Medicine Before Science* (Cambridge: Cambridge University Press, 2003), chapter 4.

⁶⁴² Siraisi, "Taddeo Alderotti and Bartolomeo de Varignana on the Nature of Medical Learning," 29.

⁶⁴³ North, "Medieval Concepts of Celestial Influence," 5. For the date of the reintroduction of these texts into the west, see Tester, 152.

⁶⁴⁴ North, 5.

brought about changes in health throughout the course of a person's life.⁶⁴⁵

It was in this context, in which Aristotelian natural philosophy was held in high regard and viewed as new and exciting by Italian physicians, that we find Pietro d'Abano writing, leading him to make extensive use of the *Speculum* in both the *Conciliator differentiarum quae inter philosophos et medicos versantur* and in his work known as the *Lucidator dubitabilium astronomiae*.⁶⁴⁶ Pietro was born around 1250 in the small Italian town of Abano, later studying at both Paris and Padua, before settling down to work as a physician in the latter city, where he died around the year 1318.⁶⁴⁷ It is likely that this is where he lived while completing the two works here under consideration, written between 1303 and 1310, but there is considerable evidence that he travelled regularly.⁶⁴⁸ During his life he seems to have been a difficult man known for his greed and irascible temper, and this may in fact have been a significant factor in problems he experienced with local inquisitors.⁶⁴⁹ An absence of popularity is rarely an asset when publicly accused of crimes. In any event, it seems clear enough that Pietro was called before inquisitorial tribunals twice, the last time in 1316, and may have still been under suspicion when he died.⁶⁵⁰ In fact, according to Peter of Strasbourg, writing in the mid-fourteenth century, Pietro was posthumously convicted, suffering the indignity of having

⁶⁴⁵ Such was the case with Taddeo Alderotti and his followers. See Siraisi, *Taddeo Alderotti*, 179. Albert, a deeply Aristotelian thinker, certainly agreed with this evaluation of the role of celestial influence in human generation. See chapter three.

⁶⁴⁶ Pietro d'Abano, *Il "Lucidator dubitabilium astronomiae" di Pietro d'Abano*, Graziella Federici-Vescovini, ed. (Padua: Programme e 1+1, 1988); Pietro d'Abano, *Conciliator*.

⁶⁴⁷ Vescovini, *Il "Lucidator dubitabilium astronomiae" di Pietro d'Abano*, introduction.

⁶⁴⁸ *Ibid.*, II, 938.

⁶⁴⁹ Thorndike, "Relations of the Inquisition to Peter of Abano and Cecco d'Ascoli," 340.

⁶⁵⁰ Thorndike provides a useful survey of Pietro d'Abano's relationship to the inquisition in a lengthy index devoted to the subject. See his *HMES*, II, 938-947.

his bones exhumed and burned.⁶⁵¹

While there might be some dispute over what transpired between Pietro and the local inquisitor, there is no doubt that he viewed astrology as “not only useful, but necessary, especially to medicine.”⁶⁵² But Pietro lived and worked at a time in which the study and practice of astrology could arouse considerable controversy. He assuredly studied at Paris well before the dispute about astrology reached white-hot intensity in the 1270s, but he could not have been ignorant of the ire that the discipline provoked among many theologians. The controversy that astrology provoked was his motivation for writing the *Lucidator dubitabilium astronomiae* in the early fourteenth century, intended to distinguish licit astrology from illicit forms of celestial forecasting⁶⁵³ and other inadmissible forms of magic and divination. This goal was not dissimilar to Albert’s stated intent in the *Speculum*,⁶⁵⁴ but whereas the Dominican scholar sought to preserve the study of astrology as an admissible academic discipline, Pietro was much more focused. He viewed astrology as an irreplaceable diagnostic tool, providing physicians with the best possible means of understanding and treating human ailments. Approaching the human body as a microcosm of the universe at large,⁶⁵⁵ Pietro admits no doubt that the stars and planets had serious effects upon the health of terrestrial

⁶⁵¹ Thomas of Strasbourg was Prior General of the Augustinians. He referred to Pietro as a heretic, detailing these events in the preface of his *Sentences* commentary. Thorndike accepts Thomas’ statements, largely because his account is the only one that might represent a first-hand account. See Thorndike, *HMES*, II, 943-944, 946.

⁶⁵² Pietro d’Abano, *Conciliator*, 22r, “si diligenter inspiciunt concedunt hanc scientiam astronomiae non solum utilem sed et necessariam maxime medicinae.”

⁶⁵³ Pietro d’Abano, *Lucidator*, 105-106.

⁶⁵⁴ Thorndike, *HMES*, II, 911; Vescovini’s introduction to the *Lucidator*, 24.

⁶⁵⁵ Eugenia Paschetto, *Pietro d’Abano, medico e filosofo* (Florence: Nuovedizioni E. Vallecchi, 1984), 280-283.

patients.⁶⁵⁶ For him, the universally accepted theory of celestial influence upon objects in the sub-lunar realm settled any questions about its use; it was simply too valuable to be ignored, and no theologically motivated concern could be allowed to stand in the way of its study. This is why Pietro found the defense of astrology contained in the *Speculum* to be particularly amenable to his own views on a subject that he viewed as inherently unproblematic.

However, the *Speculum* was more than a solidly argued and authoritative authenticating device for Pietro d'Abano. It also represented a point of access to astrological knowledge itself. Bruno Nardi, who has studied Pietro in depth, states flatly that the *Speculum* acted as a model for the Paduan physician's astrological theories.⁶⁵⁷ While Nardi has not made the detailed comparison of between the Pietro and Albert's work necessary to substantiate this, an examination of the evidence indicates that Nardi is not exaggerating. Pietro's work echoes the *Speculum* in so many small ways that one familiar with that latter work is constantly reminded of it while reading Pietro's writings. For example, when discussing the *Almagest*, he states that Albategni provides "a brief [discourse on astrology] by gathering together in a narration that which is demonstrated with greater prolixity in the *Almagest*."⁶⁵⁸ For the reader familiar with the *Speculum*, this cannot help but call to mind Albert's own support for the use of Albategni in Ptolemy's stead, because "that which has been said with prolixity for the sake of diligence in the

⁶⁵⁶ Pietro d'Abano, *Conciliator*. Differentia X begins from the presumption that "corpora celestia in hec inferiora imprimant per motuum et lucem" and that "sint aliqua corpora celestia que conferant in salutem infirmi: sunt et alia que nocent." While the term "patient" calls to mind those who visit a physician, taken more broadly it is indicative of anything passively affected by external actions or impressions.

⁶⁵⁷ Nardi, 29-37.

⁶⁵⁸ Pietro, *Lucidator*, 115. "Narratione colligendo brevius quo in *Almagesti* prolixius demonstratum est."

Almagest, is restated usefully by Azerbeel from Spain, who is called Albategni.”⁶⁵⁹

Given d’Abano’s intense reliance upon Albert as a source, for the best way to understand the Italian physician’s view of astrology, and the place of this science in his work, is to analyze Pietro’s use of the *Speculum* as a source.

For example, Pietro’s reliance upon the *Speculum* becomes quite evident through a consideration of the structure of his work, the *Lucidator*. Entire sections bear such a strong likeness to Albert’s work that these seem to go beyond mere coincidence. An example of this is Pietro’s discussion of images, which, as I have noted, physicians maintained functioned as universal prophylaxes. He begins with a brief discussion of elections, including an explanation that the “science of the images of astronomy is properly subordinated to the science that is about elections.”⁶⁶⁰ This is because the technique for making a functioning non-demonic astrological image rests upon choosing the right time for its construction, whereby one may properly harness the power of celestial bodies. Albert defined natural images in exactly the same way, as a sub-category of elections, as detailed in chapter eleven of the *Speculum*. As Nicholas Weill-Parot has pointed out, the *Speculum* was the vehicle whereby the practice of image magic entered the West⁶⁶¹ and it seems clear that with Pietro d’Abano we are witnessing an example of this transmission.

To explain the parallels between Albert and Pietro’s work, let us turn back to the

⁶⁵⁹ *Speculum*, 212, chpt. 2.. “Quod autem in *Almagesti* diligentiae cause prolixè dictum est, commode restringitur ab Azerbeel hispano, qui dictus est Albategni.”

⁶⁶⁰ Pietro, *Lucidator*, 116-117. “Huic scientie que de electionibus, subalternatur scientia imaginum astronomicarum proprie.”

⁶⁶¹ See Weill-Parot, 28-37.

Lucidator. Very quickly in his discussion of the use of images Pietro provides a list of “books obscene and depraved of understanding”⁶⁶² dealing with necromantic image magic that seeks to “be made honest and to be defended”⁶⁶³ by being categorized with natural astrological images. In Albert’s phrase, such works “presumed to usurp the noble name of astronomy.”⁶⁶⁴ According to Pietro, construction of these images involves engraving sigils upon them and the invocation of demons or of angels as well as suffumigations of the image in question.⁶⁶⁵ in short, each one of the acts involved in the construction of what Albert refers to as abominable images.⁶⁶⁶ Following these prefatory statements Pietro lists six authors whom the student of astrological images should avoid. This list is far shorter than the comparable list provided by Albert in chapter eleven of the *Speculum*, and lacks incipits or, in most cases, any indication of the contents of works that should be avoided. But it should be noted that five of the six authors to whom Pietro refers as necromantic are listed in an order that bears a close resemblance to the list of authors of abominable books provided in the *Speculum*.⁶⁶⁷

In a more general sense, Pietro uses the *Speculum*’s divisions of the components of astrology so precisely that he appears to have composed his own sections dealing with the constitutive parts of astrology with direct reference to Albert’s work.⁶⁶⁸ The

⁶⁶² Pietro uses this phrase at the end of the list, where he states “et ceteri huiusmodi, quos pertranseo, libri satis obsceni ac intellectus depravati.” See Pietro, *Lucidator*, 117.

⁶⁶³ This is Pietro’s opening statement leading up to this list, on 117: “Ei [scientia imaginum astronomicarum] etiam cupiunt subalternari et in ipsam reduci ut honestentur et defendantur imagines negromantie.”

⁶⁶⁴ Albert, *Speculum*, 240-242, chpt. 11. “Isti sunt duo modi imaginum necromanticarum, quae nobile nomen astrinimae (sicut dixi) sibi usurpare praesumunt.”

⁶⁶⁵ Pietro, *Lucidator*, 117.

⁶⁶⁶ Albert, *Speculum*, 240-246, chpt. 11.

⁶⁶⁷ Pietro, *Lucidator*, 117; Albert, *Speculum*, 242-244, chpt. 11.

⁶⁶⁸ Ibid., 30-32; Thorndike, *HMES*, II, 899-900; Vescovini, “Peter of Abano and Astrology,” 20.

congruence between the work of the Italian doctor with that of his German predecessor begins with his basic definition of the distinction between astrology and astronomy. Pietro states that

it should be known that certain people assign a difference between astronomy and astrology, saying astronomy to be that part which deals with motion; astrology is that part which informs judgments.⁶⁶⁹

It is hard not to hear echoes of Albert here, who differed in terminology but not in definition. For him “there are two great wisdoms and each is known by the name of astronomy. The first of which is in the science of the figure of the first heaven (the orb of the stars) and the quality of its movement,”⁶⁷⁰ with “the second great wisdom” being the “science of the judgments of the stars,”⁶⁷¹ meaning predictive astrology. While far from conclusive, such a division stands as strong circumstantial evidence in favor of Pietro’s reliance on Albert.

However, this similarity of definition could have come about through each man relying upon a common source. If this were the only likeness to be found between the two, one might easily dismiss the notion that d’Abano was directly relying upon the *Speculum* for his knowledge of astrology.⁶⁷² But to do so would require that we ignore the entire structure of Pietro’s work on the predictive celestial science. He outlines this structure in a passage that is strikingly reminiscent of the *Speculum*:

⁶⁶⁹ Pietro d’Abano, *Lucidator*, 108. “Propter primum sciendum quod quidam assignarunt differentiam inter astronomiam et astrologiam dicentes astronomiam fore illam que partem motus pertractat; astrologia autem que iudicia instruit.”

⁶⁷⁰ Albert, *Speculum*, 208, chpt. 1: “Duae sunt magnae sapientiae et utraque nomine astronomiae censetur. Quarum prima est in scientia figurae caeli primi et qualitate motus eius.”

⁶⁷¹ Ibid., 218, chpt. 3: “Secunda magna sapientia, quae similiter astronomia dicitur, est scientia iudiciorum astrorum.”

⁶⁷² This is the argument of Vescovini. See “Peter of Abano and Astrology,” 20.

The science of judgments exists in a form that is called two-fold: that being one that is an introduction to judgments, and another which is called an application and therefore is separated into four parts, one of which is about revolutions, the second of which is about nativities and their revolutions, the third is about interrogations and the fourth is about elections, to which the science of images is added.⁶⁷³

To understand where Pietro obtained his understanding of astrology, we need to read this passage alongside Albert's outline of astrology in the *Speculum*:

That science [astronomy] is divided into two parts. The first is introductory and revolves around the principles of judgments. But the second is completed in the exercise of judging, and this is likewise divided into four parts. The first of which is about revolutions, the second is about nativities, the third is about interrogations, and the fourth about the elections of laudable hours, to which part that part about images is added.⁶⁷⁴

As we can see, Pietro follows Albert's divisions and description of each component precisely, down to using Albert's order of the four subdivisions. Were such a similarity to show up in two student papers, any modern professor would be justified in suspecting plagiarism. In light of the similarities, it takes little imagination to see Pietro in our mind's eye, writing with the *Speculum* near at hand for ready reference.

The fact that Pietro's views of astrology and his position on the subject are quite similar to those of Albert is understandable, given the Italian doctor's goals when writing about celestial divination: the promotion and defense of the medical use of astrology.

⁶⁷³ Pietro, *Conciliator*, 22r. "dicitur scientia iudicorum que duplex existit: unam quidam introductia ad iudica: altera exercitiam appellatur que et iterum in quatuor separatur partes quarum una est de revolutionibus. secunda de nativitatibus et earum revolutionibus: tertia de interrogationibus: quarta de electionibus cui et imaginum supponitur scientia."

⁶⁷⁴ Albert, *Speculum*, 222, chpt. 4: "Dividitur itaque ista scientia in duas partes. Prima est introductoria et versatur circa principia iudiciorum. Secunda vero expletur in exercitio iudiciandi, et haec iterum divisa est in quatuor partes. Prima est de revolutionibus. Secunda de nativitatibus. Tertia de interrogationibus. Quarta de electionibus horarum laudabilium, cui parti supponitur pars illa quae est de imaginibus."

Considering the controversy that the science in its predictive forms could still provoke, it should come as no surprise that Pietro chose to take up the defense of what he viewed as his most important diagnostic tool, especially given his confrontational nature. The idea of giving up his access to star charts and tables must have affected Peter much the way that a modern medical professional would react, were he or she told to surrender blood tests and x-rays.

In Pietro d'Abano we can see the attitudes toward astrology shared by his fellow supporters of the science. The pronouncements of a semi-canonical source coming out in defense of astrology would have been most welcome to such enthusiasts. Pietro certainly shows us that it did not take long for the *Speculum astronomiae* to catch the attention of defenders of the celestial sciences. Within decades of its production, he embraced the arguments contained therein with such fervor that he directly borrowed Albert's conceptual framework for the understanding of the celestial sciences. The interest of intellectuals in astrology would prove to be an enduring feature of the premodern world, along with a concomitant interest in the *Speculum*. To understand how, and why, this interest persisted within the landscape of a new century, let us next turn to two of the most important thinkers of the late fourteenth and early fifteenth centuries: Pierre d'Ailly and Jean Gerson. These two men disagreed in their assessment of the usefulness of astrology—Pierre d'Ailly embraced it while Gerson rejected it—yet they were in complete agreement about the basic tenets of astrological theory. Likewise, they both agreed that the *Speculum* was an important source for a writer interested in astrology.

Pierre d'Ailly was important as both an intellectual and a politician.⁶⁷⁵ Born around the year 1350 at Compiègne, he died around 1420, in Avignon. Earning his doctorate in theology in 1381, he promoted nominalism and conciliarism at the University of Paris, where he held the post of Chancellor in 1389 in addition to that of Confessor to King Charles VI (1380-1422). In 1395 he surrendered these duties in exchange for the bishopric of Le Puy in 1395, and in 1397 was named Bishop of Cambrai before eventually rising to the rank of Cardinal in 1411. Laura Smoller has detailed the way in which skepticism of astrology in d'Ailly's early work eventually transformed itself to an interest in celestial divination as a tool to predict the end times, as well as an alternative to the proliferation of uncontrolled prophets who arose during the Great Schism.⁶⁷⁶ However, it is clear that even at his most skeptical, d'Ailly never rejected the major tenets of astrology—that humankind and the rest of terrestrial creation exists at the center of a web of celestial influences, which greatly affect all sublunar creatures.⁶⁷⁷

As his obsession with astrology grew in step with the deteriorating state of affairs in the church, d'Ailly to read widely on the subject, attempting to develop the skills necessary to apply astrological analysis to an understanding of events as they transpired, and as they promised to develop in the future.⁶⁷⁸ He found Roger Bacon's writings to be especially congenial to his own concerns, given the English Franciscan's interest in the study of celestial influence upon the development of religions.⁶⁷⁹ And of course, as one

⁶⁷⁵ See Laura Ackerman Smoller, *History, Prophecy, and the Stars*, for the most up-to-date scholarship on d'Ailly.

⁶⁷⁶ *Ibid.*, chapters three and five.

⁶⁷⁷ Smoller, 43-45.

⁶⁷⁸ *Ibid.*, chapter three.

⁶⁷⁹ *Ibid.*, 37-38.

might expect of a fifteenth-century student of astrology, in his mature writings

d'Ailly found Albert's *Speculum astronomiae* to be a valuable resource, articulating a view of astrology quite congenial to his own developing perspective on the subject.⁶⁸⁰

One can also imagine that he must have also found the *Speculum* to be quite welcome as a handy reference guide to astrological literature, considering that his interest in astrology did not take off until he was well past fifty. Any short-cut must have been quite useful.

It is understandable that d'Ailly would have found Albert's views on astrology congenial, for even during the period of the French scholar's most hostile attitude toward celestial divination, he would have agreed with his fellow alumnus of the University of Paris, Albert the Great, on the basic components of the theory of celestial and terrestrial relationships. Writing during his years as a student of theology at Paris, d'Ailly conceded that the heavens did indeed impart fate, if we understand that term to indicate a force inclining humans toward certain actions while foreshadowing what those actions may be in the future.⁶⁸¹ In fact, d'Ailly even conceded that "it is useful and licit even for Christians to seek knowledge of the stars."⁶⁸² However, despite this statement, d'Ailly concluded in his early works that Christians should not appeal to astrology for advice or to learn about the future, for fear that by putting one's faith in astrology, Christians might be led to ignore theology.⁶⁸³ It was the potential for abuse that astrology presented that

⁶⁸⁰ Thorndike, *HMES*, IV, 112.

⁶⁸¹ Smoller, 47. Citing Pierre d'Ailly's *Tractatus utilis super Boecii de consolatione philosophiae*. 159v: "capiendo . . . fatum . . . pro fato significante vel inclinante . . . non est negandum ymmo simpliciter et catholice concedendum fatum esse." "Volo dicere quod non est negandum quin ex dispositione celestium possibilis sit nobis per astronomiam aliqualis notitia de eventibus futurorum"

⁶⁸² Ibid., 47, citing Peter's *Tractatus utilis super Boecii*, 159v, though the translation is my own: "Apparet ex predictis quod . . . querere etiam scienciam stellarum utilis est et licita etiam Christianis."

⁶⁸³ Ibid., 47, citing Peter's *Tractatus utilis super Boecii*, 160r: "Nolunt ergo sancti quod relicta morali

led to d'Ailly's ultimate rejection of the science—while leaving the door open for a later reevaluation of the usefulness of celestial divination.

D'Ailly's acceptance of the potential usefulness of astrology and its central tenets explains why he was eventually able to abandon his doubts about the science. Writing between 1410 and 1414, d'Ailly cast aside all concerns that appeals to celestial divination might lead Christians astray and instead embraced it as a means to understand the crisis affecting the Church and the coming of the possible end of time.⁶⁸⁴ Given this attitude, d'Ailly may have found the *Speculum* to be a most valuable work indeed, for Albert had written this work specifically to assuage fears that astrology might conflict with Christian belief.

Let us then consider d'Ailly's mature attitude toward astrology in two works in which we find him appealing to Albert's *Speculum*: the *Apologia defensiva astronomiae ad magistrum Johannem cancellarium parisiensem* and his *Vigintiloquium de concordantia astronomicae veritatis cum theologia*. Both of these works were written in 1414, with the first being a short letter written to the Jean Gerson, who was Chancellor of Paris at that time, and the second being a more substantive work intended to demonstrate that there are no conflicts between astrology, at least when studied and practiced properly, and theology.

philosophia vel sciencia que pertinet ad anime salutem astrologia studeatur.”

⁶⁸⁴ Smoller, 57-60. I do not mean to indicate that d'Ailly's changing attitude toward astrology was disingenuous. I find it far more likely that for d'Ailly astrology represented a compensatory agent allowing him to better understand the crisis in the Church that he was living through. Such a psychological mechanism would have emerged from his subconscious as he struggled with the stresses that his world placed upon him, reducing the anxiety generated by events beyond his understanding and control that seemed to threaten the very fabric of society. For a consideration of such psychological mechanisms, see Tambiah, 70-74.

Due to its brevity, let us turn first to d'Ailly's letter, although it was written after the *Vigintiloquium*, for enlightenment as to the author's position vis-à-vis astrology. Johannes de Paderborn's 1483 printed edition of the work is included under the title, "The Apologetic Defense of True Astrology."⁶⁸⁵ This title is certainly appropriate, for d'Ailly is not interested in providing a blanket defense for all types of prognosticative astrology. Rather, he wishes to separate "natural," non-superstitious forms of astrology, from less reputable methods for examining the stars in hopes of learning about the future. He explains that he has previously written in opposition to superstitious astrologers so that he might teach others "to hold a middle position between two extreme opinions, one of which raises up astrological power too much, the other of which lowers it too much."⁶⁸⁶

After outlining the concerns of those who held that astrology threatened the promotion of superstitious beliefs and thus should be rejected,⁶⁸⁷ d'Ailly provides his response as a summary of his position in the *De concordia theologiae et astronomiae*: "I do not reject the truth of astrology but the vanity within certain of the astrologers."⁶⁸⁸ He does, however, admit that there are certain traditions within the Church –especially those

⁶⁸⁵ Pierre d'Ailly, *Apologia defensiva astronomiae*: 140-143. As I have noted, when d'Ailly uses the term "astronomy," he typically means what we would refer to as astrology, and vice-versa. Peter mentions the *Vigintiloquium* as his previous work on 140.

⁶⁸⁶ Ibid., 140. d'Ailly is referring to his work, *De legibus et sectis*. "medium tenere docui inter extremas duas extrema opiniones, quarum una astronomicam potestatem nimis extollit, alia nimis deprimit."

⁶⁸⁷ Ibid., 140-140. D'Ailly uses the description of a rather remarkable sermon delivered by Henry of Langenstein to demonstrate the concerns of conservative theologians. Henry discussed possible relationships between celestial influences and the birth of the Virgin Mary, including a rather detailed consideration of various heavenly bodies and configurations, and influences that one might have expected them to have imparted to Mary. Of course they did not, due to the God's special dispensation of grace. This must have been quite a sermon. Henry's sermon appears to have been delivered to students of the University of Paris, who could be expected to understand the astrological language it contained.

⁶⁸⁸ Ibid., 140. "Ego autem non astronomie veritatem sed quorundam astronomorum vanitatem secum reprobo."

relating to Christ's heralding of a new order for the world –that make it difficult to accept the premises of astrology, before stating:

faith does not compel [us] to say that the birth of this sacred offspring [Christ] will have shut off all influence of this sort of the stars just as it does not compel [us] to say that the sun did not warm her [the Virgin Mary].⁶⁸⁹

In other words, the position held by those who maintained that astrology no longer functioned after the birth of Christ is false.⁶⁹⁰

This letter is too short to present either a fully-articulated argument in support of astrological divination or an explication of how celestial influence functions. However, d'Ailly does briefly describe the purported effects of the moon over terrestrial weather and asserts that Saturn governs the formation of embryos, for which position he adduces book nine of Albert the Great's *De animalibus* and book three of Avicenna's *Canon*.⁶⁹¹ What d'Ailly is doing in this letter is to array rationality and evidence –which for medieval intellectuals⁶⁹² included the testimony of authorities—in opposition to theological attacks upon astrology. D'Ailly was a cardinal by this time, in addition to theologian, but this did not stop him from opposing religious opposition to the study of

⁶⁸⁹ Ibid., 140v. “Fides non cogit dicere quod huius sancte proles natiuitas omnem huiusmodi astrorum influxum excluserit sicut cogit dicere quod Sol eam non calefecit.”

⁶⁹⁰ It was not an uncommon position among those who rejected astrology that it either did not function after the birth of Christ, or that it was not allowable for the faithful to appeal to it due to Christ's fulfillment of the old law. D'Ailly refers to this on 140v. Theologians perceived the Magi to have been astrologers who predicted Christ's birth, which provided scriptural support for the efficacy of astrology in the time before Christ.

⁶⁹¹ Ibid., 140v.

⁶⁹² Mariateresa Fumagalli Beonio Brocchieri has outlined the attitudes and characteristics of those who “worked with words and the mind” in the middle ages. See her chapter, “The Intellectual,” in ed. Jacques Le Goff, *The Medieval World*, trans. Lydia G. Cochrane (London: Parkgate Books, 1990): 181-210.

heavenly influence over terrestrial events. For d'Ailly, astrology represented a scientific means of understanding the calamities of the world that would prove quite soothing to the French cardinal's attempts to come to terms with these events, while simultaneously providing an alternative to the dangerously unverifiable (and therefore uncontrollable) prophecies of doom that multiplied in the fourteenth century.⁶⁹³ In contrast to Vincent Ferrer's (1350-1419) 1398 vision of the Last Judgment,⁶⁹⁴ which led him to a twenty-year ministry that must have alarmed many, astrology was replicable, verifiable, and controllable. The *Speculum* must have been a welcome salve⁶⁹⁵ to allay his earlier concerns about the study of astrology, allowing him to accept astrology as a tool for living a more Christian life and understanding God's plan in a more perfect manner, just as Albert had advocated a century and a half earlier. In a letter to Jean Gerson, Pierre explains this when he states that

We agree, then, with Albert, who was the great professor of Saint Thomas, in that [view of astrology], especially in his own tract, which is called the *Speculum*, where he deals with this material fully and usefully.⁶⁹⁶

Is it surprising that d'Ailly found the logic of astrology, as advocated by the *Speculum*, preferable to socially caustic rhetoric of the Antichrist that prophets Ferrer spread?

But d'Ailly would have been more aware than most of the concerns that

⁶⁹³ Smoller, 92-95.

⁶⁹⁴ Bernard McGinn, *Visions of the End: Apocalyptic Traditions in the Middle Ages* (New York: Columbia University Press, 1998), 253-258.

⁶⁹⁵ The most direct influence upon Pierre was Roger Bacon, as Laura Smoller has detailed. However, as I will show, Albert's *Speculum* presented a justification for the use of astrology that Pierre found useful and helpful to his own evolving attitude toward the subject.

⁶⁹⁶ Pierre d'Ailly, *Apologia defensiva astronomiae*, 143v: "Concordemus denique cum Alberto magno doctore sancti Thomae in illo praecipue tractatu suo qui *Speculum* dicitur, ubi hanc materiam plene utiliterque pertractat."

motivated opponents of astrology, having once held deep reservations about the study of the science. The acceptance that astrology had gained by the time he took up its defense in the second decade of the fifteenth century had only been achieved after a period of intense opposition to the use of judicial astrology during the late fourteenth century.⁶⁹⁷ Influenced in his early career by those who attacked the science, d'Ailly knew that the concerns of the opposition could not be ignored, nor did he intend to do so. He would again present a defense based upon the *Speculum* in his much more important work, the *Vigintiloquium de concordantia astronomicae veritatis cum theologia*, which drew upon the work of Roger Bacon for its doctrine.⁶⁹⁸

Pierre d'Ailly wrote this work while at Cologne in 1414 in order to establish the validity of astrological divination in opposition of unverifiable prophetic visions. Stating, “it is necessary to harmonize true astrology with sacred theology,”⁶⁹⁹ d'Ailly then proceeds to consider twenty points of contention that might arise between conservative theologians and adherents of astrology. It was assuredly a relief for the aging cardinal that he did not have to approach this subject *tabula rasa*. The groundwork had been laid for such a defense of the principles of astrology and its concord with the Christian faith, as d'Ailly noted right away:

Albertus Magnus wrote a very useful tract, in which he distinguished

⁶⁹⁷ Ibid., 32.

⁶⁹⁸ Pierre d'Ailly, *Vigintiloquium*.

⁶⁹⁹ Ibid., 2. This is part of d'Ailly's opening statement, one of his “viginti continens verba feliciter incipit” that he has given the work its name. In its entirety, d'Ailly states: “Primum: secundum philosophum omne verum omni vero consonat; necesse est veram astronomie scientiam sacre theologie concordare.” After listing his twenty propositions, he then goes on to explicate each one fully in proper scholastic fashion, beginning on 3.

the books of true astrology and of the magical art by their principles and ends, so that he might separate true astrology and useless magic one from another.⁷⁰⁰

However, the *Speculum* did not convince everyone, or d'Ailly would not have had to revisit this subject. In fact, his own pupil, Jean Gerson, would never accept the practice of divinatory astrology, as we shall soon see.

With this in mind, d'Ailly approaches his subject systematically to demonstrate why he has come to accept celestial divination. Seeking to get to the root of the opposing camp's position, he details errors found in illicit works of astrology,⁷⁰¹ before stating that "the aforementioned errors had been reproved not only by sacred theologians, but also by true astronomers."⁷⁰² All of these errors are ultimately traceable to those "who call fate the force of the position of the stars and of the constellations in which all things occur in these inferior parts by necessity."⁷⁰³ However, there is no such thing as "fate," in the sense of foreordained unalterable outcomes, and in relation to this "doctors of theology have proven sufficiently, with whom Ptolemy, the most skilled of the astronomers, does not disagree, when he says that the prudent man rules the stars."⁷⁰⁴ This, then, represents the concord between astronomy and theology that gave his work its title: according to

⁷⁰⁰ Pierre d'Ailly, *Vigintiloquium*, 3, "Albertus Magnus perutilem etiam tractatum edidit, in quo vere astronomie et artis magice libros per eorum principia et fines distinxit: ut astronomicam veritatem et magicam vanitatem ab invicem sequestraret." Peter ordinarily used the term "astronomia" when referring to the predictive aspect of the celestial sciences, and "astrologia" in reference to a study of the motions of the heavens. See Smoller, 27.

⁷⁰¹ Pierre d'Ailly, *Vigintiloquium*, 3. Peter classifies these errors within three categories: deterministic beliefs, the mingling of superstition in otherwise sound works, and those theories of astrology that compromise free will by allowing too much power to divine and supernatural forces.

⁷⁰² Ibid., 3. "Prefati errores non solum a sacris theologis: sed etiam a veris astronomis fuerunt reprobati."

⁷⁰³ Ibid., 3. "Vocant fatum vim positionis siderum et constellationum in quam omnia in his inferioribus necessario eveniunt."

⁷⁰⁴ Ibid., 3. "Doctores theologi sufficienter probaverunt [that is: qua fatum nihil fit] a quibus non discordat peritissimus astronomorum Ptolomeus: ubi ait quod vir prudens dominatur astris."

d'Ailly, both of these *scientiae* recognize that heavenly bodies may dispose and incline individuals toward certain types of behavior, but cannot predicate actions from necessity. It is small wonder that he found Albert's *Speculum* to be "most useful" as a defense of astrology—it did, after all, make precisely this argument of inclination.

Invoking the *Speculum* in this way was in fact part of d'Ailly's argument, functioning as an authenticating device to support the author's knowledge of astrology and its literature while strengthening his position through association with Albert's earlier treatment of the subject. D'Ailly was able to access the arguments contained therein, strengthening his own position without being forced to restate Albert's position. Given the widespread familiarity of the intelligentsia of Europe with the *Speculum*, he could reasonably expect his readers to know its contents. As for d'Ailly, we cannot know precisely what influence that Albert had upon him. Even though he first made explicit reference to the *Speculum* while writing in Cologne in 1414, contemporaneous with the growth of an Albertist school of thought centered there, without further evidence we cannot do more than speculate. However, it is clear that Pierre d'Ailly found in the *Speculum* a statement in support of astrology that was congenial to his own mature position, weaving together the elements of celestial influence that all agreed upon with a compelling explanation of why divinatory astrology did not necessarily conflict with the Christian faith.

The universality of the acceptance of the basic tenets of astrology, even among those who rejected divinatory appeals to the science, can be seen in the work of Pierre

d'Ailly's pupil, friend, and Chancellor of Paris, Jean Gerson.⁷⁰⁵ Gerson was born in December of 1363, in the village of Gerson in Champagne, and died on 12 July 1429. Apparently born to a pious, but impoverished, family of peasants, he would enter the University of Paris at the age of fourteen, soon coming under the tutelage of the rector of the College of Navarre, Pierre d'Ailly. Like his mentor, Gerson was destined for a life of both scholarship and politics. Even before he earned his doctorate in theology in 1392, Jean found himself embroiled in important religious debates with deep political repercussions—most notably acting in 1387 as prosecutor before Pope Clement VII, in the University of Paris' attempt to quash the doctrine of the immaculate conception of Mary. Attaining the chancellorship of the University of Paris in 1395, at age of thirty-two, he held that post until his involvement in the Council of Constance the political difficulties that he encountered there led him to retire from active life in 1419.

It should come as no surprise that Jean Gerson, the former student of Pierre d'Ailly, repeatedly found occasion to write about astrology. However, his position vis-à-vis the science was to place him at odds with his mentor. While d'Ailly would come to defend the use of astrology, Jean never agreed that this science had a place within the life of a Christian. But this disagreement was not because he disputed the notion that celestial bodies act upon terrestrial creatures as God's instruments. Nor did he deny that astrology would be useful for enhancing a theologian's understanding of God's divine will—at least in principle. In many ways he appears to have agreed with the central

⁷⁰⁵ For a brief biography of Gerson, see Mgr. P. Glorieux, "La vie et les oeuvres de Gerson: Essai chronologique," *Archives d'histoire doctrinale et littéraire du Moyen Âge*, XVIII (1951): 149-192. The rest of this paragraph is drawn from this source.

arguments in favor of celestial influence found in the later work of Pierre d'Ailly as well as the *Speculum*.⁷⁰⁶ Indeed, when considering the use of elections done to determine the proper time to begin a given action, he states in his *Tricelogium astrologiae theologizatae*: “I admit that the vault of heaven works upon or influences strongly such things that have been begun,”⁷⁰⁷ so long as one is mindful of the standard caveat, that such influence “induces no necessity whatsoever into men, but only an inclination.”⁷⁰⁸

However, despite the influence that the heavens impart, after the birth of Christ, Gerson argued that it became impossible to predict future events based upon an understanding of the interaction of the heavens and the inclinations they impart to terrestrial creatures. The new order that Christ ushered in was one in which the actions of humankind, based as they are on free will, were so varied and unpredictable that it is beyond the capacity of man to foresee what may come to pass with any measurable degree of accuracy, which in itself negates the standing of astrology as an *ars*.⁷⁰⁹ Albert certainly disagreed, referring repeatedly to astrology as a science—a source for certain knowledge. However, this would not be the strongest point of contention between Gerson and his Dominican forebear. Gerson argued that illicit works of astrology should

⁷⁰⁶ See Jean Gerson, *Tricelogium*, 96.

⁷⁰⁷ Ibid., X, 111. “Admisso quod caelum in talibus initiis fortius agit aut influit.”

⁷⁰⁸ Ibid., X, 112. “Nihilominus necessitatem in hominibus nullam, sed tantummodo inclinationem adducit.”

⁷⁰⁹ Ibid., X, 110-111. “Hanc vero artem [astrology] vel principia eius probare volumus semper extitisse extra et supra totam humanae investigationis facultatem. Ars quippe certa et regularis esse debet; voluntates autem hominum et cogitationes secundum quas deberet talis ars iudicativa, capere fundamentum, penitus incertae sunt et variae; ut ergo nulla sit naturaliter ars de eis constantissime fatendum est. Numquid advertimus post Christi Nativitatem (quae utique miraculosa fuit, nec influentiis subjecta,) quanta varietas in conditionibus, moribus et operibus hominum innumerabilium secuta est; cuius attamen Nativitatis conditionem, illi qui principia artis huiusmodi fundare conati sunt, praevidere ut ista exciperent, minime potuerunt.”

be burned,⁷¹⁰ rather than preserved for inspection by later authorities, as Albert argued in the *Speculum*. More importantly, the *Tricelogium* presents a distinctly suspicious attitude toward the study of astrology in its various forms, as having become contaminated with so many superstitions since the time of the patriarchs that its study threatened to drag the soul of humankind down into eternal darkness.⁷¹¹

For these reasons, Gerson took Albert's *Speculum* to task in his *Tricelogium*, though in a manner that indicated a strong measure of respect for the venerable Dominican. He stated that

Albert the Great composed a little work upon this matter (astrology) that is called the *Speculum* of Albert, explaining the manner in which in his own times some wished to destroy those books of Albumasar and certain others. It seems, however, that, while preserving the honor of such a learned man, in expounding upon the books of philosophy, especially of the Peripatetics, he applied too much care, greater than benefitted a doctor of the Christians, [although] with nothing about the piety of the faith having been added; thus also in approbation of certain of the books of astrology, especially about images, nativities, sculptures of stones, characters, interrogations, he leaned too much toward the part of superstitions lacking in reason.⁷¹²

This passage tells us a number of interesting things. First of all, Gerson clearly saw no

⁷¹⁰ Citing Acts 19:19 Jean promoted the burning of all heretical works. See Bianchi, 23.

⁷¹¹ Gerson, *Tricelogium*, 90, prooemium: "Propterea non est negandum ab astrologia, quam esse scientiam nobilem et admirabilem primo patriarchae Adam et sequacibus revelatam theologia non abnegat. Verumtamen hanc ancillam suam astrologiam nonnulli tot vanis observationibus, tot impiis erroribus, tot superstitionibus sacrilegis deturpantes maculaverunt, nescientes in ea sobrie sapere et modeste uti, quod apud bonos et graves redita est necdum infamis sed religioni christianorum suisque cultoribus pestilens et nociva."

⁷¹² Jean Gerson, *Tricelogium*, propositio III, 107: "Composuit super hac re magnus albertus opusculum quod appellatur *Speculum Alberti*, narrans quomodo temporibus suis voluerunt aliqui destruere libros Albumasar et quosdam alios. Videtur autem, salvo tanti doctoris honore, quod sicut in exponendis libris philosophicis, praesertim peripateticorum, nimiam curam apposit, maiorem quam christianum doctorem expediebat, nihil addendo de pietate fidei; ita et in approbatione quorundam librorum astrologiae, praesertim de imaginibus, de nativitatibus, de sculpturis lapidum, de characteribus, de interrogationibus, nimis ad partem superstitionum ratione carentium declinavit."

reason to credit authorship of the *Speculum* to anyone other than Albert. Secondly, he evidences a closer reading and greater understanding of Albert's corpus of work than later critics of astrology do—notably Pico—demonstrate. Gerson points out that Albert drew heavily upon the work of his ancient predecessors, tending to formulate arguments that agreed more strongly with his non-Christian sources than a conservative man such as Gerson could accept. And as for Albert's advocacy of various occult arts, in this he had leaned toward unjustifiable superstition so far as Gerson was concerned.

Ultimately Gerson evidences respect for Albert as well as acceptance of the celestial influence over terrestrial creatures that lay at the heart of the model of astrology presented in the *Speculum*. Nevertheless, Gerson would not compromise in his condemnation of astrological divination. He rejected this science for two reasons. First, divine influence is infinitely more important than the celestial medium through which it passes. There is no way to study God's outpouring of power directly, and the various interactions of the mediating matter make it impossible in practice to read the stars as "signs" in a manner that will enable us to learn anything about God's plan, due to the overwhelmingly complex interactions of the various celestial bodies.⁷¹³ More important to Gerson was his second reason: the study of astrology encourages men to focus upon

⁷¹³ Gerson lists the various complexities involved, which make it impossible to effect an accurate forecast, in propositio X of his *Tricelogium*, 96. Also see his "De respectu coelestium siderum," *Oeuvres Complètes*, ed. Mgr. P. Glorieux (Paris: Desclée, 1962), X, 109-116. In particular, note the scathing rebuke to those "homines idiota et simplices" who put their faith in such things. Still, we should note that he recognizes that astrology could *theoretically* be useful. In actual practice, the combination of interacting forces represents a system of such complexity that no one can hope to accurately judge how they will actually affect the terrestrial realm—even if Christians were allowed to appeal to it.

this mediating matter, rather than the majesty of God, thereby giving birth to idolatry.⁷¹⁴

We should not be surprised to learn that even a harsh critic of the use of astrology accepted the basis of the *Speculum*'s arguments—that celestial influence affects terrestrial creatures. In this Gerson was simply speaking as a member of the learned community of his day. If there was single writer active between 1200 and 1500 who rejected the core tenet of astrology, I have yet to uncover his work. A belief that humanity sits at the center of a complex web of celestial influence represented something of a “grand unifying theory,” welding together fields of knowledge as seemingly disparate as physics, metaphysics, and theology, all through the dominant philosophical school of the day: Aristotelianism.⁷¹⁵ Astrology was, in fact, not just a part of the intellectual landscape, but rather a network of fibers running throughout this landscape, weaving together its constituent parts by explaining humankind's place within God's creation while allowing those knowledgeable in astrology's secrets to learn something of God and his plans through an analysis of His work and the influence that He imparted to it. Therefore, not only is it unsurprising to find a medieval critic of astrology who expressly accepted that science's core beliefs, but it would in fact be surprising to find an intellectual during this period who rejected those notions. Jean Gerson certainly did not. He accepted the same theories of the transmission and interactions of celestial influence

⁷¹⁴ Levack, 34. This position would lead Gerson to promote the denunciation of all magicians, white or black, as idolaters at Paris in 1398.

⁷¹⁵ See John North's “Medieval Concepts of Celestial Influence,” 5-18, and “Celestial Influence,” 243-300 as well as Stefano Caroti, “Nicole Oresme's Polemic Against Astrology,” 75-93, 78. In the words of Caroti, “with varying degrees of emphasis, this influence [of the heavens over sublunary creatures] had come to be unanimously accepted by the Aristotelian scholastic tradition—to such an extent that it had become a topos in certain areas of commentaries on Aristotle's works.”

that Albert had woven throughout his entire philosophical system, while rejecting the potential efficacy of astrology and its use based upon a consideration that Albert had ignored –the possibility of a lapse into idolatry. Pre-modern critiques of astrology were born out of religio-intellectual contexts quite different from the empiricism that the modern scientific worldview has inculcated in us. Therefore, modern historians have frequently misunderstood them.

For this reason, we should be careful when interpreting the position of one of the most important philosophers of the humanist movement: Marsilio Ficino.⁷¹⁶ Born the son of a Florentine physician in 1433, he followed in his father's professional footsteps. However, inspired by the revival of Greek linguistic study and Platonic philosophy, Ficino applied himself to a rigorous study of both. Heading his patron Cosimo de Medici's Florentine Academy, the young physician established a reputation for himself as a Neoplatonic philosopher in his own right through publication of his most important original work, the *Theologia Platonica de immortalitate animae*. Supported by a Neoplatonic model of the celestial hierarchy reaching down from God to humankind, Ficino sustained a deep interest in astrology throughout his life supported with such vigor and erudition that he was forced to defend his writings before Pope Innocent VIII in 1489.

Ficino warns his readers that the distances involved between terrestrial creatures

⁷¹⁶ I draw my biographical information on Ficino from Paul Oskar Kristeller's *Eight Philosophers of the Italian Renaissance* (Stanford: Stanford University Press, 1964): 37-53. For a more extensive consideration of Ficino's philosophy, see Paul Oskar Kristeller's *The Philosophy of Marsilio Ficino* (New York: Columbia University Press, 1943).

and the heavens can lead to tremendous errors in understanding the influences imparted.⁷¹⁷ In fact, proximate influences, from ancestry to diet, are more powerful than that imparted by the distant stars.⁷¹⁸ He also cautions that we should never forget the overpowering nature of divine influence, stating flatly that his own career is the result of a yearning toward knowledge implanted by God rather than the product of interacting mediating substances.⁷¹⁹ Some modern scholars have taken this statement to represent a rejection of judicial astrology⁷²⁰ but such an interpretation seems to be more the product of modern biases and a limited understanding of Ficino's medieval forebears than a reading of the sources. Paul Oscar Kristeller is undoubtedly much closer to Ficino's actual position when he argues that the Florentine physician and philosopher saw humankind's ability to read and interpret the motions of the stars as evidence of humanity's possession of the divine spark.⁷²¹

Beyond such metaphysical considerations of the role of astrology, Ficino undoubtedly saw the physician and astrologer as partners in increasing human lifespan and quality of life.⁷²² In his own medical practice, his pharmaceutical recipes typically

⁷¹⁷ Allen does a commendable job discussing Ficino's views. He errs, however, in his final interpretation of Ficino's position. See Allen, 11-19.

⁷¹⁸ Marsilio Ficino, "De vita coelitus comparanda," book three of his *De vita libri tres*, ed. Martin Plessner (New York: George Olms Verlag, 1978), chapters 1-8, 15. This volume is a reproduction of a 1498 printed edition of the work. As such, it is not paginated and the chapters are quite short. For the sake of convenience and clarity, I shall cite by book and chapter, rather than by page.

⁷¹⁹ Ficino, "De vita longa," in *De vita libri tres*, chapter 3.

⁷²⁰ This is Allen's position. See Allen, 11.

⁷²¹ Paul Oscar Kristeller, *Renaissance Thought and its Sources*, 180.

⁷²² Ficino, "De vita longa," in *De vita libri tres*, chapters 8 and 13. The latter chapter is entitled: "Quae adminicula senes a planetis accipiant ad omnia membra fovenda." There follows a brief description of how to create medicines at astrologically propitious times that not only "warm all the members" as the title promises, but also to encourage general good health and long life. Ficino ends his description of how to make these wondrous potions with the statement: "Et res ab eo creatas, praesertim caelestes mirificam procul dubio ad augendam vel conservandam vitam habere potentiam."

included directions for admixture and administration according to astrologically propitious times and he advocated the use of images⁷²³ designed to harness and control celestial influence as a form of medical treatment.⁷²⁴ This is perfectly logical; Ficino accepted the notion that the heavens transmitted influence to the terrestrial realm through “rays,” which could influence the soul *per accidens* by affecting the body.⁷²⁵ Given such a position, it was as logical for Ficino as for Albert before him to accept the possibility that one could manipulate these rays in order to obtain a desired result. Furthermore, Ficino affirms the usefulness of astrology beyond the medical realm. He states that this science has provided him with a means to understand his own illnesses and misfortunes, and that he has used it to advise friends and forewarn patrons about impending difficulties. Finally, he suggests that an application of astrology could aid in the aversion of calamities in Italy.⁷²⁶ All of this suggests a traditional view of celestial influence and astrology: the heavens impart impulses that interact with proximate causes in the body to move us toward an action, but we can always engage our free will to overcome this impulse.⁷²⁷

Both Ficino and Albert the Great held positions drawn from Neoplatonism, although the former certainly had greater awareness of his reliance upon this

⁷²³ Yates, *Giordano Bruno*, 71; Ficino, “De vita coelitus comparanda,” in *De vita libri tres*, chapter 15.

⁷²⁴ Ficino, “De vita coelitus comparanda,” in *De vita libri tres*, chapters 8-10.

⁷²⁵ Ibid., 7, 10. This is, of course, a Neoplatonic position that is entirely consonant with Albert’s view of celestial influence and the uses of astrology, as outlined in the *Speculum*. For an interesting consideration of Ficino’s model of the influence imparted by celestial rays coupled with a Jungian analysis of the psychological implications of Ficino’s conception of astrology, see Thomas Moore, *The Planets Within: The Astrological Psychology of Marsilio Ficino* (Great Barrington: Lindisfarne Books, 1990).

⁷²⁶ Ibid., 13.

⁷²⁷ For a consideration of this idea in Ficino’s writing, see Ernst Cassirer, *Individuum und Kosmos in der Philosophie der Renaissance* (Leipzig: Teubner, 1927), 120-121.

philosophical system and adhered to it more closely. Therefore, it should come as no surprise that in reading through Ficino's work, one is struck by the consistency apparent between his model for understanding celestial influence and that presented by Albert in the *Speculum*. Nor should we be surprised that this well-read Renaissance philosopher recognized both the compatibility between his model of celestial influence and Albert's, as well as the value of the *Speculum* as a source. In chapter twelve of Ficino's "De vita coelitus comparanda," he argues for the usefulness of the construction of a talisman to offset the malefic effects of Saturn.⁷²⁸ Recognizing the potentially controversial nature of this proposed practice, he refers to Albert the Great, "professor equally of astrology and theology," who "set himself to discern illicit [works of astral magic] from licit [works.]"⁷²⁹ The former operate through the manipulation of natural—though occult—forces, while the later resort to suffumigations and appeals to demonic aid, which as Weill-Parot has demonstrated is a definition introduced by Albert.⁷³⁰ Ficino was not shy about adducing the reputation of his venerable source. Nor did he have any patience for those who felt that astrology compromised free will, for

Albert the Great also said in the *Speculum*: freedom of the will is not coerced by the election of a favorable hour. But to condemn the elections of an hour in the beginnings of great things is not liberty, it is a jettisoning of free will rather than a liberty to condemn the elections of an hour in the inceptions of great things.⁷³¹

⁷²⁸ Ficino, "De vita coelitus comparanda," in *De vita libri tres*, chapter 12; Yates, 73-74.

⁷²⁹ Ficino, "De vita coelitus comparanda," in *De vita libri tres*, chapter 19. "astrologiae partiter atque theologiae professor;" "a licitis discernere se inquit illicita." See also Yates, 74.

⁷³⁰ Weill-Parot, 28-37. Albert originated the definition of what constituted illicit forms of astral magic. These key elements of this definition were the inclusion of suffumigations and appeals to demonic aid. See also Burnett, 3-4.

⁷³¹ Ficino, "De vita coelitus comparanda," in *De vita libri tres*, chapter 12: "Albertus quoque Magnus inquit in speculum, non enim libertas arbitarii ex electione horae laudabilis coercetur, sed potius in magnarum rerum inceptionibus electiones horae contemnere est arbitrii praecipitatio non libertas." This is not, in fact,

This statement conveniently supported all forms of elections—including the astrological images⁷³² that were important to his work as a physician.

What we see in Ficino's work is a consistent belief in the predictive powers of astrology and the usefulness of the science in many spheres of human activity. When he warns his readers about the use of predictive astrology, it is not a rejection, but rather exactly what he says it is: a cautionary note about the complex web of influences that affect terrestrial creatures, including but not limited to powerful proximate causes that make accurate predictions difficult, though not impossible. Such a warning was common enough in the Middle Ages and later.⁷³³ Therefore, when one reads Ficino's comments within their proper context, informed by an understanding of pre-modern astrological beliefs, we can see that rather than a rejection of judicial astrology based upon proto-modern skepticism, we have a thoroughly traditional caveat about the complexities involved in prognosticative efforts.

a direct quote from the *Speculum*, but it certainly sums up Albert's opinion about the use of elections.

⁷³² The construction of astrological images that presumably enabled one to harness the power of celestial bodies in order to bring about terrestrial changes was held to be a subcategory of elections because the images in question gained their power by being created at a time chosen to maximize their association with certain heavenly configurations.

⁷³³ The intricacies and difficulties of astrology were a common trope. Writing in 1391, the anonymous compiler of Bodley 581, produced for King Richard II (1377-1399) of England, states that "the science of astronomy is both of great difficulty and is time-consuming to learn, for which the present life is scarcely adequate." Carey, *Courting Disaster*, 103. Albert acknowledged the difficulties involved in his "De fato," written at Anagni in 1256. According to Albert, "in caelesti circulo quoad nos infinita consideranda sunt, sicut stellae in numero et specie et virtutibus et situs earum in circulo declivi et extra ipsum et distantiae et coniunctiones et quantitas anguli, sub quo incidit radius, et pars fortunae et gradus lucidi et umbrosi in puteis et in turribus existentes et huiusmodi infinita quoad nos." "De fato," 72. However, "multa et quoad nos infinita consideranda essent, sed considerantur paucissima, quibus oboediunt alia, et ex illis pronosticabilis habetur coniecturatio. Propter hoc dicit Ptolemaeus, quod elector non nisi probabiliter et communiter iudicare debet." Ibid., 73. In other words predictions of a *probable* future are possible, and useful, but some intervening force—such as an exercise of human will—can always negate the prediction. Such rationales were essential if one were to maintain a belief in predictive abilities, and variations had been advanced for centuries—as still happens today. See Leon Festinger, Henry W. Riecken, and Stanley Schachter, *When Prophecy Fails* (Minneapolis: University of Minneapolis Press, 1956), 4, 6-7, 33-238.

Modern scholarship with its artificial periodizations has tended to erect barriers to our proper understanding of the work of philosophers such as Marsilio Ficino, at least when this work touches upon astrology. An older generation of Renaissance scholars, lacking a proper appreciation of the medieval view of astrology, too often stumbled in interpretation of sources containing ideas that would not have been out of place in the writings of Jean Gerson, or indeed of Albert the Great.⁷³⁴ This problem is only compounded by the positivist tradition that shapes Western scholarship, with its intense skepticism about the rational bases of pre-modern astrology. But we must strive for a proper understanding if we wish to understand the world that writers such as Ficino made.

Ficino's attitude toward astrology may have had a particular influence upon the most important opponent of astrology to emerge from the Renaissance: Pico della Mirandola.⁷³⁵ Pico's opinion of astrology is rather more complex than commonly recognized, and has frequently been misunderstood. Because of these misunderstandings, as well as the important place that Pico holds in the social history of astrology, we should consider his ideas in the context of his life at some length. Born into the family of the Count of Mirandola and Concordia on 24 February 1463,⁷³⁶ Pico became known for his

⁷³⁴ I am thinking here of Don Allen Cameron's view of Ficino and Eugenio Garin's understanding of Pico, which I discuss below. While fine scholars, neither seems to be well-informed about medieval astrological theory.

⁷³⁵ The traditional interpretation has been that Pico's views on astrology and magic closely mirror those of Ficino, who is presented as his intellectual mentor. However, Darrel Rutkin problematizes this relationship, highlighting the competition between these two men that led to the development of significant differences in their thought. See Rutkin, 241-243

⁷³⁶ For a brief and erudite encapsulated biography of Pico, see Paul Oskar Kristeller, "Pico della Mirandola, Count Giovanni," in *The Encyclopedia of Philosophy*, ed. Paul Edwards (New York: MacMillen Publishing Company, 1967), VI: 307-11. See also Rutkin, 169-195.

astounding memory well before he entered the University of Bologna in 1477 to study canon law. However, he chose canon law largely to satisfy the ambitions of his mother, who saw a cardinal's hat in young Pico's future.⁷³⁷ When she died on 13 August 1478, Pico quickly ended his legal studies in order to take up the study of philosophy at the University of Ferrara beginning in 1479. During his student years he traveled to Florence, where he made the acquaintance of a number of important humanists—as well as a young Dominican by the name of Girolamo Savonarola.⁷³⁸ In 1480 Pico undertook studied under the Jewish scholar Elia del Medigo at the University of Padua,⁷³⁹ where the Italian humanist added skills in Hebrew and Arabic to his already impressive command of Greek and Latin. After brief stays at the Universities of Pavia between 1482 and 1483, as well as Paris during 1485, Pico finally returned to Florence, where he became fast friends with both Lorenzo de Medici and Marsilio Ficino⁷⁴⁰ while completing his translation of Plato into Latin.

Determined to pack as much living into life as possible, Pico set out for Rome in 1486, where he intended to publish his now-famed 900 Theses.⁷⁴¹ Delayed by an ill-chosen love affair and near fatal wounding at the hands of a jealous husband, Pico found

⁷³⁷ Rutkin, 185.

⁷³⁸ G.C. Garfagnini, "Pico e Savonarola," in *Pico, Poliziano e l'Umanesimo di fine Quattrocento*, ed. P. Viti (Florence: L.S. Olshki, 1994): 149-157.

⁷³⁹ Edward P. Mahoney, "Giovanni Pico Della Mirandola and Elia Del Medigo, Nicoletto Vernia and Agostino Nifo," in *Giovanni Pico della Mirandola: Convegno internazionale di Studi nel Cinquecentesimo Anniversario della Morte (1494-1994)*, ed. Gian Carlo Garfagnini (Florence: L.S. Olshki, 1997): 127-56.

⁷⁴⁰ Pico's first contact with Ficino was in November of 1482, when he wrote the older scholar in order to question him about philosophy and linguistics. See Rutkin, 193.

⁷⁴¹ For perhaps the most lucid analysis of Pico's life and the modern misunderstandings that have distorted his legacy, see William G. Craven, *Giovanni Pico della Mirandola, Symbol of His Age: Modern Interpretations of a Renaissance Philosopher* (Geneva: Librairie Droz, 1981). To truly understand Pico, however, one should still begin with Eugenio Anagnini's *G. Pico della Mirandola. Sincretismo Religioso-Filosofico, 1463-1494* (Bari: Gius. Laterza & Figli, 1937).

the time to examine a collection of Kabbalistic works while convalescing in Perugia.

Finally making his way to Rome, he published his 900 Theses, as well as their introduction, the *Oration on the Dignity of Man*, in December of 1486. The resultant condemnation of his 900 theses in 1487,⁷⁴² as well as the *apologia* written in 1489 to explain himself, proved to be life-changing experiences for Pico.

Like many possessed of a great intellect, Pico seems to have lacked a concomitant level of stability. The double condemnations of 1487 and 1489 seem to have struck at his very sense of self, causing him to be racked with self doubt and feelings of guilt that were not assuaged by Pope Alexander VI's exoneration in 1493.⁷⁴³ Destroying his poetry, Pico forcefully rejected secular learning and developed a fixation upon religious introspection. This was his condition at the time when Savonarola renewed his acquaintance with the young scholar. In the words of Don Allen, Pico was "staggering under self-accusations of heretical guilt"⁷⁴⁴ when Savonarola came forward to offer Pico a means of finding meaning in his life through recruitment into the Dominicans. Upon Pico's entry into the order, Savonarola assigned his new protégé a series of preparatory and expiatory acts to perform. This was the motivation for Pico to write his last work, *Disputationes adversus astrologiam divinatricem*, published in an unfinished form at Bologna in 1494 in the wake of Pico's death.⁷⁴⁵

This work presents many challenges to the reader. Its unfinished nature means

⁷⁴² Rutkin, 236.

⁷⁴³ Allen, 21. To make matters worse, in 1488 Pico had spent a short time in captivity at the hands of Philip de Savoie in Vincennes. King Charles VIII ordered his release—following the intercession of a number of Italian notables—and the pope allowed him to travel to Florence, where he lived under the protection of Lorenzo the Magnificent.

⁷⁴⁴ Ibid., 21.

⁷⁴⁵ Ibid., 22.

that it is not always clear and lacks the polish that Pico would have undoubtedly given it, had he survived. Perhaps these factors account for the difficulties that modern scholars have faced in understanding it. While Luca Bellanti suggested as early as 1502 that Pico wrote under Savonarola's influence,⁷⁴⁶ modern scholarship has tended to portray the *Disputationes* as a philosophical assault on astrology born out of a rationally motivated rejection of "superstition."⁷⁴⁷ Unfortunately, this interpretation of Pico's writing fails to take into account his expressed views on astrology and does not appear to be reflective of a close reading of the *Disputationes*.⁷⁴⁸

Pico's views on astrology have suffered from the same imposition of modernist biases that have hampered a proper understanding of the work of many medieval, Renaissance, and early-modern intellectuals. As we have seen with Ficino, modern scholars have been altogether too quick to view any negative comments made involving astrology as an attack on a "superstitious" discipline.⁷⁴⁹ Unfortunately, this approach is overly reductionist. While Pico clearly became alarmed late in his life by certain forms

⁷⁴⁶ Ibid, 35.

⁷⁴⁷ For example, see Eugenio Garin, *Astrology in the Renaissance*, 87-93. Garin's misunderstanding of Pico may be colored by incorrect assumptions about medieval and early-modern astrology. For example, Garin seems to perceive astrology as involving some form of mind reading (35-37) and, in his description of the *Speculum*, states that astrological theory predicated celestial influence only over the birth of an individual, (38) which is far from the case. Furthermore, on page 38 he states that the *Speculum*, by extending this influence throughout a person's life, indicates that "man is somehow reborn in every moment, though the first celestial influence continues to operate in every moment." This is a rather complicated and obscure doctrine that is not based upon anything within the *Speculum*, or any other astrological work that I have read.

⁷⁴⁸ William G. Craven remarks that a vigorous reinterpretation of Pico's works is long overdue, a statement with which I am in full agreement—even if I am not in full agreement with Craven's interpretations. Darrel Rutkin has constructed an admirably detailed examination of the *Disputationes* and the contexts surrounding its production in his as yet unpublished dissertation.

⁷⁴⁹ O. Neugebauer succinctly summed up the biases involved in his brief essay, "The Study of Wretched Subjects." Pierre Mandonnet, Don Cameron Allen, and Eugenio Garin are examples of otherwise fine scholars whose work has sometimes suffered from a limited understanding of astrological beliefs. This is especially problematic for Garin, who edited Pico's *Disputationes*.

of celestial divination, his critique of astrology in the *Disputationes* is not the wholesale rejection of the science that so many have taken it to be. His attitude was actually much closer to that of his colleague, Marsilio Ficino, than is commonly recognized today.⁷⁵⁰

In order to understand the way in which the *Disputationes* have been misunderstood, it is necessary that we first appreciate Pico's attitude toward astrology. There is little scholarly disagreement that Pico maintained astrological beliefs in his early scholarship.⁷⁵¹ The dispute arises when we consider the opinions he held of the subject toward the end of his brief life. The dominant scholarly opinion has been that he rejected astrology in his late work. But this notion is based upon Pico's *Disputationes*, which offer numerous problems of interpretation. Some modern scholars have viewed it as representing a complete reversal of Pico's earlier opinions about astrology, prompted perhaps by the personal crisis he suffered following Innocent VIII's condemnation of his 900 Theses.⁷⁵² Others, however, see this work as produced in order to satisfy Savonarola's dictates.⁷⁵³ Some have even gone so far as to suggest that the disordered nature of this work is indicative of a decline in Pico's prodigious mental abilities, and that the *Disputationes* might have been written while the author was in the fugue of a nervous

⁷⁵⁰ Rutkin's work presents a different view, of an alternative astrological system of Pico's devising, based on the Cabbala rather than a traditional understanding of celestial interactions. Rutkin, 278-328. Pico's understanding of astrology may have been significantly different than Ficino's, a question that is as yet unresolved, and may have been influenced by his Cabbalistic leanings. I am not completely convinced, however, that Pico considered his understanding of astrological influence to be a radical departure from the norm. A deeper consideration of this problem would take me too far from our present course to be currently feasible.

⁷⁵¹ Eugenio Garin is the only exception to this.

⁷⁵² Craven, 35; Garin, 87-93. Craven rejects the idea that Pico fell under Savonarola's sway, instead positing that he wrote independently. Garin does not seem to believe that Pico ever fully accepted judicial astrology.

⁷⁵³ Allen, 21; Shumaker, 18.

breakdown.⁷⁵⁴ While this idea has some merit—Pico was, after all, in the last year of his life while writing this work and could have conceivably been suffering from a number of ailments—it again does not seem consistent with a reading of the text.⁷⁵⁵ Disordered this work might be, but it is still powerfully argued in superb Latin. It does not appear to be the work of a man with declining mental faculties. However, neither does it appear to be the work of a man who rejects astrological divination as completely as the title might suggest.

A complete reevaluation of Pico's position must await a future study, being too far outside the boundaries of my present focus to merit inclusion here. But we can discern the Florentine humanist's position on astrology through a consideration of his treatment of Albert the Great and the *Speculum astronomiae*. It is clear that Pico felt he had to address this “most outstanding of theologians,” Albert, the “promoter of astrologers,”⁷⁵⁶ if he wished to undermine astrology, which was “prohibited by law and damned by the prophets.”⁷⁵⁷

Pico characterizes himself as being knowledgeable about the primary thinkers among the schoolmen. In 1485 Pico stated in a letter to Ermolao Barbaro that he had

⁷⁵⁴ Allen, 22.

⁷⁵⁵ The problem is further complicated in that the text as we have it today is the product of the editorial efforts of Ginfrancesco Pico, the author's nephew, and his personal physician, Giovanni Mainardi. We have no way of knowing how heavy an editorial hand these men used, but the scholarly consensus is that the printed version of the text is very much a product of their work. Furthermore, the degree to which Savonarola influenced these men is unknown. See Rutkin, 339-342.

⁷⁵⁶ Ibid., I, 94. “Quod, si mihi opponas Albertum, theologum praestantissimum, fautorem astrologorum, admonebo te primum multa referri in Albertum quae Alberti non sunt.” I will address Pico's remarkable assertions about what are, and are not, in Albert's writings below.

⁷⁵⁷ Ibid., I, 94. “Quis iam igitur audeat homo christianus (cunctis enim nunc mihi sermo) astrologiam tueri, sequi, extollerre, a lege prohibitam, a prophetis damnatum, a sanctis irrisam, a pontificibus et sacrosanctis synodis interdictam?”

spent years reading Scholastic writers, mentioning Thomas and Albert by name.⁷⁵⁸ It is clear, then, that the Florentine knew Albert's reputation, though if one were to judge only from his statements in the *Disputationes* we would question his knowledge of Albertian philosophy.⁷⁵⁹ How, then, was Pico to deal with the fact that a work combining wide circulation and a high level of prestige with the esteem of its famous author directly opposed the position that he wished to promote?

The answer is intriguingly simple: in addition to attacking components of the *Speculum's* argument, he sought to call into question Albert's authorship of the work. For the first time since the unknown author of the marginalia in MS Digby 228 had proposed Philip the Chancellor as author of the *Speculum*,⁷⁶⁰ someone chose to oppose more than two centuries of tradition and the personal observations of one of Albert's close friends, to suggest that this defense of astrology was not the product of Albert the Great's pen. In this case, Pico suggested that Roger Bacon had written the *Speculum*.⁷⁶¹ This argument served a two-fold purpose for Pico and has had considerable influence upon modern scholars⁷⁶² despite the fact that it appears to have gone ignored until the twentieth century. In the first place, it reassigned scholarship of this immensely

⁷⁵⁸ Bianchi, 219.

⁷⁵⁹ Pico saw Albert as an authority of the first rank, placing him alongside scholars of such status in the field of astronomy and astrology as Messahalla, Campanus, and Ptolemy. However, in this very passage, Pico leaves us wondering just how closely he had read Albert. He cites Albert, alongside Ptolemy, as a proponent of a cosmological model comprising nine spheres. See Pico, *Disputationes*, II, 234. However, Albert discusses, and dismisses the nine sphere model. See Albertus Magnus, *De caelo et mundo*, I, 150-154; Price, 177.

⁷⁶⁰ Oxford, Bodleian, MS Digby 228, 76r. As mentioned previously, this appears to be a fourteenth-century note.

⁷⁶¹ Pico, I, 66.

⁷⁶² Pierre Mandonnet seems to have been influenced by Pico's argument, while more recently Agostino Bagliani's work shows clear traces of the Florentine humanist's influence. See Bagliani, 139; Pierre Mandonnet, "Roger Bacon et le *Speculum astronomiae*," 313-335.

influential work from the highly respected Albert the Great to the rather disreputable Roger Bacon, a man who had died while still under house arrest. If Pico had been successful, this tactic could well have sullied the reputation of the *Speculum* through association with Bacon, degrading its value as a source in the eyes of his readers. As a secondary benefit, Pico was assigning authorship of a work he viewed with distaste to a Franciscan, rather than one of the most illustrious forebears of his own order, the Dominicans.⁷⁶³

Nevertheless, Pico is not definitive in his rejection of Albert as the author of the *Speculum*. He states that “either Albert did not write [the *Speculum*], or, if he wrote it, it must be said with the Apostle: “In these things I praise him, in this I do not.”⁷⁶⁴ And what did Pico present as the basis of this doubt about Albert’s identity as the author of the *Speculum*? The stated reason was the same one that presumably motivated Mandonnet some five centuries later: in the estimation of these two scholars, the ideas contained in the *Speculum* are more consistent with those of Roger Bacon than those of Albert the Great.⁷⁶⁵ Unfortunately, Pico makes this assessment based supposedly upon his notion that Albert had rejected in his maturity the astrological beliefs that he had embraced in

⁷⁶³ The Franciscans and Dominicans were, of course, traditional rivals. I should also note that the scholar who chose to revive Pico’s argument, Pierre Mandonnet, was himself a Dominican. Paola Zambelli suggests that this fact, more than any other, led Mandonnet to seek to reassign authorship of the *Speculum* to a Franciscan, Roger Bacon. See Zambelli, *The Speculum Astronomiae*, 5. Zambelli states that Mandonnet’s work is closer to a “historical novel than scholarly research.”

⁷⁶⁴ Pico, *Disputationes*, I, 94. “aut non scripsit Albertus aut, si scripsit, dicendum est cum Apostolo: ‘In iis laudo; in hoc non laudo.’”

⁷⁶⁵ *Ibid.*, I, 66. ll. 14-15.

his youth, a statement that is flatly contradicted by the corpus of Albert's work.⁷⁶⁶

What is it that we are seeing here? As I have demonstrated, Albert's writings are shot through with references to astrology, ranging from discussions of the usefulness of various forms of divination to simple mentions of astrological principles as support for other arguments. Such citations are present in his earliest work, *De natura boni*, and his last, the *Summa theologiae*.⁷⁶⁷ Are we, then to view Pico as ignorant of Albertian philosophy? Or should we think that he was either not a careful reader, or did not understand what he was reading? I think not. Pearl Kibre has shown that Pico's personal library contained a large number of scholastic works—dominated by those of Thomas and Albert.⁷⁶⁸ Furthermore, Pico makes a correspondingly inaccurate statement about Aristotle, that he and his followers had rejected astrology.⁷⁶⁹ A man with Pico's university education⁷⁷⁰ would have been fully aware that Aristotle's *De generatione* and *Meteorologica* both link terrestrial change to the motions of the sun and moon, which implies a similar influence from the planets and supports the theories upon which

⁷⁶⁶ Ibid., II, 528. ll. 16-17.

⁷⁶⁷ Thorndike, *HMES*, II, 584, 589. In his *Summa*, pars 1, Questio 68, Albert states that the stars govern even the souls, vegetable and sensitive, of plants and brutes, but man is made in the image of God, except as he yields to sin and the flesh: as such, the intellectual soul is free. The only view of astrological divination that Albert rejects is that which promotes fatal necessity, which is heretical [Unde sic dicere fatum, est haeticum] as well as the doctrine that history repeats as the stars repeat their courses in the *magnus annus*, which suggests a circular view of historical occurrences on the Greek model, as "horrible."

⁷⁶⁸ Pearl Kibre, *The Library of Pico della Mirandola* (New York: Columbia University Press, 1936), 62, 70. The Albertinian works in Pico's library were: *De caelo et mundo*, *De generatione*, *De intellectu*, *In elenchis*, *posteria*, *Super artem veterem*, *Super universalia*, *topica*, *Liber meteorum*, *Physica*, *Metaphysica*, and *Summa theologiae*.

⁷⁶⁹ It is true that Aristotle did not write about astrological divination, but an absence of support does not represent a rejection. His *Meteorologica* and *De generatione et corruptione* certainly implied a strong belief in celestial influence.

⁷⁷⁰ Pico's year spent at the University of Paris, 1485-86, Europe's center of Scholastic thought, would have guaranteed a level of familiarity with Aristotle that we might not be able to assume for an intellectual educated entirely in Italy.

astrologers built their discipline.⁷⁷¹ At least this was the common interpretation of these passages in European universities.⁷⁷²

If Pico knew his statements about Albert and Aristotle to be inaccurate, and there seems to be no other possible conclusion unless we wish to return to questioning his grip on reality, then what are we to make of his erroneous statements? Albert had written the strongest, most comprehensive and best-known medieval defense of astrology, buttressed by his own reputation and the circumstances of its production, in answer to a papal request. It was known across Europe with copies turning up from England to the modern-day Czech Republic. Therefore it was important, perhaps even necessary, for Pico to devalue the *Speculum* as a source if his own polemic were to be convincing. Casting doubt upon its connection with Albert the Great was certainly an effective strategy, and Pico, schooled as he was in the arts of rhetoric, would have been well aware of this. Similarly, Pico could not ignore Aristotle, the “master of those who know,” if he wished to call the bases of astrological beliefs into question. In short, Pico sacrificed truth in order to strengthen his rhetorical position.⁷⁷³

All of this begs a question: would Pico not have devalued *himself* as an authority by making statements about Albert and Aristotle that were so clearly at variance with the truth? Interest in Albert’s work was undergoing something of a revival, and interest in the

⁷⁷¹ North, 5.

⁷⁷² Smoller, 29.

⁷⁷³ Pico was certainly not above warping the truth to make a rhetorical point. For an example, see his treatment of Guido Bonatus’ position of the importance of astrology/astronomy to the liberal arts, as explicated by Rutkin, 347-348. Even more striking is Pico’s use of Ficino as an anti-astrological authority. See Rutkin, 349-350.

Speculum itself was peaking in the fifteenth and sixteenth centuries,⁷⁷⁴ while Aristotle had long been a staple of a university education. However, Pico's Italian audience could be expected to lack an intimate familiarity with these authors. Philosophers and theologians of the Albertist school were largely confined to Germany and parts north.⁷⁷⁵ That bastion of Aristotelian teaching—scholasticism—entered Italy late,⁷⁷⁶ in competition with native schools of rhetoric, and never attained true dominance south of the Alps. By the time that its influence was peaking, humanism and its focus upon Plato was developing as the primary school of thought in Italy.⁷⁷⁷ A Florentine such as Pico, educated largely within the confines of Italy, might have been unimpressed with the level of prominence that Albert and Aristotelianism held in the north.⁷⁷⁸ In any case, he would have known that an audience made up of his peers among the humanists of Italy would likely have neither a deep knowledge of Albertine or Aristotelian philosophy, nor the sort of interest that would have provided them with a thorough command of these systems of thought.

But what exactly was Pico attacking in his *Disputationes*? He accepted that the heavens transmitted influence to terrestrial creatures, including people, stating “we defend this [belief in celestial influence] as far as this, that nothing comes to us from

⁷⁷⁴ Nine manuscript copies of the *Speculum* are extant from the thirteenth and fourteenth centuries combined, while there are thirty-four fifteenth-century manuscripts still in existence. See Weill-Parot, 636.

⁷⁷⁵ De Libera, 23-25.

⁷⁷⁶ While Italy produced Aristotelian thinkers in the thirteenth century, such men tended to have received their education elsewhere. Thomas Aquinas began his studies at Naples, but entered the tutelage of Albert—first at Cologne and then at Paris—while only nineteen.

⁷⁷⁷ For a consideration of the late introduction of Scholasticism into Italy, see Kristeller, *Renaissance Thought and its Sources*, 85-105.

⁷⁷⁸ While the *Speculum* was far from unknown in Italy, evidenced by the thirteen extant manuscripts now present within its borders. However, the majority of the surviving copies of the *Speculum* are to be found north of the Alps.

heaven except with light having carried it.”⁷⁷⁹ However, he also attacks “casters of nativities” as “the most infectious of all frauds.”⁷⁸⁰ Furthermore, he calls into question the system of affinities and antipathies that were so important to astrology, while warning that this part of the science could lead the unwary into superstition.⁷⁸¹ Finally, he cautions against assigning too much strength to celestial influence, which is transmitted from a distant source by means of a vehicle—light—that is easily blocked.⁷⁸² However, one will look in vain for a clear statement that astrological forecasting is impossible. Rather, Pico seems to be concerned that astrologers will lead people into a focus upon worldly forces, and away from an attentive regard for God.⁷⁸³ This is much the same concern that had led Gerson earlier to reject astrology for leading those who practiced and put faith in it into idolatry.

Pico displays his complex attitude toward astrological divination in his treatment of the *Speculum*. This, the most popular defense of astrological divination to come out of the Middle Ages, the popularity of which was only growing in Pico’s lifetime, should draw a considerable amount of fire within a work designed to undermine the foundations of judicial astrology. In fact, we find the critique of the *Speculum* to be both limited in

⁷⁷⁹ Pico, *Disputationes*, I, 253. “quod hactenus defendamus, nihil ad nos a caelo nisi luce vehente pervenire, quod Avicenna quoque dixit in libris meteorologicis, lumen vocans vehiculum virtutum omnium caelestium et Albertus in libro *de somno vigiliaque* confirmavit.” “Hactenus” can refer to point that is no longer maintained, meaning “no longer” or “up until now,” or it can mean “as far as this,” or “this and no more.” In the context we are considering here, it must carry the latter meaning in this sentence, for Pico does not juxtapose a rejection of this important astrological doctrine with the statement.

⁷⁸⁰ Shumaker, 19.

⁷⁸¹ The notion of affinities and antipathies was structure around the belief that the universe was completely interconnected, so that celestial bodies affected or repelled earthly objects, depending upon whether the object in question was indirectly, “sympathetically,” attached or “antipathetically” opposed to the celestial body. For Pico’s warning that such beliefs could lead one into superstition, see Shumaker, 22-23.

⁷⁸² Shumaker, 22.

⁷⁸³ A much more comprehensive consideration of Pico’s attitude toward astrology is called for than I can provide within this limited space. For this, one should turn to Rutkin, 230-305.

scope as well as rather muted. Rather than a broad denunciation of the tract, Pico chooses two specific points within the text worthy of rejection: Albert's plea for the preservation of heretical works of astrology and the Albert's defense of the use of certain forms of images.

By the fourteenth century there were two schools of thought concerned with the control of information detailing how one should deal with condemned works. On the one hand, Albert held the minority opinion, arguing that condemned works should be preserved for future study by authorized scholars, in the eventuality that heretics should arise who might hold the condemned views.⁷⁸⁴ On the other side of the debate, Bonaventure and Jean Gerson strenuously advocated the burning of all such works, citing Acts 19:19 to support this position.⁷⁸⁵ The official position of the medieval Church was never clear on precisely how to deal with the production of works that might stand in opposition to the teachings of the Church, or what should be done with works that had been condemned as heretical. As such, there would be no universally accepted general censorial decree for the entire church until 1515, despite an earlier attempt by Innocent VIII to regularize the system of censorship on 17 Nov. 1487.⁷⁸⁶ For various reasons, this earlier bull went largely unheeded. However, local authorities had increasingly stressed the importance of the control of the written word, beginning with the University of

⁷⁸⁴ Albert, *Speculum*, chapter 11.

⁷⁸⁵ Bianchi, 23. Acts 19:19 states: "Multi autem ex eis, qui fuerant curiosa sectati, contulerunt libros, et combusserunt coram omnibus: et computatis pretiis illorum, invenerunt pecuniam denariorum quinquaginta millium." *Biblia Sacra juxta Vulgatam Clementinam*, eds. R. P. Alberto Colunga and Laurentio Turrado (Madrid: Biblioteca De Autores Cristianos, 1985).

⁷⁸⁶ *Catholic Encyclopedia*, ed. Ramy Lafort (New York: Robert Appleton Company, 1908), III, s.v. *Censura librorum*. Leo X promulgated the bull "Inter sollicitudines," on 3 May 1515.

Cologne on 18 March 1479.⁷⁸⁷

Thus, in the fifteenth century there was no agreed upon method for dealing with heretical works. But the burning of Wycliffite writings at Prague in 1410, with papal approval, and the subsequent burning of Jan Hus alongside his works at Constance in 1415, provided Pico with a model of Church-sanctioned use of fire to rid the world of heretical works.⁷⁸⁸ Given the “bonfire of the vanities” that his religious mentor, Savonarola, would later organize in 1497 and 1498, there Pico could have had no doubt that the fiery Dominican preacher would have viewed destruction of heretical material with approval, perhaps vocalizing his support to his newfound protégé. This would explain why Pico roundly condemns the *Speculum*’s assertion that “magical books should not be thrown away, which might someday be useful to the Church.”⁷⁸⁹ Pico finds this stance unacceptable, because

this is plainly opposed to the judgment of that very Church, which has ordered those books to be burned and to be utterly destroyed, wherever they might be found; for by what reason might it be useful to preserve entire books, those compositions that were never useful?⁷⁹⁰

If the question of how works harmful to the Christian faith should be handled was not

⁷⁸⁷ Ibid., III, s.v. *Censura librorum*. Sixtus IV gave the university explicit permission to enact this measure. The Bishop of Wurzburg and the Archbishop of Mainz followed suit in 1482 and 1485, with the papal legate in Venice issuing an order of censorship for the Venetian Republic in 1491.

⁷⁸⁸ Malcolm D. Lambert, *Medieval Heresy : Popular Movements from Bogomil to Hus* (New York: Holmes & Meier Publishers, 1977).

⁷⁸⁹ Pico, *Disputationes*, I, 94. “non esse magicos libros abiciendos, qui Ecclesiae utiles futuri aliquando sint.”

⁷⁹⁰ Ibid., I, 94. “Est enim hoc plane adversum iudicio ipsius Ecclesiae quae illos, ubi locorum fuerint, uri iubet et prorsus exterminari; nam qua ratione utile erit servare integros libros, quos utillimum erat numquam esse conscriptos?”

quite so settled as Pico makes it appear in this statement, we can well understand how Savonarola's protégé could have been led to believe otherwise.⁷⁹¹ Nevertheless, the harsh words that Pico aims toward the *Speculum* do not constitute a generalized assault on the work, or a rejection of the system of astrology. It is, rather, a localized attack—vigorous though it might be—of one small portion of what Albert has to say about works that are injurious to the Christian faith. What we are seeing is a vigorous assertion of orthodoxy from a man under the influence of one of history's most famed zealots.

Likewise, Pico's "attack" upon images is rather limited in scope, and in this way representative of his so-called "rejection" of astrology. While the *Speculum* had introduced to the West the idea of using graven images in order to harness celestial influence in order to bring about terrestrial changes,⁷⁹² Albert himself had struggled to explain how such an apparently magical activity could be reconciled with Christian beliefs. In the end he explained that only one form of image could be admissible within a Christian context: those functioning through the manipulation of the natural—though occult—power of material objects and strictly avoiding any possible conjuration of demons.⁷⁹³ Despite Albert's careful explanation of the use, or misuse, of images would

⁷⁹¹ After Pico's death there would be some regularity introduced for the official stance of the Church toward astrology in general. The Catechism for the Catholic Church, established in 1566 at the Council of Trent, states: "Omnes *divinationis* formae reiiciendae sunt: recursus ad Satanam vel ad daemonia, mortuorum evocatio vel alia exercitia quae erronee supponuntur futurum detegere. Horoscopiorum consultatio, astrologia, chiromantia, auguriorum et sortium interpretatio, praevisionis phaenomena, recursus ad pythones (*mediums*) voluntatem manifestant dominii in tempus, in historiam et tandem in homines, atque simul optatum occultas potentias sibi conciliandi. Illae sunt in contradictione cum honore et observantia, cum timore amanti coniunctis, quae soli debemus Deo." *Catechismus Catholicae Ecclesiae*, (Vatican City: Libreria editrice vaticana, 1994), paragraph 2116.

⁷⁹² Weill-Parot, 28.

⁷⁹³ . See *Speculum*, chapter 11.

continue to be a source of great concern for centuries to come.⁷⁹⁴ Nevertheless, such images were seen as so valuable to the field of medicine that few were willing to advocate their outright rejection.⁷⁹⁵

Pico was not one of those few who dismissed the value of this art. Frances Yates has noted Pico's early interest in astrological images, seeing it as inconsistent with the rejection indicated in his later *Disputationes*.⁷⁹⁶ However, a close reading of this work reveals nuances that do not necessitate any inconsistency on the part of Pico. In fact, he only explicitly rejects a single type of image, those "images by means of which it is possible that not only a single man, but even an entire state, may be miserable or unfortunate."⁷⁹⁷ Pico does not clarify precisely why an image that produces such generalized results should be rejected, but there does not seem to be any concrete reason to extend this denunciation to all images. Likewise, there is also no reason to believe that Pico had reversed his earlier, favorable, attitude toward images. The evidence simply does not support such a broad interpretation.

⁷⁹⁴ Recall the examples of Thomas Southwell and Roger Bollynbroke, masters of Oxford college, were condemned in 1441 for plotting to use such images on behalf of Eleanor Cobham, which I mentioned previously. Similarly, in 1477 Thomas Stacey, a fellow of Merton College and Thomas Blake, the Chaplain of Merton college, suffered condemnation for the use of astrological images to secure the death of John, Lord Beauchamp, in collusion with Lady Beauchamp, while simultaneously conspiring with Thomas Burdett, in the household of the Duke of Clarence, in order to bring about the death of Edward IV. Stacy was executed while Blake obtained a pardon. See Emden, I, 197, 214-215; III, 1734-1735, 1749. Of course such charges could have been mere pretexts for judicial murders. But the fact that such a malefic use of images seemed to represent a *plausible* concern tells us a great deal about the respect and fear that the use of images held in the minds of many. Jewish intellectuals found the use of images to be problematic for many of the same reasons as their Christian counterparts. For example, Solomon ibn Judah, writing around 1424, accepted the efficacy of images, while rejecting their use, due to a concern that such powerful talismans might lead common people to idolatry. See Schwartz, 134.

⁷⁹⁵ Pico's colleague, Ficino, was a strong proponent of the use of images in medicine, as was Pietro d'Abano before him. See Cameron, 8, Yates, 71; Nardi, 34-35.

⁷⁹⁶ Yates, 73-76.

⁷⁹⁷ Pico, *Disputationes*, I, 94. "imagines fieri posse quibus etiam non unus homo, sed una etiam civitas tota vel infelix fiat, vel infortunata."

In fact, a close reading of the *Disputationes* makes one doubt that Pico ever rejected the efficacy of astrological images. Since he conceded that light transfers celestial influences to the terrestrial realm, then it is logically sound for him to have further accepted the idea that one can manipulate these influences in order to produce a desired effect. As for judicial astrology, despite Pico's harsh words against those who cast nativities, working from his presumption that the heavens transmit influences responsible for effects here on earth, then uncovering the future would be nothing more than an act of mathematical astronomy. The heavens, after all, move in a mathematically predictable fashion, allowing one with the proper knowledge to discern the future positions of heavenly bodies—opening the door for arguments that future influences based upon these computed positions could be understood. Did Pico accept this line of reasoning? After all, he clearly rejected certain forms of astrological divination, “prohibited by law, damned by the prophets.”⁷⁹⁸ However, it seems that this rejection is a circumscribed and traditional attack upon deterministic astrological beliefs, rather than a wholesale reaction against all forms of astrology. He may have viewed judicial astrology with suspicion, due to its potential to turn humans away from God⁷⁹⁹ and toward an unfounded focus upon their own meager abilities, but this is not a wholesale jettisoning of celestial divination. Modern historians who have maintained that the *Disputationes* represented a complete rejection of astrology have arrived at their conclusion because of their modernist biases against astrology coupled, a handicap that has been exacerbated in

⁷⁹⁸ Ibid., I, 94. “a lege prohibitam, a prophetis damnata.”

⁷⁹⁹ Similarly, the Jewish scholar Judah Halevi (1075-1141) accepted that astrological predictions were accurate, but rejected judicial astrology on the grounds that it distracts one from a search for revealed truth. He based his belief in the efficacy of astrology on a Neoplatonic conception of the outpouring of celestial influence that then brings about terrestrial effects in a manner consistent with Pico's view of the world. See Schwartz, 3-12.

some cases by a misunderstanding of the medieval worldview fostered by disciplinary divisions that discourage diachronic work across the artificial dividing line that separates medieval from Renaissance history.

Regardless of the limited nature of Pico's attack, the *Speculum's* widespread recognition as an authenticating device for proponents of the celestial predictive science would have meant that Pico could not ignore it if he wished to establish his credibility. But it also provided a perfect foil for his own "denunciation" of astrology. In academic circles it was certainly widely known, and Pico was hardly speaking to the common people in his elevated, Ciceronian Latin. Therefore, he could expect those to whom he addressed his *Disputationes* to recognize the *Speculum* as written not only to defend, but also to promote, astrology. For a writer interested in taking issue with such a program, it would be hard to find a better work. While it was not the only important work Pico addressed, it was one of the most important.

But in the end Pico's "attack" on astrology demonstrates not an example of proto-modern skepticism, but rather a traditional statement on astrology from one skeptical of its use; suspicious yes, but in the vein of Jean Gerson rather than what you might expect to find in the work of a modern intellectual. Pico attacked celestial determinism and an idolatrous focus on the mediating elements in God's creation in a manner that Gerson would have recognized and which would have garnered his approval. In fact the intellectuals of our sample group, chosen because of their common interest in the *Speculum*, shared many things in common. Pietro d'Abano, Pierre d'Ailly, Jean Gerson,

Marsilio Ficino, and Pico della Mirandola –each of these writers agreed that celestial bodies transmitted influence to the terrestrial realm, providing a significant measure of influence to all earthly creatures, including humans. Furthermore, all of them agreed that this influence brought about changes in the sublunar sphere, and that theoretically one should be able to determine a great deal about future events from a study of the heavens. Moreover, of course all of these writers found it useful to address directly the *Speculum* in the course of their work, whether they ultimately rejected appeals to astrology or supported its use as a means to living a better life. It makes sense that they would do so. Far beyond our sample study, the idea of celestial influence represented a unifying theory that affected the worldview of all intellectuals of the medieval and Renaissance periods. This is why writers across several centuries referred to the *Speculum*, whether for support or to denounce its conclusions, for two centuries and more after Albert wrote it. Its longevity as an authoritative source was remarkable, but in the end, nothing lasts forever. In the next chapter I will consider the loss of status that the *Speculum* faced in the aftermath of Pico's *Disputationes* within the context of the beginning of the end for astrology as an academic discipline.

Chapter VI

The death and reincarnation of an authority

My last chapter ended with an examination of Pico della Mirandola's *Disputationes adversus astrologiam divinatricem*, which is where I now pick up my story. Pico's work represents a milestone that seems to have passed unobserved by his contemporaries, marking an important change of status for the *Speculum*.⁸⁰⁰ Astrology would continue to maintain its reputation as a respected discipline for centuries to come,⁸⁰¹ with practitioners active at all levels of society, many of whom had studied the subject at universities across Europe. During the sixteenth and seventeenth centuries, such august scholars as Philip Melanchthon⁸⁰² and Johannes Kepler⁸⁰³ came vigorously to the discipline's defense. In England, interest in astrological divination would reach a feverish peak during the seventeenth century, in large part as a response to the English Civil Wars and Revolution.⁸⁰⁴ But the value attached to the *Speculum* as a source

⁸⁰⁰ Some near contemporaries did in fact recognize it as a milestone, though not in the same way that I see it. Writing in 1502, Jakob Schonheintz represented Pico's attack on astrology as a sign of the degeneration of the times. See Shumaker, 35.

⁸⁰¹ The true demarcation point for the final death of astrology as a respected academic discipline—if one can ever really choose a date for such things—would be when the chair of astronomy at the University of Bologna was relieved of his responsibility to create astrological almanacs for use by the university's medical students. This event occurred in 1799. See Tester, 187.

⁸⁰² Stefano Caroti, "Melanchthon's Astrology," *'Astrologi hallucinati: Stars and the End of the World in Luther's Time*, ed. Paola Zambelli (New York: Walter de Gruyter, 1986): 109-121.

⁸⁰³ Rabin, 750-770.

⁸⁰⁴ Many Englishmen felt that the reputation of astrology rose too quickly, along with an out-of-control desire on the part of those from all walks of life to become directly involved in its study. John Heydon complained in 1664 that the revolutionary decades of the 1640s and 1650s "admitted stocking-weavers, shoemakers, millers, masons, carpenters, bricklayers, gunsmiths, porters, butlers, &c. to write and teach astrology." See Christopher Hill, *The World Turned Upside Down: Radical Ideas During the English Revolution* (London: Peregrine Books, 1984), 234; Nicholas Nelson, "Astrology, *Hudibras*, and the Puritans," in *Journal of the History of Ideas* 37.3 (1976): 521-536. To fully understand the events of seventeenth-century England one must consider the events of 1642-1688 as a totality, with the so-called Glorious Revolution representing the culmination of events set in motion when Parliament went to war

disappeared. There are no copies of the *Speculum* produced after the close of the sixteenth century.

There is a single manuscript dated to 1677 containing the *Speculum*.⁸⁰⁵ However, the copy it contains appears to be a fourteenth-century manuscript cut from an older codex and included within this compilation. But the 1615 printed edition of the *Speculum* now housed in the British Library tells us a good deal about the way that seventeenth-century readers had come to view it.⁸⁰⁶ This odd volume contains a number of works attributed to Albert, all dealing with occult or esoteric topics.⁸⁰⁷ All of these works share a common theme, that of occult interest. This interest seems to have ranged from the properties attributed to stones, crystals and various herbs, to those attributed to fantastic animals. Other than the *Speculum* they are all explicitly magical in tone—as well as pseudo-Albertine works. However, this need not arouse suspicions that the binder thought that the works were wrongly attributed to Albert. Rather, it tells us what had come of the great Dominican's standing. By the seventeenth century, Albert's reputation had largely devolved to the level of a magician who made Frankenstein-like

against King Charles I.

⁸⁰⁵ Florence, Biblioteca nazionale centrale, MS Magliab. XI 121 (Strozz 1127).

⁸⁰⁶ *Alberti Magni Speculum Astronomiae: Nunc primum M.S. codice in lucem editum. Praemittuntur autem eiusdem athenis libelli, De Virtutibus Herbarum; Lapidum, & animalium quorundam, item de mirabilibus mundi, & de quibusdam effectibus causatis a quibusdam animalibus* (London: unknown printer, 1615).

⁸⁰⁷ It did not help the *Speculum*'s value as a scientific source that it was published in Latin. Already by the end of the fifteenth century in England, scientific writing had come increasingly to be done in English, and sources that were not translated—such as the *Speculum*—began to fall out of the scientific discourse in the sixteenth and seventeenth centuries. Linda Ehsam Voigts, "What's the Word? Bilingualism in Late-Medieval England," *Speculum* 71.4 (1996): 813-826. Of course the fact that no one bothered to translate the *Speculum* within such an intellectual climate has something to say about the value placed upon it as a source in sixteenth and seventeenth century England.

homunculi and wrote alchemical tracts.⁸⁰⁸ The book provides no information on the identity of the printer or editor, and there are no other extant copies—which is most unusual for a printed work. It is possible that a printer produced this volume in order to fulfill a special order for an unknown client, as the cost of printing plummeted in the 1620s with the introduction of less expensive typeface technologies.⁸⁰⁹ Given the character of the other works included, it very much has the appearance of a curiosity piece, rather than a scholarly volume.

This, then, appears to have become the fate of the *Speculum*. Produced at papal behest in order to provide a guide for those interested in astrology but concerned with potential harm to their spiritual well being, it was at the center of controversy in the thirteenth century. As judicial astrology gradually gained acceptance in the fifteenth century, readers and authors turned to the *Speculum* repeatedly as a bibliographic guide or to provide a shorthand form of support as an authenticating device to validate their own reliance on astrology. While such uses seem rather perfunctory, we should be mindful of the fact that the success of the *Speculum* in these roles led to such extensive copying and widespread use that the arguments contained therein—and the texts listed as licit for a Christian astrologer—played a significant role in crafting the framework within which astrology came to be understood. For anyone interested in astrology as a discipline, rather than in specific questions related to this science, the *Speculum* served as the most common text to which one turned. It provided a bibliography of works to study

⁸⁰⁸ Bruce Mazlish, *The Fourth Discontinuity: The Co-Evolution of Humans and Machines* (New Haven: Yale University Press, 1993), 31-57.

⁸⁰⁹ Tim Harris, “Propaganda and Public Opinion in Seventeenth-Century England,” *Media and Revolution*, edited by Jeremy D. Popkin. (Lexington: University Press of Kentucky, 1995): 48-73, 52.

as well as works to avoid, while clearly establishing the problematic aspects of astrology alongside the solutions to those perceived problems. And because of the popularity that these usages inspired, the *Speculum*'s argument that the heavens affect human souls indirectly, thereby swaying, but not impelling action, became widely known—and just as widely influential in preserving the study and practice of astrology.

Beyond those who copied and read the *Speculum*, we find numerous writers citing it in their own works. Those who viewed astrology as an allowable discipline looked to the *Speculum* as an authoritative guide to the Christian application of astrology. Down through the end of the fifteenth century, many of those who opposed celestial divination, hoping to rid the world of certain usages of astrology, felt compelled to address Albert's guide to right practices in astrology. But by the sixteenth century the *Speculum* fell out of the scholarly debate. Scribes still produced copies and those interested in astrology still used it as a bibliographic resource, but there is no direct evidence of a deeper application of this text. By the seventeenth century interest in the *Speculum* was all but dead. With the single exception that I have mentioned, it was no longer included in new codices, scribes produced no new copies, and no one bothered to refer to it in their own works.

What happened to the *Speculum*'s usefulness as a source? One thing that can definitively be said is that its authoritative status did not lapse due to Pico's unfinished and uneven "attack" on astrology. Nor did writers turn away from it as a source due to a wholesale loss of interest in astrology or rejection of its theories. In sixteenth-century

England one of the most learned men of his day—John Dee (1527-1608)—played an important role at the court of Queen Elizabeth I (1558-1603) through his position as royal astrologer,⁸¹⁰ while plays such as *Troilus and Cressida* by William Shakespeare (1564-1616) demonstrated the continuing fascination that astrology held for the theater-going public.⁸¹¹ Evidence for the populace of England's continuing interest in celestial divination is reinforced by the fact that the production of almanacs and astrological prophesying became a booming business in mid-seventeenth-century England during the years surrounding the Civil Wars of 1642-49 and 1650 well into the Restoration period beginning in 1660.⁸¹² However, this very popularity would prove problematic, a point to which I shall return shortly.

Nor was continental Europe ready to reject astrology. Giovanni Pontano (1429-1503), the Umbrian polymath astrologer, wrote his *De rebus coelestibus* to promote the use of celestial divination in order to better the human condition while supporting astrology against critics—including Pico—in the last years of the fifteenth and the

⁸¹⁰ Tester, 226-227.

⁸¹¹ While not the only one by any means, perhaps the best example of Shakespeare's use of astrological ideas is in Ulysses' speech contained in *Troilus and Cressida*: "The heavens themselves, the planets and this centre, observe degree, priority, and place, Insisture, course, proportion, season, form, office and custom, in all line of order: and therefore is the glorious planet Sol in noble eminence enthron'd and spher'd amidst the other; whose med'cinable eye corrects the ill aspects of planets evil, And posts, like the commandments of a king, sans check, to good and bad: but when the planets in evil mixture, to disorder wander, what plagues and what portents! What mutiny! What raging of sea! Shaking of earth! Commotions in the Winds! Frights, changes, horrors, Divert and crack, rend and deracinate the unity and married calm of states quite from there fixture!" See William Shakespeare, *Troilus and Cressida*, eds. Daniel Seltzer and Sylvan Barnett (New York: Signet Classics, 2002): 1-142: 24. Of course, in Elizabethan England, the theater-going public included peasants and nobles, laborers and bourgeoisie. It is likely that the less educated among the audience members would not have understood the details of astrological doctrine that are intertwined within this speech, but they would have had no trouble comprehending the gist: that the heavens affect human affairs on a daily basis.

⁸¹² Curry, 101-102; Bernard Capp, *Astrology and the Popular Press: English Almanacs 1500-1800* (London and New York: Faber and Faber, 1979), 102-131.

opening of the sixteenth century.⁸¹³ Rather than being an aberration, Pontano's defense of astrology was entirely in keeping with educated opinion of his day, with intellectuals closing ranks against those who might question the premises of this ancient science. Indeed, the panoply of defenders who stepped forward to defend astrology during the course of the sixteenth and seventeenth centuries was truly impressive. No less a light than Johannes Kepler (1571-1630) strongly supported the idea that an examination of the heavens could allow one to foretell the future, attempting to substantiate this notion through reference to empirical evidence while applying his skills as a mathematician and theoretical astronomer to strengthening the foundations of the science.⁸¹⁴ Of course, he had good reason to support astrology's bases: he both cast horoscopes as well as acted as court astrologer to the Holy Roman Emperor Rudolph II (1576-1612).

But while Kepler's views of astrology were largely traditional, there is no indication that he turned toward the *Speculum* as a source. In large part, it had been superseded. As humanist attitudes and reading habits developed in Italy during the late fourteenth century and spread across Europe in the centuries that followed, respect for many authoritative medieval works began to decline.⁸¹⁵ But more importantly for my present study, scholars influenced by humanism working in libraries across Europe began

⁸¹³ Charles Trinkaus, "The Astrological Cosmos and Rhetorical Culture of Giovanni Giovano Pontano," *Renaissance Quarterly* 38.2 (1985): 446-472. Pontano wrote *De rebus coelestibus* c.1475, but substantially revised it and reissued it sometime after 1495.

⁸¹⁴ J. Bruce Brackenridge and Mary Ann Rossi, "Johannes Kepler's 'On the More Certain Fundamentals of Astrology' Prague 1601," *Proceedings of the American Philosophical Society* 123.2 (1979): 85-116.

⁸¹⁵ Kristeller, *Renaissance Thought*, 21-42. Of course this was not always the case. Thomas Aquinas' *Summa theologiae* became vastly more important as a source in the wake of the Council of Trent's (1545-1563) adoption of it as an official statement of the Catholic faith.

to gather larger libraries, while creating better catalogs of their contents in order to make the holdings more accessible to scholars.⁸¹⁶ Therefore, as catalogs became increasingly common, the value of the *Speculum* disappeared. Why turn to a stodgy old medieval work for a list of works on astrology, when you could wander into any library that would grant you access and look up works on the subject in the library catalog?

Library catalogs would become even more important with the advent of printing in the fifteenth century. By century's end, the trickle of printed works would turn into a flood, and library curators—and indeed private collectors—rapidly realized that the maintenance of increasingly efficient cataloging systems was essential if anyone hoped to find anything in the expanding library stacks.⁸¹⁷ Furthermore, printers eager to market their product produced comprehensive catalogs of their products, printing these catalogs in large lots that were then widely distributed.⁸¹⁸ There was no shortage of astrological works among these printed works, but the *Speculum* was absent among the works produced for sale.⁸¹⁹ With the publication of hundreds and eventually thousands of books on astrology, the lists included within the *Speculum*, which named dozens of works, could not hope to maintain their value. Therefore, the value of the *Speculum* as an academic resource lapsed quietly and without fanfare, due to a changing intellectual atmosphere and improvements in such under-appreciated fields as library cataloging.

⁸¹⁶ Berthold L. Ullmana and Philip A Stadter, *The Public Library of the Renaissance: Nicolo Nicoli, Cosimo de' Medici and the Library of San Marco* (Padua: Antenori, 1972); Paul Lawrence Rose, "Humanist Culture and Renaissance Mathematics: The Italian Libraries of the Quattrocento," *Studies in the Renaissance*, 20 (1973): 46-105.

⁸¹⁷ Elizabeth Eisenstein, *The Printing Revolution in Early Modern Europe* (Cambridge: Cambridge University Press, 1983), 22, 44, 46.

⁸¹⁸ *Ibid.*, 66.

⁸¹⁹ Capp, 44. I have located only a single printed copy of the *Speculum*, as mentioned previously, indicating that it was not part of a general print run.

However, the *Speculum*'s value as an authoritative source would eventually see a resurgence—though not among academics. To understand this, we should look briefly at the death of astrology as an academic discipline, and its reemergence in the field of esoterica. This process had begun in the Early Modern period. Even as astrology attracted defenders of the highest caliber, things were changing. In modern-day Poland an unassuming canon lawyer working at Frauenburg near the Baltic was developing a new understanding of the universe that would eventually provide an alternative to a cosmological model in which astrology held pride of place: Nicolas Copernicus (1473-1543).⁸²⁰ The Polish canon lawyer cum mathematical astronomer had no notion that his work would someday be heralded as the beginning of the Scientific Revolution.⁸²¹ Nor did he understand that the model he was developing would eventually, in the hands of modern scientists, make astrology obsolete as a learned discipline. To us it seems self-evident that a heliocentric model of the universe would leave little room for a science built around geocentric presumptions, but there is no evidence that any of this occurred to Copernicus. After all, the reason why it appears “self evident” to us is that we have grown up in the wake of the Scientific Revolution, comfortable in the idea that our world,

⁸²⁰ Copernicus graduated from the University of Ferrara in 1503 with a doctorate in canon law before moving on to Padua to undertake the study of medicine. Fortunately for the history of science, he left off his study of medicine after only one year, eventually taking up his post of canon at the Chapter of Frauenburg in 1510—a post to which he had been appointed fifteen years earlier, holding it *in absentia* while he completed his education. See Willy Hartner, “Copernicus, the Man, the Work, and its History,” *Proceedings of the American Philosophical Society* 117.6 (1973): 413-422.

⁸²¹ Of course, as S.J. Tester notes, the elements of the Scientific Revolution had coalesced gradually, from the incipient empiricism found in Aristotle's *Posterior Analytics*. Pietro d'Abano presented a description of the scientific method based upon the formulation of logically structured ideas (or hypotheses as a modern scientist would say) verifiable through analysis of evidence (read: experimentation), which can then lead to more certain forms of knowledge capable of acting as organizing principles for study (i.e., theories). If J.H. Randall is correct, it is small wonder that d'Abano expressed this. In Randall's estimation, the medical school of Padua acted as an incubator for the scientific method. See Tester, 216-218; J.H. Randall, *The School of Padua and the Emergence of Modern Science* (Padua: Editrice Antenore, 1961). Randall's point is far from proven, but is quite intriguing and worthy of further exploration.

so seemingly stable, is in reality flying around the sun at a dizzying pace.

We should forgive Copernicus for failing to see the revolutionary implications of his work. While he held off publication because he was hesitant to challenge the enshrined authority of Ptolemy, his mathematics were in line with his Alexandrian predecessor, as developed and refined by Arabic intermediaries. The resultant system was something of a hodge-podge that was both clumsier and less accurate in its ability to describe celestial motion than what it sought to replace.⁸²² The only advantages that his system offered lay in the ability to determine the order and distances of the planets with greater ease and accuracy while clearing up a handful of problems with the Ptolemaic system, such as a failure to explain the differing centers of the epicycles of inner (Mercury and Venus) and outer planets.⁸²³ Ultimately, Copernicus seems to have adopted his system based upon little more than an internal certitude that he was right, maintained in the virtual absence of evidence.⁸²⁴ Fortunately for the world, his conviction was infectious, winning over his disciple, the avid astrologer George Rheticus (1514-1574), who convinced his dying master to allow the posthumous publication of *De revolutionibus*.⁸²⁵

The story of the vicissitudes that Copernicus' ideas faced are too well known to

⁸²² N.M. Swerdlow and Otto Neugebauer, *Mathematical Astronomy in Copernicus' De revolutionibus* (New York: Springer Publishing, 1984), I, 33; Otto Neugebauer, *The Exact Sciences in Antiquity* (New York: Dover Publications, 1969, 2nd edition), 204.

⁸²³ *Ibid.*, 20-23. Of course one reason why it was so difficult to explain the motion of epicycles was that they did not exist, a point that escaped Copernicus.

⁸²⁴ *Ibid.*, 23.

⁸²⁵ *Ibid.*, 23. Rheticus seems to have believed that the Copernican system would, with refinement, offer a basis for more accurate astrological forecasting.

relate here. The Copernican model did eventually change the world, but only after a number of talented scientists applied themselves to developing their Polish predecessor's ideas. This would eventually provide a model for understanding the universe that did not require the celestial rays of influence posited by astrologers in order to explain terrestrial changes. Surprisingly, many of the ideas that made this model viable were the product of attempts to strengthen astrology's foundation, and the resultant system would not gain widespread traction until social forces beyond the realm of scientific study made astrology unpalatable to the emerging intellectual elite of the new science.⁸²⁶

Perhaps the first scholar to perceive that Copernicus, Brahe, Kepler, and those like them had been creating a system that could function without astrological forces and predictions was Pierre Gassendi (1592-1655). Born in the sleepy town of Champtercier, he quickly showed academic ability. This allowed him to study first at the Jesuit college in Digne and then at the University of Aix-en-Provence, where he received his doctorate of theology in 1617, the same year he was ordained as a priest.⁸²⁷ He then went on to teach rhetoric in Dijon (1612-1614) and philosophy at Aix (1617-1623), before being named canon and provost of the cathedral chapter at Digne (1634-1655). During this latter period, he also held the post of professor of mathematics at the University of Paris from 1645-48, in which position he primarily taught courses on astronomy.⁸²⁸ But it was

⁸²⁶ Gerard Simon, "Kepler's Astrology: The Direction of a Reform," *Vistas in Astronomy* 19.4 (1975): 439-448, 448.

⁸²⁷ For biographical information on Gassendi, I rely upon Antonia Lolordo, *Pierre Gassendi and the Birth of Early Modern Philosophy* (Cambridge: Cambridge University Press, 2006), 7-19.

⁸²⁸ For a consideration of Gassendi's contributions to science, and the philosophy that drove his work, see Saul Fisher, *Pierre Gassendi's Philosophy and Science* (Leiden: Brill, 2005), as well as Lolordo, 100-180.

Gassendi's humanist scholarship, which led him to a close study of Epicurus,⁸²⁹ instilling within the French polymath a deep-seated empiricism that would lead him to attack astrology and its practitioners.⁸³⁰

Gassendi taught astronomy for several years and it held a fascination for him throughout his life, recording observations of celestial appearances and reporting upon heavenly events as an adolescent and corresponding with Galileo as a mature professor of the subject.⁸³¹ This interest in astronomy led him to perceive the newly emerging physico-mathematical models of cosmology and inquiry to be a validation of the materialistic and empirical understanding of the universe that his classical hero, Epicurus, had promoted. His writings indicate that it was this scholarly interest that caused the Frenchman to become an avid proponent of the Copernican heliocentric model of the universe, which he perceived to be more defensible in light of the work of both Kepler and Galileo Galilei (1564-1642).⁸³² Gassendi's interests made him an unwavering supporter of the use of the experimental method, which instilled within him an intimate understanding of the process of cause and effect, leading him to reject astrology in its entirety.⁸³³ Armed with a thoroughgoing command of the sources and arguments used by astrologers, Gassendi applied his scientific knowledge to tearing those arguments down.

⁸²⁹ Lynn Sumida Joy, *Gassendi the Atomist: Advocate of History in an Age of Science* (Cambridge: Cambridge University Press, 1987). See in particular, chapter four, eight, and nine, entitled respectively: "The growth of Gassendi's Epicurean project," "Epicurus' conception of proof and Gassendi's historical justification of an atomist metaphysics and physicism" and "Between culture and nature: was Gassendi a historian, a scientist, an empiricist?"

⁸³⁰ Margaret J. Osler, *Divine Will and the Mechanical Philosophy: Gassendi and Descartes on Contingency and Necessity in the Created World* (Cambridge: Cambridge University Press, 1994), 153-170.

⁸³¹ Meyrick H. Carré, "Pierre Gassendi and the New Philosophy," 33.125 (1958): 112-120.

⁸³² *Ibid.*, 127.

⁸³³ Tester, 231; Margaret J. Osler, "New Wine in Old Bottles: Gassendi and the Aristotelian Origin of Physics," *Midwest Studies in Philosophy* 26.1 (2002): 167-184.

He stated that the heavens cannot influence the seasons, because those seasons have remained the same over the millennia despite the precession of the equinoxes.⁸³⁴ Furthermore, heavenly bodies are presumed to cause the same effect everywhere upon the earth, but this is demonstrably untrue. After all, astrologers stated that Sirius imparts great heat, but Gassendi notes that when it is hot in France, it is quite cold on the opposite side of the globe. Finally, if the stars were causes, then they should always be right, yet astrological predictions are no more reliable than a gambler's toss of the dice.⁸³⁵ In addition to these points, Gassendi haughtily states that astrologers rely upon charts created by others, while true scientists trust only observation and experiment.⁸³⁶ Therefore, their methodology put astrologers into conflict with what was coming to be seen as acceptable philosophical standards.

What Gassendi was doing was new: he was not critiquing astrology, he was completely rejecting it. This was truly revolutionary, and left no maneuvering room. Gone at a stroke were the medical applications of astrology and suggestions of vague and indirect influence of the heavenly bodies that even the most ardent critics of the science had always preserved.⁸³⁷ But his rejection did not spring to life fully formed and

⁸³⁴ This refers to the apparent, though glacially slow, rotating of the sky around the earth, that leads to all the constellations and individual stars shifting slowly, so that over the course of time the so-called "fixed" stars do not maintain an unchanging relationship with the planets or geographical points upon the earth. Equinoctial precession is a circular motion of earth's rotational axis with respect to the "fixed" stars, also known as lunisolar precession, caused by the countervailing tensions that the sun and moon place on the earth's rotational bulge. The axis precesses with a period of approximately 25,770 years, and would have been unnoticeable if astrologers had not kept records of the night sky for centuries upon end. See J. K. Beatty, C.C. Peterson, and A. Chaiken, eds., *The New Solar System* (Cambridge: Cambridge University Press, 1990, 4th edition), 105. On Gassendi's attitude toward astrology, see Tester, 230-231.

⁸³⁵ Tester, 232.

⁸³⁶ *Ibid.*, 232.

⁸³⁷ Even Galileo accepted the idea that the heavens imparted some ill-defined sort of influence. If he were to maintain his intellectual integrity, he would have had to, since he cast horoscopes for pay. See Simon,

articulated from nothing. It was built upon the work of Copernicus, Kepler, and others who insisted that a rational individual could understand the “world machine”⁸³⁸ that constituted the universe through the application of inductive logic in conjunction with observation and experimentation.

In addition to the growing sophistication of Copernican cosmology and the increasing accuracy of its predictions about celestial motion, there was another reason why Gassendi might have found this heliocentric system attractive in opposition to the older Ptolemaic model and its concomitant support for astrology: the incitement to unrest that astrology had provided during France’s troubled sixteenth century. While much work still needs to be done on French attitudes toward astrology in the seventeenth century, there were certainly strong reasons to be suspicious of all arts aimed at predicting the future. As Denis Crouzet argues in his two volume *Les Guerriers de Dieu*, almanacs and astrology—in addition to prophetic sermons and accounts of omens and prodigies—had all combined to create a level of *l’angoisse eschatologique*, that is “eschatological anxiety,” that had driven the Catholic population of France to ever greater heights of violence until culminating in the horrible events of St. Bartholomew’s day 1572.⁸³⁹

There are strengths to Crouzet’s analysis that make it appear altogether plausible and convincing. It is clear that astrological pamphlets and longer works were popular

447-448.

⁸³⁸ The idea that the universe constitutes a “world machine” functioning in accord with rules that are describable and function the same at all times—given the absence of divine intervention—was a commonplace used by many medieval writers, such as Albert the Great and Konrad de Megenberg (c.1350). See Bianchi, 55-58. What Gassendi was doing that was so different was to disallow mystical explanations posited to fill in the gaps of human understanding. He was admitting that some things may be beyond the ability of human knowledge to understand, but that such a lacuna indicates an area ripe for research, rather than the introduction of some metaphysical or mystical explanation derived solely from philosophical introspection.

⁸³⁹ Denis Crouzet, *Les Guerriers de Dieu* (Seyssel: Champ Vallon, 1990), I, 101-304.

and attained wide distribution among the populace at all levels of society.⁸⁴⁰

Furthermore, the author does a good job of establishing connections between events in Germany, such as Luther's identification of the pope with the antichrist and the Peasant's War of 1524 to 1525, which served to heighten eschatological tensions among the Catholic population of France.⁸⁴¹ Astrologers' predictions of a deluge of biblical proportions for 1524 since at least 1480 had heightened the significance of the Peasant's War, as far as the history of astrology is concerned. While the uprising of peasant farmers and the subsequent bloodletting that the social elites of Germany had visited upon them was no flood, it certainly had the appearance of a cataclysmic event to readers in France.

Moreover, there is no reason to doubt Crouzet's claim that astrological works rolled out of French printing presses at an increasingly rapid pace until at least the 1570s, or that the predictions contained therein were ever-more stridently apocalyptic in tone.⁸⁴² Less certain is the question of whether this flood of divinatory literature had as large a role in increasing the "eschatological anxiety" and civil unrest as the author claims, or if Crouzet has the cause and effect relationship reversed, with astrologers writing in order to meet an already existing demand.⁸⁴³ However, one thing emerges clearly from this comprehensive study: social elites and intellectuals in late sixteenth century France had come to see a connection between divination—whether through religious prophecy or by

⁸⁴⁰ Ibid., 103.

⁸⁴¹ Ibid., 109-110.

⁸⁴² Ibid., 103; 300-304.

⁸⁴³ Ibid., 103.

observation of the heavens—and violence in society.⁸⁴⁴

However, we should not be too quick to view Gassendi's rejection of astrology as motivated by a generalized distaste for the discipline arising among elites who viewed celestial divination as a tool for the promotion of civic unrest. Despite Crouzet's confident assertion that François Rabelais (1494-1553) and Michel Montaigne (1533-1592) provide examples of sixteenth-century intellectuals who held precisely that position, there is reason to doubt this argument.⁸⁴⁵ More than fifty years ago John C. Lapp demonstrated that while these two French scholars might have critiqued astrologers and their activities, both of them accepted and defended the notion that celestial influence affected terrestrial events.⁸⁴⁶ Furthermore, given the important role that the violence and unrest in sixteenth-century Germany plays in Crouzet's narrative, the continuing support that the discipline received in German speaking lands of the seventeenth century—as demonstrated by Kepler's vigorous defense of the subject—should make us question just how far astrology had fallen into disfavor in Germany.⁸⁴⁷ If elites in Germany continued to advocate the discipline, and cross-border influences played as large a role in the development of French attitudes as Crouzet would have us believe, then why should French elites have rejected astrology while their German counterparts continued to defend it? It is clear that there is much work to be done upon continental European attitudes toward astrology in the late sixteenth and early seventeenth century.

⁸⁴⁴ Ibid., 301-303.

⁸⁴⁵ Ibid., 302.

⁸⁴⁶ John C. Lapp, "Three Attitudes Toward Astrology: Rabelais, Montaigne, and Pontus de Tyard," *PMLA* 64.3 (1949): 530-548.

⁸⁴⁷ Rabi, 75-770.

Regardless of precisely how Pierre Gassendi arrived at his rejection of astrology, his work would become a staple of discussion in the European intellectual world. This would be particularly true for one of the most influential scientific organizations in history: England's Royal Society, formed in 1666.⁸⁴⁸ Because of the significance of the Royal Society to the history of science, as well as the attention that scholars have paid to seventeenth-century England in general, a consideration of astrology's decline in that nation can serve as a useful case study. Among Society members, Gassendi's argument that astrology should be rejected based upon its failure to employ what he saw as proper scientific methodologies fell upon receptive ears for reasons that were only tangentially related to empiricism and the developing scientific thought of the day. The members who founded the Royal Society matured in an England wracked with social turmoil and open warfare. The bloodshed of the Civil Wars, fought between 1642 and 1650, had killed twelve percent of the English population while wiping out almost half of the population of Ireland.⁸⁴⁹ Within the context of such widespread devastation, it is hardly surprising that the populace became desperate to find solace in anything that promised to explain these events while predicting what might come next. With the collapse of censorship caused by the disturbances of the Civil Wars, the increased production of astrological almanacs handily met this need. Bernard Capp estimates that by 1650 one-third of the families of England owned one or more of these works.⁸⁵⁰ Within the pages of these almanacs the reader could find not only astrological

⁸⁴⁸ Olivier René Bloch and T.J. Reiss, "Gassendi and the Transition from the Middle Ages to the Classical Era," *Yale French Studies* 49 (1973): 43-55.

⁸⁴⁹ J.S. Morrill's *The Revolt of the Provinces : Conservatives and Radicals in the English Civil War, 1630-1650* (London and New York: Longman, 1980), is in many ways still the best analysis of these events.

⁸⁵⁰ Capp, 79-80.

information and predictions, but also calendars of events and news of current happenings, often juxtaposed with an astrological explanation, serving to simultaneously serve the public's needs for reassurance, information, and advice by mingling predictions with rumors and news accounts of the war.

But with the country tearing itself apart, we should not expect these astrologers to have been unbiased, and indeed they were not. Some, such as George Wharton (1617-1681), turned their predictions into propaganda for the Royalist cause while others, such as William Lilly (1602-1681),⁸⁵¹ were just as active in their support of the Parliamentary position.⁸⁵² Propaganda pieces or not, the works of England's astrologers were extremely popular, with 30,000 of Lilly's works selling in 1659 alone, with total almanac sales by all authors climbing to 400,000 per annum in the 1660s.⁸⁵³ This very popularity was a significant contributing factor in the death of astrology as a learned discipline.

As these vernacular almanacs proliferated among the increasingly literate

⁸⁵¹ For an interesting examination of Lilly as an astute observer of his times, see Ann Geneva, *Astrology and the Seventeenth Century Mind: William Lilly and the Language of the Stars* (Manchester: Manchester University Press, 1995). One should use caution in reading Geneva, though, as her analysis of Lilly relies too heavily upon modern methods of textual and linguistic interpretation, and not enough upon a historical understanding of astrology and astrologers, or indeed of the history of seventeenth-century England. For an example, turn to chapter nine, entitled "The Decline of Astrology as a Symbolic Language System." She does, however, manage to present a convincing argument that Lilly developed his prognostications based more upon an astute analysis of events occurring around him than upon observational and mathematical study of the stars, which would make him an "astrologer" in the vein of his sixteenth-century French predecessor, Nostradamus. See Geneva, 71, 176, 281. For Nostradamus, see 'Amour, 432-433. Of course if Lilly was out of step with his times, what about Kepler College of Astrological Arts and Sciences, the only officially authorized institution in the United States where one may earn a B.A. and M.A. in astrological studies. Indeed, what should we think about the Washington State Higher Education Coordinating Board for supplying a Certificate of Authorization to Kepler College in 2000?

⁸⁵² Ibid., 31-60, 57, 73-86. Lilly predicted the King's defeat. However, this prediction was a product of 1644, when anyone with an astute judge of warfare would have been able to do the same.

⁸⁵³ Ibid., 44. Of course, as Fox News has proven, propaganda can be very popular.

population of England, the basics of astrology spread with them. Seeing the popularity of the genre, it is no surprise that new practitioners arose to meet the explosively growing demand. However, in stark contrast to the past, as well as to what occurred as the popularity of astrology exploded in sixteenth-century France, many of the astrological writers who emerged in seventeenth-century England were drawn from decidedly non-elite backgrounds.⁸⁵⁴ As Lilly's patron, Elias Ashmole (1617-1692), stated in his 1652 work, *Theatrum chemicum Britannicum*

Astrologie is a profound science. . . . Never was any age so pester'd with a multitude of Pretenders, who would be accounted . . . masters, yet are not worthy to wear the badge of illustrious Urania. And (oh to be lamented) the swarme is likely to increase, until through their ignorance they become the ridiculous object of the enemies of Astrologie . . . and eclipse the glory of that light, which if judiciously dispensed to the world would cause admiration, but unskilfully exposed becomes the scorne and contempt of the vulgar.⁸⁵⁵

In other words, astrology had slipped the bonds of respectable society to be taken up by tradesmen and the "rabble" of England, and this vulgarization of the discipline would naturally lead to a decline in the accepted standards of practice.⁸⁵⁶ This new breed of astrologers was increasingly drawn from outside the ranks of the intellectual elite,⁸⁵⁷ and as such, were less apt to possess the skills necessary to apply themselves to Latin sources, or indeed to any of the classical sources of astrological knowledge. In 1648, the astrologer George Wharton (1617-1681) wrote bitterly that for many, "Ptolemy may be

⁸⁵⁴ Curry, 20, 46-48.

⁸⁵⁵ Elias Ashmole, *Theatrum chemicum Britannicum* (Printed by J. Grismond for Nath. Brooke: London, 1652), 453.

⁸⁵⁶ Curry, 36-38.

⁸⁵⁷ Curry, 109-122, notes that seventeenth and eighteenth-century astrologers were increasingly drawn from the middling ranks of society, or even from the laboring class, and as such their education was often auto-didactic in nature and spotty in the extreme.

something to eat for aught they know.”⁸⁵⁸ The decline in accepted standards was problematic for the future of astrology, but the backgrounds of the new breed of astrologers were perhaps more damning. Elites such as Elias Ashmole had no interest in associating with those whom they viewed as socially and intellectually inferior.

But it was not just the social class and educational levels of these self-styled astrologers that provoked feelings of mistrust, apprehension, and distaste upon the part of England’s elite practitioners: many of the new low-born astrological writers were associated with the provocation of social disorder. In the absence of any effective form of censorship in the 1640s and into the 1650s, many of the almanacs enjoying the briskest sales promoted antinomian beliefs –presumably supported by celestial portents “proving” that the established social order was no more –as well as strongly anti-royalist messages.⁸⁵⁹ While agents of the Lord Protector Oliver Cromwell (1599-1658) might have overlooked the latter aspect of this newly demotic astrology, none of the country’s elites could countenance the socially subversive elements visible in so many of these new almanacs. Moreover, with the Restoration of the “martyred king’s” son, Charles II (1660-1685), to the throne, astrologers who appeared to have supported the Parliamentary position found themselves in a precarious position. The Act of Uniformity of 1662 reinstated censorship, with Parliament establishing Roger L’Estrange, the staunch Royalist and Anglican, to enforce it. His assigned task was to “seize all seditious books and libels, to apprehend the authors, and to bring them before

⁸⁵⁸ Ibid., 96.

⁸⁵⁹ Curry, 46.

council.”⁸⁶⁰ William Lilly, to whom L’Estrange referred as “old Crackfart,” complained that censors “macerated, obliterated, sliced and quartered” his books.⁸⁶¹ The once successful astrologer saw his bowdlerized books plummet in sales, from a high of 30,000 per annum in 1659 to less than 8,000 in 1664.⁸⁶²

Perhaps desperate to reestablish their position, many astrologers attempted to reform their discipline along lines accepted by the new scientific elite, but it was too little and far too late. Despite the best efforts of those such as John Gadbury (1628-1704) who assiduously gathered birth charts and honed astrological principles, no amount of effort was going to breathe life back into a field of study that had become associated with popular enthusiasms and unrest, especially since the majority of the new practitioners were self-taught members of the lower classes.⁸⁶³ This vulgarization of astrology had turned the majority of England’s intellectual elites against it, leaving them receptive to an alternative cosmological view. It was just such an alternative that had been slowly coalescing in the mathematical models and abstract theories of Copernicus, Brahe, and Kepler. Gassendi’s work was part of this movement as well. He aggressively promoted the idea that any discipline failing to apply the scientific method, as promoted by Gassendi’s hero, Galileo, could not be considered a science. Since “scientific,” however ill-defined it might have been as a construct, was becoming virtually synonymous with “rational” in the minds of Europe’s new intellectual elite, astrology’s imperviousness to controlled experimentation left it outside the realm of mainstream academia. Without

⁸⁶⁰ Capp, 49.

⁸⁶¹ Ibid., 49.

⁸⁶² Ibid., 89.

⁸⁶³ Curry, 72-76.

contributing anything new, Gassendi convinced his readers that natural, mathematically describable forces, which are understandable through experimentation, represented a method of comprehending the universe that was a viable alternative to astrology.

With the publication of Gassendi's collected works in the late 1650s, members of the Royal Society such as Robert Boyle (1627-91) and Sir Isaac Newton (1642-1727),⁸⁶⁴ embraced him. In this way, the French astronomer's ideas served to promote the idea of a rigorously empirical system of science that would be promoted as an alternative to the astrological thought that had become associated with ill-educated social radicals. Despite the fact that these very scientists continued to study other forms of esoterica, astrology was banished from their systems of thought.⁸⁶⁵ The emerging forms of the new science would step in to fill the void, offering replicable results attained through a process – experimentation—mutually agreed upon by gentlemanly practitioners who wished to distance themselves from the masses.

Within this context the death of astrology as a learned discipline is perfectly understandable. England's intellectual classes had come to associate celestial divination with unrest—which may have been the case in France as well—and to perceive it as the realm of those whom they perceived as their social inferiors. Those such as Gadbury, who applied his learning in an attempt to reform astrology in the seventeenth century,

⁸⁶⁴ Richard S. Westfall, *The Construction of Modern Science: Mechanisms and Mechanics* (Cambridge: Cambridge University Press, 1970), 140.

⁸⁶⁵ Sir Isaac Newton was an avid alchemist and proponent of the study of the bible as a means of predicting the future. See I. Bernard Cohen, "Newton in Light of Recent Scholarship," *Isis* 51.4 (1960): 489-514.

were out of step with the times, fighting a doomed holding action to preserve the study of this art within the respectable ranks of academia. In this, as with much else, Jonathan Swift (1667-1745) was the voice of the future, with his biting brilliant satire of all things astrological in his “Prediction for the Year 1708, by Isaac Bickerstaff, Esq.”⁸⁶⁶ For those in the intellectual mainstream, astrology was increasingly becoming an object suitable for ridicule, rather than study.⁸⁶⁷ As the Royal Society increased its European reputation and England became recognized as a scientific leader in the seventeenth and eighteenth centuries, English distaste for astrology spread along with the other ideas of the Society’s members.

However, although astrology lost its attraction for European intellectuals, interest in the discipline proved rather resilient in the end. Although by the mid-nineteenth century even the most conservative members of the rural populace had come to reject astrology, that situation was to prove short-lived.⁸⁶⁸ William Frederick Allen (1860-1917), an English traveling salesman, soon revived the study of astrology and successfully popularized its use.⁸⁶⁹ Being almost entirely self taught, Allen sought to simplify the practice of astrology, as well as turn its focus toward character analysis and away from its predictive aspects. Taking on the professional name of Alan Leo, Allen

⁸⁶⁶ Jonathan Swift, “Prediction for the Year 1708, by Isaac Bickerstaff, Esq.” as included in *The Works of Dr. Jonathan Swift*, (Edinburgh: G. Hamilton, J. Balfour, and L. Hunter, 1757): I, 305-314.

⁸⁶⁷ I am quite sure that there were well-educated Europeans who would have disagreed. Two examples would likely have been the masters holding the Chair of Astrology at the University of Salamanca, occupied until at least 1770, and the Chair of Astronomy at the University of Bologna, who was required to create an astrological almanac for the medical students of the university as late as 1799. See Thorndike, *HMES*, VI, 166; Tester, 187. However, the continued existence of such positions, along with those with the training to fill them, is indicative of the continued existence of antiquated system of education rather than a vibrant and living intellectual tradition.

⁸⁶⁸ Curry, 162-167.

⁸⁶⁹ James Herschel Holden, *A History of Horoscopic Astrology* (Tempe: American Federation of Astrologers, 2006, 2nd edition), 194-196. I rely upon this source for the remainder of the paragraph.

eventually launched *The Astrologer's Magazine* in 1890, which was later renamed *Astrology Today*.⁸⁷⁰ This magazine was successful enough by 1898 to allow him to devote himself full time to his work as an astrologer. Needless to say, the intellectual community was no more receptive toward Allen than to his predecessor Gadbury, but this did no harm to his popular reputation. In 1915 he founded the London Astrological Lodge of the Theosophical Society⁸⁷¹ and is today known as the father of the modern astrology movement, which still attracts thousands of those looking for an alternative to a modern scientific worldview.

Of course, with the revival of interest in astrology, these modern pseudo-scientists have found themselves in need of a defense of their art, and that is where we see a revival of the use of the *Speculum astronomiae* as an authoritative source. Thanks to Paola Zambelli and Stefano Caroti's English translation, Albert the Great is accessible to those modern adherents of astrology who lack a classical education. Indeed, a quick browsing of the Internet uncovers dozens of websites—many demonstrating a great deal of professional polish and sophistication—that use the *Speculum* as an authoritative source. These range from Christopher Warnock's site on Renaissance astrology, which quotes much of chapter eleven's defense of the use of astrological images,⁸⁷² to the French

⁸⁷⁰ This magazine remained in circulation until 1998, more than a century after Allen founded it.

⁸⁷¹ Helena Petrovna Blavatsky (1831-1891) formed the Theosophical Society in New York city in 1875 to investigate spiritual manifestations and phenomena, channeling, psychic abilities, and various other elements of the occult. One branch of this organization, the Anthroposophical Society founded in Germany in 1913, is still active. See Bruce F. Campbell, *Ancient Wisdom Revived, a History of the Theosophical Movement* (Berkeley: University of California Press 1980).

⁸⁷² Christopher Warnock claims to hold an MA in Renaissance and early modern history from the University of St. Andrews, as well as a J.D. from the University of Michigan Law School. In addition to practicing law in Washington D.C., Warnock teaches courses in Renaissance astrology online as well as offering his services as an astrological advisor. For his quotation of Albert, see <http://www.renaissanceastrology.com/biography.html>.

website that somehow manages to adduce the *Speculum*'s authority—wrongly attributed to Roger Bacon—in support of the study of alchemy.⁸⁷³

I have studied Albert the Great for almost a decade now, and I doubt that he would approve of the use that modern astrologers make of his defense of astrology. He was a man dedicated to the closest possible understanding of the world available to humankind, given the limitations of corporeal sense organs. Reason guided his philosophical speculations, and he would not have countenanced the turning away from that peculiarly human trait apparent in the works of those moderns who choose, in the face of all evidence, to believe in the efficacy of astrology. Admittedly, Albert did support branches of knowledge that have been discredited during the intervening centuries, including astrology, but we certainly cannot fault him for that: his conception of the universe was perfectly rational given the evidence that was available to him.

If we wish to understand Albert and the world in which he lived, we should strive to understand his work on its own terms—not as we would wish it to be. If modern Dominicans such as Mandonnet have found themselves embarrassed by Albert's defense of astrology, this emotional reaction is entirely contrary to the important place that the *Speculum astronomiae* holds in the history of science. Such a response is illogical, misguided, and destructive of our ability to understand one of the most important components of medieval thought: astrological beliefs. In this, Mandonnet shares much with Christopher Warnock, both of whom have had their view of the past distorted by

⁸⁷³ <http://thoth333.club.fr/htm/alchimieauteurs.html>.

wishful thinking.

In sum, then, what is the long-term importance of the *Speculum*? During the period in which it acted as a living source, it served an important function. Representing the primary support for astrology as an admissible pursuit for Christians, it assisted in the preservation of the practice of celestial divination. While most of us may not value this pursuit today, astrology's importance to the history of science can no longer be doubted. For centuries people peered eagerly at the heavens, working out the movements of the planets through the application of complex mathematical formulae, which they constantly refined in order to allow for a more accurate understanding of celestial movements. Never satisfied with their results, these astrologers searched for better models of planetary motion and elements such as the precession of the equinoxes, arguing over the relative merits of various systems while all the time looking for a more accurate means of predicting the future location of heavenly bodies—which was essential to any astrological forecast.⁸⁷⁴ Eventually certain practicing astrologers would reject the Ptolemaic geocentric model of the universe for a heliocentric one that, in time, delivered greater accuracy in modeling heavenly motions. These astrologers now make up the majority of our pantheon of the progenitors of the Scientific Revolution—Brahe, Kepler, and Galileo⁸⁷⁵—which would spawn a mechanistic understanding of the universe.⁸⁷⁶ But

⁸⁷⁴ The chief competing system for understanding precession in the middle ages were those of Thabit bin Qurrah's trepidation model, and Ptolemy's original system of epicycles. See France J. Carmody, "Notes on the Astronomical Works of Thabit b. Qurrah," *Isis* 46.3 (1955): 232-242. Albert takes note of this debate, expressing his preference for Thabit's model. See *Speculum*, 214, chpt. 14. There were, of course, other points of dispute relating to astronomy, but none which generated so much attention.

⁸⁷⁵ Although Galileo's work as an astrologer is generally overlooked by historians, twenty-five surviving genitures—horoscopes cast for clients—still survive in his hand. Drs. Nick Klosterman and H. Darrell Rutkin are both striving to rectify the modern ignorance about Galileo's astrological work and beliefs. See

it all began with the sustained, long-term contemplation of the heavens that astrology provoked.⁸⁷⁷ If opponents of astrological divination had earlier managed to quash interest in the subject, the history of science would have been quite different.

Klosterman, "Galileo the Astrologer," *Culture and Cosmos: A Journal of the History of Astrology and Cultural Astronomy* 7.1 (2005): 115-134; Rutkin presented a paper on this topic on 4 Nov. 2004 at Stanford University's History of Science Colloquium, entitled "Galileo, Astrology and the Scientific Revolution: Another Look."

⁸⁷⁶ Bernard Capp has noted the long-term importance of the developments of the Scientific Revolution: "Copernicus and his successors did not disprove astrology. Tycho Brahe and Kepler were themselves practitioners. But cumulatively the effect of their work was to undermine the old cosmology in which astrology had taken root. . . . This pattern of beliefs [astrology] became more and more implausible as astronomers revealed that the heavens were neither perfect nor unchanging." See Capp, 278.

⁸⁷⁷ This is a point that the modern astronomer Marcelo Gleiser has not missed in his work, *The Prophet and the Astronomer*.

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Appendix

Appendix A

Agostino Paravicini Bagliani provides a detailed and comprehensive guide to the surviving manuscripts of the *Speculum*.⁸⁷⁸ However, he focuses solely upon the manuscripts of the *Speculum*, and as such, does not provide information on codices containing Albert's guide. Since his study ignores the all-important context in which one finds the *Speculum*, this appendix provides data on the thirty-two manuscripts that I have personally examined. Data from an examination of these codices provide the evidentiary basis for the core of my own work.

Manuscripts in category A.

MS A 1: Florence, Biblioteca nazionale centrale, MS Magliab. XI 121 (Strozz 1127).

This "codex" is actually a bundle of loose papers intermingled with bound quires that were once bound together. Viewed on CD-ROM at the library, this text appears to be a late seventeenth-century practicing astrologer's notebook, complete with notes and calculations. Compiled by Abbot Luigi Strossi of San Carlo, in 1677,⁸⁷⁹ the manuscript demonstrates use by an astrologer working in Florence, as indicated by numerous notes about Florence throughout the text, who wrote in Italian. The compiler cut out tables and sections of older works of apparent interest to him, renumbering them sequentially, resulting in a codex containing sections of medieval works of varying ages alongside notes and writings in Italian.

This manuscript contains the following astrological and astronomical texts:

- I. 1v-21r: An Italian "geomantia."
- II. 64r-67r: "Discorso copia l'Eclipse della luna 1377." This work contains geometrical sketches demonstrating how an eclipse occurs, with a discussion of the phenomenon in Italian. At the bottom of 67r is this note: "Explicit demonstratio lunae facta per Johanem Bandis."
- III. 67v: Italian notes on the calculation of celestial motions.
- IV. 68r-78v: Four steps to arriving at an accurate position for celestial bodies, in Italian, with illustrations.

⁸⁷⁸ Bagliani, 7-56.

⁸⁷⁹ The title page on 2r identifies the abbot as the compiler.

- V. 79r: Italian notes on the eclipse of 12 Dec. 1394.
- VI. 79v: Calculations and notes on celestial movement, dated 1677.
- VII. 145r: A set of circular paper cut outs, superimposed upon one another, of decreasing size. The largest circle, drawn onto the topmost folio leaf, is divided into eighty degrees. This page is labeled: “Tabula divisionibus” Assembled, this would have acted as an aid to determine the house a planet resides in for any given time.
- VIII. 147r: A similar circular tool for the 12 zodiacal signs.
- IX. 148v: “Domorum equationes secundum Iohannem.” Information on determining house divisions.
- X. 155r-157r: An anonymous Latin text, labeled “astronomia et astrologia,” in what appears to be a fifteenth-century hand. This work describes the influences and motions of the planets, as well as containing tables and a variety of important astronomical information.
- XI. 158v-190v: This is in Italian, written in a fourteenth-century hand. Paolo dell’Abaco is better known as Paolo Dagomari (1281-1374), one of the great *maestri dell’Abaco* who is said to have taught some 6,000 students at the Florentine *scuola dell’Abaco*. This text is an incomplete copy of Dagomari’s *Trattato d’Abaco*, which is discussed at some length by Thorndike in his *History of Magic and Experimental Science*.⁸⁸⁰
- XII. 193r-196v: “De figura coeli et significationibus per eam” A brief description of the astrological influences of each of the twelve celestial signs.
- XIII. 207r-207v: The *Speculum*, though lacking the prooemium and the first half of chapter one. “Explicit speculum Alberti.”

Ephemerides and other items useful to an astrologer.

- I. 21v-22r: Celestial charts detailing movement of the planets.
- II. 22v: Charts drawn from the Alfonsine tables⁸⁸¹ and dated 1491.
- III. 53v: A sketch illustrating how to determine the ascendant, with notes in Italian.
- IV. 114r-133v: A text in a Gothic hand, appearing to date to the mid-fourteenth century, with tables for the years 1380-1480 showing planetary motion in the night sky.
- V. 133r-140v: An almanac cut from another manuscript for the years 1419-1466.
- VI. 141r-144v: Astronomical tables that appear to be from another manuscript.
- VII. 149r-150v: Incipit: “Monte ad Orizontem Florentinum.” More astronomical tables, with Florence established as the point of reference.
- VIII. 152r-154v: “Tabula Equationibus Dierum atque Noctium.”
- IX. 191r: An illustration of the microcosm of man, that is, a drawing of a male human body with notes indicating which astrological sign governs which body part. Such illustrations were useful for physicians when prescribing treatments, as well as for

⁸⁸⁰ Thorndike, *HMES*, III, 207-214;

⁸⁸¹ The Alfonsine tables provide the locations of important celestial objects necessary for making astrological judgments. Originally composed in Spanish at the court of King Alfonso X of Galicia, Castile, and Leon (1252-1284), these tables were later translated into Latin and became the standard for astronomers and astrologers across Europe until superseded by the work of Kepler. See Bernard R. Goldstein, José Chabás, and José Luis Mancha, “Planetary and Lunar Velocities in the Castilian Alfonsine Tables,” *Proceedings of the American Philosophical Society* 138.1 (1994): 61-95.

- surgeons when bleeding a patient.⁸⁸²
- X. 191v-192v: A list in Latin of the generalized effects of each sign in genethiological astrology.

Finally, there is a work that would logically seem to have been of ancillary interest to an astrologer:

- I. 22r-43v: Notes on mathematics, labeled in both Italian and Latin. This appears to have been a workbook for someone doing mathematical calculations. Apparently written in the same hand as Italian works and notes included in the manuscript, this is, most likely, the personal workbook of the compiler and original owner of the codex.

MS A 2. Florence, Biblioteca Medicea Laurenziana, MS Plut. XXX.29

This handsome volume has wooden covers still bearing brass corner pieces and a central crest with “CM” engraved upon it. The library catalog identifies this text as thirteenth century,⁸⁸³ which fits with the appearance of the script. The majority of the works within this codex would have been of use to an astrologer, with a few anomalies.

Works useful to an astrologer are listed below:

- I. 1r-25v: “Ugonis Satiliensis Geomantia.” More commonly known as Hugo Sanctelliensis or Hugh of Santalla, this is a translation of the otherwise unknown Arabic writer, Alatrabulucus.⁸⁸⁴ According to Richard Lemay, Hugh was a Spanish priest working as a solitary translator in Tarazona during the middle of the twelfth century.⁸⁸⁵
- II. 26r-30v: “De signis astrinomicorum.” An anonymous work on the celestial signs.
- III. 32r-32v: “De signorum proprietatibus.” This may be the pseudo-Ptolemaic, *Liber de proprietatibus signorum secundum Tholomeum de figura configuro arietis*.
- IV. 33r-42v: “De nativitatibus,” This is the *Kitâb al-Mawâlid* (Nativities) of Omar, or ‘Umar Ibn al-Farrukhân al-Tabarî (Baghdad, fl. 762).⁸⁸⁶ This work gives detailed information on the casting of natal horoscopes.
- V. 42v-49v: “Flores” of Albumasar.
- VI. 50r-56v: “De electionibus,” by Zahel.

⁸⁸² French, “Foretelling the Future: Arabic Astrology and English Medicine in the Late Twelfth Century,” 454; Peschietto, *Pietro d'Abano, Medico e filosofo*, 280-283.

⁸⁸³ Leopold, II, 71.

⁸⁸⁴ Charles Homer Haskins, *Studies in the History of Mediaeval Science* (Cambridge, MA: Harvard University Press, 1924), 71-80. According to Haskins Hugo was a little-known thirteenth-century translator who can be credited with nine works translated from Arabic into Latin.

⁸⁸⁵ Richard Lemay, “Dans l’Espagne du XIIe siècle: Les traductions de l’Arabe au Latin,” *Annales*, 18 (1963), 647-649.

⁸⁸⁶ ‘Umar Ibn al-Farrukhân al-Tabarî, *De nativitatibus secundum Omar* (Basel: Iohannes Hervagius, 1533); F.J. Carmody, *Arabic Astronomical and Astrological Sciences in Latin Translation. A Critical Bibliography* (Berkeley-Los Angeles: University of California Press, 1956), 38-39.

- VII. 59r-62r :“De imaginibus,” by pseudo Ptolemy,⁸⁸⁷ on the construction and use of astrological images meant to harness celestial power in order to generate earthly effects.
- VIII. 79r-84r: “Divinationum divisio.” The compiler lists this work as anonymous. It is, despite the unusual but nevertheless accurate title, the *Speculum*.

Anomalous works:

- I. 57r-58v: “De secretis secretorum,” by pseudo Aristotle. This work does little to assist a reader in the use of astrology. However, it promotes the use of astrology by presenting itself as a book of advice to Alexander the Great, explaining how astrology may be used for a wide variety of specific instances that could be important to a ruler.⁸⁸⁸
- II. 63r-70v: “Alchimia.” Anonymous. The presence of a work on alchemy indicates that the compiler of this text was apparently interested in both of these occult forms of knowledge, astrology and alchemy. Multiple scholars have noticed the linkages between these two *scientiae*,⁸⁸⁹ making it unsurprising to find a text appearing to have been prepared for an individual interested in both subjects. Given the extensive underlining and notes found in this work, it appears to have received considerable use.
- III. 71r-78v: “De colorum diversitate.” This is an anonymous work. This text may have been included due to the compiler’s interest in natural philosophy in general, or it could have been present due to an astrological interest in light, seen as the transmitting force of the stars.⁸⁹⁰
- IV. 84r-86r: “Ars notaria.” This is a pseudo Aristotelian work on writing and other issues relating to notaries. It has no clear thematic connection to any other work in this volume.

MS A 3. Bologna, Biblioteca Universitaria, MS 1609 (3649) inf. 11

This is a sixteenth-century manuscript, carefully bound in leather and very plain, but assembled with obvious care. The size of this volume would have allowed one to carry it easily enough in a pocket. This codex contains only two works: Albert’s *Speculum* and Arnold de Villa Nova’s (1235-1313) *De imaginibus*. The scribe used almost no abbreviations and wrote in a handsome hand, using system of abbreviation not unlike those used today.

⁸⁸⁷ This is the only work bound with the *Speculum* in any of the codices I have examined for which Albert expresses disapproval bordering on condemnation. See Albert, *Speculum*, 248-250. “Est et alius liber, qui sic incipit: *Opus imaginum Ptolemaei etc.*, qui sicut est inutile est, cum nihil sit ibi nisi sub quo ascendente sint imagines singulae faciendae, quod si tacite conditiones necromanticae sunt, intolerabilis est.”

⁸⁸⁸ Kieckhefer, *Magic in the Middle Ages*, 122

⁸⁸⁹ Levack, 7; Shumaker, 177-179.

⁸⁹⁰ This was a common notion among astrologers and natural philosophers. Albert wrote extensively of light as the instrument of celestial influence, as did others, such as his younger contemporary, Witelo (1220-1278) as well as later scholars, such as Nicole Oresme (c.1323-1381). See Birkenmajer, 276-277.

Astrological works contained:

- I. 1r-53v: "Incipit Speculum Astronomiae Domini Alberti Magni Ratisponensis Aepiscopis."
- II. 54r-55v: "Incipiunt Sigilla Magistri Arnaldi." This is Arnold of Villanova's work on images.

MS A 4. Venice, Biblioteca Nazionale Marciana, MS Lat. Z. 337 (1582).⁸⁹¹

This is a slender sixteenth-century volume containing the *Speculum* bound by itself, which is most unusual. This leather codex has an impressed medallion on front and back. A winged lion is rampant upon the medallion, holding a book with the initials on one page that read "P.T.M," and "E.M" on the next. The spine reads "Alb. M." Only nineteen folio leaves, the marginalia in this text suggest that it was owned by an astrologer familiar with medicine. For example, see the notes such as those on 3v highlighting astrological authorities that Albert discusses, such as "Thebit," "Joannis Hyspalensis," "Flores Jo. Hyspalensis," and "Albetragius," all of which suggest an interest in astrology. Further down on the leaf, we find notes that bespeak a certain knowledge of, or interest in, medicine: "Nota ab ignorantia Cyrugi de interfectis" and "Nota de ignorantia medici imperiti." However, such evidence is inconclusive, leading me to classify this as an astrological text, lacking enough support to classify this text as that of a physician.

Contains a single work:

- I. "Alberti magni astronomiae speculum incipit." (2r-15v)

MS A 5. Venice, Museo Civico Correr, Fondo Cicogna, MS 1097.

This is a beautifully bound fifteenth-century volume, covered in soft cream-colored leather. Written on paper, the leaves themselves are fairly plain and devoid of decorative effects. There seems little doubt that this codex belonged to an astrologer, given the complexity of details included about the effects of various planetary combinations. This codex looks like a teacher's notebook, with the *Speculum* perhaps acting as an aid to what the teacher's students should avoid, as well as what works they would need to consult.

- I: 1r-22v: "Albertus de scientis lictis et illicitis." In the right margin another hand has written: "Albertus Magnus." At the end we find: "Explicit liber de nominibus librorum astronomiae tam demonstratis quam iudicialis quem frater albertus edidit ut sciatur qui libri sunt contra fidem catholicam et qui non contradicunt ipsi fidei." After the explicit are what appear to be astrological notes on the effects of the planets on terrestrial creatures, written before the final "laus deo finis."
- II: 23r-35v: Explicit: "Finiunt demonstrationes Blasii de Parma super Theorica

⁸⁹¹ Very briefly and inadequately described in *Bibliotheca Manuscripta Ad S. Marci Venetiarum*, Joseph Valentinelli, ed. (Venice: Biblioteca S. Marci, 1871), IV, 254. Valentinelli does helpfully note: "Opus Rogero Baconi male tributum, recte sub Alberti Magni nomine pluries editum est."

Planetarum compilate per ipsum in Gymnasio Patovino anno Domini 1448 dum illic publice doceret.” This is a commentary with set of mathematical demonstrations based on Blasius de Parma’s *Questiones circa tractatum proportionum magistri Thome Braduardini*.⁸⁹² The “per ipsum” in question appears grammatically to refer to Blasius. However, this is problematic, as Blasius de Parma died in 1416.

- III: 36r-37v: These are notes on problems of stellar dispositions that do not match Ptolemy’s model. For example, on 36r: “Rota octavae sphaerae autem non est ad calculariam ptolomei usque ad presentem.”

MS A 6. Bergamo, Biblioteca Civica Angelo Mai, MS MA 388 (1177; EII 2).

This is a beautifully bound fourteenth-century volume, covered in soft cream-colored leather. Written with a handsome hand on good paper and including colored division markers separating thoughts and paragraphs throughout, the scribe also included fairly ornate capitals. Considerable marginalia indicates no small amount of use.

Astrological works included:

- I: 1r-48r: “Incipit scriptum Alkabitii Introductionus ad iudicia Johannis [“Alberti” superscript over “Johannis”] de Saxonia ordinatum Anno Domini 1337.” Incipit of text on 1r with large rather ornate capital V. “Vir sapiens dominabatur astris.” This appears to be a commentary on Alcabitius, focusing on defending the notion that the stars incline, but do not compel, individuals toward actions. This is an extensive commentary dealing with various technical aspects of astrology, such as the influence of the zodiacal signs (14v-15v), the usefulness of predictions, allowing one to change behavior in order to avoid negative outcomes (15v-16r), the influence of the houses (17r-26r) the influence of each of the planets (26v-31r), (42r-44v). Ends with: “Explicit scriptum alkabito introductionus ad iudicia astronomiae ordinatur per ipsum Albertum de Saxonia anno domini 1337.”
- II: 50r-58v: “Speculum Alberti Magni ordinis praedicatorum liber modo de studendi in astrologia.” Ending: “Explicit Speculum Alberti in astrologia Deo gratias.”
- III: 59r-68v: An anonymous work with missing capitals. This work is not indexed in the archive’s catalog and has neither colophon nor closing statement. Highly abbreviated and faded, it appears to be a consideration of Ptolemy’s system of planetary motion in conjunction with Thabit’s corrections. Laden with technical language, this appears to be an individual consideration of these two authors, rather than a text written for broader consumption, and as such was likely written by the owner of the codex. The contents demonstrate in-depth knowledge of mathematical astronomy.
- IV: 70r-75v: “Incipit theorica planetarum magistri Johanni de Sacrobosco; de circulo et motu solis.” This is an incomplete copy of Sacrobosco’s *Theorica planetarum*.
- V: 76r-90r: “Incipit astrolabium principia.” This and Sacrobosco’s work appear to have been cut from another codex and inserted into this one.

⁸⁹² Blasius de Parma, *Questiones circa tractatum proportionum magistri Thome Braduardini*, edited by Joël Biard and Sabine Rommevaux (Paris: J. Vrin, 2005).

Ephemerides and other items useful for astrologers:

- I: 91r-112v: These leaves contain charts allowing one to calculate the position of stars, complete with well-done drawings representing each of the constellations and the major stars therein.
- II: 113r-121v: Almanacs for each of the planets, showing their movements through the various houses.
- III: 122r: "Tabula motionum lunae facta ad gradum zodiaci primi mobili anno salvati 1466."
- IV: 122v: "De stellis octavae sphaerae." A table that allows one to determine where stars appear in the night sky.
- V: 123r-130v: "loca stellarum fixarum longitudes earum et distantia ab equinoctionali cum gradu caelium medientur."
- VI: 136v-137r: These leaves contain a list of cities and their ruling signs, useful for casting forecasts for any of the indicated cities.
- VII: 138v-140r: This is a horoscope dated 1478, with notes.

Astronomical texts:

- I: 132r-133v: "Incipit thebit de quantitibus stellarum." This is a work on the apparent magnitudes and locations of various important stars, by Thabit ben Corath.
- II: 133v-135r: "De magnitudine corporum caelestium secundum campanum in sua theorica." A work on stellar magnitudes, based upon the work of Campanus de Novarra.
- III: 135v-136r: Incipit: "Altitudo poli et latitudo ab equatore est idem. Longitudo civitatum ab occidente et earum latitudo ab equatore." A list of 46 cities, mostly in Italy, though the list includes Cordoba, London, Paris, Carthage, Tunis, the island of Sardinia, Constantinople, Damascus, "Africa," and "Armenia."

Miscellaneous texts:

- I: 131r-132r: "Incipit foeliciter tractatus domini Alberti Magni de causis sompnorum." On dreams, which were thought to be a means of predicting future events.
- II: 136v: "Tabula de coloribus in eclipsum." This table lists the various observable colors during the stages of an eclipse.

MS A 7: Bern, Civic Bibliothek, MS 483.

Dated to 1497, this codex has worn wooden covers, with the remnants of leather covering the wood. The individual who compiled this codex was obviously an astrologer with a deep interest in astrometeorology and a thoroughgoing command of the mathematics and mechanics of astronomy. The texts are heavily abbreviated and the writing is somewhat careless, with many words struck out that have been written in the wrong place and other evidence of careless mistakes being present. According to Martin Germann of the Civic Bibliothek, this manuscript was once the property of, and was likely produced in, the Dominican convent of Bern at the end of the fifteenth century, coming into the

possession of the city library in 1674.⁸⁹³ A single hand seems to have been responsible for all of the text in this codex, including the notes. With the exception of the *Speculum*, each of the works contained herein is a summary of a longer work or reflections upon astrological or astronomical problems. The *Speculum* appears out of place in what could otherwise be a personal notebook. Perhaps it was included in order to ward off suspicions of heresy that might otherwise fall upon the owner of such a collection.

Astrological works included:

- I. 75r: This page of notes on Albumasar and Hermes deals with planetary motion and the significance of various celestial alignments.
- II. 75v-105v: This work provides no indication of author. However, this is a work on astrometeorology by Firminus de Beauval, the fourteenth-century astronomer from Amiens,⁸⁹⁴ complete with tables useful for calculating the motion of planets and houses, along with their combined effects.
- III. 112r-116v: "Capitulum de pluviis et aeris mutationibus." This is an anonymous tract on astrometeorology.
- IV. 116v-122r: "De revolutionibus annorum mundi et quomodo conveniatur dominus anni." This work is anonymous.
- V. 122r-129v: "Incipit tractatus de his quae accidunt planetis in semetipsis et quid accidat uni ab altero." Another anonymous tract about the interacting influences of planets.
- VI. 132r-138v: "Liber de nominibus librorum astronomiae tam demonstrativorum quam judicialium." This is the *Speculum*. The explicit is: "Explicit liber de notibus librorum astronomiae tamen demonstratio quod composuit fideliter Albertus Magnus ordinis praedicatorum apud scientiam qui libri sint congruentes fidei et qui non."

Astronomical works included:

- I. 1r-21v: "Tractatus astronomicus." Incipit: "Ad laudem cunctipotentis et novellorum clericorum." Contains information on calendar computations. "Tractatus de Sphaera eorum capitalis." This is a summary of Sacrobosco with extensive notes and diagrams in the margins. The bottom of 61r-62v has notes on the mechanics of a solar eclipse in the footer. (52r-61v).
- II. 130r-130v: "De stellis fixis verificatus secundum Albumasar." This is an anonymous discussion of the ways to determine the true position of fixed stars.
- III. 151r-153v: A set of notes on astronomy.
- IV. 154r-188r: "Ex commento Alkabuti." These leaves contain extensive notes on Alchabitius with corresponding diagrams in the margins.
- V. 189r-194v: "Tractatus de planetis cum figuris." This is a set of diagrams detailing the motions of each of the planets, with appended discussion of these motions.

⁸⁹³ Martin Germann, "Der Handschriftenbestand heute," *Die Burgerbibliothek Bern* (Bern: Verlag AG, 2002): 111-117, 113; personal conversation with the author on 24 April 2006.

⁸⁹⁴ Personal conversation with Herr Germann on 24 April 2006.

VI: 195v-197v: Labeled as “Algorisma,” This is actually an extract from Sacrobosco’s *De sphaera*, containing a discussion of the mathematics of planetary motion.

Works on natural philosophy:

- I: 23r-51v: A general commentary on Albert’s philosophy as a whole. Incipit: “Phylosophia dividitur in tres partes in logicam ethicam physicam.” 53v: “Explicit summula domini Alberti ordinis praedicatorum.”
- II: 63r-69r: “Incipit liber Alkindi de pluviis et ventorum mutatione.” There are notes in the margins indicating the specific influences on the weather derived from each of the twelve signs.
- III: 69r-70v: “Incipit epistola messahallahae in pluviis et ventis a magistro Drogone translata de Arabico in Latinum.”

Ephemerides and other items useful for an astrologer:

- I: 70v-75v: “Tractatus astronomiae cum figuris et tabulis.” This work contains multiple well-done diagrams showing planetary motion demonstrating changes of zodiacal houses. The tables include corrections for latitude and longitude of terrestrial viewer. (70v-75v)
- II: 105v-111v: These are carelessly written notes on the motions of the planets and the effects thereof on terrestrial weather patterns, including charts showing the meteorological effects of planetary conjunctions and a more detailed analysis of the effects of planetary motion in relation to zodiacal signs and houses.
- III: 140r-150v: “Tabulae horarum inaequalium diei artificialis ad medium octavi climatus et latitudo est iuxta 43 05.”
- IV: 198v: A list of the longitude and latitude of various cities, such as Toledo, Oxford, Magdeburg, Carthage, Bologna, and “Armenia.”

MS A 8: Munich, Bavarian Staatsbibliothek, MS CLM 221.

This apparent presentation copy has a beautiful tooled leather cover with the remnants of gold inlay. According to a note on 223r, the scribe completed this codex in 1488. Five large brass buttons affixed front and back are apparently designed to protect the cover when the codex is placed on a hard surface. The brass cover clasps are still intact. A single scribe copied this text, appearing to value aesthetics over legibility. The ornately Gothic hand is supplemented with decorative capitals throughout, along with different colored inks used to set off each point and subheading. Small leather tabs present on the edge of folio leaves set off major chapter divisions of individual works contained in this codex.

Astrological works:

- I. 1r-222v: Incipit: “Omnia iudicia de accidentibus,” by John of Aeschedam. This text

covers everything one might need to know in order to make judgments about any given subject, alongside easy-to-read tables indicating the influences to be expected from almost any celestial combination imaginable. In short, this is an excellent textbook for the study of astrology, or a working guide for a practitioner. Explicit: “Completus est haec compilatio summa iudicalis de accidentibus mundi 18 die mensis decembris anno domini 1348. Explicit summa iudicalis optima de accidentibus mundi secundum Johannem de Eschenden professorem theologiae quondam socium aulae de Mentone in Oxoniensis. Scripta autem est et finita anno domini 1488 die vero 9 mensis augusti.” (1r-222v)

II. 223r-227v: “Speculum mathematicae venerabilis domini Alberti.”

III. 228r-228v: “Incipit libellus haly de proprietatibus lunae in qualibet domo.”

IV. 229r-240v: “Summa quinta libri anaglypharum [sic] de nativitatibus ex scripta Doctoris Magistri Nicolai fratris ordinis praedictoris de Dacia.” Anaglypharum is certainly correct, though its meaning is unclear. Perhaps “of things carved in bas relief,” from Lewis and Short’s “anaglyphus.” This work includes two horoscopes on 240r, dated 1488.

Ephemeris useful to an astrologer:

I: 241r-246v: “Tabula verae latitudinis lunae et saturni in orbe signorum ab ecliptica pro omni loco et tempore” This is the first heading, but in reality this is a set of complete tables for each of the seven planets.

Astronomical work:

I: 247r-249r: “Compositio instrumentorum eclipsum solis et lunae.”

MS A 9: Munich, Bavarian Staatsbibliothek, MS CLM 27.

This is a large, beautifully bound codex with the appearance of a prestige item. Bound in tooled leather and written in a handsome, humanist hand with ornate, colored capitals beginning each text. The inside front cover identifies this volume as: “Liber Doctoris Hartmanni Schedel de Nuremberga.”⁸⁹⁵ According to page six of the Staatsbibliothek catalog, ff 38-138 are in Schedel’s hand.

Astrological works:

⁸⁹⁵ This refers to the German humanist and physician, Hartmann Schedel, who died in 1514 and published his *Welt Chronik* in 1493. Schedl was a native of Nuremberg who studied at both the University of Leipzig, where he earned his M.A., and Padua, where he earned his doctorate in medicine in 1466. Though a physician, Schedl had a particular interests in Greek, nourished at Padua by Demetrios Chalkondydes (1424-1511). For a consideration of Schedl’s life, as well as his *Welt Chronik*, see Elisabeth Rücker, *Hartmann Schedels Weltchronik, das größte Buchunternehmen der Dürerzeit* (Munich: Verlag, 1988).

- I: 55r-55v: An excerpt of the *Speculum*, in Schedel's hand. So little of the work has been copied, that we might be left to wonder why anyone would bother. Fortunately, Schedel provided us with an explanation in a colophon: "Albertus Magnus in libro suo de Recapitulatione omni librorum Astronomiae sequentia laude digna scribit de hiis duobus libris messahallah sequentibus eorum utilitatem ostentans." This is followed in red by "Lege foeliciter." Apparently, this excerpt was included merely to provide support for the use of Massahallah's texts, which follow this excerpt.
- II: 56r-58r: "Liber duodecim capitulorum Messahallach incipit foeliciter." Explicit: "Finivit liber Messahallach de iudiciis astrorum."
- III: 59r-68r. "Liber messahallah de revolutione anni."
- IV: 69r-70v: "Tractatus de modo compositionis almanach." Anonymous.
- V: 71r-74v: "Liber ymaginum thebit."
- VI: 112v: This is a collection of poorly organized notes about understanding celestial influence on the affairs of men.
- VII: 191v-206v: "Canones tabularum regis alfonsis." Written in a sloppy and hurried hand, this is a user's guide to the Alfonsine tables, followed by the tables in question beginning on 194r: "Canones tabularum regis Alphonsi collecti" The appears to be in a fourteenth-century hand, written on paper that seems soiled from much use. This text shows signs of having been cut out of a different codex for insertion here. This is the only portion of the codex not in Schedel's hand.
- VIII: 209r-213r: Schedel's hand picks ups again. "Coniunctio planetarum sole in 12 signis." Discusses the terrestrial effects of celestial conjunctions. For example, on 209r: "Saturnus in ariete sub radiis facit pluvias in hominibus autem facit infirmitates ex reumate frigidus." This goes on for several leaves, describing in each case the effects of celestial influence on the weather, then upon human health. It should be noted that none of the descriptive analyses provide any indication of effects on areas other than those related directly to health. These appear to be the notes of a physician interested in the weather.

Astronomical works:

- I: 7r-16r: Incipit: "Universis bonarum artium studiosis Ioannes de Montereio." This work in a sixteenth-century hand considers competing systems of epicycles.
- II: 17r-37v: "Theoricae novae planetarum Georgii Purbachii Astronomii celebratissimi." Purbach's work begins with a beautiful, ornate capital, and is illustrated throughout in color. The text discusses planetary motion, stationary and retrograde positions, aspects of rays, and conjunctions.
- III. This is an unusual item to appear in a list of astronomical works. It is a personal letter pasted between 77v-78r. It is, however, on a subject related to astronomy. "H. Schedelii epistola ad Georium Napurg in Reichenbach" is written on the back of the letter. Folio 77v has a highly abbreviated draft version of the complete letter, beginning on 78r: "Salutem plurimum optet. Ab eo tempore in quo a Nuremberga descessit." Schedel provides the reason for his letter: "de instrumento astronomico

Turketi appellati mittendo quem intellexi. Commune est proverbium/ Remota ab oculis/ procul a lumine cordis. Verum cum sciam vos esse amatorem astronomiae . . .” The letter then goes on to briefly discuss the usages of a Turketus, which is an instrument designed to measure the motion of the spheres. Schedel also promises to forward details of its construction. This letter is dated: “Ex Nurembera anno domini 1499 die 6 monatis Augusti.” Therefore, Schedel wrote this letter after the composition of the codex as a whole. The letter is signed: “Hartmannus Schedl legis et utrumque medicinae doctor.”

IV: 79r-96r: Incipit: “Astrolabium facere cum volueris.” The text is missing the diagrams of an astrolabe that are promised at the bottom of 81r, presumably meant for 81v, which is left blank. Overall, this text has a unfinished look, as 87v also has a blank space left for diagrams promised in the text.

V: 97r-99r: “Compositio astrolabii brevis et clara.”

VI: 100r-111v: “Canones utilitatum astrolabi.” This work complements the two previous texts on astrolabe construction.

VII: 113r-127v: “Compositio sphaerae solidae cum utilitatibus.” This is on constructing a sphere showing the heavens.

VIII: 129r-130v. “Haec sunt figurae sphaerae solidae secundum ordinem.” These leaves contain very detailed diagrams of a celestial globe, including a drawing of how to construct an azimuth indicator for the sphere, used to determine latitude, pasted onto 129r.

IX: 132r-136r: Incipit: “Signis voluerit componere Turketus.” This explains how to construct a Turketus.

Ephemerides and other :

I: 38r-53v: A collection of well-done charts in Schedel’s hand.

II: 76r: A table showing the movement of the seven planets in relation to the twelve houses.

III: 137v: This leaf has two horoscopes, dated 11 March 1450.

IV: 138r. This leaf contains a chart labeled: “Radicii medii motui planetarum anno 1444.” This chart lists each of the seven planets with information on their motion.

V: 138v-191r: “Tabulae astronomice illustrissimi Regis Castelle Incipiunt.” Explicit: “finitae per Nicolaum Dotnow anno domini 1396 in oppido Bernensi [Bern].”

MS A 10: Vatican City, Vatican Library, MS Palitani Latini 1445.

A late fourteenth or early fifteenth-century codex copied in a very poor and sloppy hand, with many mistakes are apparent throughout. These range from minor to major. Lines are transposed with one another or left out, the names of some sources are omitted, and words are copied incorrectly. The present binding appears to have been done in the seventeenth century.

Astrological texts:

- I: 1v-3v: Labeled simply “Albumasar,” this is an incomplete copy of Albumasar’s *Flores*. The portion included contains tables on 2v-4r useful for casting determinations on tasks ranging from when “emere possessiones,” “Ambulare,” “Navigare,” or “Seminare.”
- II: 4r-9r: Haly’s *Practica*.
- III: 10r-145v: “Compiliatio in Astrologia,” by “Leopoldus ducatus Astrie filius.”⁸⁹⁶
Incipit: “Gloriosus Deus et sublimis qui omnia creavit.” This work contains comprehensive information on the practical aspects of casting various astrological determinations.
- IV: 147r-154r: “Incipit tractatus de significationibus signorum firmamenti astrorum revolutionibus annorum.” This anonymous text makes the same argument that Albert does in his *Speculum*: that knowledge of astrological judgments can be used to improve one’s life in various ways.
- V: 154r-160r: “Sequentur aphorisma Almonisoris.”
- VI: 160v-183r: “100 Flores domini Hermetis.”
- VII: 183v-186v. “40 precepta Zael.”
- VIII: 187r-197r: “Sequentur 121 Considerationes.” This is the “Considerationes” of Guido Bonatus de Forolivio.⁸⁹⁷ Incipit: “Tres sunt motus ad movendum hominem ad interrogandum.”
- IX: 197v-209v: “Incipit Liber Alberti Magni de duabus sapientiis aut de recapitulationibus omnium librorum astronomiae.”
- X: 210r-273v: This anonymous tract defends natural magic of all sorts and includes tables indicating precisely when to construct images in order to obtain a variety of results. The author also discusses illicit forms of magic, which obtain results through appeal to demons (216r-217v), as well as how to recognize and avoid such forms of magic. For this reason, this text has much in common with the *Speculum astronomiae*, doing for magic what Albert was doing for astrology. I include this work under the heading of astrological works due to the lengthy discussion of image magic that is included, dependant as that subject is upon astrology.

Ephemerides and other items useful to an astrolger:

- I: 274r-296v: Numerous astrological charts, designed specifically to assist in the creation of astrological images.

⁸⁹⁶ Leopold of Austria was an “astronomer and meteorologist” who flourished in the second half of the thirteenth century. According to George Sarton, Leopold was a poor theorist whose greatest influence was through the sixth book of this *Compilatio*, devoted to astro-meteorology. It was due to this influence that he was most often quoted and printed twice, in 1489 and 1520. See Sarton, II, 996.

⁸⁹⁷ This text represents a technical guide, explaining the different elements of a horoscope, from the influence of the fixed stars to the effects of various house/planet combinations. Guido Bonatus was a famed Italian astrologer born in Tuscany. In 1223 he was in Ravenna and Bologna. Perhaps the peak of his career was his term as court astrologer to Guido de Montefeltro, count of Urbino (d. 1298). Guido Bonatus died in 1297 while visiting Paris. Guido was, in the words of George Sarton “the foremost defender of . . . extreme astrology, without compromise,” Dante placed him in the eighth circle of Hell, and Pico singled him out in his *Disputationes* for contempt. However, much of this seems to be based on Guido’s much longer work, the *Liber Astronomicus*, written sometime after 1261. The shorter work found here defends astrology in conjunction with an affirmation of the freedom of the human will. See Sarton, II, 988-989.

II. 297r: An undated natal chart for an unnamed individual.

MS A 11: London, Institute of Electrical Engineers, MS Thompson Collection 5.

According to the inside front cover, this pocket-sized volume was bound in Venice in 1517. Only two works are contained in this slender volume: the “*Speculum astronomicorum: de Libris licitis et illicitis*” and Thabit’s “*Liber imaginum astronomicorum*.”

I. 1r-43r: “*Speculum astronomicorum: de Libris licitis et illicitis*.”

II. 43v-54r: “*Liber imaginum astronomicorum*.”

MS A 12: Cambridge, Trinity College, MS 1185 0.3.13.⁸⁹⁸

The title on the spine of this sixteenth-century volume is quite appropriate: “*Manu de Astronomia*.” This codex would have been of great value to a practitioner of astrology. The works included, along with the tables, would have allowed an expert to perform a variety of astrological judgments without reference to other codices.

Cover page: “*Alberti Magni Speculum*”

Astrological works:

I. 1r-7v: “*Speculum Alberti Magni*.”

II. 80v-97v: “*Introductorius alcabitii de inditiis astrorum interpretatus a Iohani ispalensi*.”

III. 98r-104r: “*Tractatus messeallach de revolutione annorum mundi*.”

IV. 104r-113r: “*Eiusdem [Messehalla] de interrogationibus*.”

V. 113v-116r: “*Alius liber eiusdem de eodem*.” Book three of Massahallah’s *Tres libri*.

VI. 116r-118r: “*De pluviis secundum indos*.” On astrometeorology.

VII. 118r: “*Iuditium messeallach*.”

VIII. 118v-120r: “*Epistola messeallach de 12 coniunctionibus*.”

IX. 120v-123r: “*Liber alcoali de nativitatibus*.”

X. 123r-132v: “*Liber qui dicitur flores albumasar*.”

XI. 132v-146r: “*Haly in electionibus horarum*.”

XII. 146v-168r: “*Liber zebel de interrogationibus*.”

XIII. 168r-173r: “*Liber introductorius zael [that is, Zahel] philosophi*.”

XIV. 173v-179v: “*Liber eiusdem [Zahel] electionibus*.”

XV. 180r-185v: “*Liber eiusdem [Zahel] de eo quia non est in 12 signis de electionibus*.”

XVI. 185v-188v: “*Liber capitulorum mansor astrologi*.”

XVII. 188v-189v: “*Liber de significationibus planetarum*.”

Astronomical works:

I. 58r-64v: “*Iohannis Sacroboscus de Sphaera tractatus*.”

II. 65r-74r: “*Theorica de motibus planetarum*.”

⁸⁹⁸ Detailed in Montague Rhodes James, *The Western Manuscripts in the Library of Trinity College, Cambridge* (Cambridge: Cambridge University Press, 1902), III, 195-197.

Ephemerides:

- I. 7v-10v: "Canones tabularum eclipsium quas composuit Abraam Iudeus salmanticensis."
- II. 10v-21r: "Canones super tabulas illustris regis Alfonsi." The scribe dates this text to 1461.
- III. 21r- 26r: "Canones tabularum Iacobi iudei que aliter vocantur poel." Explicit provides a date of composition. "Finis Canonum Poellis. Tabularum quarum Radix fuit annus a nativitate nostri Salvatoris 1360."
- IV. 26r-56v: "Tabulae differentiarum unius regni ad aliud et nomina regium cuiuslibet esse cognite et sunt radices dierum cuiuslibet nominate in sequentibus tabulis posite." This text contains extensive, detailed tables that would have been useful for determining the movements of the Sun, Mercury, Venus and the Moon in relation to the minute and hour of any given day. This work has a prefatory chart providing natal information on various great rulers, from Nebuchanedzer to Diocletian. This would allow one to cast the charts of various great kings, either for practice or as a historical exercise.
- V. 74v-80r: "Tabularum resolutarum canones."
- VI. 191r-193r. These leaves contain a number of detailed diagrams illustrating celestial motion.

MS A 13: Oxford, Bodleian, MS Digby 81.

This is an odd volume. On the one hand, it contains works of mathematical astronomy (1,2,5) but on the other, it contains a religious chronicle and a prophetic text.

Astronomical works:

- I. Sacrobosco's *de Sphaera*
- II. *Compotus manualis*. Incipit: "Compotus iste dividitur in quinque partes" Explicit: "Compotus manualis secundam usum cantabregie." By John de Marisco. I have been unable to identify this author. However, there was a de Marisco family of Norman lineage who were prominent in fourteenth-century Stafford, England. One John de Marisco held an MA from an unspecified university and acted as archdeacon of Stafford from 1353-1356.⁸⁹⁹

Mathematical works:

- I. An anonymous *Arbor Numeralis*.
- II. An anonymous *Versus Memoriales*.

Miscellaneous texts:

- I. Thomae de Novo. *Commentarium*. This is a biblical commentary.

⁸⁹⁹ John Le Neve, *Fasti Ecclesiae Anglicanae 1300-1541* (London: Athlone Press, 1965), X, 18-20.

- II. Thomas de Novo's *Commentarius super librum Dionysii*.
- III. *Tabula chronologica ab anno Domino I usque ad 1256 abbatibus de Havistock*
- IV. John of Stratford, Archbishop of Canterbury (1333-1348): *Constitutiones domini Johannis de Stratford*.
- VI. Anonymous: Incipit: *Sompniale Danielis prophete*

Astological works:

- I. *Speculum Astronomiae*, included anonymously.

Ephemeris:

- I. The horoscope of one Christopher Watson who is identified as 27 years of age in 1573.

MS A 14: Oxford, Bodleian, MS Digby 228.

This codex, as a whole, seems to have been produced by an astrologer for personal use. It contains works on the theoretical parts of the science, such as Sacrobosco's "De sphaera," but also numerous works that would be of interest only to an astrologer.

Astrological codices:

- I. "Incipit quidam tractatus de 7 planetis et 12 signis." Incipit: "In principio creavit Deus caelum et terram. In primo ordinavit 12 zodiaci circuli signa."
- II. "Alexandri de villa dei massa compoti"
- III. Haly's commentary on pseudo Ptolemy's *Centiloquium*
- IV. Massahalla. "liber secretorum astronomiae."
- V "Tractatus de 28 mansionibus lunae."
- VI. "Introductio, sive canon, in Almanach Protacii. "
- VII. Albumasar's *Flores*.
- VIII. *Liber morum de regimine dominorum [de] secreta secretorum ab Aristotle ad petitionem Alexandri imperatoris*.
- IX. *Alfragani scientia astrorum et radicum motuum planetarum interpretata ab Johanne Hispalensis*
- X. *Liber Lunae*
- XI. *Regulae de responsis astrolicis per literas alphabeti Hebraici calculandis*
- XII. *Tractatus de Virtutibus septem planetarum*
- XIII. Messehalla- *Super Significatione Planetarum et Plagis Terrae*
- XIV. 76r-79v: *Speculum astronomiae*. In the upper margin a contemporary fourteenth-century hand has written: "Tractatus magistri Phillipi Cancellarii Parisiensis de libris astronomiae qui tenendi sunt secundum integritatem fidei catholice et qui non." This is the earliest attribution to Philip the Chancellor of Paris, and one of two that may be found at Oxford. The third is to be found at Milan. It is possible that this was an Oxford tradition, but it is impossible to discern why it developed. There is a superscript over the text, partially obscured by a missing corner of the page, but it states: "de libris licit legere et non" on 76r. Bagliani asserts that this

copy of the *Speculum* lacks a title, apparently missing this superscripted label.⁹⁰⁰

- XV. *De Signatione puerorum in qua die nascuntur.*

Astronomical works:

- I. *Glossa brevis super Sacrobosco de Sphaera*
- II. *Brevia de quatuor climatibus mundi et de septem planetis*
- III. *Galfridi de Meldis Tractatus de Stellis cometis*
- IV. *Tabulae duae calendares*
- V. *Johannis de Lineriis: Tractatus de Utilitatibus equatarii planetarum*
- VI. *Thomas Bradwardine's Proportiones Motuum*
- VII. *Sacrobosco's De Sphaera*
- IX. *An anonymous commentary on Sacrobosco.*

Natural philosophy work:

- I. *Grosseteste's Modus prolixo et bono*

Ephemeris:

- I. *Tabulae pro planetarum motibus*

MS A 15: Erfurt, Wissenschaftliche Bibliothek der Stadt, MS Amplona, QU 348.

This fourteenth-century codex is almost entirely astrological and mathematical in nature. There is one possible reference to medicine in a marginal note within the *Speculum* that may have been made by a physician. Judging by the appearance of the script, a single scribe copied this volume, dating his work to May of 1393.

Astrological works:

- I. 4v-7r: "Si fuerat canonum simetrum magnitudine."
- II. 13r-22v: "Liber de proportione" by Thomas Bradwardine. On 22v: "Explicit proportiones edite a reverende doctore sacrae theologiae Bragberdino anglico."
- III. 54r-87r: "Incipit astronomia Alkabiti ad intellegendum quadripartum ptolomei." Explicit: "finis est astronomia Alkabiti 1393." This is Alcabitius' commentary on the *Quadripartum*, perhaps better known as the *Almagest*, of Ptolemy.
- IV. 90r- 110r: "Alphraganus." This, superscripted in the header of the text, refers to the author, known in the West as Alfarangi. The title appears in the incipit: "Liber triginta differenciarum."

⁹⁰⁰ Bagliani, 36.

V. 110v-112r: “Incipit thebit de circulis spherorum et mundi totalis valde utilis ad habendam ymaginacionem introductoriam in astronomiam.” This work by Thabit bin Corath is one that I would normally classify as one of mathematical astronomy, since it involves a discussion of epicycles and the movements of planets, divorced from the application of such knowledge to astrological forecasting. However, the scribe seems to have perceived this text as useful primarily in the construction of astrological images. Furthermore, he carefully noted pertinent astrological data relating to the precise moment of his completion of this text, revealing a keen interest in astrology. See 112v: “Thebit Benkorath compilatus Erphordie in archa finitus 1393 23 die maii sole in 10 gradu geminorum et luna in 3 scorpionis.” Since I am most interested in the way end readers approached the texts I am studying, I have decided to include this among astrological works, as it seems to have been used primarily by this scribe as grist for his astrological work.

VI. 112r-114r: Thabit’s “De imaginibus.”

VII. 114v-125v: “Incipit liber Alberti Magni episcopi Ratisponensis de libris mathimatice licitis et illicitis Erphardi conscriptus.” Marginal note at tope of 115r: “Scientia astronomie non est proscripta auctoritate medicinae dixit haly auctore yppocrate.” This suggests that a physician used this work, but is hardly conclusive. Note the explicit: “Finitus est Erphardie (Erfurt) liber Alberti de libris mathematice licitis et illicitis 1393 die 29 mensis maii luna in capricorno et sole in capricorno et sole in geminis.” Not only does the scribe provide the same sort of intriguing astrological data as he did upon completion of Thabit’s “De sphaeribus,” but he also records that he completed this text only six days after that other work, which says something about his commitment.

VIII. “De diebus infelicissimis anni.” (136r-142v)

Astronomy work:

I. 114r-114v: “Incipit Thebit de equatoribus.” Though I have decided to include this short work as an astronomical text, due to the absence of astrological information it contains, as well as an absence of evidence that the scribe or readers of the codex valued it as a work providing data for astrological work, it is worth noting that this text follows Thabit’s “De imaginibus” as well as his “De sphaeribus,” which seems to have been used primarily for its application to astrological work.

Natural philosophy works:

- I. 1r-4v: "Tractatus Iordani de ponderibus."
- II. 22v-24v: Notes on natural philosophy and logic.
- III. 25r-38r: Incipit: "disputatio ex argumentis." This work is "de intentionibus et remissionibus motuum et mutationum," according to 25r.
- IV. 39r-45v: Incipit: "Una medietas scribitur sic $\frac{1}{2}$ et una tertia." This is about mathematical proportions, including the application of mathematics to astronomy.
- V. 46v-53v: This appears to be a work on the quadrant, entitled simply "Quadrans," by one Robert, bishop of England. Incipit: "Geometrie duae sunt partes theorica et practica." Explicit on 53v: "Per dictum dabit capacitatem. explicit quadrans Rubert Anglici." This seems to refer to Robert, bishop of Lincoln.

MS A 16: Florence, Biblioteca Medicea Laurenziana, MS Ashburnham 210.

A rather fancy codex on vellum, with elaborate colored capitals and other artwork throughout, it does not appear to have been copied for regular use. In fact, it shows no sign of any sort of use. According to the inside front cover, and a colophon on 159v, a single scribe copied this volume in 1401: "Arnoldi Suiedis de Ibesalia 1401."

Works on astrology:

- I. "Nicole Oresme questio disputata generatur astrologiae indicis."
- II. "Quodlibeta Oresme."
- III. "Henricus de Haffia tractatus indicationibus planetarum."
- IV. "Oresme contra astrologos."
- V. "De commensurabilitate motuum caelestium." Oresme
- VI. "Algorismus proportionum sunt principes laboriose se occupantes veram astrologiam Oresme."
- VII. 178r-183v: "Speculum Alberti." This title is in a different hand than that of the scribe who copied it, though it appears to be in a contemporaneous hand.

Works on natural philosophy:

- I. "Henricus de Haffia de reductione effectum in suas causas."
- II. "De configurationibus qualitatum Oresme."
- III. "Henricus de Haffia de magnetem."
- IV. "Oresme monetarum de mutatione"
- V. "De ductu aquarum." Anonymous.
- VI. "De habitudine causarum et influxu nature Henricus de Haffia."

MS A 17: Milan, Biblioteca Ambrosiana, MS I 65 Inf.

I examined this fifteenth-century manuscript through a microfilm copy housed within the Ambrosiana collection at the University of Notre Dame. Inclusion of this codex within category A, for astrologers, required a good deal of consideration. According to the explicit of the *Speculum*, Peter the Surgeon of Cordoba copied this text in 1477.⁹⁰¹ However, the other texts included within the codex are thoroughly astrological in nature, with no marginal notes that might indicate any use in a medical capacity. Nancy Siraisi has demonstrated that physicians often combined astrological forecasting with their medical career,⁹⁰² while not necessarily forsaking medicine for astrology. However, by the sixteenth century some physicians did in fact opt for full-time careers as astrologers.⁹⁰³ By the late fifteenth century, when Peter of Cordoba copied this codex for his patron, Jacob,⁹⁰⁴ surgeons were well-educated professionals who regularly wrote technical treatises in Latin, displaying deep knowledge about the technical aspects of their trade, such as astrology.⁹⁰⁵ But in the absence of additional evidence beyond knowledge that the copyist of this text was a surgeon, I am unprepared to assume that he used this copy of the *Speculum* to assist him in his medical profession. This volume contains four astrological texts, including the *Speculum*.

Astrological works contained in this volume:

- I. 1r-68r: "Zael israelite seu arabi, liber Introductio Iudicorium, seu Introductio ad Scientiam Astronomiae."
- II. 68v-81v: The author, is identified in the explicit as "Zael Israelite," and the work is "Liber de Electionibus."
- III. 82r- 94v: "Albertus Magnus, seu Philippus, magister et cancellarium parisiensi, 1477."
- IV. 95r-122v: "De qualitate lunae et eius effectibus." Anonymous.

Manuscripts in Category B:

MS B 1: Erfurt, Wissenschaftliche Bibliothek der stadt, MS Amplona, QU 349.

This is a late fourteenth or early fifteenth-century codex with uncovered wooden front and back pieces. There is a serviceable leather clasp still attached, but nothing in the way

⁹⁰¹ Milan, Biblioteca Ambrosiana, MS I 65 Inf., 94v.

⁹⁰² Nancy Siraisi, *Medieval and Early Renaissance Medicine*, 68.

⁹⁰³ Nostradamus is an example of this. See Pierre Brind 'Amour, 430-435.

⁹⁰⁴ Milan, Biblioteca Ambrosiana, MS I 65 Inf., 94v. This information is contained in the explicit: "Explicit liber seu speculum alberti magni de secretis librorum astronomie aprobandis vel reprobando laus deo amen petrus domini iacobi de corduba chirurgicus exscripit anno m cccc lxxvii." There seems to be no further information available on either Peter the Surgeon of Cordoba or his lord, Jacob.

⁹⁰⁵ Siraisi, *Medieval and Renaissance Medicine*, 153-164.

of ornamentation. All 172 folio leaves are written in the same hand. Several of the texts are excerpts of larger works, and the odd choices make one think that this rather plain codex represents a personal notebook.

Astrological works:

- I. 11r-18v: "Multiplicis philosophie variis radiis illustrato domino Roberto de Bardis de Florencia Glacunensis ecclesie inclito diacono Io. de Lineriis Anbianensis diocesis astronomiae veritatis amator." Jean de Lignières⁹⁰⁶ discusses astronomy separated "rebus nigromaticiis" [11r] that can allow the cognescenti to predict the future through an analysis of celestial signs. The author takes Albert's position: observation of the heavens, if decoupled from superstitious practices, can allow one to gain knowledge about a likely future. My cursory examination of this manuscript cannot confirm that it was written in response to –or indeed with any knowledge of—the *Speculum*, but its inclusion in a codex containing the *Speculum*, in a hand that appears to have written both, is suggestive, especially in light of the common arguments.
- II. 17v-66r: Alkindi's "De radiis." This work is bound improperly. Beginning on 48v, the rest of the text is on: 66v, 66r, 16r, 17v, ending on 29r. "Explicit theorica artis magis. Explicit Alkindi de radiis stellis" on 29r.
- III. 34r-48v: Heading: "Tractatus quomodo vel quomodo non valent prognosticationes futurorum per cometas." Incipit: "Anno domini 1368 a vigilia Palmarum usque ad 3 septimanas Parisius visus fuit cometas."
- IV. 98r-108r: Heading [heavily faded]: "Liber de nominibus librorum astronomiae sive speculum domini alberti." Mid to late fifteenth-century hand. "Explicit liber de nominibus librorum astronomiae."
- V. 108r-111v: "Incipit Ptolomei libri almaghesti." This is an incomplete copy.
- VI. 121r-133v: Heading: "Tractatus iudiciorum in revolucionibus et eclipsibus." Incipit: "In laude Dei pii misericordissimi. Incipit pretiosum effectuum planetarum prestigium de secretis secretorum." This text contains a number of horoscopes coupled with detailed commentary of each explaining how to interpret them.
- VII. 133r-143r: Heading: "Tractatus practicans de nativitatibus." Incipit: "In nomine Dei pii et misericordissimi. Incipit practicans nativitatum presagium secundum astronomiae principia declarandum sub hac forma."
- VIII. 147r-150r: Heading: "Tractatus directori significatoris." Incipit: "Recipe tabulam planam, super cuius extremitatem."
- IX. 154v-157v: Incipit: "Exemplum proiectionis radiorum. Planetorum sint gradus sextiles." This is on the influences of planets upon one another.
- X. 157v-160v: Heading: "Quomodo fit directio significatoris per tabulas." Incipit "Cum volueris significatorem dirigere ad quemlibet."

Astronomical works:

⁹⁰⁶ Jean de Lignières (Johannes de Lineriis) formulated astronomical tables in Paris in 1321, which were known in Bologna from 1344. Thorndike, "Notes upon some Medieval Astronomical, Astrological and Mathematical Manuscripts at Florence, Milan, Bologna and Venice," 44.

- I. 1r-7r: "Declarationes canonum Iohannis de Lyneriis super tabulis eiusdem." A work intended to assist in locating the planets and analyzing their future movements.
- II. 7v-8r: Title at top of leaf: "Tractatus de latitudinibus planetarum." Incipit: "Theorica motuum latitudinis planetarum." "Explicit tractatus de latitudinibus planetarum."
- III. 9v: "De 8 sphaera." This is an excerpt, apparently taken from Thebit bin Qurrah's *De spheribus*.
- IV. 10r: This is a page of fragmentary astronomical notes.
- V. 30r-33v: "Planisphaerium Iordani." Incipit: "Planisphaera in quolibet polorum planum contingentem." This is the work of Jordanus Nemoranus, or Jordan of Saxony (c. 1177-1237). Jordan, who succeeded Dominic as master general of the Dominicans, was a skilled mathematician and astronomer and is reputed to have been the preacher who recruited Albert the Great to the Dominican order.⁹⁰⁷
- VI. 57r-67v: Campanus' "De sphaera," with diagrams and mathematical notes in the margins. This work is followed by two pages of notes and diagrams.
- VII. 67r-78v: Incipit: "Cordam arcus unius gradus per duas cordas" This is a compilation of notes and diagrams concerning celestial motions.
- VIII. 91v-95r: "Calendarium perpetuum." This text demonstrates how to make calculations for all important religious feasts for any period in the future. It is on vellum, and appears to have been taken from an older manuscript.
- IX. 96v-98v: Astronomical notes in a very careless hand.
- X. 111r-112v: Incipit: "Totius astrologiae speculationis radix." "Explicit tractatus de sphaera solida sive astrolabium sphericum anno domini 1303." These are diagrams for a planisphere.
- XI. 151v-153r: Heading: "Tractatus chylindri." Incipit: "Investigationibus silindri dispositionem qui dicitur horrologium viatorum."
- XII. 160r-162v: Heading: "Tractatus optimus de turchetus."⁹⁰⁸ An older vellum text, completed in 1284 according to the explicit, describing the construction and use of a Turchetus with diagrams.
- XIII. 163v-172r: Heading: "Incipit epilogus Mufini et operationes astrolabii Mesallae et aliorum quorundam." Incipit: "Nomina instrumentorum astrolabii sunt haec." This is on the construction and use of an astrolabe.

Ephemerides:

- I. 16r: This is a rough table, labeled, "tabula planetarum," with subheadings: "Lux solis," "lux saturni," etc., for each of the 7 planets, with the years on the left side (1320, 1340, 1360) in 20 year increments to the year 1420, constructed around great conjunctions.⁹⁰⁹

⁹⁰⁷ Gerard of Frechet, 188.

⁹⁰⁸ The Turchetus, or Turketus, is an instrument used for making astronomical observations.

⁹⁰⁹ A great conjunction is the conjunction of Jupiter and Saturn that occurs every twenty years, seen to signify great disturbances within religious communities and for rulers.

- II. 78r-90r “Compotus [sic] ecclesiasticus.” This computus was taken out of an older manuscript, late thirteenth or early fourteenth century. Written on vellum in faded ink, it provides information on computing celestial movements.

Miscellaneous works:

- I. 9r: “Carmen amatorum.” This is faded into near illegibility, but still recognizable as a love song, with what appears to be a system of musical notes.
- II. 10v: Incipit: “Viro venerabili et discreto domino officiali Tornacensi Iohannes curatus de Coulz salutem in Domino.” This is a highly abbreviated letter—or partial letter—to a superior from John, the curator of Coulz.

Medical works:

- I. 18r-22r: “Astronomia ypocratis.” Incipit: “Sapientissimus ypocras et medicus medicorum.” This is on medical astrology, with various marginal notes indicating extensive use.
- II. 56r-57v: Heading: “De flagellationibus.” Incipit: “De flagellationibus anno 1349 non completo mensis marcii die 12 in nocte” This work is on God’s punishment as made manifest in the Black Death. Explicit: “post factum est et sequitur huius figura celi.” The horoscope details the celestial conditions that brought on the plague.

Mathematical works:

- I. 23v-29v: “Algorismus proportionum.” This is a work on mathematics with various notes in the margins, including the working out of some rather complex mathematical problems.
- II. 48r-55r: Heading: “Tractatus de proportionibus.” Incipit: “Omnis proportio vel est communiter dicta.” “Explicit tractatus proportionibus motuum. Iohannis de Wasia.”
- III. 146r-146v: Two folio leaves of fractional computations with no explanatory information.

Natural philosophy work:

I. 56v: Heading: "De coloribus." Incipit: "Colorem lux."

MS B 2: London, British Library, MS Harley 2378.

The Harleian guide in the British Library lists this codex as a "Pharmaceutical book . . . written by various hands . . . partly in old English, partly in Latin." The spine of this volume, states: "Medical recipes etc." It appears to have been bound in the seventeenth century, but many of the works included are much older, such as the fragment of the *Speculum* that is a product of the fifteenth century. Dr. John Covell, a sixteenth-century master of Christ's Church, who was a doctor turned priest, identifies himself in the inside front cover as the compiler of this text.

Medical works:

- I. 1v-4r: Four folio leaves of handwritten medical notes, in English.
- II. 7v-8v: A guide to the mixing of "unguentem Alabaustri, nardi, pistici preciosi, quod Romani de Jerusalem deportabant, eo tempore quo Dominus noster Iesus Xpus Crucifixus fuit et vinctus."
- III. 8v-18r: "The book of Ypocras. Incipit: In this book he techyth for to know the planets, seknesse, lyf & Deth, and the times thereof."
- IV. 18v-21r: "De solsequiis, et aliis quibusdam herbis."
- V. 21r-36v: A modern hand identifies this as: "A note touching the Great Plague which almost destroyed Europe AD 1348."
- VI. 37r-41v: "For the Fyere of Helle." This is on a skin rash.
- VII. 41v-43r: On an herb known as "Gratia Dei."
- VIII. 43r-46v: "Unguentum Viride."
- IX. 46v-46r: "For man or Womman that is blisted with Wikkide Spirits; to do away the Ache, and abate the Swellyng."
- X. 47v-48r: "For the Elf-Cake." An herbal remedy.
- XI. 49v- 54v: "For the Fallyng Yael." This work has been purposely defaced.
- XII. 55v-70v: "For to maken a Drynke that men calle Dwale; to make a man slepen whylis men kerve him."
- XIII. 70r-92v: "For a man that spekethe in his sleepe."
- XIV. 92v-94v: "Unguentem album."
- XV. 94v-95v: "To make Grene Entrete[salve]."
- XVI. 95v: "For man or woman that hathe the perillouse coughe."
- XVII. 95r-104r: "For the cough that is calle the kynke."
- XVIII. 104r-106v: "For a woman that leteth hire Barne, for defaute of a man, and taketh evil there-through." This is apparently on abortion and the medical problems that can resort from a poorly-performed procedure.
- XIX. 106r-114v: Medicinal recipes, written in English and Latin, in various hands.
- XX. 115v-208v: "Antidotarius Nicholai," with marginal note: "Ego Nicholaus rogatus a quibusdam in Practica Medicinae studere volentibus."
- XXI. 208r-212r: "Diascoridis quid pro quo."

- XXII. 213v-221v: "Nomina Herbarum, alphabetico Ordine disposita, Latine et Anglice."
- XXIII. 221v-223v: A modern hand identifies this as: "Medicinal & Distillatory recipes, Latine et Anglice." A seventeenth-century hand labels this: "Modus conficiendi Aquam vite perfectissimam."
- XXIV. 223v-228r: "Orison, pur sane estranger."
- XXV. 229v-241r: "A collection of Medicynes that good Lechis have made & drawn out of thir Bookys, Galien, Asclepius, & Ipocras, for al maner sorys and wondys, cancrys, Gouts, Fefyrs, Flelouns, & for Sodeyn Sorys, and al maner Ivelys in the Bodye, within and withoute." The text contains a note that this is by Nicholaus Spaldyng.

Astrological works:

- I. 331v-332r: A fifteenth-century fragment of the *Speculum*, consisting only of the first chapter and the first 27 lines of the second chapter. There is no chapter division, and the text ends in mid-sentence with space beneath it for the continuation of another two lines. This gives the appearance that the scribe broke off with the intent to return to his task. This fragment would have been of little use to anyone interested in astrology, but may have provided a measure of insurance against those who might attack the owner's orthodoxy.

Works of natural philosophy:

- I. 325v-330r: A pseudo-Albertine work, the "Secretum herbarum et lapidarum." Foliated beginning with "169r," this work appears to be a late thirteenth or early fourteenth-century vellum manuscript.

Miscellaneous:

- I. 4v: Genealogical info on the Goodriks of Suffolk.
 II. 5r: A guide to drying black thread.

MS B 3. Oxford, Bodleian, MS Canonici Misc. 517.

Astrological works:

- I. *canones horoscopi instrumenti*
- II. Hermes Trismegestus. *Flores*
- III. Dorotheus. *de Luna et Mansionibus eiusdem*
- IV. Haly. *Regulae utiles in electionibus horarum*
- V. *Tractatus de proprietatibus lunae in signis duodecim circuli zodiaci*
- VI. Messahalla: *de abundantia et charastia rerum*
- VII. *Libellus de Scientiis Scientiae Astrorum a Johanne Hispano ex Arabico Versus in Latinum*

- VIII. Alcabitius: *Libellus de revolutione annorum et de significatione conjunctionis Planetarum*
- IX. *De Diebus faustis et infaustis* [On fortunate and unfortunate days]
- X. *Centoloquium Bethen*
- XI. Zahel. *Capitula de Luna et de judiciis*
- XII. Haly. *Libellus de impressionibus*
- XIII. *Liber de consuetudinibus*
- XIV. *Significatio verborum in judiciis*
- XV. Almansori. : *Libellus de signorum dispositione a Platone Tiburtino* [Plato of Tivoli] *Latine traductus*
- XVI. *Flores divini viri Hermetis Trismegisti, quos Stephanus de Messana de Secretis illius viri transtulit Manfredo regi Sicilae*
- XVII. *Capitulum Zahelis quando malus planeta signat bonum et prosperitatem*
- XVIII. *Expositiones septem planetarum per duodecim domos*
- XIX. *Tractatus Ptolomaei cum commento Haly metrice verso de aspectibus lunae ad planetas*
- XX. 52v-59v: Alberti Magni *speculum de nominibus librorum astrologiae*. "Incipit speculum alberti." "Finis Spectabili alberti."
- XXI. *Johannis Blanchini sive de Blanchiniis Tabulae praevis canonibus aliisque regulis astrologicae*

Astronomical work:

- I. Thabit's *liber de diametro terrae planetarumque*

Medical works:

- I. Arnald de Villa Nova. *Parva et generalis introductio ad judicia Astronomiae ad Medicum introducendum*
- II. *Libellus de Impressionibus Hippocratis*
- III. Ibn Ezra. *Significationes planetarum per domos in domos per Petrum de Abano Hispanum Latine versatus*: though this is the title as given, I find it highly doubtful that Peter d'Abano had any hand in the translation of this text into Latin, since there is no indication that he had any particular linguistic skills beyond Latin.⁹¹⁰ The work does concern the analysis of house divisions in a manner that would have been useful to physicians, so perhaps his name simply attached itself to the work due to his medical reputation, combined with his reputation for astrology.
- IV. *Scientia edita ab Edri philosopho astrologo et medico*

Natural philosophy works:

- I. Hermes Trismegestis. *Excerpta de Tonitribus*.
- II. *Tractatus de Sensibus interioribus in partes tres distributas*

Ephemerides:

⁹¹⁰ Vescovini, 19-40.

- I. *Tabulae mansionum et aequationum duodecim domorum secundum Davidum Cremonensem et Alphonsum regem cum canonibus*
 - II. The *Speculum* is followed immediately (60r) by tables useful for determining the ascendant signs.
- MS B 4:** Munich, Bavarian staatsbibliothek, MS CLM 267.

A handsome fourteenth-century codex on vellum, bound in finely-tooled leather with evidence of now missing clasps. This work once belonged to Hartmann Schedl, the Nuremberg physician who died in 1514 and owned so many of the other works that are now resting in Munich. On the bottom of folio 90r there is an interesting little cartoon of a man with short dark hair and rosy cheeks. Written above this is the statement: "The book of doctor Hartmann Schedel of Nuremburg."⁹¹¹ This certainly leads one to believe that this might be a crude self portrait of the volume's previous owner. The contents of the work are, almost in their entirety, those selections that would be of direct use to a physician.

Medical works:

- I. 2r-45v: "Versus Egidii (Aegidius) de urinis." This is a comprehensive medical treatise on the analysis of urine, with marginal notes throughout. The same cartoon of a man as is found on 90r is present at the bottom of 2r, inside a shield. This work looks as if it was taken from a slightly larger text and cut to fit this codex, as many of the notes have been truncated by the process of trimming the pages.
- II. 46r-48v: *Gulielmus Anglicus de urina non visa*.⁹¹² This work contains extensive marginal notes throughout, including a horoscope at the bottom of 48r.
- III. 48v-68r: "Richardus anglicus de signis aegritudinis" This is on the relationship between celestial influence and illness.
- IV. 68r-70v: "Incipiunt iudicia urinarum secundam magister Gualterum."
- V. 70v-83v: "Incipiunt contenta urinarum secundum magister Gualterum Agilon."
- VI. 84r-88r: "Alkindi tractatus de astronomia applicata ad principia medicinae."
- VII. 90r-91r: "Liber hippocratis de iudiciis aegritudinum secundam lunam."
- VIII. 102r-116r: "Practica fratris de modo curationis apoplexie." This is an anonymous work, but at the bottom of 116r, one finds this descriptive explanation: "Explicit practica fratris compilata de diversis auctoribus memoriae a quodam cardinale in curia."
- IX. 118r-131r: "De simplicibus medicinis." This is an anonymous pharmacological work.
- X. 131r-136v: "Incipiunt regulae urinarum."
- XI. 136v-144v: "Modus medendi." This is another pharmacological work.
- XII. 145r-147r: "Incipit flores dietarum magistri johanis de sancto paulo." This is an

⁹¹¹ Munich, Bavarian staatsbibliothek, MS CLM 267, f. 90r: "Liber doctoris hartmanni schedel de nuremberg."

⁹¹² This is the *De Urina non Visa*, written in Marseilles in 1219 by Guilielmus Anglicus (William the Englishman). This treatise, condemned to being burnt as a work of black magic by the Sorbonne in 1494, explained how a physician could assess the quality of a patient's urine at a distance, even though he had not observed it, through the use of astrological divination. In this way, physicians could consult upon cases even at a considerable remove. Thorndike, *HMES*, III, 214.

interesting work on the medical importance of a proper diet.

XIII. 147r-153v: "De aqua rosea et de aliis pulveribus necessariis ad modum medendi."

Astrological works:

I. 91r-94v: "Incipit liber fratris Alberti de recapitulatione omnium librorum astronomiae."

This is the *Speculum*. "Explicit dominus Albertus de defensione astrologiae."

II. 95r-101r: "Albumazar flores de electionibus."

Horoscope:

I. 1r-1v: A detailed horoscope lacking dates, but otherwise replete with data on celestial conditions and an analysis of the impact of those conditions.

Work on natural philosophy:

I. 88v-90r: "Incipit liber ignium a marco graeco descriptus."

Miscellaneous:

I. 117v-118v: "Iste liber vocatur in Greco Sulse Racena est secreta secretorum." This is the pseudo Aristotelian *Secreta Secretorum*. This work, written as an advice book from the Philosopher to his student, Alexander the Great, emphasizes the usefulness of astrology to rulers and was not uncommonly found bound into codices intended for astrologers.

MS B 5: Berlin Staatsbibliothek, Preussischer Kulturbesitz. MS Lat f. 192.

A fifteenth-century codex that is well-bound in leather, with two brass clasps, but lacking other ornamentation. The first thirty-two folio leaves are paper, with the other one hundred and ninety-six on vellum. This codex once belonged to the library of the imperial monastery of Saint Maximinus, according to 1r.

Medical works:

I. 72r-86r: "Liber prognosticonorum circa morbos et alia opuscula medica." These are anonymous tracts.

II. 87r-95v: "Tractatus physicus de secundis stellis magistri wilhelmi meil." Incipit: "Opusculum istud est de prognosticis aeris."

III. 127r-129r: "De impressionibus aeris tractatulus."

IV. 130r-139v: "Liber hermanni contracti de indicationibus cordis et rebus occultis"

V. 202v-205v: "Significator status infirmi sumitur a maiori parte ascendentis et eius

domini.” This work discusses the application of astrology to medical diagnoses.

VI. 208r-211v: “Tractatus de urina non visa Guillelmi Anglici.”

VII. 211r-213r: Incipit: “Bonum quidem michi videtur omnibus nobis astrorum peritie insudantibus antequam aliquid de motuum effectibus iudicemus.” “Hec de detectione defectus tabularum alfonsii sufficiant... ut ab erroris devio retraham hanc scientiam inquirentes. Explicit completum parisiis 21 die aprilis.” This is another work on the application of astrology to medicine.

Astrological works:

I. 18r-32r: “Liber Alfragani.” Incipit: “Capitulum primum de annis arabum et aliorum omnium et de nominibus mensium ipsorum et dierum eorum et de diversitate eorum ad invicem.”

II. 33r-70v: Incipit: “Cum plures sint homines qui scire desiderrant veritatem naturarum et secretorum corporum supercelestium et artem astronomie “Astronomia Raymundi.” This is Raymond Lull.

III. 86r-87r: “Incipiunt impressiones quorundam signorum quae sunt sub signis coelestibus.” This short tract is anonymous.

IV. 96r-96v: This appears to be a personal notebook containing selections on astrology. Explicit: “collecta ex libro magistri fratris nicolai ordinis praedicatorum.”

V. 97r-105v: “Incipiunt partes 12 domorum.” This is excerpted from Albumasar.

IV. 105r-110v: “Incipit quadripartus hermetis.” At the top of 107r is the rubric: “ymagi albumasar.” “Explicit capitulum de ascensionibus ymaginum 48 ceoli prime differencie tractatus sexti domini Albumasar.”

V. 110v-111r: “Incipit centiloquium hermetis.”

VI. 114v-119r: “Incipit commentarii halii super centiloquium ptolomei.”

VIII. 139v-140v : “Tractatus de gravitate et levitate annonae.” Incipit: “Ad honorem illius qui numerat multitudinem stellarum et omnibus eis nomina.”

IX. 140r-141v: Incipit: “Dixit thebit bin corach cum volueris operari de imaginibus.”

X. 141v-142r: Rubric: “Ymaginis Leopoldi de austria.”

XI. 143v-147r: “Speculum domini alberti magni episcopi ratisboni.”

XII. 164r-191r: Incipit: “Scito quod 12 sunt signa et ex ea 6 masculina.” “Explicit zael ben ezra.” In small superscript above this: “zahel israelito.” This is Zahel’s *De interrogationibus*.

XIII. 199r-200r: “De imaginibus.” This is Thebit b. Qurra’s work.

XIV. 207v-208r: “Capitula stellarum oblata regi magno sarracenorum alharam ab almansore astrologo filio abrahe iudei a platone tyburtino translata.” “Explicit breviloquium almansoris filii abrahe iudei. 1342. breser. Perfectus est liber capitulorum almansoris cum dei auxilio translatus de arabico in latinum a platone tyburtino. quem deus exaltet. in civitate barchiona. anno arabum. 530. 18. die mensis dialkiada sole in virgine 1.5. luna in ariete 15.16.” This is by the Arabic astronomer from Toledo, Almansor (fl. 1150), general known as the “Iudicia seu propositiones.”

Astronomical works:

- I. 1r-18r: "Theorica planetarum."
- II. 120v-121r: "Liber Almansoris." "Explicit compendium de opere astrorum in hoc mundo corruptibili quod Abraham tholetanus almansori Saracenorum regi obtulit."
- III. 129r-130r: "Sententia liconiensis et diffinitiva veritatis de natura cometarum." This is attributed to Robert Grosseteste, though this does not appear to be one of his works.
- IV. 152r-163r: "Incipiam autem a saturno eo quod superior est omnibus." 163r: "Explicit abraham avenerre." (Abraham Ibn Ezra). This work on mathematical astronomy lacks any references to astrology.
- V. 192r-197r: Incipit: "Quadrans est instrumentum continens quartam partem circuli et in multis practicis est idem cum astrolabio."

Miscellaneous works:

- I. 71r-72v: A table of contents.
- II. 121r-127v: "liber octo conclusionium perscrutatorum." Incipit: "Dixit perscrutataro Anno Christi 1325 in civitate eborum Angliae Anno filii regis edwardi 18 scribo vobis qui vultis de mirabilibus elementorum videre."
- III. 148v: Rubric: "Ex libro anaglyffarum" Incipit: "Ex libro anaglyffarum de scientiis exceptivis." Explicit: "Hec collecta sunt ex libro anaglyffarum fratris nicolai lundensis ordinis predicatorum et sic est finis." This is on forbidden forms of knowledge, such as necromancy. It appears to be primarily useful as a guide for what sort of works to avoid, which is similar in some respects to the *Speculum*.
- IV. 198r-198v: Incipit: "de temporum ratione domino iuvante." "Explicit quedam Ars numerandi ysidori secundum In libro ethimologiarum secundum signa manuum." This is Bede's "De temporum ratione."

Ephemerides:

- I. 148r-151r: "Tabula stellarum fixarum equatarum in nona sphaera anno domini 1347."
- II. 197v: "Tabula antiqui quadrantis."
- III. 215v-224v: "Tabula equationum domorum in climate quinto."

MS B 6: Berlin staatsbibliothek, MS lat f 246.

An attractive leather-bound volume with holes where now-absent metal fittings once

adorned the four corners and centerpiece, as well as where clasps once existed. Ludolphus de Borchtorpe, a physician at Brunswick who earned his MA from the University of Erfurt in 1445, copied this codex for personal use, completing it in 1479 at his alma mater.⁹¹³ A complete description of this codex is impracticable in the space available to me here: there are ninety-one complete astronomical and astrological texts included, along with excerpts of as many as three hundred others. Some of these excerpts are quite brief, consisting of no more than a paragraph or two. As such, I shall confine myself to listing only the most important of the complete works included.

Astrological works:

- I. 24r-32v: pseudo Ptolemy. "Centiloquium." This copy of the "Centiloquium" has Haly's commentary written around the main body of the text, similar to the form a biblical commentary would take.
- II. 75v-79v: "Incipit speculum philosophiae alberti episcopi ratisonensis." This is the *Speculum astronomiae*. Bagliani seems to doubt that this title was original to the manuscript, but the hand appears to be that of the copyist of the text.⁹¹⁴
- III. 240r-253v: "Liber introductorius in astronomiam et de interrogationibus eiusdem." Zahel.

Astronomical works:

- I. 2r-22r: "Questiones de sphaera materiale." Questions on Sacroboscus "Sphaera materialis."
- II. 32r-39v: "De astrolabia." Messahalla. A number of very well done diagrams of the heavens and on the construction of an astrolabe are included.
- III. 48r-53v: "Gerard Cremonensis theorica planetarum."
- IV. 61r-70r: "Tractatus novus de compositione et canonibus astrolabii stilo clariori editus."
- V. 87r-94v: "Demonstrationes geometricae in theorica planetarum. Blasius de Parma."

Ephemerides:

- I. 39r-46v: "Canones super tabulos toletanis Azarchel."
- II. 60v-61v: "Tabula prima ad inveniendum locum polis in anno cum motu octave spere."

⁹¹³ We know the identity of the copyist thanks to the note on 1r: "In presenti volumine continentur infrascripte materiae quas omnes ego Ludolph de Borchtorpes manu propria scripsi exceptis questionibus spere et richomathie Erfordie (Erfurt) Padue et in Brunswick." The rest of this information is thanks to the description of the codex inside the front cover. Prof. Dr. Ernst Zinner from the Universitätsbibliothek of Tübingen, completed this description 19 Feb 1958.

⁹¹⁴ Bagliani notes the title, but is clearly unconvinced. "Au f. 75va, dans la marge superieure, au-dessus du texte, une main (celle du copiste?) a ajoute le titre et l'attribution a Albert le Grand: *Incipit speculum philosophie alberti episcopi ratisonensis*." Bagliani, 11.

- III. 114r-121r: "Johannes Dankonis canones pro tabulis alphoncii regis castelle." This is a commentary on the Alfonsine tables.
 - IV. 122r-135r: "Tabulae illustrissimi principis regis alphoncii." These are the Alfonsine tables.
 - V. 135r-144r: "Tabulae Johannes de Lineriis."
- Miscellaneous:

- I. 206r-215v: An anonymous geographical work that may be an original work by Borchtorpe.⁹¹⁵
- II. 206r-216r: "Incipit tractatus Richmimachi id est de pugna numerorum ars pulcherrima." This is a work on music theory.
- III. 264v: This leaf has two very short works: "Invectiva contra astronugos [sic] et specialiter contra quendam rudem et praesumptuosum." "Iudicium cuiusdam ydeote de quo supra." These are attacks aimed at opponents of astrology.

Medical works:

- I. 103v-109v: A set of notes on medicine.
- II. 252v-253v: "Wilhelmus Marsiliensis de Anglia (Guillelmus Anglicus) De Urina non visa."
- III. 254r: "Tractatus de impressionibus aeris hippocratis."

The works I have listed represent a sampling of the major works contained within this text, with one major exception: I have included all selections relating to medicine. This is significant because, even in the cursory examination that I have provided, it is clear that astrological and astronomical works heavily outnumber medical texts. This is interesting in a codex compiled by a physician. We should also note the two brief, but biting, attacks on opponents of astrology included on 264v. These seem to be works original to Borchtorp.

MS B 7: Erfurt, Wissenschaftliche bibliothek der stadt MS Amplona QU 189.

This volume is well-bound in leather, though the covering has deteriorated over the years. This should not be a surprise, as this is one of the oldest surviving codices containing the *Speculum*, dating to the late thirteenth or early fourteenth century.

Medical works:

- I. 1r-24r: Incipit: "... ego stephanus Arnaldi vestrorum medicorum minimus –propter bonam communem in medicina studentium persequi librum de dietis ordinandis

⁹¹⁵ Arno Borst discusses this work in *Das Mittelalterliche Zahlenkampfspiel* (Heidelberg: Carl Winter, 1986), 289.

quem dietarium placuit nominare.” Stephan Arnaldi, or Arlandi, was a physician and translator who became the vice-chancellor of the University of Montpellier in 1319.⁹¹⁶

- II. 24r-25r: Aegidius. “Incipiunt versus egidi de iudiciis urinarum.” This is followed by a full column of medical notes.

Astrological works:

- I. 25r-40r: “Liber Albumazar de revolutionibus annorum.”

- II. 68r-70r: Rubric written in a different hand than the text: “de imaginibus astronomicis.” Incipit: “In nomine dei pii et misericordii dixit Aristotelis qui legit philosophiam.” This is excerpted from pseudo Aristotle’s *De imaginibus*.

- III. 70r-71r: Following the excerpt of pseudo Aristotle’s *De imaginibus*, on 70r, one finds this: “Albertus in suo speculo in quo dato capitulo de ymaginibus post opiniones falsas de ymaginibus recitatis.” There follows a long note filling most of the column outlining Albert’s position that “a method of images of the stars that eliminates those filthy things”⁹¹⁷ can be useful for improving one’s health and fortune, while presenting no danger to a Christian, for such images contain nothing of necromancy. It is clear that this late thirteenth or early fourteenth-century writer not only accepted Albert as the author of the *Speculum*, but used him as support for the use of images. To reinforce this, the author copies the section of the *Speculum* on images. As such, the *Speculum* exists as a highly fragmentary text in this codex—fragmentation that is the result of a very selective reading of the work. The compiler of this codex seems to have viewed the *Speculum* as primarily valuable for its defense of the use of astrological images.

- IV. 81v-85v: Incipit: “Signa aquarum et ventorum et tempestatum et serenitatum sic scripsimus.” This is on astrometerology.

Astronomical works:

- I. 71r-78r: “Incipit theorica planetarum.” Though not identified, this is by Gerard of Cremona.

- II. 78r-80r: These leaves contain a series of hastily-written notes on mathematical astronomy.

⁹¹⁶ Lynn Thorndike, “Vatican Latin Manuscripts in the History of Science and Medicine,” 13.1 (1929): 53-102, 89-90.

⁹¹⁷ Erfurt, Wissenschaftliche bibliothek der stadt MS Amplona QU 189, “modo ymaginum astrorum qui eliminat istas spurcitas.”

Natural philosophy works:

I.41v-67r: “Incipit liber primus mineralium qui est de lapidis editus a fratre Alberto Theutonico de ordine fratris praedicatorum.” This is Albert’s *De mineralibus*, a work that affirms his belief in the effectiveness of image magic, although Albert states that this is not the place to discuss the subject, as one must have knowledge of magic and astrology to understand and use such objects.⁹¹⁸

II. 67r-68r” “De coloribus et primo de Lazurio Lazurium fit multis modis.”

MS B 8: Oxford, MS Ashmolean 345.

A slender little volume of only eighty folio leaves, compiled in the fourteenth century.

Medical Works:

- I. Incipit: “Prognosticum Ypocratice quod dies mortis vel salutis ostendit.”
- II. “Dixit Ypocras medicorum optimus quod medicus primo aspiciat lunam.”
- III. “De cronicis diebus luna facit in nobis.” Galen
- IV. “De urina non visa.” William of England

Astrological works:

- I. “De subradiis planetarum.” Haly
- II. “Regula Ptolomaei ad sciendum utrum nativitas fuerit masculina aut femina.”
- III. The *Speculum*, though without attribution. (14v-21r)
- IV. “Prognosticatia Campani.”
- V. “De domibus planetarum.”
- VI. “De occultis Dorotheus.” A First century Greek astrologer from Sidon, primarily concerned in this work with elections and nativities. This work also deals with celestial effects on the human body, which is an important component of natal horoscopes. Such a work would have been useful for practicing physicians.
- VII. “De electionibus.” Dorotheus.
- VIII. “De electionibus per cursum lunae in divis signis.”
- IX. “De furatis et perditis.”
- X. “Albumasoris flores.”
- XI. “De regimine planetarum.”
- XII. “De signis in quibus dominatur.”
- XIII. “De effectu et efficace planetarum.” Bernard Sylvestris.

⁹¹⁸ Lynn Thorndike, *HMES*, II, 555-556; Albertus Magnus, *De Mineralibus*, vol. II, iii, 3: “Est autem principium in ipsa scientia omnia quaecunque fiunt a nature vel arte moveri a virtutibus coelestibus primo; et hic de natura non est dubium. In arte etiam constat, eo quod aliquid modo et non ante incitat cor hominum ad faciendum; et hoc esse non potest nisi virtus coelestis.”

- XIV. "Prognostica de Annona."
- XV. "Signa temporum."
- XVI. "Quid faces ardentes significant in caelo."
- XVII. "Supputationes Kalendarum."
- XVIII. "Prognostica secundum literas dominicales."
- XIX. "Supputationes per diem natalem Domini."
- XX. "Prognostica per ventum."
- XXI. "Propositio Tholomei de crisi."
- XXII. "Sequitur figura Ptolomei quam Haly commentator suus describit."
- XXIII. "Epistola de discretione martis."
- XXIV. "De puerorum nativitate."
- XXV. "De artibus cuius nativitatem noverimus."
- XXVI. "Excerpta ex Achyndene in prohemia." This appears to be by John Ashenden, the English astrologer who flourished between 1340 and 1370.
- XXVII. "Excerpta ex Ars brevis illuminati doctoris Raymond Lull." Printed in 1514.

Astronomical works:

- I. This is actually a collection of abstracts taken from Campanus, which would be useful for the construction of celestial charts and the analysis of celestial movements.
- II. "De colore eclipsis solaris."
- III. "De instrumento astrolabiae."
- IV. "De vero motu planetarum per instrumentum."
- V. "De spheris."

Natural philosophy works:

- I. Excerpts from Macrobius.
- II. "De sompnis."
- III. "Quid planetes agunt climatibus signorum."
- IV. "De significationibus tonitruum."
- V. "Ventos quatuor in cardinales dicimus."

MS B 9: Ballard MS 1: F.A. Countway Medical Library, Harvard.

Dated to 1370, this "manuscript" is little more than the vandalized remains of a long-gone codex. Consisting of ten folio leaves cut from a larger work, it nevertheless provides interesting hints as to its original intended purpose, despite much of the all-important context of this information that has been lost. At the end of the *Speculum*, there is a well done drawing of a nude male on 9r. Red lines to each part of the body note the location of "venas," indicating where one should phlebotomize a patient for a variety of illnesses. For example, for an "apostema oculorum" [abscess of the eyes] then one should bleed the patient from the "vena in frontem" located just above the bridge of the nose. There are no

references to astrology, instead just indicating where one should apply the lancet.

Category C. Codices useful to natural philosophers.

MS C 1: Vatican City, Biblioteca Apostolica, MS Borgh. 134.

A rather plain volume copied on vellum, containing five works of natural philosophy of a general nature, and one work pertinent to astrology, the *Speculum*.

Astrological work:

I. 224v-230v: The *Speculum*, without title or attribution.

Natural philosophy works:

I. 1r-36v: “De animalibus.” Albert the Great.

II. 37r-75r: “De generatione.” Albert the Great

III. 75v-84r: “Incipit liber artium de motu.” Anonymous.

IV. 84v-109r: “Liber de natura et origine divinae rerum.” Anonymous.

V. 110v-136r: “Incipit liber de natura locorum.”

VI. 160r-168r: “Liber de causis proprietatum.”

MS C 2: St. Gallen, Kantonsbibliothek, Vadianshe Sammlung, MS 412.

This volume belonged to Vadian, the sixteenth-century poet, physician, and importer of the Reformation to St. Gallen, Switzerland.⁹¹⁹ The codex as a whole has the appearance of a personal notebook. Most of the texts seem to be the work of an individual puzzling over different points of astronomy, with the addition of personally composed tables (compiled from Ptolemy and Alfarangi) to simplify astronomical observations. The only astrological sections of the volume are two ephemera contained within a body of tables that would have been useful for determining the celestial influences on the human body,⁹²⁰ and of course the *Speculum*.⁹²¹ It is interesting that this latter work takes up a relatively small portion of the codex, yet the spine bears the title: “Speculum astronomiae Alberti Magni.”

⁹¹⁹ Vadian died in 1551. Dr. Rudolf Gomper of the Kantonsbibliothek of St. Gallen discussed Vadian’s ownership of this volume with me on 28 April 2006.

⁹²⁰ These are circular devices on 102v and 104r, that allowed one to rotate the various paper wheels, superimposed one on another. The first would have allowed a physician to rapidly determine celestial influences in relation to an individual’s health, while the latter focuses upon celestial influence on psychological characteristics and other factors.

⁹²¹ Vadian was highly ambivalent toward astrology, at best, according to Dr. Gomper. We should not forget that the *Speculum* contains a bibliographic guide and other materials useful to the pursuit of astronomy.

Astrological work:

- I. 1r-10v: “Incipit Speculum Alberti Magni in quo distinguit libros astronomicos ponendo eorum titulos et continentias cum auctorum eorum notibus ut scilicet liciti ab illiciti discernetur et separantur nutu dei et veratis amore.”

Astronomical works:

- I. 18r-28r: “Tractatum de sphaera” This is a commentary on Sacrobosco.
- II. 31r-56r: Incipit: “Circulus eccentricus vel egredi cuspidis vel egredientis centri dividitur qui non habet centrum cum mundo.” One of nine anonymous works in this codex. This is an interesting piece, representing a comprehensive analysis of the motion of each of the seven planets. This analysis takes into account epicycles and motion eccentric to a terrestrial center, and is complete with diagrams to demonstrate the motion of each planet, as well as the eighth sphere, that of the fixed stars.
- III. 59r-62r: A collection of short tables as well as the mathematical formulae whereby one can determine where a planet might be on any given night, either at the time that the astronomer is completing his work, or for any day in the future.
- IV. 68v-75v: Incipit: “Compositurus novam quadrantem compositione meliori prioribus. Accipe tabulam planam.” This provides a detailed description of the mathematics and mechanics involved in determining a wide variety of celestial measurements with precision.
- V. 80r-93v: Incipit: “Scribitur primo posterium. In omnia scientia praeponitur quid nominis ut igitur facilius habeatur notitia astrolabii cum compositione eiusdem cognitione instrumentorum ad illud requisitorum et hic promittenda.” A text on the use of armillary tables, celestial diagrams, and other astronomical instruments.
- VI. 96r-108r: Incipit: “Pro brevi expositione terminorum notandum quod signorum celestium aliqua sunt domus essentielles planetarum.” This contains tables and devices that would be useful to an astronomer. At the bottom of 102v is a circular device that, when used in conjunction with a horoscope, could rapidly be used to determine what parts of the heavens bring about various maladies.

Natural philosophy work:

- I. 132r-137r: “Sequentur tractatus subtilis domini alberti de viribus lapidis magnetis.” This is a work on magnetism—the only text contained in this codex that does not deal with astronomy. It is also only one of three works in the codex clearly written by someone other than the scribe.

Ephemeris and other items useful for a study of the heavens:

- I. 93v-95v: A set of tables, labeled: “Nova nomina stellarum. Nomina vetera ymaginis stellarum.” These tables represent a list of 24 stars and the constellations within which they are found, as well as how to determine their locations from various terrestrial longitudes and latitudes.
- II. 104r: Vellum rather than paper, containing an intact central wheel. By turning the wheels an astrologer could easily find which sign combines with which celestial phenomenon to influence different human characteristics.
- III. Detached, but inserted between 105v and 106r is a wheel, with the hole for a center wheel, or wheels, which are now missing. There are labels present, such as “Saturnus primus oriens in die sabbathi.” This appears to be an aid for determining where a planet will be at given times in the future, useful for an astronomer or astrologer. However, this appears to have been designed for astrological forecasting, judging by cryptic notes on the back appearing to be for a natal horoscope.
- IV. A detached leaf is inserted between 107v and 108r, holding a table labeled: “Tabula longitudinum et latitudinum civitatum.” This leaf contains a list of this information for twenty cities, and an accompanying note at the bottom explaining how to work up the information for any cities not listed. On the back is a table listed “Per magno almanach compositione.” There are symbols for each of the planets and signs, with their names written below, as well as several astronomical phenomenon, such as “coiunctis,” sextilis,” and “oppositio.”

MS C 3: Bavarian, Staatsbibliothek, CLM 8001.

This handsome, late thirteenth-century codex, is a large 270 folio leaves of vellum bound between tooled leather covers. This volume contains a large collection of works by Albert, Thomas, Averroes, Alfarabi, Aegidius (Giles of Rome), and Isaac Israelita: most are on philosophy taken broadly. It appears that an effort has been made to group texts by author within this codex. It is likely that this was a library copy, perhaps for a university. This would explain why that the codex has only received light underlining, authors have tended to be grouped together, and why there is a rather complete subject index included.

Work on astrology:

- I. 144r: “Incipit epistola de aliquibus nominibus librorum astronomiae.” “Explicit liber de nominibus librorum astronomiae alberti magni.” Begins with: “De libris vero nigromanticis sine praeiudicio melioris sententiae videtur” This is chapter seventeen of the *Speculum*, providing a list of the different illicit forms of divination. It seems that the scribe may have included this bit of the *Speculum* to make the list available to those using the codex, presumably so that they would know to avoid those divinatory forms. Bagliani asserts that

this manuscript, perhaps the oldest surviving copy of the *Speculum*, bears no attribution to Albert.⁹²² As such, he speculates that the work circulated anonymously in the thirteenth century. There are two problems with this argument. First, and most importantly, he is mistaken about the manuscript's anonymous nature. The explicit clearly bears Albert's name. Secondly, even if the manuscript were anonymous, that would still tell us nothing: a single chapter existing without attribution would not constitute a tradition.

Works on natural philosophy:

- I. 1r-13r: "Incipit commentum Averrois supra librum Aristotelis de generatione et corruptione."
- II. 26r-27v: "Aegidius de diluviis sumptus de Thymeo Platonis."
- III. 37r-46r: "Incipiunt plurimum tractatum Alberti Magni." This superscript is in the hand of the scribe. The first of these texts is: "Incipit liber de motibus Alberti."
- IV. 46v-54v: "Incipit liber alberti de principiis motus processivi."
- V. 54v-75r: "Incipit liber alberti magni de sompno et vigilia."
- VI. 75r-84r: "Incipit liber primus de spiritu et respiratione." Has a note at the bottom of the leaf: "Incipit liber Alberti de inspiratione et expiratione."
- VII. 84r-91r: "Incipit liber de morte et vita." At the top of the page in black: "Incipit liber alberti de morte et vita."
- VIII. 91r-95v: "Incipit liber ["Alberti" superscripted above line in black, in contrast to the red ink used in each incipit] de aetate seu de iuventute et senectute."
- IX. 139v-144r: "Liber domini Alberti de impressione aeris."
- X. 145r-151v: "Incipit liber Ysaac Israelita de elementis."
- XI. 151v-154v: "Incipit Ysaac de diffinitionibus."
- XI. 168r-270r: "Incipiunt libri plurimis ["Alberti" superscripted in black to contrast to the red of the rest of the heading] de vegetalibus."

Other philosophical works:

- I. 13r-24r: "Incipit nova translatio Alexandri libri ethicorum." "Explicit prima pars Ethicorum Aristotelis . . . ex arabico in latinum. Anno domini 1243 octavo die Aprilis."
- II. 24r-25r: "Aegidius de differentia rhetoricae ethicae et politicae."
- III. 25r-26r: "Aegidius de divisione totius philosophiae in partes suas."
- IV. 27r-28v: "Libellus de unitate et uno."
- V. 28v-29v: "De aeternitate mundi." This is Thomas Aquinas.
- VI. 29r-37v: "Thomas contra magister sogerum (Siger of Brabant) de unitate intellectus."
- VII. 95v-99v: "Aegidius ad Albertum de XV questionibus."
- VIII. 99v-109r: "Incipit libellus de contradictione contra eis qui dicunt quod post seperationem ex omnibus non remanibus nisi quod intellegimus."

⁹²² Bagliani, 33.

- IX. 109r-114r: The heading of this text is partially smeared, appearing to have suffered water damage. "Incipiunt quadam capitula ex eiusdam metaphysica de intellectu et [?] seperata." This is a summary of some of Albert's writings on the intellect.
- X. 114r-115v: "Incipit explanatio sua [Albertus] brevis de intellectu prima summa platonis et aristotelis edita ab alfarabi."
- XI. 115v-121v: "Incipit Aegidius de plurificatione potentialis intellectus."
- XII. 121r-125v: "Incipit liber Alfarabi de multiplici acceptione intellectus."
- XIII. 125v-135r: "Incipit liber de intellectu et intelligibili [in red with "Alberti" superscripted above the line]."
- XIV. 135r-139v: "Incipit liber de nutrimento et nutritio." The author is identified as Albert in the explicit.
- XV. 145r: "Epistola thomae aquini."
- XVI. 154v-160r: "Incipit tractatus sancti Thomae de essentia et ente."
- XVII. 160r-164r: A comprehensive table of contents for the first 2/3 of the codex, with folio numbers to make it easy to find a wide range of subjects.

Category D.

This category contains two texts that would have been of interest to individuals preoccupied with doctrinal purity: preachers and an individual with a legalistic interest in heresy, who may have been associated with the Inquisition.

MS D 1: Bavarian Staatsbibliothek MS CLM 18175.

A large fifteenth-century volume, roughly twenty by sixteen inches, bound in tooled white leather with brass hasps and holes where five metallic buttons or studs were present on front and back, one at each corner and one in the center. This volume was once part of the monastic library at Tegernsee in Bavaria, copied by the monk Oswald Nott. This codex contains a preponderance of theological works, eleven to be precise, from Augustine, Peter Damian, and Alan of Lille. As such, the four astrological texts, by Albert and Peter d'Ailly, seem oddly chosen. However, these works do share a commonality: all of them consider the question of what sort of astrology could be allowable to a Christian. As such, one may surmise that the reason why they are included is to allow theologians and preachers to differentiate between licit and illicit astrology.

Theological works:

- I. 1r-62r: A collection of six works by, or attributed to, Augustine open this volume, comprising the first sixty-two folio leaves: "De catechizandis rudibus;" "De quarendo deo;" "De bono coniugali;" "De servanda virginitate;" "De professione viduitatis;" "De libero arbitrio voluntatis."

- II. 63v-66v: "Sermo Petri Damiani de Johanne Evangelista et Apostolo." Peter Damian.
- III. 67r-78v: "Epistulae Augustini." This is a collection of letters from Augustine to various recipients, beginning with: "Epistola Sancti Augustini ad petrum diaconum."
- IV. 79v-90v: Four sermons written by Bernard of Clairvaux, beginning with: "Sermo Sancti Bernardi in nativitate domini."
- V. 91r-115v: "Liber Alani de maximis theologiae."
- VI. 116r-123v: "Incipit liber [magister Alani: superscripted black in contrast to the red ink, with a line indicating that it belongs after "liber"] primus de arte fidei catholicae."

Astrological works:

- I. 125r-133v: "Incipit Speculum de nominibus astronomiae domini Alberti." "Explicit liber de nominibus librorum astronomiae edita a domino alberto coloniensi et est speculum eius."
- II. 133v-146r: "Vigintiloquium Petri cameracensis [d'Ailly]."
- III. 146r-163v: "Tractatus de concordantia theologiae et astronomiae." Peter d'Ailly.
- IV. 163v-184r: "Tractatus Petri de Concordia astronomiae cum theologica et historica veritate." "Explicit secunda apologetica defenso astronomiae scripsit per me fratrem Oswaldem Nott qui [illegible word] in tegernsee." Peter d'Ailly.

MS D 2: Vatican City, Biblioteca Apostolica, MS Vat. Lat. 4275.

A rather plain leather-bound volume, produced in the late fourteenth-century.

Theological works:

- I. 1v-16r: Incipit: "Tibi dabo claves regni caelorum Mt XVI verbum XIX cui libet dicitur confessori qui absolvendi." This is a confessional manual written by Johanus Cusinus.⁹²³ It contains a number of marginal notes that all appear to be corrections. This text has no obvious link to astrology or astronomy, instead providing instruction upon how to take confessions and administer absolution, with general guidelines upon correctional procedures.
- II. 17v- 18r: Incipit: "Casus sequentes tangunt speculationem rectoris et consules et potestatem." This is a short but telling manual providing an enumeration of cases that an inquisitor might encounter, and how to deal with trials for the crimes in question. These range from "monks cloistered in a monastery holding arms" to "the Religious fondling Beguines."⁹²⁴ The text ends with a brief section, "de

⁹²³ This is Cusinus' *De Sufficiencia legis Christiana*. See Bernard de Monfaucon, 116.

⁹²⁴ Vatican City, MS Vaticani Latini 4275, 18v. "Monaci saepta monasterii arma tenentes;" "Religiosi foventes Beginas."

ignibus,” dealing with those judged contumacious who are to be handed over to secular authorities for punishment. Written and corrected carefully, this was obviously a work of some importance to the owner.

- III. 20r-35v: Incipit: “Defectum fuit scriptorum per interrogationes astronomicas quod astronomos praesentia possint praesciri futura.” This is written as an epistolary conversation between the author, writing in the first person, and a “certain man” – “quidam vir”—who was “recently a chancellor of Paris,”⁹²⁵ attacking astrology. The author appears to be directly addressing the author of the *Speculum*, as evidenced by the language and arguments that his opponent uses. The scribe penned this manuscript during the lifetime of Petrarch, who regularly had epistolary conversations with long-dead classical authors, such as Cicero. As such we should not be surprised at the way this work is structured.

Astrological works:

- I. 19v-29r: “Speculum Alberti de libris Astronomiae.” Explicit: “Explicit libellus gloriosissimi viri domini Alberti quem edidit de libris astronomie.” It is worth noting, given the overall nature of this manuscript, that folio 21r has a hand drawn in the left margin pointing to the section of the text referring to “nigromantic” images.
- II. 35r-40r: Nicolas Oresme’s “Tractatus contra astrologos.” Oresme supported the use of astrology to make general predictions about large-scale events, such as famines and floods, but opposed judicial astrology.⁹²⁶

Astronomical works:

- I. 41v-51v: Nicole Oresme, “De Visione Stellarum.” This text includes extensive notes with diagrams of planetary positions and mathematical formulae in the margins (41r, 42v) as well as the relative positions of the signs of the Zodiac for a given date (44v, 44r). There are three full pages of notes following this work. These notes deal with the technical aspects of mathematical astronomy, showing no evidence of interest in astrology, but there is extensive evidence that the reader was someone with a keen interest in, and in-depth knowledge of, mathematical astronomy.
- II. 84v-90v: Thebit bin Chora’s “De motu sphaerae octavae.” This work, as with the other astronomical works in this codex, contains detailed diagrams of planetary motion drawn into the margins.

⁹²⁵ Zambelli has pointed out that the author of the *Speculum* never clearly identifies himself, instead referring to himself as a “quidam vir.” Zambelli, *The Speculum Astronomiae*, 111. There is a slender tradition that Philip, Chancellor of Paris, actually authored the *Speculum*. The earliest known reference to this tradition is the fourteenth-century marginal note on folio 76r of Oxford, Bodleian Library, MS Digby 228.

⁹²⁶ Tester, 197-198.

Mathematical works:

- I. 60r-70r: Title: "Arithmatica." Incipit: "figura numerorum sunt 0,1,2,3,4,5,6,7,8,9 est cum prima" This is an anonymous tract on mathematics, describing the usage of Arabic numerals, their advantages, and the types of computations one might perform with them.
- II. 70r-84v: "Jordanus de datu numerorum arithmatica." Incipit: "Numerus datus est cuius quantitas nota est."⁹²⁷
- III. 90r-102v: "Tractatus de additione et subtractione proportionum." Incipit: "Illa medietas arbitror sic $\frac{1}{2}$ et una est sic $\frac{1}{3}$ et sic." This is a complicated, anonymous work on geometry.

Work on natural philosophy:

- I. Incipit: "Omnis rationalis opinio de velocitate motuum ponit eam sequi." Explicit: "Explicit tractatus de velocitate motuum." This is an anonymous work dealing with Aristotelian physics. (102r-127r)

⁹²⁷ Jordanus Nemorarius (1225-1260) was a natural philosopher, mathematician, and astronomer. Known as a formulator of the laws of the inclined plane and a precursor to Galileo, relatively little is known about him. He appears to have been born in German, near Borgentreich and to have died off the coast of Syria while returning from Palestine. He studied at Paris and wrote twelve books on physics, force, and planes. Snodgras, 143. The work contained in this manuscript appears to be an excerpt from his magnum opus, the *Arithmetica*, which focused on number theory. It is worth noting that this is a highly theoretical work and would have been useless to anyone other than a trained mathematician.

Vita

Scott Hendrix graduated Cum Laude from Athens State University in 1998 with degrees in both English and history. After teaching English for a year in Ulsan, The Republic of Korea, Scott entered the graduate program of the University of Tennessee in 1999. He completed his MA with a speciality in seventeenth-century English history in 2001 under the direction of Dr. Paul Pinckney, with a thesis entitled, “The Road to Rebellion: Norfolk, 1646-1650.”

Entering the doctoral program at the University of Tennessee in 2001, Scott reshifted his focus to the intellectual history of the medieval, Renaissance, and Reformation periods under the direction of Dr. Thomas Burman. While a student at the university, Scott received the Susan Becker award for outstanding teaching for his work as a teaching assistant, taught at various local colleges, and received numerous awards to further his research, including the Broecker fellowship for research in England, the Andrew W. Mellon research fellowship for work both at Notre Dame University and St. Louis University, and the McClure fellowship for international research. Scott has presented papers at various conferences, including the International Medieval Congress and the Medieval Academy of America, and has been published in *Hortulus*. He is currently teaching at Carroll College in Waukesha, Wisconsin.