An Examination of the Cosmology and Medical Astrology of St. Hildegard of Bingen (ca. 1097 – †1179 CE) in the Berlin fragment and *Causæ et curæ* (Codex Berolinensis. ms. lat. qu. 674)

by

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ABSTRACT

In the heart of the twelfth century renaissance in the Latin west, the polymath, magistra, foundress and consecrated Benedictine virgin, St. Hildegard of Bingen, invites the superlative among all who encounter her and her vast and varied *oeuvre*. The twelfth century was a time of intellectual ferment, access to new Latin translations of astrological treatises from their eastern sources, and widespread social change against a background of anticipation of the end of humankind; the imminent apocalypse.

This study is a text-focused analysis of selected extracts from two complementary manuscripts attributed to Hildegard:

- *Hildegardis Bingensis, Codex Berolinensis*, MS Lat. Qu. 674, folios 103ra-116ra. The *Thuringiae Revelationes* (The Berlin Fragment), and;
- *De duodecim signis et planetis* (On the Twelve Signs and the Planets) in *Liber 1* of *Beate Hildegardis, Cause et cure de mundi creatione*, København, Det Kongelige Bibliotek, Ny royal collection, MS 90b.2°.

For eight centuries, the Berlin Fragment of the Codex Berolinensis, attributed to Hildegard and enigmatically connected to her medico-scientific apocalyptic work – *Causæ et curæ* – awaited a full translation. Appearing in fresh translation, the study examines these manuscript sources for evidence of new perspectives on Hildegardian Neoplatonic cosmological views which could advance recent scholarship. The findings of the study create new tensions for scholars in three broad categories: 1) The Berlin Fragment is composed in an aphoristic but antiphonal, rhythmic style which echoes the structure of medieval Latin lyric poetry; 2) It introduces a planetary melothesia which has no apparent analog to other forms of medical astrology unless juxtaposed to an illuminated image, and; 3) The new translation of *De duodecim signis et planetis,* re-examined astronomically with the aid of digital retrospective simulations of the medieval sky, argues for a reinterpretation within the context of eyewitness historical astronomical phenomena; revealed in medieval, zodiacal, astrological allegorical prose.

PROLEGOMENON and ACKNOWLEDGEMENTS

"We shall not cease from exploration, and the end of all our exploring will be to arrive where we started; and know the place for the first time. Through the unknown remembered gate, with the last of earth left to discover, was that which was the beginning." *"Little Giddings", T.S. Eliot*

For precisely eight centuries, the Berlin Fragment of the Codex Berolinensis awaited translation. In the year 1222, watchers of the skies witnessed a terrifying spectacle – the return of a comet we call Halley. Weeks after, those who worked with, sang with, prayed with, and admired a *magistra* (teacher) hastily assembled a collection of manuscripts. These were destined for Rome to support the cause for Hildegard von Bingen's canonisation. Perhaps they had heard that bright comets graced the skies over the Latin west in 1097, the year Hildegard was conceived and in 1106 when she was tithed to the Benedictine monastery at Disibodenberg. Early one evening on 30 November 2022, the confluence of two *cruces*: listening to the soaring vocals of the quartet *Sequentia* singing from Hildegard's *O choruscans lux stellarum* ("O glistening light of the stars") and seeing *O Saturnus igneam sphaeram* ("O Saturn in the sphere of fire") as translation began on the Berlin Fragment. *Clamavi*. I cried.

On this journey, I was guided by the wit, wisdom, and exceptionality of many. To the *doctores astrologiæ*: Christopher Mitchell for his enthusiasm, deep appreciation for medieval history, and mentor for the project as principal advisor; Nicholas Campion, Programme Director of the MA in Cultural Astronomy and Astrology for assisting me in finding a voice which would resonate with the music of the spheres. Bernadette Brady who, on 20 May 2020 in the midst of a pandemic that only conjunctions can herald, introduced me to a completely new 'science of the stars' which has changed everything; Darrelyn Gunzburg, whose love for sacred skies and sacred imagery is the essence of what Hildegard confessed made us unique – we look upward with longing and awe; Frances Clynes, for engaging with Marsilio Ficino and the Neoplatonists in ways which Eriugena would admire. Deepest gratitude to Lea at Document Delivery at the University of Manitoba for her extraordinary energy and patience as I sought rare volumes from across a continent to support this study. Barbara Newman of Northwestern University and Margot Fassler of the University of Notre Dame for encouraging this project to be undertaken by a neophyte. To Christina, my love, and my strength as I gazed into those meticulous manuscript ink strokes, recognising with me that hidden in there was the poetry of ancient evenings.

DECLARATION FORM / STATEMENT OF ORIGINALITY

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Dated: 24 February 2024

TABLE OF CONTENTS

INTRODUCTION 1

1.1 Twelfth Century Apocalyptic and the Revival of Astrology in the Latin West 3

1.2 Primary Sources, Objectives, and Academic Rationale 6

1.2 Literature Review and Translation Methodology 8

1.3 The Berlin Fragment: Its Structure and Relationship to Hildegard's *Causae et Curae* .. 8

1.4 Sequence of Chapters 10

CHAPTER 2 – From the Imaginal to Text and Illuminations in the Berlin Fragment 13

2.1 Introducing the Seven *Planetae* of the Berlin Fragment 16

2.2 From Text to Image in the Berlin Fragment 23

2.3 Melothesia in the Berlin Fragment 30

2.3.1 Planetary Melothesia in the Berlin Fragment 30

2.3.2 Anemographic Melothesia in the Berlin Fragment 35

CHAPTER 3 – A Twelfth Century Benedictine Science of the Stars 40

3.1 The Zodiacal Movements of the Sun and Planets *Liber Prima* of *Causae et Curae* 41

3.2 *De Stellis et De Duodecim Signis et Planetiis* 42

3.2.1 Translation of De Stellis et De Duodecim Signis et Planetiis – Liber I, Causae et Curae 44

3.2.1.2 The Sun Journeys Through Pisces, Aries, and Taurus in the De Duodecim Signis et Planetis 46

3.2.2 Astronomical Interpretations of *De Stellis et De Duodecim Signis et Planetiis* 46

3.2.3 Astronomical Simulations of *De Stellis et De Duodecim Signis et Planetiis* 48

3.2.3.1 Pisces - Aries – Taurus and Two Cruces: The Stellae Hildegardis 49

CHAPTER 4 – Summary and Conclusions 59

Appendix 'A'- Approaches and Principles of Translation 67

Method of Translation and Literature Review 67

Appendix 'B'- The *Stellæ hildegardis* of 1145 and the Great Conjunction of 1146..... 75

Appendix 'C' - Latin-English Translations of Folios 105ra to 108rb, Berlin Fragment with Astrological, Anemographic or Melosthesiac Orientations 81

Appendix 'D' - Folios from the Copenhagen Codex of *Causae et Curae;* Incipit *De duodecim signis et planetis* 108

BIBLIOGRAPHY..... 112

Manuscripts 112

Primary Literature 112

Secondary Literature 113

LIST OF FIGURES

Figure 1: Detail of *Visio II* of the *Liber Divinorum Operum.* ……..24

Figure 2: Detail of *Visio tercia* of the Book I of Hildegard's *Liber Divinorum Operum*.. ……..35

Figure 3: Folio 3r of MS Vatican Pal. lat. 1417 Folio 3r, (ca. mid-12th cent.).. ……36

Figure 4: The 'star of 1145 CE' in the pre-dawn skies of May 10, 1145……..50

Figure 5: The great comet of 1066 as depicted in the Bayeaux Tapestry……..51

Figure 6: *Stella Hildegardis* 1P (Halley) and *Stella Hildegardis* 96P (Macholz)……..52

Figure 7: Digital retrospective image of early morning sky of May 12. 1145……52

Figure 8: Detail of Tripartitum Psalterium Eadwini (The Eadwine Psalter), MS R.17.1, Folio 10r.....53

LIST OF TABLES

Table 1: Planetary Melothesia in the Berlin Fragment and the Decans of Abū Ma'šar……34

Table 2: The twelve signs of the zodiac and Hildegard's allegorical representations in *Causae et Curae* ……..56

Table 3: Example of Translation Styles, from Original Latin to Literal and to Poetic Forms……..71

Table 4: Example of Translation Styles, from Original Latin to Literal and to Poetic Forms (*BFrag*ment, Folio 106ra, v. 35)……..72

LIST OF PLATES

Plate I: Hildegard von Bingen, *Causae et Curae,* MS Lat. Qu. 674, Folio 103va.....12

Plate II: The planets appear by name in the Berlin Fragment.....17

Plate III: Saturn appears for the first time in the Berlin Fragment.....18

Plate IV: Visio II of the *Liber Divinorum Operum*, Lucca Codex 1492.....26

Plate V: *Le Très Riches Heures du duc de Berry* zodiacal miniature of the "L'Homme Zodiacal"……45

Plate VI: The *Tripartitum Psalterium Eadwini* (The Eadwine Psalter), MS R.17.1, Folio 10r……58

Plate VII: "The Twelve Signs and the Planets", *Causae et Curae*_MS Kongelige Bibliotek Ny kgl. saml. 90b, Folio 4vb.....108

Plate VIII: Twelve Signs and the Planets", *Causae et Curae*_MS Kongelige Bibliotek Ny kgl. saml. 90b, Folio 5r..... 109

Plate IX: Twelve Signs and the Planets", *Causae et Curae*_MS Kongelige Bibliotek Ny kgl. saml. 90b, Folio 5v.....110

SIGLA of MANUSCRIPTS with ABBREVIATIONS

Abū Ma'šar	Abū Ma'šar and Adelard of Bath, *The Abbreviation of the Introduction to Astrology: Together with the Medieval Latin Translation of Adelard of Bath*, ed. by Yamamoto Michio Yano and Charles Burnett.
København	*Beate Hildegardis, Cause et Cure de Mundi Creatione,* København, Det Kongelige Bibliotek, Ny royal collection. 90b.2°
Moulinier/Berndt	*Beate Hildegardis Cause et Cure*, Rarissima Mediaevalia Opera Latina Volumen I, ed. by Laurence Moulinier and Rainer Berndt SJ
BFragment	*Beate Hildegardis, Codex Berolinensis, MS Lat. Qu. 674, folios 103ra-116ra.* Sammelhandschrift mit Texten von und über Hildegard von Bingen: Thuringiae Revelationes (Fragmente),
Schipperges	Heinrich Schipperges, Ein unveröffentlichtes Hildegard Fragment, (Codex Berolin. Lat. Qu. 674)
[ ]	denotes an interpolation, a word considered as omitted in the original, or in the case of translations, an insert which identifies an untranslatable word or assists the anglophone reader with the Latin phrasing and syntax with insertion of words which could be considered as implicit.
<< >>	For translations to English where these immediately follow Latin, Greek, Spanish, German or other modern languages in citing original sources in the footnotes only.

DEDICATION

Ad Christinam....et sorores;

ad omnibus sororibus ... in omni tempores….

For Christina…and her sisters;

for all the sisters... in all times….

IN BEATÆ MEMORIÆ

URSULA MIRIAM DRONKE
(3 NOVEMBER 1920 - † 8 MARCH 2012)

ERNST PETER MICHAEL DRONKE
(30 MAY 1934 – † 19 APRIL 2020)

CHAPTER 1- INTRODUCTION

Visionary, mystic, healer, botanist, linguist, poet, artist, musician, playwright, biographer, exegetical theologian, exorcist, prophetess, *scándalum virórum*[1]. These are among the adjectives one encounters in the person of Hildegard of Bingen (ca. 1097[2] - †September 17 1179 CE). This twelfth century polymath, *magistra,* foundress and consecrated Benedictine virgin invites the superlative among all who encounter her. Therefore, this study opens in precisely the way Hildegard and her works are often remembered; an orientation which can only be described as *hagiographical.*[3] Such a style of historiography, occasioned by overly sentimental and pious overtones, nevertheless speaks to an exceptional variety of attributes in an important woman in an important time. In our time, the latter half of the twentieth century in medieval scholarship witnessed an explosion of new contributions bearing on the *oeuvre* of Hildegard, including critical editions of her seminal works on theology, cosmology, monophonic composition, and at least two of her medical-scientific treatises.[4] There is a lacuna in this scholarship, and it relates to one adjective describing Hildegard which has not appeared to date in the literature – that of the *doctor-astrologer.*[5]

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[1] The '*scándalum virórum'* (*lit.* "an obstacle to males"). This attribute appears as a phrase in a lengthier complaint of the 'feminisation' of the clergy. Hildegard castigated the lack of sacerdotal virility to engage with the seriousness of issues of her 12th-century social/moral environment. It has been difficult for scholars, however, to view this attitude in Hildegard as authentic. The broader context of the statement appears to rule out irony or humour on her part. In translation, it reads as: "to the scandal of the male [priesthood], women now prophesy; it will proceed in this way until that time - when after the destruction of certain of the churches - justice shall arise as the moon does, extending its reach." Note the reference to the anthropomorphised moon, her favoured personal planet. *Berlin Fragment,* Fol. 115ra, IV.28.

[2] Hildegard's year of birth is recorded as ca. 1097 here: H. Zatschek, *Mainzer Urkundenbuch, Band I, Die Urkunden Bis Zum Tode Erbischof Adalberts I (1137) Bearb. Von Manfred Stimming*, vol. 49 (Wagnersche Universitätsbuchhandlung, 1935). All authors cite her year of birth as 1098. Hildegard herself claims 1100.

[3] '*hagiographium*' refers to both a writing style as well as a product. For centuries, hagiographies were written to bring the lives of canonised saints of the Christian church to the faithful. These were meant to edify the living by providing evidence from the dead as to what a good living consisted of. Hildegard was formally canonised as a saint in the catholic church in May 2012, and a doctor of the church on October 7, 2012 by PP. Benedict XVI. There were four previous attempts at canonisation, the first began in 1227 CE. See Petrus Bruder, *Acta Inquisitionis de Virtutibus et Miraculis, S. Hildegardis, Magistrae Sororum Ordine S. Benedicti in Monte S. Ruperti juxta Bingium ad Rhenum,* Analecta Bollandiana, Sumptibus Herder (1883), pp. 116-129. See also Benedictus PP. XVI, 'Apostolic Letter Proclaiming Saint Hildegard of Bingen, Professed nun of the Order of Saint Benedict, Doctor of the Universal Church'. https://www.vatican.va/content/benedict-xvi/en/apost_letters.index.html [accessed May 1, 2023].

[4] For the most comprehensive source of scholarly publications and manuscripts attributed to Hildegard of Bingen, see Michael Embach and Martina Wallner, *Conspectus Der Handschriften Hildegards Von Bingen* (Munster: Aschendorff Verlag GmbH & Co., 2013). Also, the online links of the International Society of Hildegard von Bingen Studies at: https://www.hildegard-society.org/p/home.html.

[5] The closest the literature has come to the use of the term 'astrologer' in considering Hildegard's praxis and her theological and scientific works would be as a 'philosophical or theological anthropologist'. See Elizabeth Gössmann, 'Ipsa Enim Quasi Domus Sapientiae: The Philosophical Anthropology of Hildegard von Bingen', *Mystics Quarterly,* 13 (1987), 146-154. In a personal communication from Barbara Newman of Northwestern University in the USA, the situation among scholars was described as: "the scholarly community

There are many instances, however, where Hildegard's writing has been deemed to possess content which is *astrological.* This will be illustrated in this study as consonant with, and predicated upon, the times and place(s) in which she lived. To this point of time and place, James Hillman, from the perspective of his field of archetypal psychology though a professed astrological agnostic, noted:

> A human is placed. [The] natal moment is always somewhere, and that *where* is not a mere geographical set of coordinates; that place is also [a][6] culture, a human nature, a history, a politics, a geography, a language. Place is not an accident of birth, but that one and only particular place of which the Neo-Platonist, Plotinus, said the soul *chose* as one of its four choices: your parents, your body, your circumstances, and your place of entry into the world.[7]

Hildegard von Bingen was privileged on three of these occasions of choice, not four: born into the nobility, the twelfth century of the Latin west, and near the monsastery at Trier. As for the fourth, her body experienced decades of periodic suffering through debilitating episodes, possibly migraine[8]; but she had longevity and viewed such infirmities as the inevitable token of the consecrated religious life.[9]

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on Hildegard's works has not been possessed of an individual who can deal effectively with her astrology…" Personal email, March 14, 2022.

[6] In this study, open brackets [ ] can denote an interpolation, a word considered as omitted in the original, or in the case of translations, an insert which identifies an untranslatable word or assists the anglophone reader with the Latin phrasing and syntax with the insertion of words which could be *understood*.

[7] James Hillman, *"Heaven Retains within its Spheres Half of all Bodies and Maladies",* Address to the ISIS Institute, San Francisco, California on February 12, 1997. Box Hillman 162A, Folder 02, Opus Archives and Research Center, Santa Barbara, CA, (1997). The text here was checked against that of Marielle Churaqui, Appendix in 'An Examination of James Hillman's Views on Astrology' (MA dissertation, Institute of Education and Humanities, University of Wales Trinity Saint David, 2011). *Italics* added.

[8] Charles Singer was the first historian of medicine to advance this retrospective diagnosis in Hildegard. See 'The Visions of Hildegard of Bingen', *The Yale Journal of Biology and Medicine,* 78 (1928). Then R.H. Elliot, 'Migraine and Mysticism', *Postgraduate Medical Journal,* 8 (1932), 449-459. For more recent treatment in the literature which favours the retrospective diagnosis of Hildegard being migrainous, see Anita Obermeier and Rebecca Kennison, 'The Privileging of Visio Over Vox in the Mystical Experiences of Hildegard of Bingen and Joan of Arc', *Mystics Quarterly,* 23 (1997), 137-167.; Gabrielle M. Spiegel, 'History, Historicism, and the Social Logic of the Text in the Middle Ages', *Speculum,* 65 (1990), 59-86*;* Ermelinda M. A., Ferreira, 'Migraine and Aura in the Genesis of Mystical Visions and Artistic Creation: The Case of Hildegard Von Bingen', *Headache Medicine,* 2 (2011), 25-32; Angela Woods and others, 'Interdisciplinary Approaches to the Phenomenology of Auditory Verbal Hallucinations', *Schizophrenia Bulletin,* 40 (2014), S246-S254, and; Markham J. Geller, *Melothesia in Babylonia. Medicine, Magic, and Astrology in the Ancient Near East* (Munich, Germany: de Gruyter, 2014) esp. pp. 77-91. Geller notes from Babylonian astral medicine tablet LBAT 1597 the following: 'If the moon is in the region of Perseus, and the Marduk-star [Mercury] is seen, migraine' (p. 81), and; 'If the moon is in the region of Cancer and has a halo, migraine' (p. 82).

[9] On the life of Hildegard, there are many options in the literature. Among the more reliable as scholarly works include: Fiona Maddocks, *Hildegard of Bingen: The Woman of Her Age* (Faber & Faber, 2013); Barbara Newman, 'A Poor Little Female', in *Sister of Wisdom: St. Hildegard's Theology of the Feminine* (University of California Press, 1998a), pp. 1-41; B. Newman, *Voice of the Living Light: Hildegard of Bingen and Her World* (University of California Press, 1998); Heinrich Schipperges, *Hildegard of Bingen: Healing and the Nature of the Cosmos,* trans. by John A. Broadwin (Princeton, NJ: Markus Wiener, 1997).

1.1 Twelfth Century Apocalyptic and the Revival of Astrology in the Latin West

There is perhaps no historiographer who changed the mindset of scholars of the Middle Ages more suddenly, and more visibly, than when Charles Homer Haskins published his ground-breaking *The Renaissance of the Twelfth Century* in 1927.[10] In his own description of this paroxysm in the history of idea-making, Nicholas Campion remarked that '[by] the twelfth century, the quest for knowledge of astrology was to become one of the most powerful intellectual movements in European history, demolishing and transforming the prevailing worldview; reconnecting the Catholic world with its roots in the philosophy of pre-Christian Greece'.[11] The change in *gestalt* was seismic. One significant catalysing agent, among many, was the itinerant medieval scholar who enjoyed the freedom of transferring across, and transcending, traditional geographical, cultural, linguistic, and intellectual constraints not seen since the Carolingian era. Importantly, there developed a 'need for astrological texts'. When viewed retrospectively, especially from a modern anti-astrological vantage point, this raises suspicion.[12] The twelfth century was a time of intellectual ferment equally balanced by the anticipation of the imminent apocalypse, for the one-thousand years of perceived peace in the Christian world had been torn apart by the Eastern schism in the eleventh century. There was an expectation that celestial wonders would soon grace the morning and evening skies; portents of unimaginable social change as humanity was about to be similarly metamorphosed into heavenly beings following the *parousia.*[13] Hildegard too was caught up in the expectations of preparing for what she referred to as the *novovissimum diem* [14] (the "last day"). In the fourth section of folios in the *Berlin Frgament,* particularly 112va-vb, Hildegard's apocalyptic demonstrates itself as intimately

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[10] Charles Homer Haskins, *The Renaissance of the Twelfth Century*, 2nd edn. (Cambridge, Massachusetts, USA: Harvard University Press, 1927). See especially his chapter 6 on medieval poetry.

[11] Nicholas Campion, *A History of Western Astrology Volume II: The Medieval and Modern Worlds*. (London, UK: Bloomsbury Academic Publishing, 2009, p. 29. Cf. *Pagani philosophi ut donatus, [ut] Lucanus, erant precurrens sucus et precurrens vox philosophorum ecclesie.* << The pagan philosophers who were Roman citizens, namely Donatus and Lucanus, were the foretaste of that earlier stream of flowing, medicinal nectar giving voice to the philosophers of the Church. >> *Berlin Fragment,* Folio 109ra, III.13, 399-401. Hildegard directly invokes two of the most luminous writers of the first five centuries CE – the grammarian, Aelius Donatus (fl. mid-fourth century CE) and the epic poet, Marcus Annaeus Lucanus (39 CE – 65 CE). See Chapter 2, this study.

[12] For a rich and informative synopsis of this period, especially details of the translation of Arabic and Greek astrological and astronomical texts into the Latin west, see Nicholas Campion, *A History of Western Astrology Volume II*, pp. 29 - 42.

[13] The appearance of such celestial wonders is taken up in detail in Chapter 3 of this study.

[14] *Novovissimum* is in the superlative sense, and so loses much of its energy and severity in English translation. In Hildegard's time, just uttering the word could cause the body to tremble in fear. The *computi* and their regard for astronomy and reliance upon astrological texts is taken up by Campion (2009, p. 31).

woven into the fabric of the astrological sun, the human body, its soul, its ultimate human destiny, and final consummation by the element fire:

> The soul is fire, and this fire is stronger than the fire of the sun, because it is a fire which is alive; and the fire of the soul warms and sets the whole body of the human being alight. For when a woman draws breath within herself, she stirs up this fire, and thus this fire makes the blood warm and causes it to flow. Creator-god, who is fire, sets all living things on fire, so that they will burn brightly until that extraordinary last day, and then all things including the human being will be consumed in flames; however, the Creator-god will endure, full of fire.[15]

In the same period, the Latin west was increasingly reliant upon the monastic orders and their *computi* and to engage in systematic, observational astronomy. As Christopher Mitchell observed in his *Roger of Hereford's Judicial Astrology*, 'when considering the need for Christians to calculate the date of Easter, [this] meant that an understanding of solar and lunar cycles was important, leading to the development of the science of *computus*, taught in secular cathedral schools, which were the main centres of learning in England in the twelfth century'. [16] The paschal necessity of computus in the twelfth century was a central aspect of the much broader acceptance of Arabic archaeoastronomy in the Latin west. Indeed, Mitchell noted 'the Church's ambivalence towards astrology together with its need to calculate Easter, and its tentative contacts with Islam, where scholars were translating astrological texts, opened the door to examining planetary cycles in general'.[17] In terms of

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[15] *Ánima ignis est et ignis forcior igne solis quia vivit; et ignis ánime totum corpus hóminis caléfacit et incéndit, velut ignis ligna, hálitus autem velut follis est et ignem ánime ad fortitúdinem accéndit. Nam cum homo hálitum intra se trahit, ignem istum éxcitat et ita ignis iste sánguinem cálidum et manántem facit. Deus ignis ómnia vivencia adésse incéndit, Qve ita incénsa inésse ardent usque ad novíssimum diem et tunc ómnia in favíllas consumabuntur; et deus plenus ignis permanébit. Berlin Fragment,* Folio 112va, IV, 1, 628-635. This destruction by fire has important overtones of Stoic philosophy, perhaps most exemplified by the *ekpyrosis* (consummation of the world by fire), and a key feature of one of Hildegard's *pagani philosophii* – the Roman poet Marcus Annæus Lucanus and his epic *Pharsalia.* See *Berlin Fragment,* Folio 109ra, III. 13.
All translations in this study are by J. Murray unless specified otherwise.

[16] Christopher J. Mitchell, 'Roger of Hereford's Judicial Astrology: England's First Astrology Book?', (PhD Dissertation, University of Leicester, 2020), p.2. The dissemination of newly translated Greek and Arabic texts into Latin in the twelfth century likely could not have escaped the notice of the Benedictine monasteries in Germany. Mitchell has identified in excess of 200 such texts by fifteen translators: all from hands flourishing during Hildegard's period of greatest writing activity mid-12th century. Included among these are Bernardus Sylvestris and William of Conches who are considered cosmological sources for Hildegard's works. See Mitchell, p. 21. His is a new study on the role of computus, observational astronomy, and its synergistic relationship with mediaval astrology. See also, Richard de Grijs,'Roger of Hereford: The Twelfth-Century Astronomer Who Put Hereford on the Map, Literally', *arXiv Preprint arXiv:2301.06610,* The Local Historian (Journal of the British Association for Local History], vol.53 no.2 (April 2023), pages 98-111 (2023). The possibility of Hildegard having direct connection with emerging cathedral schools is taken up by Constant J. Mews in his essay, 'Hildegard and the Schools', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), pp. 89-110.

[17] Christopher J. Mitchell, 'Signs from Heaven or a Dark Art? How the Church Embraced Arabic Astrology and Introduced it into the Christian West', in *Skylights: Essays in the History and Contemporary Culture of Astrology*,

these cycles of the sun and moon, Hildegard herself waxes and wanes allegorically with the celestial objects central to computus and the Benedictine liturgical life. Here, there is a metaphorical connection between the astrological and astrophysical cycles of growth and sacrifice which define the human experience:

> All that has come forth under the sun experiences transformation; to become distinguished in one moment and then unimportant the next; except the sun itself, which neither increases nor decreases, but is appointed to stand firm. Now the winds blow, now they cease; now the stars inflame with fire and are enkindled, and now their brightness is in dimishment. The waters now spring forth, and now they are drawn back. Trees now verdant and vigorous, and now they wither and dry up. The human being is now replenished with food, and now becomes emptied; now the blood of family swells within her to be born, and now it wanes within her, for it is a time of birth.[18]

As for the moon:

> As the moon begins to come to an end as it endures eclipse, the verdant wind belonging to the east breathes inspiration upon her; the north wind comes to her in the midst of her weakening, to cool her…[When] the moon abandons her light in eclipse, coming to her end, the winds blow with increased unsteadiness than when she is in her increase; on the contrary, the winds blow more steadily when the moon is increasing than when she decreases..[19]

Recently, Margot Fassler of the University of Notre Dame postulated that the connectedness of liturgical life in the monasteries with the motions of the visible celestial bodies is an important one, if not essential to the prayer-filled ascetical life. In her *Cosmos, Liturgy and the Arts,* Fassler argues that medieval 'liturgical practices were completely

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ed. by Frances Clynes (Ceredigion: Wales UK: Sophia Centre Press, 2022), p. 50. For the revival and broader embracing of Arabic astrology in the Latin west, see Mitchell's chapter (pp. 49-54). See also Jennifer Moreton, 'Before Grosseteste: Roger of Hereford and Calendar Reform in Eleventh-and Twelfth Century England', *Isis,* 86 (1995), 562-586.

[18] *Omnes creature, que sub sole sunt, in maius et in minus mutantur excepto sole, qui nec crescit nec decrescit, sed in uno statu est: venti nunc flant, nunc cessant; stelle nunc ignescunt, nunc in igne minuuntur. Aque nunc crescunt, nunc decrescunt. Arbores nunc virent, nunc arescunt. Homo cibis nunc repletur, nunc inanescit; nunc sanguis in eo crescit, nunc decrescit*. *Berlin Fragment,* Folio 104ra, II. 9, 64-68.

[19] *In defectu lune incipientis deficere, ventus orientalis ad defectum eam afflat; sed cum ad medium medii defectus sui venerit, aquilo eam infrigidat…[Venti] in defectu lune instabilius flant, quam in incremento eius, in incremento autem stabilius quam in defectu illius flant*. *Berlin Fragment,* Folio 109rb, III. 27, 424-426; 28, 434-436. Similar passages occur in *Causae et Curae* with respect to the moon governing the seasons, especially *Et quoniam luna hanc vicissitudinem in se habet…[nec] etiam secundum stellas notande sunt, quoniam stelle non secundum se ipsas, sed secundum lunam faciunt; nec secundum auram aeris quia ipsa secundum lunam faciunt. Nam ornnia secundum lunam temperantur, quoniam illa mater omnium temporum est.* << The moon possesses a changeable nature within itself…[and] even the stars and the atmosphere are not independent but are governed by the moon. All is under the influences of the moon since she is the matriarch of all time periods. >> Laurence Moulinier and Rainer Berndt S.J., *Beate Hildegardis Cause et cure.* Rarissima mediaevalia, Opera Latina Volumen I (De Gruyter French Edition, 2003), p. 40.

rooted in the measurable rotations (sic) of the sun and the moon and their ever-changing interrelationships'.[20] Echoing our own times, to this we can also add the potential influences of a changing climate on human mobility during the Medieval Warming Period, which changed fluvian transport and the agrarian life of the Latin west; permanently.[21]

1.2 Primary Sources, Objectives, and Academic Rationale

This study is a text-focused analysis of selected extracts from two complementary manuscripts (MSS) attributed to Hildegard of Bingen which have remained untranslated in their entirety in a modern language. These MSS are:

- Hildegardis Bingensis, Codex Berolinensis, MS Lat. Qu. 674, folios 103ra-116ra. Sammelhandschrift mit Texten von und über Hildegard von Bingen: *Thuringiae Revelationes (Fragmente)*; henceforth, *Berlin Fragment.*[22]
- *De duodecim signis et planetis* (On the Twelve Signs and the Planets) in *Liber 1* of *Beate Hildegardis, Causae et curae de mundi creatione*, København, Det Kongelige Bibliotek, Ny royal collection, MS 90b.2°; henceforth, *Causae et Curae.*[23]

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[20] Margot E. Fassler, *Cosmos, Liturgy, and the Arts in the Twelfth Century: Hildegard's Illuminated "Scivias"* (Philadelphia: University of Pennsylvania Press, 2022). p. 71.

[21] For more examination of the Medieval Warming Period, the warmest pre-industrial period known in the history of human civilisation, see Raymond S. Bradley, Malcolm K. Hughes and Henry F. Diaz, 'Climate in Medieval Time', *Science,* 302 (2003), 404-405; Mark Carey, 'Climate and History: A Critical Review of Historical Climatology and Climate Change Historiography', *Wiley Interdisciplinary Reviews: Climate Change,* 3 (2012), 233-249; Rüdiger Glaser and Dirk Riemann, 'A Thousand-year Record of Temperature Variations for Germany and Central Europe Based on Documentary Data', *Journal of Quaternary Science: Published for the Quaternary Research Association,* 24 (2009), 437-449; Hugues Goosse, and others, 'The Origin of the European" Medieval Warm Period"', *Climate of the Past,* 2 (2006), 99-113; Fredrik C. Ljungqvist, Andrea Seim and Dominik Collet, 'Famines in Medieval and Early Modern Europe—Connecting Climate and Society', *Wiley Interdisciplinary Reviews: Climate Change,* (2023), 1- e890); R. Moschen, and others, 'Temperature Variability at Dürres Maar, Germany during the Migration Period and at High Medieval Times, Inferred from Stable Carbon Isotopes of Sphagnum Cellulose', *Climate of the Past,* 7 (2011), 1011-1026; Christian Pfister, and others, 'Winter Air Temperature Variations in Western Europe during the Early and High Middle Ages (AD 750–1300)', *The Holocene,* 8 (1998), 535-552.

[22] Henceforth identified as the *Berlin Fragment.* See Hildegardis Bingensis, Codex Berolinensis, MS Lat. Qu. 674, folios 103ra-116ra. Sammelhandschrift mit Texten von und über Hildegard von Bingen*: Thuringiae Revelationes (Fragmente),* (Berlin, Staatsbibliothek Preussischer Kulturbesitz, 2014). Digital MS online at: https://digital.staatsbibliothek-berlin.de/werkansicht/?PPN=PPN654043922 . This is the principal primary source of this study, accessed digitally, complements of the Staatsbibliothek Preussischer Kulturbesitz. Since the first Latin transcription, published in 1956 by Heinrich Schipperges, this MS bears the colloquial name "The Berlin Fragment". See Heinrich Schipperges, 'Ein Unveröffentlichtes Hildegard-Fragment: (Codex Berolin. Lat. Qu. 674)', *Sudhoffs Archiv Für Geschichte Der Medizin Und Der Naturwissenschaften,* 40 (1956), 41-77. These more recent transcriptions were used as a cross-reference: Hildegard von Bingen, *Physica*, Edition der Florentiner Handschrift (Cod. Laur. Ashb. 1323, ca. 1300) im Vergleich mit der Textkonstitution der *Patrologia Latina* (P. Migne), Herausgegeben von Irmgard Müller und Christian Schulze unter Mitarbeit von Sven Neumann (Georg Olms Verlag AG, Hildesheim, 2008); *Physica: Liber Subtilitatum diversarum naturarum creaturarum*, Text mit Berliner Fragment im Anhang, Textkritische Ausgabe, Volume 1, ed. by Reiner Hildebrandt and Thomas Gloning (Berlin/New York: Walter de Gruyter GmbH & Co. KG, 2010), pp. 384-406. Cross-referencing and pagination of all references of the Berlin Fragment use H. Schipperges.

[23] *Beate Hildegardis, Cause et Cure de Mundi Creatione,* København, Det Kongelige Bibliotek, Ny royal collection. 90b.2°; (ca. 1200 CE; Skt. Maximin Kloster, Trier). Digital MS online at: http://www5.kb.dk/manus/vmanus/2011/dec/ha/object61066/da/. The critical edition used in this study is *Beate Hildegardis Cause et Cure*, Rarissima Mediaevalia Opera Latina Volumen I, ed. by Laurence Moulinier

The aim of the study is to examine these MSS for evidence, if any, of novel perspectives of Hildegardian cosmological views and associated medico-astrological ideas not yet revealed in the literature. To accomplish this aim, there are certain objectives in the study which are considered essential. Taken together, these objectives inform the academic rationale and orientation of the study. The first of these takes the form of transcription as a precursor to translation.[24] Though transcriptions were available for these MSS as will be observed in subsequent chapters, it was deemed important to write out these text selections by hand. The rationale for this was to get a *feel* for the text (the *scriptus*) and to sense the labours involved in the scriptoria of Hilegard's Rupertsberg monastery (the *manus*); to see and write each word in context from the only MSS witnesses presently available that date to the first decades of the thirteenth century. The second objective was to narrow the gaps (*lacunae*) in the available literature with respect to these two MSS sources through new, complete translations to a modern language.[25] The narrowing of these lacunae is important to the predominantly anglophone community now working in the history and philosophy of Hildegardian works. The third objective takes its initiative from historiographic bias. From the viewpoint of historians and their historiographical position, Richard Evans writes: 'Anyone…[will] be aware of the fact that many different interpretations of a text are possible, a number of them only remotely related to the interpretation *intended* by the author'.[26] In terms of finding some measure of broader agreement on that author intent, Evans further emphasised that 'what counts as evidence is not determined solely by one historian's perspective' – it is the community which authorises.[27] With this in mind, a corollary of Evans's dictum is that there can be a number of interpretations of what comes forth from a new translation, and the translation itself carries with it personal *prima facie* lexicographic biases. Therefore, this study places emphasis on provisional interpretations of what Hildegard may have been thinking, saying, writing, and intending while also relying upon previous scholarship from the community which authorises when providing

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and Rainer Berndt SJ (Berlin: Germany: Akademie Verlag GmbH, 2003). Cross-referencing and pagination of all references of *Causae et Curae* uses Paul Kaiser, *Hildegardis Causæ et Curæ* (Lipsiae: B.G. Teubneri, 1903).

[24] For a detailed, systematic synopsis of the techniques and principles used in translation for this study, see Approaches and Principles of Translation, Appendix 'A' this study.

[25] A complete translation of the entirety of the *Berlin Fragment* (Folios 103ra to 116ra) has been completed, to be published elsewhere. Excerpts from the *Berlin Fragment* in this study have their Latin original in the notes where these occur and in Appendix 'C'. As for *De duodecim signis et planetis,* a new Latin/English text appears in Appendix 'B' - The *Stellæ hildegardis* of 1145 and the Great Conjunction of 1146.

[26] Richard J. Evans, *In Defense of History,* (London: W.W. Norton & Co. 1997). pp. 89-90. (*italics* my own).

[27] Richard J. Evans, *In Defense of History,* p. 110. As a result, this study is reliant upon multiple threads and sources of evidence. Particulars of many of these sources are detailed in the notes in this study.

commentary. The achievement of a fourth objective requires the previous three just outlined to operate simultaneously. That objective is to ascertain if astronomical, astrological, and cosmological aspects surface in these MSS in ways not yet observed but can be connected to other authentic works of Hildegard, her possible sources, or argue for others acting on her behalf.[28]

1.2 Literature Review and Translation Methodology

In this text-based study, a methodology which would be underpinned by a separate, isolated literature review is substituted with what can be described as a continuous, *in-line* literature review. In contrast to approaches used in field studies, such as mixed methods, what is developed in this study is more akin to what would be observed in a critical edition of a translated text. The nature and reliability of the primary source MSS is supported by their authenticity; the study translates directly from original parchments that have been digitised at high resolution and cross-correlated with transcriptions available in the literature. All translations of excerpts from the *Berlin Fragment* and from the original Latin text of the *De duodecim signis et planetis* ("Regarding the Twelve Signs and the Planets") appear in English for the first time. In addition, these excerpts from the two primary source MSS described in section 1.1 are developed within larger contexts generated in Chapters 2 and 3. The Latin text informing the translations, where necessary, appears in the notes. This structure places a premium on the necessity of comprehensive notes which can be considered as an important contribution to the in-line literature review structure (see Appendix 'A' for in-depth treatment).

1.3 The Berlin Fragment: Its Structure and Relationship to Hildegard's *Causae et Curae*

The *Berlin Fragment* is an inclusion among a sequence of manuscripts known collectively as the Codex Berolinensis and was first described by Hermann Degering in 1917.[29] The other works in the codex include: the autobiographical *Vita S. Hildegardis virginis* (fols. 1ra –

[28] In terms of the authenticity of the medico-scientific works of Hildegard, especially *Cause et cure de mundi creatione,* see Laurence Moulinier, 'Fragments Inédits de la Physica: Contribution à l'Étude de la Transmission des Manuscrits Scientifiques de Hildegarde de Bingen', *Mélanges De l'École Française De Rome-Italie Et Méditerranée,* 105 (1993), 629-650; also by Moulinier, 'Hildegarde ou Pseudo-Hildegarde? Reflexions Sur L'Authenticite du Traite *'Cause et Cure''*, in *Angesicht Gottes Suche Der Mensch Sich Selbst": Hildegard Von Bingen (1098-1179),* (2001), 115-146, and *Le Manuscrit Perdu à Strasbourg: Enquête sur l'Oeuvre Scientifique de Hildegarde*, volume 35 (Publications de la Sorbonne, 1995).

[29] Hermann Degering*, Mitteilungen aus der Königlichen Bibliothek Berlin III,* (Berlin: 1917), pp. 12-18 and reprinted in Hermann Degering, 'Kurzes Verzeichnis Der Germanischen Handschriften Der Preußischen Staatsbibliothek', *Mitteilungen Aus Der Preussischen Staatsbibliothek, VII* (1925), p. 114 *seq.*

24vb)*;* the *Epistolae* which is a collection of fifty-six lectures (fols. 25ra – 56rb); a single folio acrostic, cruciform *Schaubild Buchstabenkreuz* (fol. 57v)*;* the *Lingua ignotae* and *Littere ignote* which together constitute a unique Teutonic language and alphabet used among Hildegard's community of religious (fols. 58r – 62r); a brief four folios, the *Quindecim signa quae evenient ante diem judicii* which were revelations of fifteen signs that the last days of humanity were imminent (fols. 99vb – 102va); the *Speculum futurorum temporum* which became a widely-read piece of apocalyptic not attributed to Hildegard's hand (fols. 63r – 99vb) and lastly; the *Thuringiae revelationes,* the folios of which comprise the *Berlin Fragment* proper (fols. 103ra – 116ra).[30] Moulinier and Berndt noted that 'a first hand, from the beginning of the 13th- century, copied folios 1-62 and 103-116 and is probably the same as the one who copied, around 1220 CE, the Lucca Codex, MS. 1942, which contains Hildegard's final theological work, the *Liber Divinorum Operum*.[31]

The Codex Berolinensis had been purchased by Sir Max Wächter in 1895, then offered as a gift to Emperor William II who then donated it to the Royal Library of Berlin in 1912.[32] Following a hiatus in its examination, new interest developed in the 1950s when two Benedictine nuns – Marianna Schräder and Adelgundis Fürkhötter – conjectured that Folios folios 1-62 and 103-116 had been produced in the scriptoria of the Rupertsberg monastery in the early 1220s; Hildegard's own.[33] That same year witnessed the publication – unnoticed outside of Germany – of Heinrich Schipperges' transcription of the *Berlin Fragment* portion of the codex which provides this study with its most-used document.[34] The relationship between the *Berlin Fragment* and Hildegard's medico-scientific *Causae et Curae* becomes obvious from the outset; folio 103r in the *Berlin Fragment* begins in the middle of a word and in mid-sentence and is essentially verbatim from folios 9va-10ra of the Copenhagen Codex of *Causae et Curae* (see Plate I).[35] From that point on, the *Berlin*

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[30] Important additional information related to the structure and origins of the *Berlin Fragment* is available in the Introduction in Moulinier / Berndt, 2003, pp. XXVII – XXX.

[31] Moulinier / Berndt, 2003, p. XXVIII. Folios 103 – 116 comprise the *Berlin Fragment.* Visual re-examination of the MS source confirms their view that the same hand is responsible for folios 103 to 116. The *Lucca Codex, MS. 1942* of Hildegard's *Liber Divinorum Operum* (Book of Sacred Works) figures importantly in Chapter 2 of this study in terms of the imagery in its illuminations.

[32] Moulinier / Berndt*,* 2003, p. XXX. Here, they outline an interesting and valuable history of the *Codex Berolinensis,* including that it had been housed at the monastery of Trier which not only was frequented by Hildegard, but was the location of the Synod of 1147 where PP. Eugenius III gave Hildegard's early writings his apparently unequivocal support and *canonizati* (essentially a verbal *imprimatur*) to continue with her writing.

[33] Marianna Schräder OSB and Adelgundis Fürkhötter OSB, *Die Echtheit Des Schrifttums Der Heiligen Hildegard Von Bingen: Quellenkritische Untersuchungen* (Cologne: Böhlau, 1956).

[34] Heinrich Schipperges, 'Ein unveröffentlichtes Hildegard Fragment, (1956).

[35] See København, Digital MS online at: http://www5.kb.dk/manus/vmanus/2011/dec/ha/object61066/da/.

Fragment takes on its own, unique characteristics – including multiple *paragraphus* notations (℗) - and described as 'a fascinating text of anthropological and astrological content close in spirit to *Causae et Curae'*.[36]

1.4 Sequence of Chapters

Chapter 2 – *From the Imaginal to Text and Illuminations in the Berlin Fragment* – features new, translated excerpts and commentary from the *Berlin Fragment* itself. The focus of the excerpts is on planetary and cosmological aspects in the MS and their potential relationships to other works attributed to Hildegard. This is to provide additional input into the nascent debate among a very few scholars presently working in the area interfacing Hildegard's *Causae et Curae* and the *Berlin Fragment.* Presently, the centre of the debate about the origin, purposes, and nature of the *Berlin Fragment* is whether or not it is a unitary piece which can stand on its own merits, or is a collection of aphoristic, loosely-organised, provisional drafts of *pensées* that are inchoate to the modern reader and scholars of Hildegard alike. In this chapter, such concerns are addressed through evidence for planetary and anemographic melothesia through *text to imagery,* and the possible availability and use of astronomical and cosmological sources available to Hildegard and her community.

Chapter 3 – *A Twelfth Century Benedictine Science of the Stars* – examines an astronomical narrative prose section of *Liber I* of Hildegard's *Causae et Curae* which has not been adequately assessed by scholars nor been translated to a modern language in its entirety. This narrative, *De duodecim signis et planetis* ("Regarding the Twelve Signs and the Planets") occupies folios 5ra to 5vb of the Copenhagen Codex MS 90b.2° (ca. 1200 CE).[37] Once deemed as having no astronomical foundations, this narrative takes the reader – together with the sun – on the path of the zodiacal constellations of a complete solar year. Since there is reasonably precise positioning of the five planets of antiquity from sign to sign, all written in poetic allegory, it held the prospect of a testable hypothesis. Could this narrative have an astronomical foundation which has not been determined, and, be replicated retrospectively using planetarium software? This chapter outlines the results of this test. If the twelfth century was a time when both *astronomia* and *astrologia* were

[36] N.F.P., 'Editions of Texts: Hildegard Von Bingen: Physica. Liber Subtilitatum Diversarum Naturarum Creaturarum. Textkritische Ausgabe', *Medium Ævum:* Society for the Study of Medieval Languages and Literature, 1 (2011), 164-165. <https://www.jstor.org/stable/43632504>.

[37] See København, folios 5ra to 5vb.

regularly and acceptably intertwined and tolerated within the Benedictine monastic experience, such a test is not only important, it may also demonstrate the ability of the digital age to re-imagine time and skies of the past. That is, *computus* and *kairos.*[38]

Chapter 4 – *Summary and Conclusions* – revisits the aim of the project, to examine the MSS evidence from the *Berlin Fragment* and *Causae et Curae* for novel perspectives of Hildegardian cosmological views, associated medico-astrological ideas such as planetary melothesia, and the use of imagery through illuminations which speak visually to these aspects of her thinking. These are not yet adequately addressed in the literature. Considerations for future research are recommended in this chapter, providing iterative opportunities for the existing evidence to be re-interpreted with fresh eyes. Those eyes, as we will discover in Hildegard's visual field, always look upward to comprehend what is seen below.

[38] For the interrelationships of time, image, and medieval computus, see Faith Wallis, 'What a Medieval Diagram Shows: A Case Study of "Computus"', *Studies in Iconography,* 36 (2015), 1-40.

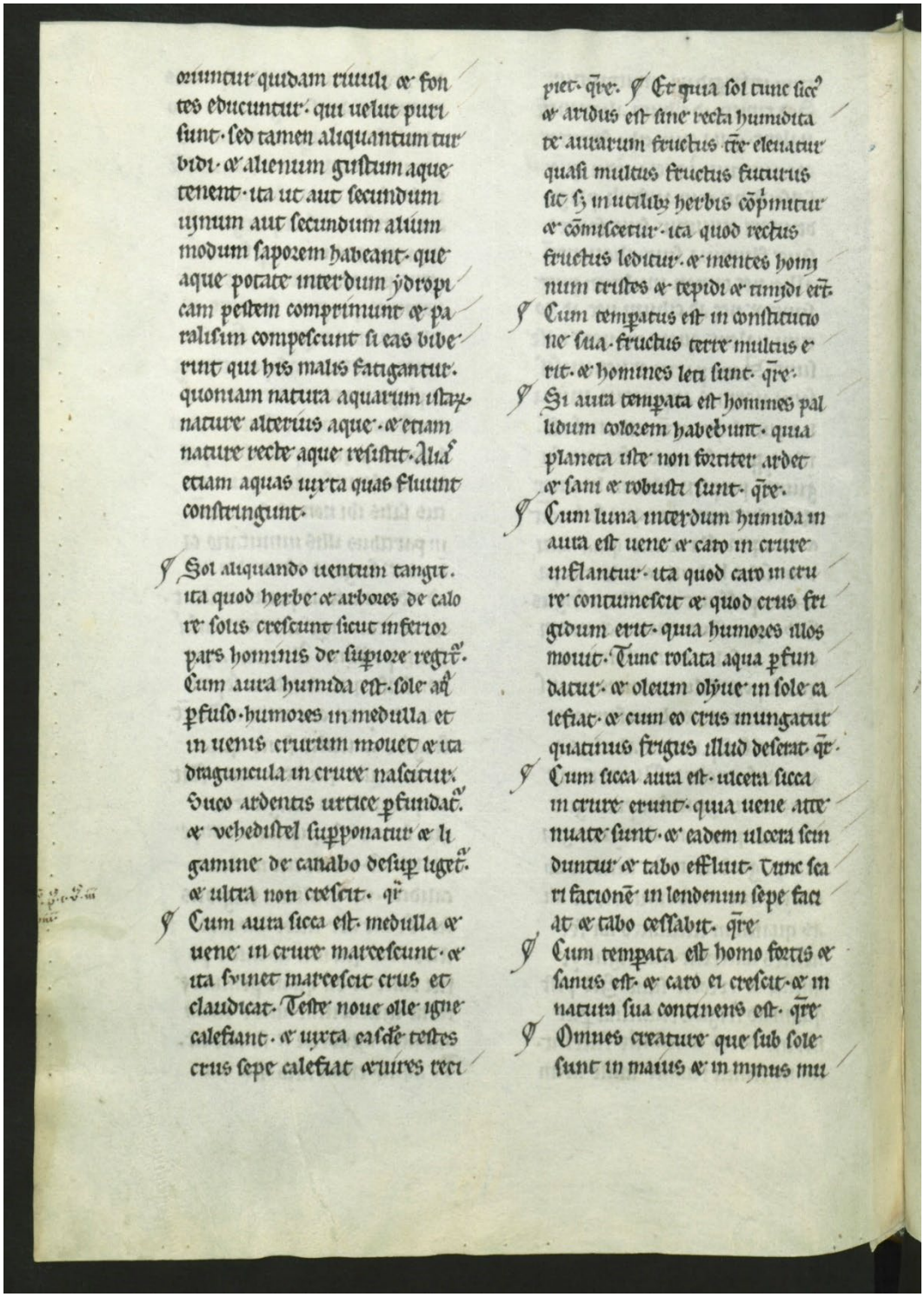

PLATE I

Paragraphus notations and use of *quere* by the copyist.[39]

[39] *Hildegard von Bingen. MS Lat. Qu. 674*, Folio 103va. Sammelhandschrift mit Texten von und über Hildegard von Bingen: Thuringiae Revelationes (Fragmente), (Berlin, Staatsbibliothek Preussischer Kulturbesitz, 2014). Digital MS online at: https://digital.staatsbibliothek-berlin.de/werkansicht/?PPN=PPN654043922 .

Chapter 2 – From the Imaginal to Text to Illuminations in the Berlin Fragment

The aim of this chapter is to provide new input into the continuing debate among scholars as to the nature and purposes of the text of the *Berlin Fragment* and its potential manuscript affiliations with Hildegard's *Causae et Curae*.[40] For instance, in terms of its *nature,* Hildegardian scholarship in German tends to incline towards the *Berlin Fragment* possessing an internal, coherent flow with the four elements of antiquity providing the organisational structure.[41] This view can be described as the *unitary* hypothesis. The anglophone, francophone and emerging Spanish-speaking Hildegardian community is supportive of the manuscript's fragmentary, if not inchoate, character; often using the word *miscellanea.*[42] There is a second and equally important aim, and this is to extend the preliminary work of José Carlos Santos Paz of the Universidade da Coruña on the *Berlin Fragment* with respect to postulated connections to illuminations in Hildegard's third and most detailed theological treatise, her *Liber Divinorum Operum.*[43] These new contributions come with a particular purpose in mind: to examine certain sections of the *Fragment* for previously unobserved or unpublished evidence which could be considered as cosmological, astronomical, melothesiac, and astrological, and link this to recent provisional

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[40] Hereafter, the *Berlin Fragment* will be cited as *BFragment* in notes and captions.

[41] The *unitary* hypothesis appeared in the original MS description of the *Berlin Fragment* by Hermann Degering in 1917 as *Neue Erwerbungen der Handschriftenabteilung, II.* Die Schenkung Sir Max Waechters (1912) Mitteilungen aus der Königlichen Bibliothek Bd. III, herausgegeben von der Generalverwaltung (Berlin: Weidmannsche Buchhandlung 1917). pp. 12-18.

See also the introduction to Schipperges, (1956) and; Hildegard von Bingen, *Physica: Liber Subtilitatum diversarum naturarum creaturarum*, Volume 1: Text mit Berliner Fragment im Anhang, Textkritische Ausgabe, ed. by Reiner Hildebrandt and Thomas Gloning (Berlin – New York: De Gruyter, 2010), pp. 407-410.

[42] This position is presently led by the work of José Carlos Santos Paz and previously by Peter Dronke and is most in-depth in the works of Laurence Moulinier. See her 'Hildegarde Ou Pseudo-Hildegarde? Réflexions Sur L'Authenticité Du Traité "Cause Et Cure"', in *Angesicht Gottes Suche Der Mensch Sich Selbst: Hildegard Von Bingen (1098-1179)* (Berlin, Akademie Verlag, 1998), and; Moulinier / Berndt, 2003.

See also Peter Dronke, 'The Four Elements in the Thought of Hildegard of Bingen: Cosmology and Poetry', *Studi Medievali,* 54 (2013), 905-922 and his 'Problemata Hildegardiana' in *Intellectuals and Poets in Medieval Europe*, ed. by Peter Dronke (Roma, IT: Edizioni di Storia e Letteratura, 1992), pp. 143-191, and; *Women Writers of the Middle Ages: A Critical Study of Texts from Perpetua (†203 CE) to Marguerite Porete (†1310 CE)* (Cambridge University Press, 1984). Dronke's essay in *Studi Medievali* (2013) was particularly critical of the unitarian hypothesis, referring to it as 'a tissue of errors', and 'illusory' (p. 141).

[43] Presently, José Carlos Santos Paz is the only scholar working directly with the *BFragment* in a modern language (Italian/Spanish). See for instance: José Carlos Santos Paz, 'El Fragmento de Berlin Atribuido a Hildegarde De Bingen y la Actividad del Scriptorium de Rupertsberg', *Anuario De Estudios Medievales,* 52 (2022), 857-886; Jose C. Santos Paz, 'Dal progetto all'immagine: il Frammento di Berlino e le illustrazioni del Liber Divinorum Operum', in *Ildegarda di Bingen, Nel Cuore Di Dio: Liber Divinorum Operum* le miniature di Lucca, ed. by Sara Salvadori (Milano: IT: SKIRA Editore S.p.A., 2022), pp. 134-140.

work on the *Berlin Fragment*.[44] At this juncture in the literature, there exists both reasoning and explicit requests for a more thorough examination, and it comes from the few authors who have written on this and identified certain lacunae.

Peter Dronke, in his 2016 essay *The Four Elements in the Thought of Hildegard of Bingen,* seemed unimpressed with previous scholarship which made attempts to reconcile the *Berlin Fragment* as a unitary text which had echoed - or acted to inform - Hildegard's *Causae.*[45] He concluded that 'the interpretation of the *Fragment* must begin afresh'.[46] Santos Paz has recently described the *Berlin Fragment* as 'an extraordinarily interesting document – deserving further study – of the activity that took place in the Rupertsberg [scriptorium] in relation to the text and the image of her [Hildegard's] cosmic vision'.[47] He further suggested that 'there is reasonable evidence to think that…[it] details written instructions for developing the images in the *Liber Divinorum Operum,* coming from Hildegard herself or from her circle of collaborators. The clues I am referring to are found in one under-researched text…[having] the status as miscellanea and doubts about its authenticity'. Santos Paz too rejects the position of the manuscript as unitary, unable to stand on its own merits as a singular, internally consistent work.[48] However, Santos Paz has

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[44] All references to Hildegard's *Causae et Curae,* including Latin transcriptions, are from Moulinier / Berndt, 2003. References to this critical edition follow the pagination of Moulinier/ Berndt. Manuscript references to the *BFragment* are from the *Codex Berolinensis, MS Lat. Qu. 674, folios 103-116ra, Hildegardis Bingensis. Sammelhandschrift mit Texten von und über Hildegard von Bingen: MS. Lat. Qu. 674, Thuringiae Revelationes (Fragmente).* (Berlin, Staatsbibliothek Preussischer Kulturbesitz). Cross referencing and pagination for the *BFragment* uses the following publications: Schipperges (1956), pp 41-77; one other critical edition was consulted (in German) which included, as an appendix, a transcription of codex Lat. Qu. 674 and is Hildegard von Bingen, *Physica: Liber Subtilitatum diversarum naturarum creaturarum*, Text mit Berliner Fragment im Anhang, Textkritische Ausgabe, Volume 1, ed. by Reiner Hildebrandt and Thomas Gloning (Berlin – New York: De Gruyter, 2010).

[45] The publication to which Dronke referred was the brief Introduction to the *Fragment* as provided by Hildebrandt & Gloning (see note above for reference). Dronke levels a blistering and unimpeded critique of their "aurgumentation as a tissue of errors" (p. 140) and maintains that the linkages 'they had proposed between *Causae et Curae* and the *Fragment* were all illusory'. (p. 141). See Dronke, Peter, 'The Four Elements in the Thought of Hildegard of Bingen: Cosmology and Poetry', in *Sacred and Profane Thought in the Early Middle Ages*, ed. by Peter Dronke (Firenze: Italy: SISMEL - Edizioni del Galluzo, 2016), pp. 139-154; reprinted from The Four Elements in the Thought of Hildegard of Bingen: Cosmology and Poetry', *Studi Medievali,* 54, (2013), 905-922. Peter Dronke died on April 19, 2020 during the early months of the SARS-CoVID-2 pandemic. The panegyric to him, penned by Charles Burnett of the Warburg Institute (University of London), appeared here: Charles Burnett, 'In Memoriam Peter Dronke (30. V. 1934–19. IV. 2020)', *Mediterranea: International Journal on the Transfer of Knowledge,* 6 (2021), 157-161.

[46] P. Dronke, 'The Four Elements in the Thought of Hildegard of Bingen' (2016; p. 141).

[47] See José Carlos Santos Paz, 'Dal progetto all'immagine: il Frammento di Berlino e le illustrazioni del Liber Divinorum Operum', in *Ildegarda di Bingen, Nel Cuore Di Dio: Liber Divinorum Operum* le miniature di Lucca, ed. by Sara Salvadori (Milano: IT: SKIRA Editore S.p.A., 2022), p. 140.

[48] 'Credo che vi siano ragionevoli indizi per pensare che esistessero istruzioni scritte dettagliate per elaborare le immagini del *Liber Divinorum Operum* e che queste istruzioni provenissero dalla stessa Hildegard o dalla cerchia dei suoi collaboratori. Gli indizi a cui mi riferisco si trovano in un testo finora poco studiato per diverse

remarked elsewhere that his conclusions with respect to the manuscript preparation of the *Berlin Fragment* are 'obviously subject to discussion given the partial nature of this study, not taking into consideration the entirety of the fragment of Berlin, but rather certain passages'.[49] This chapter of the study pays attention to some of these tentative positions, narrowing the gaps in scholarship.

Margot Fassler of the University of Notre Dame (USA), in her recently published *Cosmos, Liturgy and the Arts in the Twelfth Century,* referenced the first folio of the *Berlin Fragment* (folio 103ra-rv) which is essentially a verbatim text from *Causae* that appears unrelated to what follows in the remainder of the manuscript.[50] She directs back to the synopsis of Dronke, describing his review as 'a masterful analysis of the Berlin fragment…[and] is revelatory' in terms of the clues it may offer to how manuscripts were prepared, collaborated upon, and ultimately assembled in Hildegard's monastery at Rupertsberg.[51] An important corollary of these recommendations from the scholarly community is to broaden the scope of the analysis beyond Hildegard's vivid imagination, further than translation and exegesis from text, to the illuminations of her ideas; that is, to the *codicological.* By codicology the reference is to the materials, tools, techniques and eventually the outcome - artistic representations. Consequently, this chapter of the study takes newly translated sententiae from the *Fragment* and discusses connections to five broad categories of the medieval macrocosm / microcosm in Hildegard's vision of the cosmos: the seven planets, the sixteen fixed stars, the four winds, the four elements, and the four humours.

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ragioni (il suo carattere miscellaneo, i dubbi sull'autenticità)'. José Carlos Santos Paz, 'Dal progetto all'immagine: il Frammento di Berlino', p. 134. (trans. J. Murray).

[49] 'Obviamente son conclusiones sujetas a discusión, dado el carácter parcial de este estudio, que no toma en consideración la totalidad del fragmento de Berlín; sino algunos pasajes.' (Trans. J. Murray). See José C. Santos Paz, 'El Fragmento de Berlin Atribuido a Hildegarde de Bingen y la Actividad del Scriptorium de Rupertsberg, *Anuario De Estudios Medievales,* 52 (2022), pp. 883.

[50] P. Dronke, in his 'The Four Elements in the Thought of Hildegard of Bingn',(2016; p. 140) importantly points out that the opening folio of the *BFragment* comprises two columns of continuous prose taken directly from *Causae.* See Moulinier/ Berndt, 2003; pp. 49.6 to 50.18. The section of the MS begins in the middle of a word (i.e., *<aliquan>tum* and ends just as abruptly in the middle of a sentence (*<constringunt>*). This has been checked for this study in Copenhague, Kongelige Bibliotek, Ny kgl. saml. 90b, Florence, Biblioteca Medicea Laurenziana, cod. Ashburnham 1323.

[51] See the Introduction of Margot E. Fassler, *Cosmos, Liturgy, and the Arts in the Twelfth Century: Hildegard's Illuminated" Scivias"*. Philadelphia: USA. University of Pennsylvania Press, (2023; pp. 11). There, Fassler extracts a portion of Dronke's 2016 essay where he had described the *Fragment* as 'essentially a series of disjointed notes, loosely assembled…[the] notes do contain moments of brilliance…[but] remain as *pensées* which Hildegard had not had the opportunity to order and expand [upon]'. See the Introduction to this study for commentary on the structure within the *Fragment* with special reference to the scribe's multiple uses of the word *quere* ("inquire about this"). More will be said about this 'miscellany' hypothesis later in this chapter.

2.1 Introducing the Seven *Planetae* of the Berlin Fragment

Among the most visible characterisations of the planets in the *Berlin Fragment* is their arrangement with respect to one another and apparent lack of context. A source of frustration to scholars, the MS does not provide a reference point for the reader to place Hildegard's vision of the disposition of the planets into some broader cosmographic view. Almost triumphally, Jupiter is introduced with reference to its position to Saturn and to Mars in this way (see Plate II):

> The planet Jupiter, which is beneath the first [Saturn], is at hand to serve and promote the sun…the planet Mars is beneath and close to the one which provides service to the sun [Jupiter] and is his sword-bearing charioteer.[52]

In the folio immediately following, one discovers that the planets Jupiter and Mars have cosmographic connections to the left and right knees respectively. The *primus planete* ("highest planet") appears for the first time by name at the end of this folio, and with such de-contextualised suddenness that even in the original parchment this planet's visibility inline is easily missed (see Plate III). In *Causae,* the section of *Liber I* describing the sun's annual path through the zodiac constellations begins with the planets arriving in Capricornus to offer assistance to the sun as it begins its steady rise towards its summer apex in Cancer.[53] As will occur repeatedly in the *Berlin Fragment,* Hildegard always refers to the three suprasolar planets first, as these are positioned in the *igneam spaeram* ("sphere of fire") which in her cosmography is immediately above the *sphaerum ignis negram* ("sphere of black fire") bearing the sun. Of interest astrologically, in the *Abbeviation to the Great Introduction* by the Arabic astrologer Abū Ma'šar Ǧa'far ibn Muhammad ibn 'Umar al-Balhī (ca. 787 CE-†886 CE), the planet Mars is in its 'exaltation' in the constellation of Capricornus. The other two planets mentioned by Hildegard in this early portion of the

[52] *Planeta iovis minister solis, qui sub primo [saturnus] est... Planeta mars sub isto minister et* ***reithman*** *solis*. *BFragment,* 105ra_rb, II, 26-27, 148; 158-159. Note that all verse (sententiae) references to the *BFragment* will use the page convention of Schipperges (1956). Hildegard's Germanic neologisms appear in **boldface**. *Reithman* used by Hildegard here has been translated by Schipperges (1956, p. 52) as a "sword-bearing charioteer" as if fiery Mercury, so close to the sun, would have acted in a faithful, military, and protective service to the Sun. The scribe must have required clarifications on the matter at hand, for the end of each paragraph in this section features the word *quere* (inquire). This scribal feature of the *BFragment* was taken up in Chapter 1. See Plate I for the MS evidence.

[53] Cf. the treatment of *De duodecim signis et planetis* (The twelve signs and the planets) in Chapter 3 of this study.

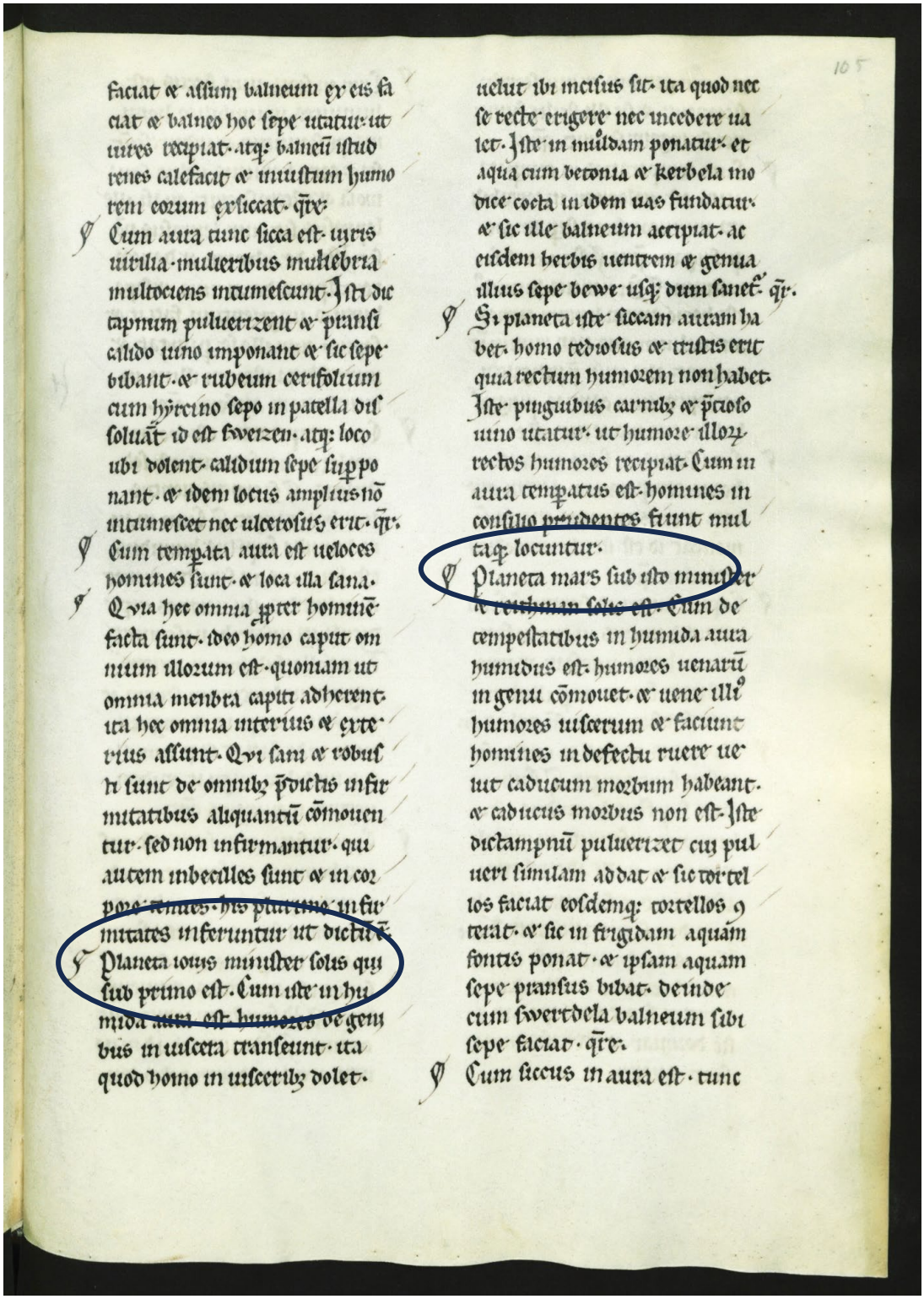

PLATE II

The planets appear by name in the *BFragment.*[54]

[54] *Hildegard von Bingen. MS Lat. Qu. 674*, Folio 105ra. Sammelhandschrift mit Texten von und über Hildegard von Bingen: Thuringiae Revelationes (Fragmente), (Berlin, Staatsbibliothek Preussischer Kulturbesitz, 2014). Digital MS online at: https://digital.staatsbibliothek-berlin.de/werkansicht/?PPN=PPN654043922 .

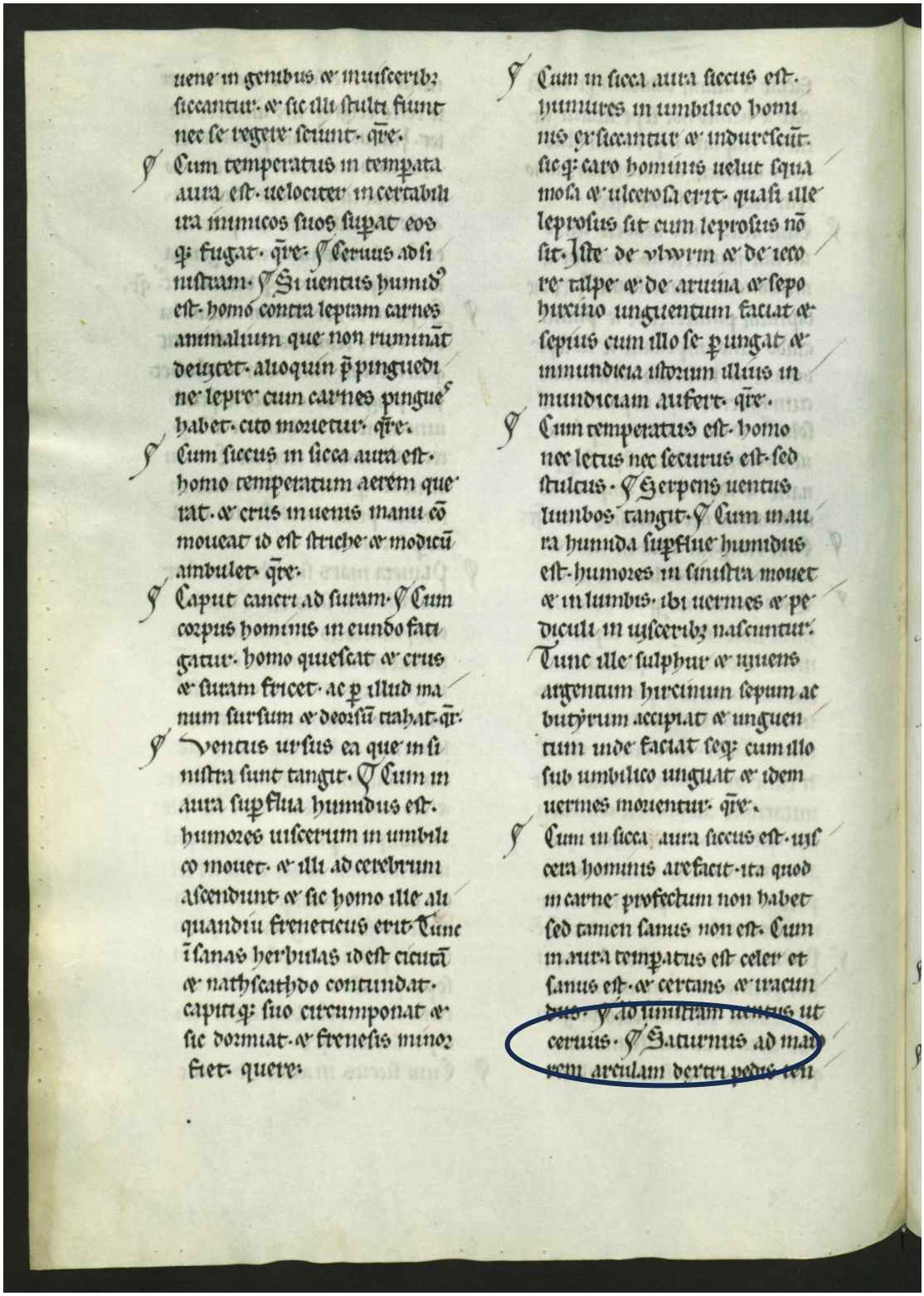

PLATE III

Saturn appears for the first time in the *BFragment.*[55]

[55] *Hildegard von Bingen. MS Lat. Qu. 674*, Folio 105va. Sammelhandschrift mit Texten von und über Hildegard von Bingen: Thuringiae Revelationes (Fragmente), (Berlin, Staatsbibliothek Preussischer Kulturbesitz, 2014).

Berlin Fragment are Saturn and Jupiter, which have their own Arabic-sourced astrological traditions with respect to Capricornus.[56]

It is in Folio 106 that the *Berlin Fragment* first enunciates all seven planets, which for Hildegard includes the five traditional *planetae errantes* (the "wandering stars") together with the sun (*sol*) and the moon (*luna*). However, this occurs in an unusual way and it is best seen in its entirety:

> Saturn exerts its influence in the direction of the large arch of the right foot; Jupiter to the left knee, Mars to the right knee, and the planet Jupiter exerts its influence toward the right shoulder; the planet Mars is exerting its influence toward the left shoulder [upper arm]. The sun to the seat of intelligence and reason, Mercury extends its reach to the right of the crescent-shape [moon], itself the strength and youthfulness which assists and directs her place.[57]

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[56] In Part I of his larger work – *The Great Introduction to Astrology* - the Arabic astrologer, Abū Ma'šar (ca. 787 CE - †886 CE) declares that there are 'two species' of sciences: the 'science of the universe' which we would described as astronomy (*αστρονομία*) and the 'science of the nature of every planet' which we would define as astrology (*αστρολογία*). In this section of the Berlin Fragment, one observes that Hildegard is much more inclined to the second of these 'sciences of the stars'; for her interests were principally in health and healing of the body. At first glance, there are strong indications that her medicine and connections to the planets was informed – at least partially – by *melothesia* and possibly through direct (or indirect) contact with a transcription of the *Astronomica* of Manilius (fl. 20 CE – 40 CE). On Marcus Manilius, see Steven J., Green, Katharina Volk and Mark Riley, 'Forgotten Stars: Rediscovering Manilius' Astronomica', *Aestimatio: Sources and Studies in the History of Science,* 10 (2013), 166-174, and; Katharina Volk, *Manilius and His Intellectual Background* (New York: NY: Oxford University Press, 2009).

It can be further noted that in the more condensed *Abbeviation to the Great Introduction* by Abū Ma'shar, the planet Jupiter is in its 'exhaltation' in the constellation of Sagittarius. The two planets mentioned by Hildegard in this section of the *BFragment* are Saturn and Jupiter. For Abū Ma'shar, 'Sagittarius is the house of Jupiter' and is therefore its planetary *ruler.* Saturn belongs to the third *decan* in Sagittarius, and the upper legs are the planetary melothesia locations on the human body (a *decan* = 10-degree span within a 30-degree zodiacal sign). See Abū Ma'šar and Adelard of Bath, in *The Abbreviation of the Introduction to Astrology: Together with the Medieval Latin Translation of Adelard of Bath*, ed. by Michio Yano Yamamoto and Charles Burnett. Islamic Philosophy, Theology and Science. Texts and Studies, vol. 15, (Leiden, The Netherlands: Brill, 2021), *I.61* and *I.68*.

[57] For Abū Ma'šar, the planet Saturn is in its 'domicile', hosted in the constellations of Capricornus and Aquarius of traditional Greek astrology. He writes, 'Capricorn is the house of Saturn' and is therefore, astrologically, its planetary *ruler.* It is the same for Aquarius. The planetary melothesia locations on the human body signified by Saturn are the lower legs (Aquarius) and feet (occupying the first *decan* of Pisces; a *decan* = 10-degree span within a 30-degree zodiacal sign). Jupiter and Mars are the next planets mentioned by Hildegard here, and she connects their influences to the knees of the body. The planetary melothesia locations for the knees are as follows: Jupiter occupies the first *decan* of Capricorn and Mars the second. As for Jupiter and Mars having influences on the shoulders, Abū Ma'šar states that these planets occupy, respectively, the first two decans of Gemini which inclines itself to the shoulders, upper arms (*humerum*) and the hands. The Sun, for Abū Ma'šar, is in the second decan of Aries which is the zodiacal sign of the head and the face, which would include the *cerebrum,* the seat of intelligence and anatomically, the brain. See Abū Ma'šar especially *I.2-3* p. 13 and *1.5-89* pp. 14-27.

> Venus extends her reach to the left of the crescent-shape [moon], aiding in the effort to carry away her light.[58, 59]

One initial observation is the ordering of the planets. Hildegard arranges them as Saturn-Jupiter-Mars-Sun-Mercury-Venus-Moon. This same arrangement, as we will see later in the *Berlin Fragment*'s treatment of her planetary melothesia in Folio 107, appears not to be Ptolemaic *per se,* but quasi-Tychonic.[60] The sequencing of the planets in Folios 106$^{ra\text{-}vb}$ remains systematic for Hildegard, from the 'highest planet' (Saturn) descending to the Moon as the planet nearest Earth. The sequence of the planets in Folio 107 also remains consistent: Saturn-Jupiter-Mars-Sun-Mercury-Venus-Moon. The planetary system of Ptolemy, brought forward from Babylonian astronomy, has this ascending sequence of the 'lower' orbs: Moon-Mercury-Venus-Sun. Note how Mercury and Venus are interchanged in the system as written by Hildegard. Is there a plausible explanation for this interchange? The answer quite possibly lies in the naïve adoption of a form of Tychonic (Egyptian) system, centuries before Tycho Brahe expounded upon it formally. Hildegard's is a helio-geocentric system in the inner solar system as: Sun-Mercury-Venus-Moon. Ambrosius Theodosius Macrobius, the Roman provincial known generally as Macrobius (fl. ca. 395 to 423 CE), in his widely copied *Commentarii in Somnium Scipionis* (Commentary on the Dream of Scipio) noted this difference between the Babylonian (i.e., Ptolemaic) and the Egyptian (i.e., Tychonic) systems which disagreed on the positions of Mercury and Venus.

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[58] Poetically, Mercury and Venus draw away the "curtain of light" which describes a waning crescent (or, for that matter, an early-cycle waxing crescent in the western sky just after sunset); each located at one of the sides of the crescent moon; astronomically, one can imagine a pre-dawn sky with a waning, balsamic moon in conjunction with Mercury on the one cups and Venus on the other. The next *paragraphus* (line 36) then begins to specify the actual cusps (horns) of the crescent moon. Other than the treatment of the day of conception during the lunar cycle in *Liber VI* of *Causae et Curae,* Hildegard only ever references the crescent moon.

[59] *Saturnus ad maiorem arculam dextri pedis tendit. Iovis ad sinistrum genu, Mars ad dextrum genu, Iovis planeta ad humerum dextrum tendit; Mars planeta ad sinistrum humerum tendit. Sol ad cerebrum, Mercurius ad dextram lune tendens, ipsi vires administrans. Venus ad lunam in sinistra tendit, lumen illius subtrahere iuvans*. *BFragment,* Folio 106ra, II, 35, 196-202.

[60] The Tychonic arrangement can be found in Cicero's *De natura deorum* ("On the Nature of the Gods") where he writes: *Infima est quinque errantium terraeque proxima stella Veneris, quae Phosphorus Graece, Lucifer Latine, dicitur cum antegreditur solem, cum subsequitur autem Hesperus;* << [The] lowest of the five wanderers and nearest to the Earth is the star Venus, called by the Greeks *Phosphorus* (i.e., the "bringer of light") and *Lucifer* among the Latins when it rises with the sun and *Hesperus* when it follows the sun >>. See Cicero, *De natura deorum II, 53,* trans. by H. Rackham (Loeb Classical Library, 1933), p. 175].

See Ambrosius Macrobius, *Commentarii in Somnium Scipionis, Liber Primus*, XIX, 1-27. See the diagram in Folio 47v here: https://art.thewalters.org/browse/creator/ambrosius-aurelius-theodosius-macrobius/ [accessed 06 November 2023], or the diagram of the Tychonic (Egyptian) cosmological model showing the displacement of the Sun and planets from the spheres of Earth and Moon in Folio 50v here: http://www5.kb.dk/permalink/2006/manus/33/eng/50+verso/ [accessed 07 November 2023].

These passages warrant closer attention with respect to Hildegard's unparalleled planetary melothesia, addressed in a subsequent section.

The possible availability to Hildegard and her contemporaries of newly translated Arabic astrological texts – especially that of Adelard of Bath and his translation to Latin of the *Abbreviation of the Introduction* of Abū Ma'šar – may have been an influence, but this is conjectural. In Chapter One of the *Abbeviation*, Abū Ma'šar announces to the 'lovers of philosophy and the higher sciences' that they are the 'possessors of long speculation on the wonders of the conditions of the wanderers in the universe' (i.e., the celestial bodies).[61] Perhaps Hildegard too viewed herself as a 'lover of philosophy' and by extension interested in the workings of the heavenly spheres. There is some evidence for this in an isolated verse in the *Berlin Fragment* which has the flavour of an aphorism, a line of lyric poetry, an antiphon to be sung; or all three on different levels. It occurs in Folio 109ra in an otherwise lengthy eschatological narrative:

> The pagan philosophers who were Roman citizens, namely Donatus and Lucanus, were the foretaste of that earlier stream of flowing, medicinal nectar giving voice to the philosophers of the Church. As the sun shines its light upon every part of the world, so also the sacred breath of life is exhaled upon all; [so] the human being has comprehension and discernment, a breath in the intellect which then considers possibilities.[62,63]

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[61] Abū Ma'šar*, The Abbreviation of the Introduction., I.2-3.*

[62] *Pagani philosophi ut donatus, [ut] Lucanus, erant precurrens sucus et precurrens vox philosophorum ecclesie. Sol per totam terram lucet; ita et exspiratio spiritus sancti. Quod homo intellectum habet, possibilitas anime est. BFragment,* Folio 109ra, III.13, 399-401. In the MS, Hildegard employs a poetic echo by using the noun *precurrens* twice in the same sententia. The entire sententia, when written in the form of a stanza, has the hallmarks of medieval lyric poetry, including: rhythmic parallelism, the use of abundant rhyme, and echo effects. Therefore, *precurrens* may have been repeated as a literary device, but with the authorial intent to have different meaning of the adverb. See P. Dronke, "Further Lyrics by Hildegard of Bingen?", in *Sacred and Profane Thought in the Early Middle Ages*. SISMEL, Edizioni del Galluzzo, 2016. Pp. 121-137, esp. pp. 123.

Here, the word *anime* is translated as "breath", not soul, to connect sententiae 13-15 into a comprehensive description of the nature of the rational soul. These sententiae were taken up twice in essays by Peter Dronke: in 1992 in his *Problematica Hildegardiana* he stated "there seems no reason to doubt the authenticity of the two sentences just cited. Indeed, for one versed in Hildegard's modes of expression, the strange phrase *precurrens sucus* is so distinctively Hildegardian as to leave little room for doubt." (pp. 158-159). See also his 2013 essay *The Four Elements in the Thought of Hildegard of Bingen* where he takes up the same sententiae but claims that he "still cannot propose a Donatus commentary such as might let the grammarian be viewed as a philosopher and a Christian precursor" (Dronke (2013, pp. 148)). However, there may well remain a possible source for Hildegard in the treatment of Donatus in the *Cosmograhia* of Aethicus Ister (ca. early 8th century; see Michael W. Herren, *The Cosmography of Aethicus Ister: Edition, Translation, and Commentary*, (Belgium: Brepols, 2011); pp. 20-21 and 146-147). In para. 20 of *Aethicus Ister,* the self-styled autodidactical author notes that Lucanus wrote of many different and fantastic beasts: *Lucanus quidem ista sentiens tantundem exorsus est dicere* ("Lucanus, expressing much the same thoughts, began to discuss them [the many beasts]; tr. adapted by J. Murray from Herren (2011; p. 146).

[63] When viewed in poetic stanza form, this sententia takes on the visibility as a line of lyric poetry, perhaps an antiphon to be sung, or, more colloquially a saying which came up in conversation with Hildegard's scribal colleagues:

These sententiae comprise a striking and daring appeal to the importance of a stream of learning (the "nectar") and rhetorical or philosophical foundations (the "voice") which came to the Church fathers via classical poetic literature and the grammarians (i.e., Lucanus and Donatus). Schipperges noted that next to the sacred scriptures of Christianity, the classic texts from both Ælius Donatus (i.e., the *Ars Major, Ars Minor,* and the *Vita Vergili*) and Marcus Annaeas Lucanus's *Pharsalia* were among the most common texts available in the cathedral schools' lists up until about 1300 CE.[64] It is perhaps not surprising that the figure of Lucanus would arise given the eschatological flavour of the narrative which surrounds these verses. Lucanus's type of imagery with its climactic cosmic dissolution figured prominently in the apocalyptic of the Stoics.[65] Though outside of the present study, the reference to Lucanus is nevertheless important generally for the *Berlin Fragment*. Hildegard's own eschatological view – including that of the human race – is expounded upon in Folio 112.[66] Similar to her received wisdom through the writings of the Church Fathers (included in the *officio divina* of Benedictine prayer), and Lucanus's *Pharsalia,* Hildegard too writes of the *ekpyrosis,* the consumption of the world by fire.[67] The next

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Pagáni philósophii ut Donátus, [ut] Lucánus, erant precurrens sucus et precurrens vox philosophórum ecclesii.	The [pagan] philosophers who were Roman citizens, namely Donatus and Lucanus, were the foretaste of that earlier stream of flowing, medicinal nectar giving voice to the philosophers of the Church.
Sol per totam terram lucet; ita et exspirátio spíritus sancti. Quod homo intelléctum habet, possibílitas ánime est.	Just as the sun shines its light upon every part of the world, as if an exhalation of sacred breath; [so] the human being has comprehension and discernment, a breath in the intellect which considers possibilities.

Foundational studies in medieval lyric poetry come from Peter Dronke in his *Latin and Vernacular Poets of the Middle Ages*, Variorum Collected Studies Series, Volumes CS352, CS352 (Hampshire UK: Variorum, 1991); *Poetic Individuality in the Middle Ages: New Departures in Poetry, 1000-1150* (Brepols Pub., 1986). The structural aspects of medieval lyric poetry are taken up by Thomas C. Moser in *A Cosmos of Desire: The Medieval Latin Erotic Lyric in English Manuscripts* (Ann Arbor: University of Michigan Press, 2004), and Barbara Newman in *God and the Goddesses: Vision, Poetry, and Belief in the Middle Ages* (Philadelphia: University of Pennsylvania Press, 2003).

[64] Schipperges, his note III.13 pp. 59.

[65] Michael Lapidge, 'Lucan's Imagery of Cosmic Dissolution', *Hermes,* 107 (1979), 344-370.

[66] See *BFragment,* Folios 112ra-vb.

[67] In Lucanus's *Pharsalia,* it is fire which consumes the world to regenerate it, providing rebirth from the corruption which had come to define it. This "extraordinary last day", the *novissimum dies,* may not allude to the end times in accordance with the Christian view of the final day of divine judgement, but has better alignment with the pagan (Stoic) views of a cyclic regeneration of the world by fire. In the 12th century of Hildegard's time, much of the Christian world would have been anxious about – or maybe even welcoming of – the imminent finality of the world which would end human misery, the widespread corruption in the Church, and heretical movement. The latter were gaining momentum then in Germany with Catharism, of

section examines the role of the planets in the *Berlin Fragment* with emphasis on the apparent inability to appreciate what she is writing about, unless there is access to complementary imagery.

2.2 From Text to Image in the Berlin Fragment

Perhaps the strongest argument favouring the position that the *Berlin Fragment* as a loosely organised, decontextualised collection of Hildegard's thoughts, or as 'provisional, discarded drafts' of text not intended to make their way into a major finished work rests its case among certain (though rare) scholars with the need for *imagery.* This is an important component of what I refer to as the hypothesis of *miscellanea.* Santos Paz considers it from a 'project to image' position in this way:

> …the non-autonomous nature of these texts [in the *Berlin Fragment*] which, to be understood, require familiarity with [Hildegard's] cosmic vision of the *Liber Divinorum Operum.* To which they add partial and precise nuances: specifically, the influences of the planets and the winds upon the human body and, in connection with these, medical contexts.[68]

The astrological and metaphysical content of Folios 106 to 108 serve to illuminate the situation. We begin with a return to the arrangement of the planets from the previous section, offering additions to that portion which ended with 'Venus extends her reach to the left of the crescent-shaped moon, aiding in the effort to carry away her light'.[69] That narrative continues with:

> The right horn [cusp] of the crescent-shaped moon extends its reach to the right eyebrow, the left horn to the left eyebrow. The Sun comes near to the Moon and she to him for he is the one who ignites and enflames her. And what the sun extends to the seat of intellect and intelligence, the moon then bends into a crescent and thereafter extends its reach to the eyebrows like unto a set of scales. [70]

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which Hildegard was not only a fierce opponent theologically, but actively so in her correspondence and preaching tours.

[68] José Carlos Santos Paz, 'Dal progetto all'immagine: il Frammento di Berlino e le illustrazioni del Liber Divinorum Operum', in *Ildegarda di Bingen, Nel Cuore Di Dio: Liber Divinorum Operum* le miniature di Lucca, ed. by Sara Salvadori (Milano: IT: SKIRA Editore S.p.A., 2022), p. 137.

[69] *Venus ad lunam in sinistra tendit, lumen illius subtrahere iuvans*. *BFragment*, Folio 106ra, II, 35, 201-202.

[70] *Dextrum cornu lune ad dextrum supercilium tendit; sinistrum cornu ad sinistrum supercilium. Sol ad lunam et ipsa ad eum, quoniam ab eo accenditur. Et quod sol ad cerebrum et quod luna ad supercilia tendit, quasi libra est*. *Berlin Fragment,* Folio 106ra, II, 36, 202-205, For the ignition of the fires of the moon by virtue of coming near to the Sun at New Moon and the fourteen days following, see *Causae et Curae, Liber 1, Folio 3vb, v. 13-17: Illam accendit, sed et cetere planete et stelle atque aer et cetera luminaria, que circa lunam sunt, ad eam flagrant et ad accensionem eius ipsi succurrunt. Et postquam incensa fuerit, paulatim crescit usque ad plenitudinem suam, sicut etiam rogus vel domus incensa paulatim incipit ardere, usque dum tota incendatur.*

It would be difficult – if not incomprehensible – to contextualise what Hildegard intends in this poetic section without its intending to become image from text, relate to some other text (but unknown), or utilised as a heuristic within the monastic scriptorium to instruct potential illuminators.[71] As it turns out, there is a manuscript available which illustrates this selection from the *Berlin Fragment* in a manner which is appealing, if not mirroring it; the image is *Visio secunda* of the illuminated manuscript now held in the state library of Lucca

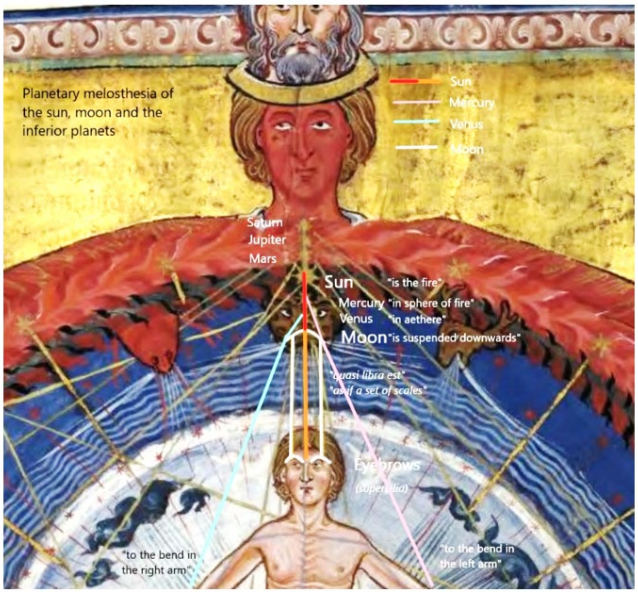

Figure 1: Detail of *Visio II* of the *Liber Divinorum Operum*. It demonstrates the relationships among sun, moon and human eyebrows (supercilia) as outlined by Hildegard in folio 106ra of the *Berlin Frgament*. MS Lucca Codex 1492, Biblioteca Statale di Lucca. Used with permission.

in Italy. This MS is Hildegard's *Liber Divinorum Operum* (Book of Sacred Works) which is the last of the trio of theological treatises produced in her lifetime. Detail from this image appears in Figure 1, with annotations added to include the features just described in the selection from the *Berlin Fragment*.

Following this, there is a gap in the narrative which directs its attention to what I will refer to as the *planetary winds,* the *tongues of clouds* (*linguae*) and the *proportions* of the human figure. These aspects are treated in the next section on Hildegard's melothesia. Hildegard picks up where Folio 106ra left off with what is the lengthiest continuous prose narrative of the manuscript. Occupying thirty-eight verses, it is prose which appears to demand a complementary image, at least in the imagination of the viewer. What follows are brief

<< He (the Sun) enkindles her (the Moon), but the rest of the planets, the stars, the air and the other luminaries that are around the moon are also inflamed with passion and they themselves assist her as the attendants of the new moon (i.e., *accensionem* = new moon). And after she has been set on fire, she [the moon] gradually grows to her ardent fullness, just as a pyre or a house on fire first begins to burn gradually, until it is completely consumed by fire >> (See Moulinier & Berndt (2003); incl. their note on pp. 28).

[71] Michela Pereira was inclined to the latter of these positions, that Hildegard would have required specific instructions for her illuminators at the Rupertsberg scriptorium. See her 'The Fullness of Creation. Incarnation and Humanity in the *Liber Divinorum Operum* ', in *Hildegard Von Bingen: In the Heart of God; Liber Divinorum Operum, the Lucca Miniatures*, ed. by Sara Salvadori (Milano: IT: SKIRA Editore S.p.A., 2021), pp. 9-13. This may only be a part of the story as is mentioned later in this chapter.

excerpts from this verse, becoming comprehensible to the reader when juxtaposed with the original illumination. Plate 4 provides the planetary, anemographic [72] (winds), and fixed star perspectives as a guide, and the complete sequence with translation is in Appendix 'C'.

> Saturn occupies the summit of the highest of circles. The sun is in the [black] fire. The moon's crescent suspended downwards – pendulum like - in the same place within the aether underneath Venus.[73] A streak [of light] descends to the eyebrows from both cusps of the moon. The wind which is the crab was to the right in the upper air [aether], and on the left side in the upper air, the stag wind.[74]
>
> *BFragment,* Folio 107rb – 107vb, II, 48, 287-290.

[72] *Anemography* is an artistic expression of a physical presence (in this case the winds) which is vivid, fantastic, or illusory but has movement. That is, it is a form of *enargia* (*ενάργεια*) which in the literal sense means "having vividness".

[73] The word *ventus* appears in the original MS but is stated as a proper noun; hence, it is more likely an entity or object misnamed by the copyist. José Carlos Santos Paz also makes the suggestion that this is an editorial error by the copyist, and that the intended word was the planet Venus. The most illustrative argument supporting this position rests in the text sequence itself.

[74] *Saturnus in summitate summi circuli. Sol in igneo. Venus vento in æthere. Luna deorsum pendens in eodem æthere sub vento. Virgula de utroque cornu lune ad supercilia descendens. Venus dextra parte cancrum in æthere, in sinistra cervum in æthere. BFragment,* Folio 107rb – 107vb, II, 48-9, 287-325.
Ignis medulla hominis, aer vox eius, aque vene ipsius, terra ossa eius. BFragment, Folio 107rb – 107vb, II, 49, 325-326.

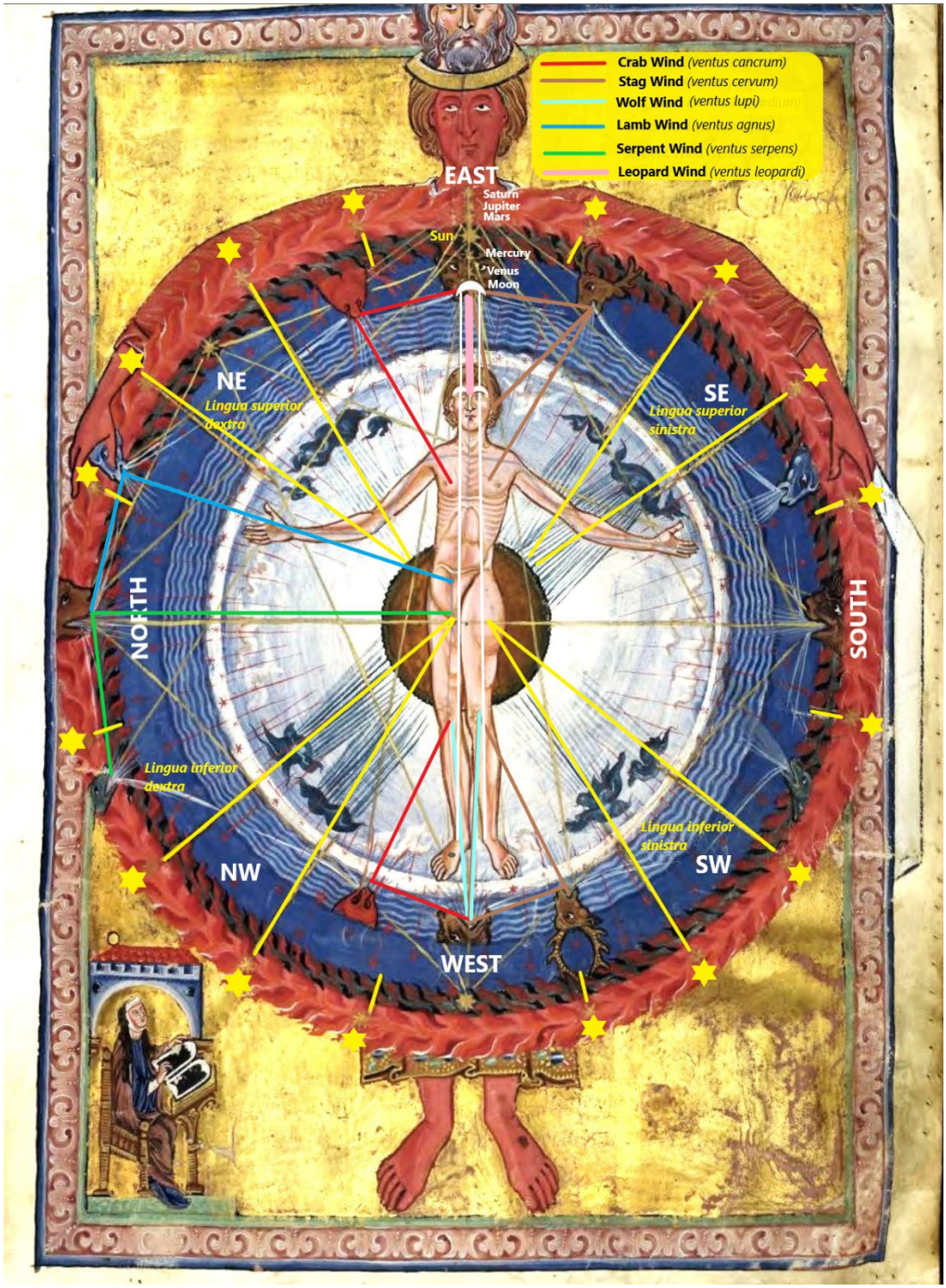

Plate IV:

Visio II of the *Liber Divinorum Operum*. It demonstrates the relationships among the planets (located in the east), the winds, and the fixed stars.

[75] Folio 107rb-va of the BFragment. Lucca Codex 1492, Biblioteca Statale di Lucca, Italy. Used with permission.

In her 2013 study of the historical sky and associated astrological motifs in the frescoes of the Salone di Palazzo della Ragione in Padua, painted in the fourteenth century by Giotto di Bondone, Darrelyn Gunzburg maintained that 'it is often an assumption…[that] textual documents alone give us primary information about the way people thought about their world'.[76] If a fuller appreciation of what Hildegard describes in this portion of the *Berlin Fragment*(the 'textual') requires associated imagery (the 'visualisation'), then this must be sought in her *oeuvre*. The evidence from text and its reasonable fit with at least one of Hildegard's cosmological visions as appearing in *Visio secundum* of the *Liber Divinorum* invites further work in this area of text-to-image.[77] Hildegard's reputation for the visionary, the imaginal, and the poetic with respect to the micro / macrocosm of the twelfth century must have included what Gunzburg described as 'an iconography that…[was] part of an ensouled cosmology'.[78] Hildegrard does speak to this 'ensoulment' on multiple occasions in the *Berlin Fragment*; always invoking the four elements when she does so:

> Earth endures in bringing forth life and is like unto the dwelling place of the soul; because if the breath of life were to pass into it and this dwelling place were to be destroyed, there is no life; and so the Creator-god placed it there, for where there is soul there is life and the soul gives life to the body: because earth too is as the body.[79]
>
> The lights of the firmament are as earth is; she is life-giving and strengthening, giving vitality to souls. Through its obedience, the firmament strengthens the earth with its light and is her feminine attendant and handmaiden, since her fire fortifies, her air preserves, and her water bathes; for in the same way the firmament goes around as one which provides the works of a slave; as if the earth stood still in the manner of one who has dominion, and is seated on a throne.[80]

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[76] Darrelyn Gunzburg, 'Giotto's Sky: The Fresco Paintings of the First Floor Salone of the Palazzo Della Ragione, Padua, Italy.', *Journal for the Study of Religion, Nature & Culture,* 7, (2013), p. 407.

[77] As of this study, some of that work is underway by J. Murray with the *BFragment* and its textual relationship with two other illuminations in the Lucca Codex of the *Liber Divinorum Operum*; namely, *Parte I, Visio tercia* (Macrocosm of Winds, Microcosm of Humours; Lucca Codex MS 1492, folio 28v) and *Parte I, Visio quarta* (Cosmos, Body and Soul); Lucca Codex MS 1492, folio 38r.

[78] Darrelyn Gunzburg, 'Giotto's Sky: The Fresco Paintings', *op.cit.,* p. 430. It is noted here that Gunzburg's approach to her examination of the astrological and astronomical aspects of Giotto's frescoes involved the use of digital retrospective sky mapping together with traditional astrological horoscopic techniques. Chapter 4 in this study adopts Gunzburg's approach to similarly date the historical sky - in this instance the sky over 12th-century Bingen Am-Rhein – to position an otherwise isolated narrative about the sun's annual path through the contellations from Hilegard's *Causae et Curae.*

[79] In a very poetic and passionate metaphor, earth is the vessel which holds all animate living things without which vessel there can be no life (macrocosm); the human body by virtue of the closing simile is the *tabernaculum* or dwelling place, of the human soul, taking its place in the dusty clay of the earth which is the human body (microcosm). No earth, no life; no corporeal body, no life of the soul. *BFragment,* Folio 108rb, III, 4, 354-362.

[80] *Terra vitalis sustentatio et domus animarum est, quia anima pertransiret, si domus eius destrueretur; et deus eam posuit, ut cum anima vita esset et anima vita cum illa in corpore, quia corpus terra. Firmamentum*

> O Fire! The quintessence of being human, air the human voice, water the blood of human veins, earth the dust of human bones.[81]

The insights in these sententiae are notable. Earth is an 'ensouled' entity in the cosmos and mirrors the ensoulment of the body which is of iteself animated. All four elements are included in this vision: fire fortifies as marrow, air preserves and has voice, water bathes and flows as blood, earth the body and its supportive structure. Similar metaphorical langauge occurs in other locations in the *Berlin Fragment,* most notably here:

> Then, as the dusty clay of the earth lay dormant, God breathed the breath of life into the opening to the lungs of the human being. And when He had sent forth all the elements which had proceeded from the command of God through the Word, these were as obedient attendants who had embraced the same breath which had commanded the dusty clay of the earth. Thus, the human being can know and understand all things. Fire, air, water, earth, and all that exists besides can be considered as being within the human being; and so, all these [created] things cannot cause harm to the soul but can cross the barrier to do harm to the body. [82]

In her *Scivias,* Hildegard noted that the elements lost their primordial stability through humanity's fall from grace in the *paradysum.* Hers is a metaphysics of the elements which becomes quite visible in the *Berlin Fragment* and echoes the views expressed (possibly) in her poetic sources from among the *pagani philosophii.* Human conflicts were a regular expression of that cosmic turmoil in the sublunary world once the elements had been 'touched by the works of the human being'.[83] This disturbance in the elements also reminds of the *Kosmos und Sympathie* of Karl Reinhardt in his 1926 study of Posidonius and in

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servicium est luminis et terra firmamentum vite vitalium animarum, quia eas retinet. Firmamentum est servicium et obsequium luminarium terre et terre ministrat, quoniam ignis eam firmat, aer retinet, aqua perfundit; quoniam firmamentum circuit sicut qui <108va> ministrat, et terra stat velut qui dominando sedet. *BFragment,* Folio 108rb, III, 4-5, 354-362.

[81] *O Ignis! medulla hominis, aer vox eius, aque vene ipsius, terra ossa eius. BFragment,* Folio 107vb, II, 49, 325-326.

[82] *Cum limus iacebat, deus spiraculum rationalitatis in illum misit, id est viventem ventum. Et cum mitteret omnia elementa, que in verbo iussionis dei processerant, ei occurerunt quasi famulando, que spiraculum illud comprehendit, et sic secum in eundem limum duxit. Unde homo omnia scit. Ignem, aerem, aquam, terram et cetera in se habet; et hec omnia animam non ledunt, corpori autem sepe nocent*. *BFragment,* Folio 106va, II, 42, 235-240. Cf. *Berlin Fragment,* Folio 107vb, v. II.49 (325-326): *Ignis medulla hominis, aer vox eius, aque vene ipsius, terra ossa eius;* << O Fire! The quintessence of being human, air the human voice, water the blood of human veins, earth the dust of human bones >>; also Hildegard, *Causae et Curae,* Folio 9ra, K 23. 25-28: *Sed quemamodum anima rationem, intellectum, scientiam et sensibilitatem in se continet; sic etiam firmamentum quatuor elementa secundum genus suum in se continet et sustenat.* << But the soul contains reason, intellect, knowledge, and sense perception in itself; so too the firmament contains and sustains the four elements in itself according to its nature >> (trans. courtesy P. Dronke). See Moulinier/ Berndt, 2003; p. 47.

[83] *Ipsa tanguntur ab operibus hominum*. *Causae et Curae,* 91.12. See also P. Dronke, 'The Four Elements in the Thought of Hildegard of Bingen', 2016; pp. 148-149.

Lucanus's *Pharsalia* as he poetically described the dissolution of the elements as a corollary of the Roman civil war.[84]

The four elements also echo a section of Hildegard's *Causae et Curae* where she outlines the relationships among the stars in the firmament and the works of humankind. This is more than simply a geometric arrangement of *here below* and *so above.* It is an arrangement as intimate, as mutual, and as selfless as a lover's caress. There exists for Hildegard – and she attaches to this a word not in Latin, but in its Greek equivalent - a cosmic *sympathia,* a feeling of having a connectedness or something in common.[85] In addition, there is a demarcation by Hildegard as to the degree to which the stars have influence (or not) on human affairs. Bernadette Brady endeavoured to reconcile the unpredictability of the heavens in relationship to human cultures and actions. Brady's neologism - *chaosmos* - possessed the 'cosmic surety of [the] heavenly numbers' which was the remit of the astrologers, and added was the term *sumpatheia (*Greek *συμπάθεια)* to describe the complex, reticulate interconnections of all attributes of the cosmos which allow for us here below to have a lived experience *embedded* in the cosmic tapestry. We are not in isolation from it, or separated out in conflict with it, or encouraging ourselves to have dominion over it.[86] In Hildegard's *Causae et Curae,* there is a sententia complementary to Brady, an echo where the abbess outlines the relationships between the stars in the firmament and the works of humankind. It was unacceptable for Hildegard to live with a *fated sky* which was at once indifferent to the human condition and irrevocably in control of those conditions. To emphasise this point, there exists in Hildegard's *oeuvre* an Augustinian-like aversion to astrological investigations or understandings if these imperil the independence of the human being. This is an important demarcation by Hildegard as to the degree to which the stars have influence (or not) on human affairs and is explicit in the first of her visionary theological works – the *Scivias.* In *Liber I, Visio Tercia* (*parte XXI*) of that treatise, we read:

> For I do not want you to scrutinise stars, or fire, or birds or any other creatures or objects for signs of future events…[Oh] human, where were you

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[84] See Reginald E. Witt, 'Plotinus and Posidonius', *The Classical Quarterly,* 24 (1930), 198-207, and; Lucanus, *Phrasalia,* I. 72-81 (also noted by P. Dronke, (2016; pp. 148-149).

[85] A modern and astrological interpretation of this 'cosmic sympathy', or *sumpatheia* as it has come to us from the Stoics, is taken up in detail by Bernadette Brady who exponded on the interrelationships among the measurable geometrical motions of the sky which can be put to numbers and the complementary metaphysics of how these signs and symbols allow for the cosmos to 'speak to life on earth'. See Bernadette Brady, *Cosmos, Chaosmos and Astrology: Rethinking the Nature of Astrology* (University of Wales Trinity Saint David: Ceredigion, Wales, UK.: Sophia Centre Press 2014), pp. 13-19 and 116-121.

[86] See Bernadette Brady, *Cosmos, Chaosmos and Astrology,* especially pp. 10-11.

> when the stars were made? Are you able to pass judgement and give advice about their arrangement?[87]

The next section of the study focuses on evidence of Hildegard's *melothesia* as this may apply to the textual evidence in the *Berlin Fragment.*

2.3 Melothesia in the Berlin Fragment

The interrelationships among the planets, the winds, and the body of the human being dominate the *Berlin Fragment* to the extent that these occupy fully half of the MS text; from Folios 103 through 108. It is beyond the scope of this study to provide a comprehensive treatment; therefore, this section will be selective, attempting to demonstrate where Hildegard's thinking shines brightly in this regard.

2.3.1 Planetary Melothesia in the Berlin Fragment

The first to expound on Hildegard's melothesia was Hans Liebeschütz in his 1930 *Das allegorische Weltbild der heiligen Hildegard von Bingen,* described by Peter Dronke as 'the first major study of Hildegard in this [the twentieth] century…[and] remains arguably the most profound and most penetrating that has been devoted to Hildegard's thought.'[88] Almost a century later, the freshness of Liebeschütz's work helps to frame Hildegard's thoughts on the role of the planets in the macrocosm of the firmament and the microcosm of human experience. In *Das allegorische,* Liebeschütz maintains that it was crucial for Hildegard to have had direct access to, or at least was privy to lengthy discussions about, the reception of Arabic astrological texts newly translated into Latin. In particular, he pointed to astrological knowledge as *gnosis,* or 'secret knowledge about the inner structure and the forces of the cosmos'.[89] One particular source for Hildegard, he argued, was the *Proaemium* of Julius Firmicus Maternus (*fl.* mid-fourth cent. CE). This influence, for Liebeschütz, was due to Maternus' emphasis on the powerful rays attributed to the sun and

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[87] At first glance, this apparent antagonism with respect to astrology seems hardened. The folios of the *BFragment* argue otherwise. The pagan philosophers who would have counted the *mathematici* as among them, possessed the *nectar* which nourished the church's theologians. Extract from *Hildegard of Bingen: Scivias*, ed. and trans. by Mother Columba Hart OSB and Jane Bishop, Classics of Western Spirituality, series edited by Bernard McGinn (Mahwah, NJ USA: Paulist Press, The Abbey of Regina Laudis: Benedictine Congregation Regina Laudis of the Strict Observance, Inc., 1990). pp. 100-101.

[88] Peter Dronke, in Preface to 'The Allegorical World-Picture of Hildegard of Bingen: Revaluations and New Problems', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), and p. 1. See also Hans Liebeschütz, *Das Allegorische Weltbild Der Heiligen Hildegard Von Bingen*, 2nd edn. (Wissenschaft Buchgesellschaft, 1964). A reprint from 1930 original.

[89] 'Er will dem Adepten in der Kunst alles an Technik zur Beherrschung der Himmelserschei- nungen übermitteln und alles geheime Wissen über den inneren Bau und die Kräfte des Kosmos.' Hans Liebeschütz, *Das Allegorische Weltbild,* p. 82. (trans. J. Murray).

moon, but always in cooperation with the remaining planets. There is a striking relationship between Liebeschütz's position with respect to Hildegard's imaginal sources and what is observed in the illumination from *Visio secunda* of Hildegard's *Liber Divinorum Operum*.[90] He describes Hildegard's visionary melothesia as unique to her, with a profundity of his own:

> The primacy of the sun and moon in the transfer of the heavenly forces to the human body occurs in a particular form for Hildegard, with the other five planets casting their rays one to another throughout the entirety of the celestial regions. But the sun and moon shine directly on the person in the middle of the cosmos. The sun covers the human being from the brain to the ankles, with its strongest effect at the top because the brain controls the entire body with its intellect and sensory perception, just as the sun shines through the moon to the earth. The moon, with its natural powers, restrains the proportions of the human body. Therefore, it [the moon] irradiates the human eyes from the eyebrows to the ankles. Its influence on human limbs is not as powerful as that of the sun; but merely partial.[91]

Even the language used by Liebeschütz has the poetic inclinations of Hildegard, and though he seemed unaware of the existence of the *Berlin Fragment* by virtue of making no mention of it in *Das allegorische,* the parallels are nevertheless visible. Hildegard, writes with similar imaginal tones:

> The sun-god comes near to the Moon and she to him, for he is the one who ignites and enflames her. And what the sun extends to the seat of the intellect and reason (the mind; brain) the moon then bends of herself into a crescent and extends her reach to the eyebrows, as if it were a set of scales.[92]
>
> As the honey in the honeycomb adheres to its calyx (cup), so the earth is connected to the watery air and the watery air moistens the earth, so that it does not turn to dust, and the sun provides vital warmth from above and

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[90] Refer to Plate IV, this chapter, for Hildegard's visualised and perceptual connectedness of the planets to the cosmic human being.

[91] Die verbreitete Astrologenlehre von der Führerstellung von Sonne und Mond bei der Übertragung himmlischer Kräfte auf den Menschen körper… [wio] wir schon andeuteten, in einer besonderen Form bei Hildegard vertreten. Die anderen fünf Planeten werfen sich ihre Strahlen nur gegenseitig zu und wirken auf den Menschen durch Vermittlung des ganzen Himmels bereiches. Sonne und Mond aber strahlen den Menschen in der Kosmos mitte unmittelbar an. Durch die Sonne wird er ganz bestrichen vom Gehirn bis zu den Knöcheln; oben wirkt sie am stärksten; denn das Gehirn regiert mit Intellekt und Sinnesempfindung den ganzen Körper wie die Sonne die Erde durchleuchtet. Der Mond hält mit seiner natürlichen Kraft den Menschenkörper in seinem Maß, daher bestrahlt er den Men sehen von den Augenbrauen bis zu den Knöcheln, denn seine Einwirkun auf die Menschenglieder ist nicht so mächtig wie die der Sonne, doch teil. Hans Liebeschütz, *Das Allegorische Weltbild,* pp. 83-84. (trans. J. Murray).

[92] *Sol ad lunam et ipsa ad eum, quoniam ab eo accenditur. Et quod sol ad cerebrum et quod luna ad supercilia tendit, quasi libra est. BFragment,* 105vb II, 36, 203-205. Note how Hildegard writes about the relationship between the sun and moon as if it were between lovers. The style is strikingly reminiscent of that used poetically in the Old Testament *Canticle canticorum* (The Song of Songs).

> from underneath, which gently parches her, matures her, so that she comes to be enduring and substantial.[93]
>
> As the moon waxes in her increase, so too the faculties of the human mind increase; however, as the moon wanes and is in her evanescence, so too the faculties of the human mind wane.[94]

And perhaps most poignantly, Hildegard follows the above with a comprehensive narrative about womanhood, the phases of the moon, and how its phases over the twenty-nine-day lunar synodic cycle mirror the advancement of chronological age in the human from infancy to senescence. The intimacy of this macrocosmic / microcosmic relationship to the moon is such that she takes it from the heights of the stars in the night sky, to synaesthesia in the veins as flows of blood, then to the very depths of the marrow of the bones:

> When a woman sleeps, the marrow of her bones increases and is vivified, and her other bones are made stronger in her; and when she wakes up to work, then the marrow begins to vanish; but the more she labors, the stronger she will become, because the marrow is what strengthens the bones. When she is exhausted from her labours, she falls asleep once more; so also as the moon declines, the stars in the night sky are more distinct than in its increasing.
>
> At the beginning of the moon's increase, the marrow of the bones becomes rich; when the moon is full, and also when it first initiates its increase [i.e., new moon], a woman should consider a purification of her blood; but if the moon is in the midst of its decline and in the time thereafter the woman cleanses the blood, it is greatly injurious to her strength. For the nature of the human being is twofold - increasing and decreasing - in accordance with the moon and the passage of months. In every respect of her nature, the woman follows the moon; and therefore also she is like unto a second moon; because in childhood this can be understood as a moon which begins to grow, and as it continues to grow, there is the age of youth, and when it is full, she is in the age of her perfection; and in old age this is understood as an eclipsing moon... now being in her decline.[95]

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[93] *Ut favus cum melle vasculo suo adheret, ita terra aquoso aeri conexa est; et aquosus aer terram humectat, ne in pulverem vertatur et calor solis supra et subtus eam coquit, ut firma sit*. *BFragment,* 108rb II, 52, 346-349

[94] *Cum luna crescit, tunc et cerebrum hominis crescit; cum autem decrescit, cerebrum etiam decrescit*. *BFragment,* 107ra II, 46, 278-279.

[95] *Quando mulier dormit, medulla in eo crescit et alia ossa sua in eo firmiora sunt, et cum ad opus evigilaverit, tunc medulla in eo evanescit; et quanto plus laboraverit, tanto forcior erit; quia medulla ossa confortat, quando de labore fessus fuerit, usque dum iterum dormiat; sic etiam stelle in defectu clariores quam in profectu lune sunt. Cum luna plena fuerit, mulieribus purgationem sanguinis sui faciat et etiam cum incipit crescere; si autem in medietate defectus lune et postea homo sanguinem purgat, valde eum in viribus suis ledit. Natura enim hominis secundum lunam et menses crescendo et deficiendo duplex est; et in omni natura sua homo lunam sequitur; ac ideo etiam quasi secunda luna est, quia in hoc quod luna crescere incipit, puericia hominis, et cum crescit, iuventus, et cum plena est, perfecta etas, et in defectu suo senectus intelligitur*. *BFragment,* 107ra II, 46, 278-279.

The intimacy of this macrocosmic/microcosmic relationship continues elsewhere in the *Berlin Fragment.* Keeping in mind that Hildegard authored a substantial *oeuvre* of liturgical antiphons, sequences, and hymns; reaching its zenith with her *Symphonia armonie celestium revelationum* which has been dated to the mid-1140s by Barbara Newman, a new hypothesis is advanced here with respect to the contents and structural characteristics of the *Berlin Fragment.*[96] The first aspect to note is that when the sententiae are separated out from the MS and written in stanza form, they take on the form of medieval lyric poetry. A good example of this is in folio 105vb, fully enveloped by Hildegard's planetary melothesia:[97] Translation, however, removes completely the poetic structure of the phrasing:

Saturnus ad maiorem arculam dextri pedis tendit;	Saturn exerts its influence in the direction of the large arch of the right foot;
Iovis ad sinistrum genu, Mars ad dextrum genu,	Jupiter to the left knee, Mars to the right knee,
Iovis planeta ad humerum dextrum tendit; Mars planeta ad sinistrum humerum tendit.	planet Jupiter exerts its influence toward the right shoulder; planet Mars exerting its influence toward the left shoulder.
Sol ad cerebrum,	The sun to the seat of intelligence and reason,
Mercurius ad dextram lune tendens, ipsi vires administrans.	Mercury extends its reach to the right of the crescent-shaped moon, itself the strength and youthfulness which assists and directs her place.
Venus ad lunam in sinistra tendit, lumen illius subtrahere iuvans.	Venus extends her reach to the left of the crescent-shape moon, aiding in the effort to carry away her light.

Returning once more to the question of Hildegard's sources and the advantages which come from newly translated Arabic sources in *this* century. In Chapter One of the *Abbeviation to the Great Introduction* by Abū Ma'shar, the astrologer declares that all those aspirants to the 'higher sciences' would only achieve this by possessing knowledge of 'the degrees of the zodiacal circle, the number of the signs and their names, the quantity of

[96] The analysis here is consistent with sententiae structure and stylistic characteristics identified by Barbara Newman in her *Symphonia: A Critical Edition of the "Symphonia Armonie Celestium Revelationum" [Symphony of the Harmony of Celestial Revelations]* (Ithaca: NY Cornell University Press, 1998). See Appendix 'A', p. 74.

[97] Poetically, Mercury and Venus draw away the "curtain of light" which describes a waning crescent (or, for that matter, an early-cycle waxing crescent in the western sky just after sunset); each located at one of the sides of the crescent moon; astronomically, one can imagine a pre-dawn sky with a waning, balsamic moon in conjunction with Mercury on the one cups and Venus on the other. The next *paragraphus* (line 36) then begins to specify the actual cusps (horns) of the crescent moon. Other than the treatment of the day of conception during the lunar cycle in *Liber VI* of *Causae et Curae,* Hildegard only ever references the crescent moon

degrees of each of them…and the nature of the twelve places and the planets.[98] In that chapter, Abū Ma'šar defines the *decans* which subdivide each thirty-degree space of a zodiacal constellation into three, ten-degree sectors and provides connections to the physical parts of the human body. Of interest and conjecture, though no inferences can be made with respect to whether Hildegard or her colleagues possessed such abilities, Table 1 maps the melothesia of the *Berlin Fragment* to that available from the *Abbeviation*. Dorian Greenbaum has written extensively about astronomical medicine and medical astrology (especially on the *iatromathematici*) and noted that 'melothesia, the assignment of parts of the body to planets, zodiacal signs, decans, and so forth has a long history in astrological medicine'. She has further explained that *decumbiture* (taking to one's sickbed), considerations around conception and birth, length of life, the use of plants and lapidary, and the person of the doctor-astrologer were all rekindled in the Latin west of the twelfth century. Hildegard herself was an autodidactic specialist in all these fields; to merit the name doctor-astrologer?[99]

Table 1: Planetary Melothesia in the Berlin Fragment and the Decans of Abū Ma'šar * [100]

Planet	Body Part	Decan and Zodiacal Sign	Text in Berlin Fragment
Saturnus	Foot (right)	I - Pisces	105vb, 106ra; 197 106vb; 219
Jovis	Arm (right) Shoulder (right) Viscera Knee (left)	I – Gemini I – Gemini III – Libra I - Capricornus	106ra; 198 106vb; 252-53 105ra; 148-150 106ra; 198
Mars	Knee (right) Arm (left) Veins Viscera	II – Capricorn II – Gemini n/a III - Leo	106ra; 198 106ra; 199 n/a 106ra; 199
Sol	Brain (Seat of Intellect)	II - Aries	106ra; 200; 204 107rb; 292
Mercurius	Eyebrow (right; via Moon)	n/a	106ra; 200
Venus	Eyebrow (left; via Moon)	III - Aries	106ra; 201
Luna	Eyebrow (left; via Sun) Eyebrow (right; via Sun)	II – Aries (via Sun) II – Aries (via Sun)	106ra; 202-05; 107va; 295-6 106ra; 202-05; 107va; 295-6

[98] Abū Ma'šar, p. 13.

[99] As of this writing, there is no published scholarship on Hildegard von Bingen as a doctor-astrologer. The contents of the *Berlin Fragement* and her well-known – and well-researched *Causae et Curae* – argue for this field to become occupied.

[100] Abū Ma'šar). * indicates decan in the melothesia of Abū Ma'šar and sourced from pages 15-25 of the critical edition of Yamamoto and Burnett. Table structure adapted from Dorian G. Greenbaum, 'Hellenistic Astronomy in Medicine', in *Hellenistic Astronomy*, ed. by Alan C. Bowen and Francesca Rochberg (Leiden, The Netherlands: Brill, 2020), pp. 369-370. I am grateful to Dorian Greenbaum who supplied a pre-print version of her chapter [November 19, 2022]. Cf. Plate 1 this chapter and the tables in Greenbaum (pp. 369-370; 373.

2.3.2 Anemographic Melothesia in the Berlin Fragment

In addition to Hildegard's notable connections among the planets and stars of the firmament to the experience and sense perception of the human body, there is an equally important relationship to the body with respect to the winds. The sun still has a certain closer relationship to the intellectual functions, has proximity to the brain physically, and to the intellect metaphysically as pointed out by Liebeschütz in his chapter *Windkräfte und Sternenkräfte* in *Das allegorische.* The rays as aureate lines that run between the planets, the stars and the winds in the vision illuminated in the Lucca Codex also serve to balance the celestial and terrestrial forces, to inhibit and to stimulate. This, according to Liebeschütz is derived (he was more emphatic with the word 'unquestionably') from the constellations, as Firmicus Maternus had explained in his fourth book on the moon, in which stars in a certain geometric configuration radiate defineable positive and negative effects to one other. Hildegard, in this view, extends those effects to the human being and invokes the winds in her cosmography as these are the forces which drive the planets in their orbits.[101] There is likely no clearer manifestation of that then what the illuminators painted in *Visio tercia* of the *Liber Divinorum Operum* (see Figure 2 below). [102]

Figure 2: Detail from the illumination of *Visio tercia* of the Book I of Hildegard's *Liber Divinorum Operum.* Image 66, Lucca Codex 1492, Biblioteca Statale di Lucca, Italy.

The notion of one component of the firmament, whether it be stars, the planets, the winds, or some combination of these acting as restraints or encouragers on another is deeply embedded in the thought which generates the imaginal realm of Hildegard's thinking.

[101] See the treatment by Hans Liebeschütz, *Das Allegorische Weltbild,* pp. 80-81. In the image, Note the planets, sun and moon in their respective orbits, driven in an easterly direction by the southerly winds represented anthropomorphically as a lion.

[102] The complete MS of the Lucca Codex 1492 can be viewed online at https://www.loc.gov/item/2021668244/ .

Among scholars, Peter Dronke is the one who first invited consideration that an early medieval cosmological dialogue, the *Liber Nemroth* (The Book of Nimrod, the Astronomer, ca.) was not just a source for Hildegard's allegory but may have influenced her more directly. The *Liber Nemroth* was first examined as a study in a 1914 paper by Charles H. Haskins who set its probable origins to a Syriac text which he dated to 791 CE to 826 CE.[103] The Book of Nimrod is a dialogue, being a treatise in thirty folios, casting Nimrod as the astronomer and his pupil, Joanton, as the youthful questioner.[104] The possibility that Hildegard may have had exposure to a manuscript of this text, as suggested by Dronke, is chronologically, geographically and illustratively reasonable.[105] According to Livesey and Rouse, 'the Latin text of the *Liber Nemroth* was a composition which drew upon both Western astronomical works and the Eastern traditions of Nimrod in Latin'.[106] At least one MS was at the monastery of Trier; to which Hildegard spent time on more than one occasion and was the location of the 1147 CE synod convened by Pope Eugenius III, providing Hildegard's theological writings with a direct approbation (*canonizati*). This is the connection of spatial geography. As for a visual representation, a diagram from that same Trier MS contains the image of a *rota* with a motif of the seven planets (Figure 3):

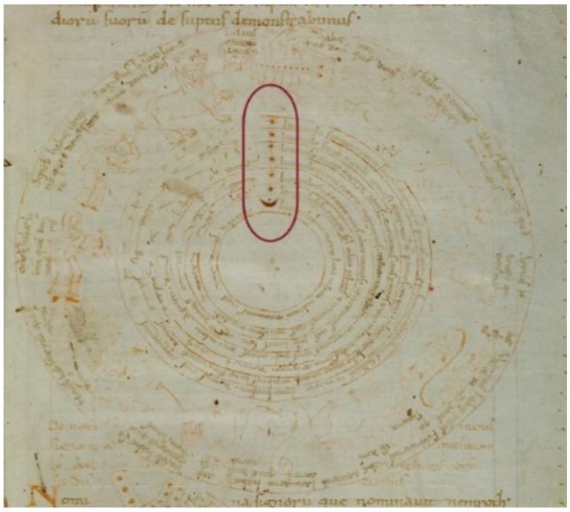

Figure 3: Folio 3r of MS *Vatican Pal. lat. 1417 Folio 3r*, (ca. mid-12th cent.) with a motif of the sun, planets, and crescent moon. Note the similarities with the illumination of the Lucca Codex MS 1492 in Figure 2.

[103] Charles H. Haskins, 'Nimrod the Astronomer', *The Romanic Review,* 5 (1914), 203-212.

[104] The early twentieth century treatment of the *Liber Nemroth* by Charles H. Haskins is the classic introductory paper (see ref. in note above). Haskins' 1914 paper appeared in revised form as Chapter XVI in his *Studies in the History of Mediaeval Science*, vol. 27 (Harvard University Press, 1927). The detailed examination by Steven J. Livesey and Richard H. Rouse is a seminal, modern medievalist' treatment in their 'Nimrod the Astronomer', *Traditio,* 37 (1981), 203-266. For a general view on medieval diagrams featuring the winds, see Barbara Obrist, 'Wind Diagrams and Medieval Cosmology', *Speculum,* 72 (1997), 33-84. For considerations on the quest to date the *Liber Nemroth,* see David Juste, 'On the Date of the "Liber Nemroth", *Journal of the Warburg and Courtauld Institutes,* 67 (2004), 255-258.

[105] David Juste remarked that the *Liber Nemroth* had popularity from the first half of the twelfth century forward; and was quoted by Philippe de Thaon (ca. 1113), Hugh of St. Victor (†1141) and William of Conches (†1159). The *Liber Nemroth* is now dated to early ninth century according to Juste, and the *MS Vatican Pal. lat. 1417* is the one once housed at Trier.

[106] Steven J. Livesey and Richard H. Rouse, 'Nimrod the Astronomer', *Traditio,* 37 (1981), p. 207.

This chapter concludes with Hildegard herself as she writes about the planets and winds and their connectedness with human form. In the *Berlin Fragment,* there is always an association among allegorical prose, abstractions to the androgynous cosmic human being, and her medico-scientific orientation, leaving modern readers requiring an associated image acting as a heuristic (cf. Plate IV, p. 26):

> The wind that is the lamb extends its blasts in the direction of the navel area of the human being. The wind that is the serpent extends its blasts to the seat of sexual excitement in the loins; on one side and the other [testes]. The wind that is the crab extends its blasts to the region of the lower right leg. The wind that is the stag extends its blasts to the region of the lower left leg.
>
> The winged god Mercury is in the winds of the crab, bestowing youthful bodily strength to the right-hand side. The goddess Venus is in the winds of the stag, bestowing youthful bodily strength to the left-hand side.[107]
>
> From the crab, a blast of wind extends to the right side of the [human being's] breast, out of its own mouth, together with the stag, whose blast is towards the places of hearing. The wind of the crab in the arch of heaven issues forth and is cast towards the mouth of the leopard, which is the place where the easterly winds come forth, whence it then departs as a streak of colour to the area of the right breast. The wind that issues forth from the opening of the mouth of the stag, this same wind as the one which passes through the mouth of the leopard, is as a streak of colour to the left ear.
>
> The wind which comes out of the mouth of the wolf, issuing forth from the watery air, is the westerly wind which releases a streak of colour to the rear of the lower right leg [of the human being], having its origins and agency in the wind which is the crab. This same [westerly] wind also receives the wind coming out of the mouth of the stag, releasing a streak of colour to the rear of the lower left leg [of the human being]. The winds which come out of the mouth of the northern bear which is in the aether have their origins and agency in the wind of the lamb; and these send forth a streak of colour towards the area of the navel on the left side [of the human being]. This same [northerly] wind also receives the wind out of the mouth of the

[107] *Ventus ut agnus ad umbilicum hominis utraque parte tendit. Ventus ut serpens ad lumbos utrimque tendit. Ventus ut cancer ad suram dextram tendit. Ventus ut cervus ad sinistram suram tendit. Mercurius vento, qui ut cancri est, vires ad dextram tribuit. Venus vento, qui ut cervus est, vires ad sinistram tribuit… Ventus ut agnus ad umbilicum hominis utraque parte tendit. Ventus ut serpens ad lumbos utrimque tendit. Ventus ut cancer ad suram dextram tendit. Ventus ut cervus ad sinistram suram tendit. Mercurius vento, qui ut cancri est, vires ad dextram tribuit. Venus vento, qui ut cervus est, vires ad sinistram tribuit. Ventus ut cancer ab ore leopardi id est orientalis venti exiens, virgulam ad dextram mamillam mittit. Ventus ut cervus ab ore eiusdem venti egrediens, virgulam ad sinistram aurem mittit. Ventus ut cancer ab ore lupi, id est occidentalis venti, in aquoso aere exiens, virgulam ad dextram suram mittit. Ventus ut cervus ab ore eiusdem venti egrediens, virgulam ad sinistram suram mittit. Ventus ut agnus ab ore ursi aquilonalis venti in æthere exiens, virgulam sinistra parte ad umbilicum mittit. Ventus ut serpens ab ore eiusdem venti exiens, virgulam sinistra parte ad lumbos mittit. Berlin Fragment,* 106ra II, 37, 205-210.

> serpent as its agent, sending forth a streak of colour towards the area of the genital organs on the left side [of the human being].[108]

Once more, the narrative is difficult to comprehend unless there is some attachment to an image. The most likely candidate for that image is the second vision illumination of the *Liber Divinorum Operum.* Taken together, the MS evidence accommodates all twelve winds as depicted in the illumination (cf. Plate IV). Santos Paz outlined this problem as the 'non-autonomous nature of these texts' in the *Berlin Fragment* and concluded that sententiae such as these were provisional, possibly discarded drafts, or simply notes which were not intended for any other reader other than Hildegard and those responsible for illuminations in the Rupertsberg scriptorium.[109] Here, I advance an alternative hypothesis which requires further analysis beyond the present study. That is, these passages (draft notes as they may be), may be samples of Hildegard's cosmological and melothesiac excursions into lyric poetry. Note below how the flavour of Hildegard's text presents quite differently if arranged in stanza form.[110] In this manner, certain of the passages in the *Berlin Fragment* look much

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[108] *Berlin Fragment,* 107rb II,48, 289-315.

[109] José Carlos Santos Paz, 'Dal progetto all'immagine: il Frammento di Berlino', p. 137.

[110]

Ventus
dextra parte cancrum
in æthere,
in sinístra cervum,
in æthere.

O Cancer!
vírgulam
ad dextram mamíllam,
cervus ex ore suo vírgulam
ad sinístram aurem.

O Sol!!
vírgulam per ventum
ad cérebrum.

Ventus,
ut cancer ab ore leopárdi
id est orientális venti
éxiens,
vírgulam ad dextram
mamíllam
mittit.

Ventus,
ut cervus
ab ore ejúsdem venti
egrédiens,
vírgulam ad sinístram aurem mittit.

Ventus,
ut cancer ab ore lupi,
id est occidentális venti,
in aquóso áere éxiens,
vírgulam ad dextram suram mittit.

less like a collection of *miscellanea*, and more like medieval *sequentiae,* an art form for which Hildegard von Bingen has a measure of experience with her *Symphonia*. Perhaps in her *milieu,* images were sung into being and the poetry allowed for the libretto to be composed first, as a heuristic device. This aspect of her writing, with reference to the *Berlin Fragment,* merits closer attention going forward.

Ventus,
ut cervus
ab ore ejúsdem venti
egrédiens,
vírgulam ad sinístram suram mittit.

Ventus,
ut agnus ab ore ursi
aquilonális venti
in æthere éxiens,
vírgulam sinístra parte ad umbilícum mittit.

Ventus, ut serpens ab ore ejúsdem venti
éxiens,
vírgulam sinístra parte ad lumbos mittit.

Note: These stanzas take the same prose narrative appearing in the translation above, and place it within the medieval lyric form, the scholarship of which was first introduced fifty years ago by Peter Dronke. See these seminal studies of the form in Peter Dronke, 'The Composition of Hildegard of Bingen's *Symphonia*', *Sacris Erudiri,* 19 (1969), 381-393; *Latin and Vernacular Poets of the Middle Ages*, Variorum Collected Studies Series, Volume CS352 (Hampshire UK: Variorum, 1991) and; *Poetic Individuality in the Middle Ages: New Departures in Poetry, 1000-1150*, (Brepols Pub, 1986).

Chapter 3 – A Twelfth Century Benedictine Science of the Stars

In the autumn of 1995, a colloquium was convened at the Warburg Institute of the University of London as a presage of - and a tribute to - the nine-hundredth anniversary of the birth of Hildegard von Bingen. The international stature of the attendees, their contributed essays, and the celestial and stentorian vocals of members of the medieval musical scholars *Sequentia* made for both solemnity and the makings of a mirror image of the celebrated abbess' 'astonishingly varied work'.[111] The papers from that two-day event, hosted by historian Charles Burnett and medievalist Peter Dronke, ran the *currere* of Hildegard's *oeuvre*. The days in London approached disciplines as disparate as sacred music, lyric poetry, botany and medicine, mystical hagiography, astronomy, and all this woven into the tapestry of Hildegard's unprecedented and bewildering allegory. This event would become the signature example of the sheer vastness of the Hildegardian written landscape and provided an opportunity to address the (then) state of scholarly enquiry into Hildegard's unique worldviews. It was pointed out in the opening paper of the proceedings' monograph that for about three generations, no work had been published that exceeded the reach and the depth of Hans Liebeschütz's monograph of 1930: *Das allegorische Weltbild der heiligen Hildegard von Bingen* (The Allegorical Worldview of Saint Hildegard of Bingen).[112] Re-issued in 1964, *Das allegorische* has retained its freshness and is considered essential reading for initiates into Hildegard's visionary life and works as outlined in Chapter two of this study.

Among the topics addressed by the attendees at the Warburg conference, there is one which aligns with the emphases in the present study but has received scant attention elsewhere – Hildegard's *imaginal astrology.* In his 1998 essay, *Hildegard of Bingen and the Science of the Stars,* Charles Burnett betrays a certain parochialism with respect to the definition of what counts as 'astrological' for Hildegard with the claim that her astrology was external to the 'scientific astrology of her day' comprising 'how the stars and planets influence events on earth, and in particular, human beings'.[113] The sense of the unusual in

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[111] See Introduction, *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke, Warburg Institute Colloquia 4 (London: UK: The Warburg Institute, University of London, School of Advanced Study, 1998).

[112] Liebeschütz, Hans. *Das allegorische Weltbild der heiligen Hildegard von Bingen*. Studien der Bibliothek Warburg (1930).

[113] For a carefully reasoned outline of Hildegard's sources related to her cosmological approaches, her literary style, and her astronomy / astrology, see Charles Burnett, 'Hildegard of Bingen and the Science of the Stars', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke. (London: UK, The Warburg Institute, University of London, School of Advanced Study, 1998), pp. 111-120; esp. 112-115.

Hildegard's cosmology is evoked from the outset of *Liber I* of her *Causae et Curae* as she describes a creation where the behaviours of human beings cause disturbances among the four elements of fire, air, water and earth; stormy weather is a portent of wars, famine, or sudden death; the four cardinal winds support and hold the firmament in place; fiery javelins occasionally purify the air and the five planets are enslaved by the sun to assist with its seasonal movements and ensure that it does not exceed the boundaries set out for it. Summing up, the five planets in Hildegard's cosmology are the *ornamentation* of the sun, just as the five senses are described by her as the adornments keeping the human body together.[114]

3.1 The Zodiacal Movements of the Sun and Planets - *Liber Prima* of *Causae et Curae*

At this point, one can ask the question, "What is the nature of this 'ornamentation' of the sun, and to what extent are the five wandering planets of antiquity (*stellae errantes*) involved with the sun as it makes its annual journey among the background stars of the zodiac?" In *Liber I* of *Causae et Curae,* Hildegard provides an elaborate, detailed narrative of planetary motions in a manner which simultaneously provides details which are astronomical as well as allegorical.[115] To date, these folios have not been translated fully and directly from an original manuscript.[116] With digital access to the MS Codex Copenhagen, there is opportunity to re-examine Hildegard's allegory of the sun, the planets and the zodiac afresh. Burnett described this section, written beneath the *capitula* of *De duodecim signis et planetiis* (On the Twelve Signs and the Planets) as 'meriting closer attention…[otherwise] one needs to make some effort to visualise the situation she describes'.[117]

A generation ago, when Burnett was examining this section of *Liber I* of *Causae et Curae,* he concluded that it is 'the most detailed astronomical information she gives [concerning] the Sun's course through the zodiac', then subsequently and dismissively(?) asserts that it 'has no astronomical foundation'.[118] With the aid of digital simulation, it is conjectured here that

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[114] *Et sicut quinque sensus corporis hominis corpus eius continent et ornamenta eius sunt, ita etiam isti quinque planetae solem continent atque décor ipsius sunt.* Moulinier/ Berndt, 2003; folio 4rb, pp. 30] and; Paul Kaiser. *Hildegardis Causæ et Curæ*. Lipsiae: Teubneri (1903); pp. 9.

[115] Moulinier/ Berndt, 2003; folios 4vb – 5vb; pp. 34-36.

[116] The MS used for translation here is the Codex København, Kongelige Bibliotek, Ny kgl. saml. 90b, 93 Fols. (ca. 1200); see especially fols.4vb – 5vb). Unless stated otherwise, all translations are by J. Murray.

[117] Charles Burnett, 'Hildegard of Bingen and the Science of the Stars', pp. 112.

[118] Charles Burnett, 'Hildegard of Bingen and the Science of the Stars', pp. 112-113.

these opinions generate a testable hypothesis: Is this narrative concerning the sun's path through the constellations of the zodiac one with discernible historical *astronomical* foundations, or a fable in the realm of *fabula similitudine*?[119]

What follows is an original Latin-English translation (in exerpt) of *On the Twelve Signs and the Planets* with commentary and complementary digital simulations of the morning or evening skies available to Hildegard and her contemporaries in the middle of the twelfth century. The dates of the writing of *Liber I* of *Causae et Curae* remain contested (as is its authenticity as coming from Hildegard herself), so it is further proposed that retrospective digitally produced imagery can not only serve to constrain the period within which the observations informing this zodiacal narrative *could* have been made; it may also shed new light on the time of its writing and the question of authenticity of *Causae et Curae*; presently not settled in the literature.[120] The suggested processes of close attention to astronomical detail and visualisation using planetarium software occupy the remainder of this chapter.

3.2 *De Stellis et De Duodecim Signis et Planetiis* (Regarding the Stars, the Twelve Signs and the Planets)

As noted in her *Hellenistic Astronomy in Medicine,* Dorian Gieseler Greenbaum identifies Claudius Ptolemaeus (ca. 100 CE - ca. 178 CE) as offering a certain ideal celestial combination of merits for appreciating the movements of the sun, moon, and planets in relation to earth.[121] The opening paragraph of Ptolemy's treatise on the 'second of the

[119] By *fabula similitudine* (that is, an imaginatory fable), the reference is to a form of literary prose spanning the ninth to the twelfth centuries and exemplified by archetypal examples with which modern scholars such as Peter Dronke have now increasingly familiar. These include: Scotus Eriugena's *Periphyseon* (fl. 864-846 CE); Guillaume de Conches' *Dragmaticon* Bernardus Sylvestis' *Cosmographia* (read by PP. Eugenius III at the Synod of Trier, 1147), and Hildegard of Bingen's *Liber Divinorum Operum* (whose early drafts of her first theological work, the *Scivias,* were also read aloud at that same Synod). Such *fabula* are characterised by, among other attributes, cosmogonic visions, dialogues on the nature and structure of the universe, and allegorical epics which often have alternating prose and lyric – if not rhyming – verse. This realm of imagination reaches its apex in the Latin west among the 12th–century neo-Platonists who benefitted from access to new translations of Arabic and Greek philosophical, natural historical, and astrological treatises. See Peter Dronke, 'Bernard Silvestris, Natura, and Personification', *Journal of the Warburg and Courtauld Institutes,* 43 (1980), 16-31; Peter Dronke, 'The Fable of the Four Spheres', in *Fabula: Explorations into the Uses of Myth in Medieval Platonism*, ed. by Peter Dronke, Mittellateinische Studien und Texte, Band IX, K. Langosch (ed.)(Leiden: Netherlands: E.J. Brill, (1985), pp. 144-153; Peter Dronke ,'Fables of the Cosmic Egg', in *Fabula: Explorations into the Uses of Myth in Medieval Platonism*, pp. 79-99.

[120] Cf. Moulinier, Laurence, èHildegarde ou Pseudo-Hildegarde? Réflexions Sur L'Authenticité Du Traité "Cause et Cure"'*, Angesicht Gottes Suche Der Mensch Sich Selbst". Hildegard Von Bingen (1098-1179)* (Berlin, Akademie Verlag, 1998).

[121] Greenbaum, Dorian G., 'Hellenistic Astronomy in Medicine', in *Hellenistic Astronomy*, ed. by Alan C. Bowen and Francesca Rochberg (Leiden: The Netherlands: Brill, 2020), pp. 350-380. See also an earlier work in this area of iatromethematics in: Greenbaum, Dorian G., 'Astronomy, Astrology, and Medicine', in *Handbook of*

sciences of the stars' - the *Tetrabiblos* – opens with this statement: 'we apprehend the aspects of the movements of sun, moon and stars in relation to each other and the earth….[whereby] we investigate the changes which they bring about in the surrounding environment'.[122] In Chapter 2 of this study, a number of instances were identified in the Berlin Fragment which demonstrated a willingness in Hildegard to directly connect perturbations in the elements as an explanation for human disease states and in turn, these illnesses in the body were mirrored in the firmament with unusual events among the celestial objects known to her. Moreover, the illuminations in the Reisencodex of Hildegard's *Liber Divinorum Operum* – particularly the *Visio secunda* (the "cosmic human being") – appears to be an early example of illustrated planetary melosthesia which predates the early fifteenth century apex of this artform exemplified by the androgynous *L'Homme zodiacal de Très Riches Heures* by two hundred years (see Plate V on p.45).[123] In terms of the obligation of the medical artist to also incline to look upward and be watchful of the skies, Hildegard herself could well be described in both the tradition and the ideal of the Ptolemaic *iatromathematicus* (*ιατρομαθηματικός*)*;* an individual steeped in Galenic medical practices, astrological medicine, and simultaneously involved in the practical tasks associated with health and healing.[124,125] Did Hildegard regularly watch the pre-dawn and early evening skies as the *magistra* responsible for leading the structured prayer life of her community? We are aware of the constancy with which she observed the phases of the moon, particularly in its waxing and waning crescent phases, critical to advising her monastic sorority on issues of health and beyond the walls of the cloister to the broader community of women across western Europe whom she treated in what could be described

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Archaeoastronomy and Ethnoastronomy, ed. by Clive L. N. Ruggles, (New York: NY: Springer Science and Business Media, 2015), pp. 117-132.

[122] *καθ' ὃ τοὺς γινομένους ἑκάστοτε σχηματισμοὺς τῶν κινήσεων ἡλίου καὶ σελήνης καὶ ἀστέρων πρὸς ἀλλήλους τε καὶ τὴν γῆν καταλαμβανόμεθα… [αὐτῶν] ἰδιοτροπίας τὰς ἀποτελουμένας μεταβολὰς τῶν ἐμπεριεχομένων ἐπισκεπτόμεθα.* Ptolemy, *The Quadripartite Mathematical Treatise, or 'Tetrabiblos' of Claudius Ptolemy. Introduction Book 1.I.1.* trans. by F.E. Robbins, Ptolemy's Tetrabiblos, Loeb Classical Library, (1940). Also quoted in Greenbaum (2020; p. 371; see note above).

[123] See Harry Bober, 'The Zodiacal Miniature of the *Très Riches Heures* of the Duke of Berry – its Sources and Meaning', *Journal of the Warburg and Courtauld Institute,* 11, 1 (1948),1-41, and; Chales Clark,'The Zodiac Man in Medieval Medical Astrology', *Quidditas,* 3 (1982), 13-39.

[124] For detailed historical perspectives on Hildegard's medical practices and theoretical approaches, see Victoria Sweet, 'Hildegard of Bingen and the Greening of Medieval Medicine', *Bulletin of the History of Medicine,* 73 (1999), 381-403 and Sweet's PhD thesis, 'Body as Plant, Doctor as Gardener: Premodern Medicine in Hildegard of Bingen's "Causes and Cures"'.(Ph.D.thesis, University of California, San Francisco, 2003).

[125] For a detailed treatment of Galen's alleged astrologically informed medical practices such as the identification of critical days of the moon or the decumbiture (taking to one's bed) of the ill person, see Greenbaum, (2020). pp. 365-367 and note above).

as the Latin west's first large-scale, dedicated women's infirmary.[126] The following section intends to bring the answer to this question into sharper focus.

3.2.1 Translation of *De Stellis et De Duodecim Signis et Planetiis – Liber I, Causae et Curae*

This section provides an excerpt from the first complete translation to modern English of *Liber I* of *Causae et Curae* dirrectly from the MS Codex Copenhagen[127], identifying it as the *editio princeps* and dated to ca. 1200 to 1222 and the monastery of St. Maximin at Trier.[128] This MS provided the basis for the 1903 transcription by Paul Kaiser which faced certain criticisms from recent scholars, principally Laurence Moulinier of the Université de Lyon. Therefore, prior to translation, the text was cross-referenced with the Codex Copenhagen, Laurence Moulinier's critical edition, and the Latin transcription of Paulus Kaiser from a century earlier.[129] For convenience, following the manner in which Moulinier ordered the transcriptions in her critical edition, the numbering system follows the text of Kaiser.[130] Appendix 'D' provides images of Folios 4vb-5vb of the Codex Copenhagen. We begin as does the modern zodiac, in sidereal Pisces:

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[126] Cf. Victoria Sweet, *op. cit.* (1999; pp. 394-399).

[127] MS Kongelige Bibliotek Ny kgl. saml. 90b (folios 4vb-5vb).

[128] The full translation to English is available in Appendix 'B'. Images of folios, Copenhagen Codex, Appendix 'D'.

[129] The three editions used in translation are as follows: Codex Köbenhavn, Kongelige Bibliotek, Ny kgl. saml. 90b, in 93 Folios. (ca. 1200); Moulinier/ Berndt, 2003; pp. 34-37; Paul Kaiser. *Hildegardis Causæ et Curæ*. Lipsiae: Teubneri (latin transcription from Codex Købenvavn, 1903; pp. K11.14 – K12.35). The critical edition by Moulinier remains the only one published to date in a modern language (French). There are translations of *Causae et Curae* available in English, French, German, and Italian but these were not consulted in this study by virtue of being translations from an earlier, non-academic German translation. The caution of Barbara Newman of Northwestern University in the USA to avoid completely translations of translations, or editions produced for a mass, trade-book audience and not found among *editiones critica* was adopted (see note below). To produce a translation from a translation would, as pointed out by Peter Dronke, be nothing but a "tissue of errors based on careless reading"; see Peter Dronke, 'The Four Elements in the Thought of Hildegard of Bingen: Cosmology and Poetry', *Studi Medievali,* 54 (2013), pp. 140. Three of these editions are cited in the *fontes* of Moulinier as follows: *Hildegard of Bingen: On Natural Philosophy and Medicine: Selections from Cause et Cure*, transl. Margaret Berger, Cambridge, Rochester N. Y. 1999. Hildegarde de Bingen: *Les causes et les remedes*, transl. to French by Pierre Monat, Grenoble 1997. Ildegarda di Bingen: *Cause et eure delle infermitii*, tr. by P. Calef (Le favole mistiche, 6) (Roma 1997). See Moulinier / Berndt, 2003, p. 399.

[130] For example, K11.25 is read as the MS transcription coming from Paul Kaiser, his page 11, line 25. Note: The Latin text from the Codex Købenvavn, Kongelige Bibliotek, Ny kgl. saml. 90b appears in the footnotes. Square brackets [ ] indicate descriptive interpolations not found in the original MS but are helpful in English syntax. For convenience, a complete two-column Latin-English translation appears in Appendix 'B'.

131

Plate V:

Le Très Riches Heures du duc de Berry zodiacal miniature of the "L'Homme Zodiacal" (ca. 1406 CE to 1426 CE).

[131] Chantilly, Bibliothèque et Archives du Château, *MS 65, fol. 14v*. Size 29 cm x 21 cm. Cf. Plate IV, p. 26 this study.

3.2.1.2 The Sun Journeys Through Pisces, Aries, and Taurus in the *De Duodecim Signis et Planetis*

> They [the planets] accompany the sun as faithful servants to the sign of Pisces without interruption; and upon arriving at that sign, it is as if it is already in the midst of the waters. The fishes, which had previously hidden themselves from winter's cold, now perceive the effects of its heat, going forth in their fertility. The other planet, which was to the right of the Sun in the sign of Cancer, encounters him there and draws him upward into the sign of Aries [i.e., the Ram]. And when the sun arrives in the sign of Aries, it is there that two planets of lesser brilliance encounter him, and embrace him, and gradually ascend with him, eventually stretching themselves forward in front of him in the manner of a ram with its antlers. With the Sun ascending ever higher, as if climbing the cliffs into the sign of the Bull, [i.e., Taurus], there in that place two planets remain and two others come into the Sun's path, approaching to confront him, as if to attack him. These planets are rarely observed and seldom reveal themselves, unless as portents; omens intending to bring with them miraculous events somewhere.[132]
>
> And these [planets] impel the sun before them with excessive power, in the manner of a bull, thrusting mightily with its horns; and these [planets] convey the sun to such a height, that when he arrives in the sign of the Twins, the sun and the planets thereby separate themselves, one moving to one side [of the Sun], the other to the other side of it.

3.2.2 Astronomical Interpretations of *De Stellis et De Duodecim Signis et Planetiis*

In Section 3.1, a testable hypothesis was advanced concerning the narrative of 3.2.1. The question raised was, "Is this narrative concerning the sun's path through the constellations of the zodiac one with discernible historical *astronomical* foundations?" To accomplish this test, one first needed a clue from the narrative which would appear significant enough astronomically to attract the attention of regular 12th- and 21st- century watchers of the sky, or, perhaps a rarer and spectacular phenomenon to attract the disenchanted possessing more pedestrian interests. This is the chosen clue: 'These planets are rarely observed and

[132] *Solem comitántur usque ad signum píscium. Et cum ad signum illud pervénerit, jam quasi in medietáte aquárum est. Et pisces, qui se prius a frígore [frigóre] abscónderant,* K12.10 *jam calórem ejus séntiunt et ad fecunditátem procédunt. Et álius [alíus] planéta, qui in signo cancri ad dextram solis erat, ei hic occúrrit et ipsum sursum trahit usque ad signum aríetis. Et cum sol sic ad signum aríetis pervénerit, et ibi duo inferióres planéte ei occúrrunt et eum suscípiunt et cum eo* K12.15 *paulátim ascéndunt et in ante tendunt velut áries cum córnibus. Sed cum áltius ascéndit quasi ad signum tauri, isti duo planéte ibi rémanent, et álii duo ei óbviam véniunt, qui rari sunt ad vidéndum et qui raro ostendúntur, nisi áliqua mirácula portent.*

seldom reveal themselves, unless as portents'.[133] The history of cultural astronomy points in the direction of these celestial phenomena which could satisfy the need for a spectacle: eclipses of the sun and moon, bright meteors or bolides (fireballs), and comets (*cometes*). Less well observed by the general populations, but documented carefully in tables by the *computii* of the Middle Ages whose astrological interests inclined them to those having political and ecclesiastical interests provides for one exception: a Great Conjunction of Saturn and Jupiter. The literature documenting Great Conjunctions and their integration with human affairs is vast and beyond the scope of this study.[134] Nevertheless, it was determined that there were only two such conjunctions within the approximately twenty-year cycling of such events in the twelfth century which would have occurred during the time in which Hildegard of Bingen was fruitfully writing; in 1146 in Taurus and the 1166 event in Capricorn.[135] Unless Hildegard and her companions at Disibodenberg and Rupertsberg monasteries had received information from the newly-translated Arabic and Greek astrological and astronomical works circulating in the Latin west, it seems unlikely that a conjunction of the superior planets of her own obscure naming in the Berlin Fragment (*planetae primus et secundus*) would attract enough attention to inspire a written astronomical narrative. This was the remit of the chroniclers of her time, not the Benedictine sororities.[136]

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[133] *[isti] duo planéte ibi rémanent, et álii duo ei óbviam véniunt, qui rari sunt ad vidéndum et qui raro ostendúntur, nisi áliqua mirácula portent. Causae et Curae,* MS Copenhagen Codex 1492, Folio 5rb, K12.16-18.

[134] Further reading on Great Conjunctions is equally difficult to provide within a confined space. The following are recommended including references and indices therein: Giuseppe Bezza, 'Representation of the Skies and the Astrological Chart', in *A Companion to Astrology in the Renaissance,* Lieden: Brill (2014), pp. 59-86; Abū Maʿšar, Part VII, pp. 741-761; Nicholas Campion, *Astrology and Cosmology in the World's Religions* (NYU Press, 2012); Hilary M. Carey, 'Astrology in the Middle Ages', *History Compass,* 8 (2010), 888-902; Frederick A. De Armas, 'Saturn in Conjunction: From Al-Bumasar to Lope De Vega', in *Saturn from Antiquity to the Renaissance*, ed. by Amilcare A. Iannucci and Massimo Ciavolella, vol. 8 (Ottawa, Canada: Dovehouse Editions, 1992), pp. 151-172; Christopher J. Mitchell, 'Roger of Hereford's Judicial Astrology: England's First Astrology Book?' (PhD, University of Leicester, 2020) and; Luís C. Ribeiro, 'Early Modern Astrology: An Overview', in *Jesuit Astrology: Prognostication and Science in Early Modern Culture,* ed. by Dáibhí Ó Cróinín, Benno van Dalen, Gad Freudenthal, Tony Grafton, Leofranc Holford-Strevens, Bernard R. Goldstein, Alexander Jones, Daryn Lehoux, Jörg Rüpke, Julio Samsó, John Steele. Series *Time, Astronomy, and Calendars*, vol. 13 (Brill, 2023).

[135] The 1166 Great Conjunction is ruled out by virtue of its invisibility. It occurred primarily in a December sky at closest approach to the observer and these planets were in essence in conjunction with the Sun. The 1146 event was very long lasting due to the geometry with Earth, with Saturn and Jupiter within 10 degrees of one another for some fourteen months; it extended into early 1147.

[136] For studies and techniques which have used historical astronomical data for the purposes of refining dates of manuscripts, or from images, frescoes, and illuminations, see: Richard Mostert and Marco Mostert, Using Astronomy as an Aid to Dating Manuscripts: The Example of the *Leiden Aratea Planetarium'*, *Quaerendo,* 20 (1990), 248-261; Elly Dekker, 'The Provenance of the Stars in the *Leiden Aratea* Picture Book', *Journal of the Warburg and Courtauld Institutes,* 73 (2010), 1-37. Bruce Stansfield Eastwood, *The Revival of Planetary Astronomy in Carolingian and Post-Carolingian Europe* (Routledge, 2017), and; Bruce Stansfield Eastwood, Origins and Contents of the Leiden Planetary Configuration (*MS Voss. Q.79, Fol. 93v*): An Artistic Astronomical

The decision was made to utilise sophisticated astronomical simulations in a retrospective manner to view the pre-dawn and early evening skies of the period 1145 to 1147; the time of day is consistent with the canonical hours of *matins-lauds* and *vespers-compline* in the Benedictine life of daily prayer - the *officio divina* – which was compulsory as much as it was celebrated. The years selected would provide opportunity to ensure that the positions of the sun and planets in the narrative reflect what was reasonably visible to observers under the pre-industrial dark skies of the mid-12th century.[137]

3.2.3 Astronomical Simulations of *De Stellis et De Duodecim Signis et Planetiis*

In her most fertile periods of writing in collaboration with her decades-long confraternity with her secretary and amanuensis, Volmar, Hildegard was motivated by the interrelationships among the objects of the celestial spheres of the firmament, their geometrical arrangement and precision placement, and the manner in which these were acting as a helpful guide for the most luminous of them all, the sun. The sun was not free to roam is it wished in Hildegard's cosmography but had a defined annual path through the twelve parts of its zodiacal journey and was not permitted an excursion into the northern regions of the sky. The solstitial positions of sunrise marked its annual limits easterly. Westerly, however, there is no evidence to suggest that Hildegard's *mundi* allowed a sunset any further north than due west. The sun was also constant in the sky, and year over year. No waxing, no waning, no backwards motions against the stars as was seen among the planets (the *stellae errantes*). We read about this constancy early in the Berlin Fragment:

> All that has come forth under the sun experiences transformation; to become distinguished in one moment and then unimportant the next; except the sun, which neither increases nor decreases, but is appointed to stand firm:
> now the winds blow, now they cease; now the stars inflame with fire
> and are enkindled, and now their brightness is in dimishment.[138]

This echoes a similar statement in *Causae et Curae* where Hildegard writes 'the human being should not be observed in accordance with the sun, [because] it stands still in one

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Schema of the Early Middle Ages, *Viator,* 14 (1983). I am grateful to Margot Fassler of the University of Notre Dame for the suggested references here.

[137] The simulation software used in this study is *Starry Night Pro 8*; all images, graphics and simulations have been generated by J. Murray and appear courtesy of Starry Night® Pro 8. Simulation Curriculum Corporation. Used with permission.

[138] *Omnes creature, que sub sole sunt, in maius et in minus mutantur excepto sole, qui nec crescit nec decrescit, sed in uno statu est: venti nunc flant, nunc cessant; stelle nunc ignescunt, nunc in igne minuuntur. Berlin Fragment,* Folio 104ra II, 9, 64-68.

state, so that it neither increases nor decreases'.[139] The human form and being was changeable and so was more like the moon; the sun for its part has a single state, guided in its course by the five planets to which its care has been entrusted. Just as the planets did not deviate from the narrow path of the twelve signs, so too the sun was, to put it poetically, embraced by these planets which were there to be of service to the sun. The phrase Hildegard uses defines the planetary responsibilities: they are 'in slavery to the needs of the sun'.[140] With this in mind, what follows is an examination of the path of the sun through three of the twelve signs – Pisces – Aries – Taurus – astronomically guided and astrologically inspired by Hildegard's narrative in *Causae et Curae.* The sun and planets illustrated through modern astronomical simulations, retrospectively.[141] Limitations of the study do not permit a comprehensive journey through all twelve constellations. This is available in Appendix 'B'.

3.2.3.1 Pisces - Aries – Taurus and Two Cruces: The *Stellae Hildegardis*

What occurs in the skies over Disibodenberg monastery in the months of April to May 1145 warrants close and careful attention. Hildegard writes of the sun arriving in the sign of the Ram and encountering 'two planets of lesser brilliance encountering him, to embrace him'.[142] Retrospective digital simulation provides some clues. If the observation was direct by Hildegard, the inferior planets would not be the typical pairing of the *inferiores,* Mercury and Venus. The language of the 'embrace' is perhaps a poetic manner of describing how each of these planets where not only close together in the morning sky, but equidistant from the rising Sun. What are these planets she writes of? Using simulation of the pre-dawn skies of mid-April, 1145, there is a readily apparent celestial connection with her notion of these two planets 'stretching themselves forward in front of the Sun as if the tips of a ram's horns (hence the reference to 'ram's antlers').[143] Poetically (that is, *tropically*-speaking), *cornibus* is a word indicative of strength, courage, or power; all considered characterising a ram. It is worth noting that in the pre-dawn hours of mid-April, especially at the hour of the

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[139] *Et hominum secundum solem notari non debent, [quia] ipse in uno statu stat, ita quod nec crescit nec decrescit. Causae et Curae, Liber I.* Folio 6vb, 2-4 (K 17, 1-4).

[140] ...[*suscípiunt] et quod ei hoc modo sérviunt. Causae et Curae, Liber I.* Folio 5ra, 2 (K11, 34).

[141] The main body of the study will focus on certain notable celestial events over the solar year of 1145 CE. For a complete synopsis of the movement of the sun through the twelve constellations of the zodiac as described by Hildegard in *Liber I* of *Causae et Curae*, including modern astronomical-observational interpretations, see Appendix 'E'.

[142] *Et cum sol sic ad signum aríetis pervénerit, et ibi duo inferióres planéte ei occúrrunt et eum suscípiunt…. Causae et Curae, Liber I.* Folio 5ra, 2 (K12, 14-15).

[143] *[et] cum eo paulátim ascéndunt et in ante tendunt velut áries cum córnibus. Causae et Curae, Liber I.* Folio 5ra, 2 (K12.15).

Divine Office of prayer known as *lauds* (morning praise) at 4:10 AM sharp for the Benedictines of Hildegard's abbey at Disibodenberg, a "new star" of 1145 has reached a luminosity rivalling Jupiter. It is rather stationary in Pisces, and it has a discernible tail of about five degrees of arc. In modern as well as medieval astronomical terms, a comet has arrived and is easily visible (see Figure 4).[144]

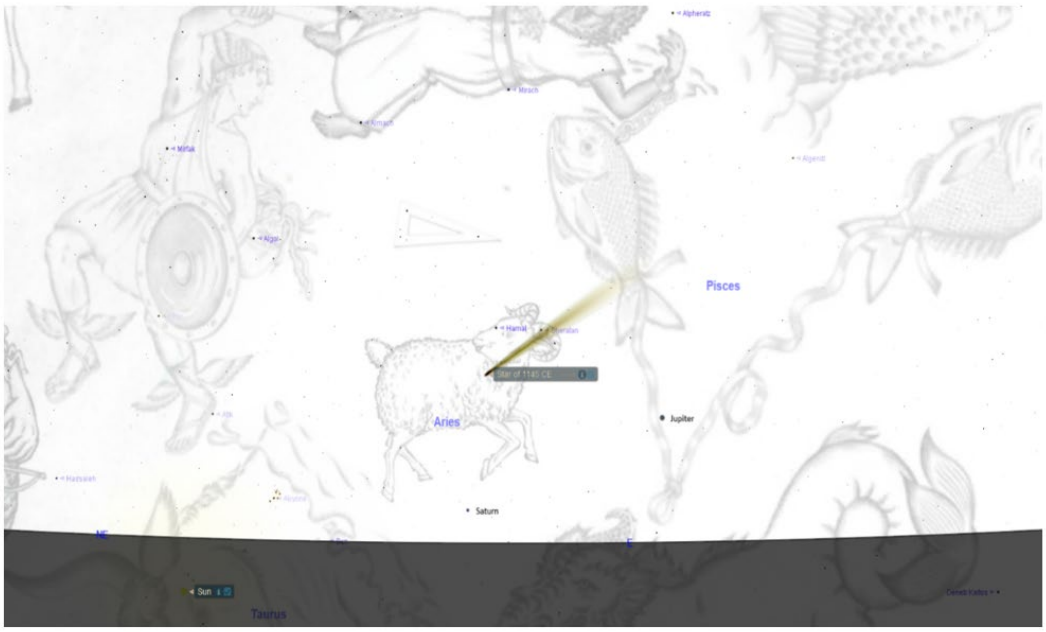

Figure 4: The 'star of 1145 CE' in the pre-dawn skies of May 10, 1145 in a pairing with Jupiter (Saturn would be in the glare of sunrise), It is conjectured that the new 'star' and Jupiter could have represented the 'horns of the ram' in Hildegard's text of *De duodecim signis*.

Later in April, on or about April 23 to 30, 1145, there is yet another newcomer to the Hildegardian skies. Consultation with detailed historical texts from Japan and China, the *Dainihonshi* (1715 CE) and *Wen h'sien t'ung k'ao* (1308 CE) respectively, treat these 'stars' as two, independent 'broom stars'.[145] Hildegard writes about - and may have acquired historical astronomical knowledge of - times when two planets appear together in the sky, albeit only rarely. It is tempting to surmise that this knowledge was of Great Conjunctions of

[144] This new 'star' will henceforth be named (retrospectively) as *stella hildegardis* (the star of Hildegard).

[145] In this section, all historical records consulted are checked multiply and cross-referenced with those of: Gary W. Kronk, *Cometography: A Catalog of Comets, Volume 1: Ancient-1799 CE*. (Cambridge U.K.: Cambridge University Press, 1999); John Williams, *Observations of Comets: From 611 BC to AD 1640: Extracted from the Chinese Annals* (London UK: Strangeways and Walden; Leicester Square, 1871); , Ichiro Hasegawa, 'Orbits of Ancient and Medieval Comets', *Publications of the Astronomical Society of Japan,* 31 (1979), 257-270; Ho Peng Yoke (Ho Ping-Yü,), 'Ancient and Mediæval Observations of Comets and Novae in Chinese Sources', *Vistas in Astronomy,* vol. 5. (1962). pp. 127-225, and; Peng-Yoke, Ho and Ang Tian-Se, 'Chinese Astronomical Records on Comets and 'Guest Stars in the Official Histories of Ming and Ch'Ing and Other Supplementary Sources', *Oriens Extremus,* 17 (1970), 63-99. Primary sources and ancient sources such as chroniclers from Japan, Korea and China were not accessed directly in this study. The reliance for these is references in Kronk (1999).

Saturn-Jupiter which occur at regular intervals of about twenty years. As mentioned previously, the year 1145-1146 was most easily visible close pairing of Saturn-Jupiter during the decades in which Hildegard was at her zenith of writing volume and personal popularity from the early 1140s to the late 1160s. However, in the year 1145, as the Sun reached the constellation of Taurus in April-May of 1145, the celestial excitement among witnesses would be unreservedly the bright 'new star' which had first been seen to remain in the region of Pisces-Aries for many weeks, and now a second 'new star' appearing quite suddenly; both easily visible in the pre-dawn skies of late April-early May as this is a region of the night sky is devoid of bright stars. With no Moon present to illuminate the sky around these two 'stars', the new stars have at this point become a spectacle to observers who rise early. We are reminded of the look on the faces of observers of this same 'star' as it was illuminated on the Bayeaux Tapestry of the 11th century (April,1066) which chronicled the Norman invasion under William the Conqueror (see Figure 5 below).

Figure 5: The great comet of 1066 as depicted in the Bayeaux Tapestry. The caption above the observers at left reads "there, the star that amazes". Official digital representation of the Bayeux Tapestry, 11th century. City of Bayeux, DRAC Normandie, University of Caen Normandie, CNRS, Ensicaen (2017). La Fabrique de patrimoines en Normandie. Used with permission.

Do we have historical records available to confirm a second comet in 1145? The answer is a provisional 'yes', the likely candidate being the short-period comet 96P/Macholz. Its presence can be digitally simulated (see Figures 6 and 7 below).[146]

[146] The osculating orbital elements provided by the NASA-JPL database and confirmed by Gary Kronk (1999; pp. 203) indicate that periodic comet 96P/Macholz satisfies the brightness aspects and its position with respect to 1P/Halley in the constellations Taurus-Perseus.

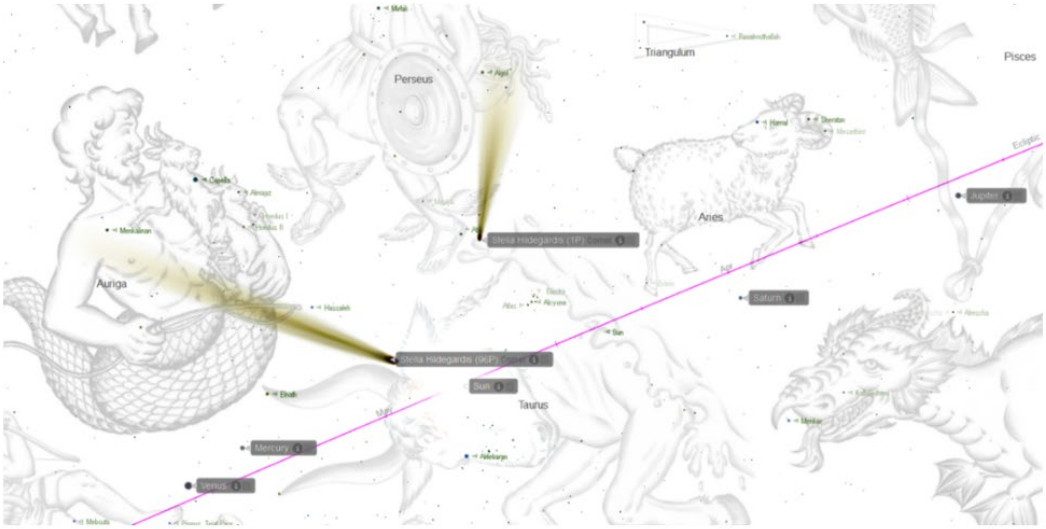

Figure 6: Digital retrospective image of early morning sky of May 11. 1145. Two comets – which are referred to here respectively as *Stella Hildegardis 1P* (Halley) and *Stella Hildegardis 96P* (Macholz) - each have significant tails stretching more than 20 degrees across the sky. The sun is in Taurus. Both comets are low to the NE local horizon. The *linea rosa* is the ecliptic plane.

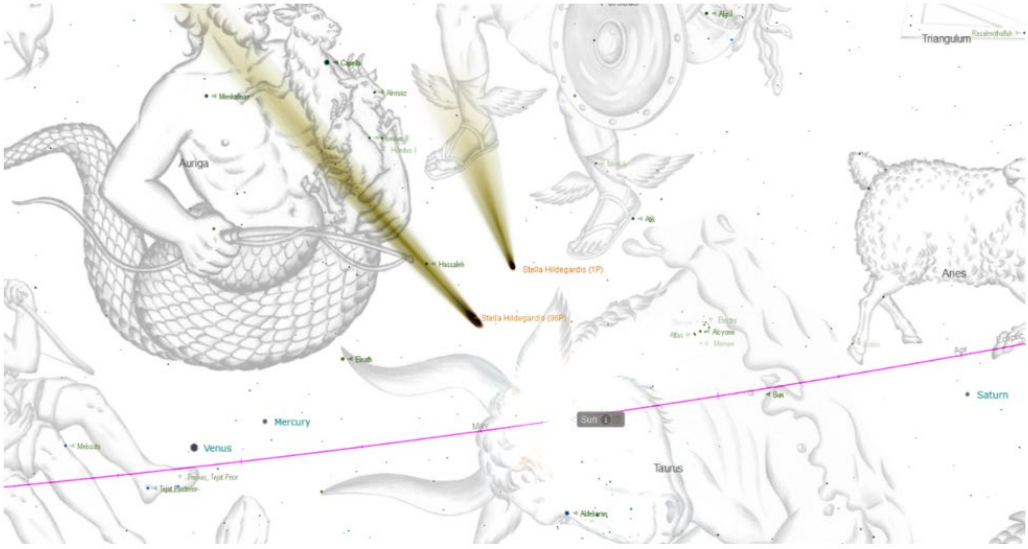

Figure 7: Digital retrospective image of early morning sky of May 12. 1145. Note the speed of movement of both comets from one day to the next (cf. Figure 6).

The *stella hildegardis* which first appeared in Pisces was the 1145 return of Comet 1P, a *periodic* comet now known as Halley's Comet.[147] It is important to recognise that in the 12th

[147] See Edmond Halley, 'Astronomiæ Cometicæ Synopsis; Autore Edmundo Halleio Apud Oxonienses Geometriæ Professore Saviliano et Reg. Soc.', *Philosophical Transactions of the Royal Society of London,* 24 (1705), 1882-1899. 'Periodic' comets are in a class of objects which are gravitationally bound to the sun – as the planets and asteroids are – in elliptical orbits. Subject to perturbations by the planets of the solar system, the orbits of comets are altered with each passage into the solar system. Therefore, digital simulations of past cometary events must include so-called *osculating orbital elements* to have the correct position when near Earth. In this study, all orbits were determined from both Gary W. Kronk, *Cometography: A Catalog of Comets, Volume 1: Ancient-1799 CE* and the NASA-*JPL Solar System Dynamics Small-Body Database*.

century, there was not what could be described as a proto-scientific theory of comets available to cloistered religious unless there was bibliophile access to, for instance, the contemporaneous writings of William of Conches and his *Dragmaticon philosophiae* (ca. 1144-1147). This manuscript did have a section descriptive of comets in *Liber V,* Section 8. In that section, William notes an old Roman record of a comet which had split into two 'stars':

> According to some philosophers, when two planets move close to one another, the space lying between is lit up by the colliding rays, and those who are watching take it to be one star. In confirmation of this, Ephorus says that the comet that appeared when Buris and Helice were destroyed split into two stars.[148]

We have access to further corroborating evidence from contemporary England. Folio 10r of the Anglo-Saxon *Tripartitum Psalterium Eadwine* (The Canterbury Psalter; ca. 1150) has a margin drawing of a comet having a multi-object nucleus and braided tail which would be consistent with the descriptions by observers in China and Japan of the comets of 1145 (see Plate 6; Figure 8). The marginalia, in Anglo-Norman Latin, reads:

> *Be cometa bam steorran Ðyllicne leoman hæfð cometa se steorra on englics hine man nemð se feaxeda steorra he hine ætywð seldan ymbe fela pintra þonne for fortacne.*
>
> Regarding the comet - that star, such an illustrious mane this comet star has, and in English they named it the 'long-haired star'; these seldom reveal themselves in any year, but when appearing, it is a great portent of things to come.[149]

Figure 8: Detail of *Tripartitum Psalterium Eadwini* (The Eadwine Psalter), MS R.17.1, folio 10r. This folio is generally accepted as depicting the well-documented comet of 1145 (1P/Halley) or possibly the Great Comet of 1147.

[148] Italo Ronca and Matthew Curr. *William of Conches: A Dialogue on Natural Philosophy (Dragmaticon Philosophiae).* (Notre Dame: IN, University of Notre Dame Press,1997), p. 108; also see Book V, note 62 therein. See also: *Guillelmi de Conchis Dragmaticon philosophiae,* ed. by Italo Ronca. Opera omnia I. Corpus Christianorum Continuatio Mediaevalis 152 (Turnhout: Brepols, 1997); Italo Ronca, 'A New Critical Edition of the *Dragmaticon Philosophiae* of William of Conches', *Akroterion,* 22 (1997); Barbara Obrist, 'William of Conches, Māshā'Allāh, and Twelfth-Century Cosmology', *Archives D'Histoire Doctrinale Et Littéraire Du Moyen Age,* 76 (2009), 29-87, Eric M. Ramírez-Weaver, 'William of Conches, Philosophical Continuous Narration, and the Limited Worlds of Medieval Diagrams', *Studies in Iconography,* 30 (2009), pp. 1-41. See also entries for 1P/1145 G1 and 96P Macholz of 1145 CE in NASA-JPL *Solar System Dynamics Small-Body Database*.

[149] Translation is an interpolation by J. Murray and so is subject to imprecision and further refinement.

Events such as the arrival of a comet - as with a supernova appearance - constituted sudden disturbances in the otherwise predictable celestial order; in essence, omens or signs in the sky of fortuitous - or malignant - events about to take place.[150,151] Hildegard specifically identifies these objects as *planetae* which are 'rarely seen', are 'omens', and that these celestial visitors 'bring about miraculous events somewhere'.[152] It would seem that Hildegard considered these events as indicators of future events in a positive light, and had not yet received the Ptolemaic points of view, such as:

> We must observe, further, for the prediction of general conditions, the comets which appear at any time whatever; for these naturally produce the effects peculiar to Mars and to Mercury—wars, hot weather, disturbed conditions, and the accompaniments of these; and they show, through the parts of the zodiac in which their heads appear and through the directions in which the shapes of their tails point, the regions upon which the misfortunes impend. [Through} the time which they last, the duration of the events, and through their position relative to the sun likewise; for in general their appearance in the orient betokens rapidly approaching events and in the occident those that approach more slowly.[153]

In the Berlin Fragment, Hildegard writes: 'The planet Jupiter, which is beneath the first [planet Saturn], is at hand to serve and promote this star… people then become able to engage in farseeing deliberations and discussions about the many fortuitous events which are about to take place.'[154] The similarity of language is striking and could demonstrate a conventional medieval lore about comets 'as the experience of natural phenomena as marvels, miracles and portents within the monastic community'.[155] or more provocatively,

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[150] The comet of 1147 was a highly unusual apparition, and apparently spectacularly bright with a 30-degree maximum tail due to its close approach to the sun near the time of closest distance to earth. It was lost from view for more than three weeks, then suddenly reappeared. Hence, it was thought to be two comets by all available records (as had occurred just two years earlier in 1145) until an orbit was calculated in 1979. Occurring in January-February of that year, it is thought to have been the omen instigating Konrad III of Germany and Louis VII of France to set out in April 1147, for what would be a disastrous Second Crusade. Of interest is the German record of the comet as appearing in the *Annales Brunwilarensis* in 1179, the year of Hildegard's death (see G. Kronk, 1999: pp. 203-204).

[151] For the historiography and astrology of comets, see Adam Mosley, 'The History and Historiography of Early Modern Comets', in *Christoph Rothmann's Discourse on the Comet of 1585.* (Brill, 2014), pp. 282-325.Mosley focuses particularly on the role of comets and their cultural significance as described in Aritotle's *Meteorologia* and the *Tetrabiblos* of Claudius Ptolemaeus.

[152] *[qu]i rari sunt ad vidéndum et qui raro ostendúntur, nisi áliqua mirácula portent. Causae et Curae, Liber I.* Folio 5ra, 2 (K12.18).

[153] Ptolemy, *Tetrabiblos, II.13.* Ptolemy. *Tetrabiblos.* Translated by F. E. Robbins. Loeb Classical Library 435. Cambridge, MA: Harvard University Press, 1940. It would seem also that, for Ptolemy, the position of a comet in Taurus and in its western portion near the Pleiades and Aries was particularly worrisome as it was an omen of wars, earthquakes or protracted severe, windy weather. This was the case with *stella hildegardis 96P (Macholz)* which rose with the Pleiades mid-April 1145; *stella hildegardis* 1P (Halley) was at its peak brightness near the Hyades in the head of the Bull. For Ptolemy, this apparently meant fires started by lightning strikes, (*Tetrabiblos, II.11;* seq,). Cf. note 146 below.

[154] *Berlin Fragment,* Folio 105ra_rb II, 26-27.

[155] Chris Halsted, '*Annales Sangallenses Maiores* (1056): Introduction, Translations, and Notes'. *Leeds Medieval Studies,* 3 (2024), 25-57; see p. 12. Published January 29, 2024, this is the freshest translation of a medieval

Hildegard accessing some of the many new translations to Latin of ancient sources and the scribal records of annals being produced in the monasteries of what is now Germany, Austria, and Switzerland.[156]

The celestial events of May, 1145 - when combined with the eventual close approach of Saturn-Jupiter for many months in 1145 and 1146 - could have provided the context for Hildegard to pen an allegorical trip of the Sun through the zodiac at an auspicious time in the firmament for those seeking political signs, or possibly for her personally.[157] As to addressing whether this narrative is an example of a serious retrospective on the solar year in the zodiac or a fanciful piece of *fabula,* we return to the *fabula similitudine* (resembling a fable) of Peter Dronke and to the commentary of Charles Burnett on this section of *Causae et Curae.*[158] Importantly, Burnett noticed that for each of the signs mentioned, Hildegard uses language which allegorises each of them in what is certainly their astrological traditions. However, Burnett referred to these in his *astronomical* treatment of the text. An extension of Burnett's commentary, which ends in Cancer at the sun's apex to the full cycle of signs, is presented in Table 2 (also available in full Latin-English in Appendix 'B' with digital simulations available in the table caption link).

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monastic annal. It spans the Carolingian-era years of 709CE to 1046CE and features at least thirty-one different hands contributing over three centuries. The autograph manuscript, St. Gallen Stiftsbibliotek 915, includes nine references to comets leading to calamitous events (especially earthquakes, famine, severe weather events, or the death of abbots and members of the nobility). Spectacular coment apparitions appearing in this annal were in the years 868, 912 (return of 1P Halley), 941 ('a miraculous sign appeared in the heavens'; apparenly an omen of the imminent death of all cattle in the Rhineland that winter (see p. 23 in Halsted)), and the next return of 1P Halley in the year 989. Completing this list of ominous celestial events was in the spring of 1014, 'that sorrowful comet which burned in an uncommon way for a long time; indeed, through different places: now in the middle of the earth, now the interior below the east, now it concealed itself beyond the arctic pole. [And] a plague without name followed, wasting bodies, seething the viscera, then great flows of blood' (p. 29).

[156] Annals which were extant in the regions where Hildegard lived and travelled include: *Annales Formoselensis* (1136). *Monumenta Germaniae Historica, Scriptores,* Volume 5. Ed. by Georgius Heinricus Pertz (Hanover, 1844); *Annales Leodiensis* (1121). *Monumenta Germaniae Historica Scriptores,* Volume 4. Ed. by Georgius Heinricus Pertz (Hannover, 1841); *Annales Sanctae Germani Minores* (1146). *Monumenta Germaniae Historica Scriptores,* Volume 4, ed. by Georgius Heinricus Pertz (Berlin, 1841) and the *Chronica* (1111) of Sigebertus Gemblacensis. *Monumenta Germaniae Historica Scriptores,* Volume 6, ed. by Georgius Heinricus Pertz (Hannover, 1844). I thank Gary F. Kronk of Washington University, St. Louis, USA for these annal references.

[157] We know from her *Vita* that the situation at the monastery of Disibodenberg near Bingen Am-Rhein had increasingly become untenable for her and her sorority of nuns ca. 1140s. Over the period 1144 to 1146, Hildegard must have completed the first drafts of her initial (of three) major theological works – the *Scivias* ("Know the Ways") - for these were requested by the papal legates for examination about a year before being read out – and approved publicly – by the newly consecrated PP. Eugenius III at the Synod of Trier in November 1147. For contemporaries who inclined their thinking to this being a malefic celestial omen of the times, on February 15, 1145 CE, just two months before the first European sightings of 1P Halley, Pope Lucius II was assassinated in Rome and within less than a day the new pontiff – Eugenius III, a Cistercian and pupil of Bernard of Clairveaux – is consecrated.

[158] See Charles Burnett, 'Hildegard of Bingen and the Science of the Stars', pp. 112-113.

Table 2: The twelve signs of the zodiac and Hildegard's allegorical representations in *Causae et Curae.* Full digital simulations are available at: https://drive.google.com/drive/folders/1-hiLsKFcYwBWydu2CUxB87_Ui66fLWod?usp=sharing [159]

Constellation	Physical and Allegorical Attributes	*Causae et Curae Liber I Folios 4vb to 5vb*
Capricornus - Sagittarius	The sea-goat and the centaur; both derivatives of climbing, hoofed animals	[it] is said of the sign of Capricornus that things struggle as if on their knees, endeavoring to ascend by climbing, ever so slowly.
Aquarius - Pisces	The waters of the earth and the fishes; spring and the time of nature's fertility; the spawning grounds	[the] earth around its foundations warmed such that the waters above and under the earth were warmer to the touch in winter than they in the summer; upon arriving at that sign, it is as if it is already in the midst of the waters. The fishes which had previously hidden themselves from winter's cold, now go forth in their fertility.
Aries	The ram with antlers (or horns); strength and courage	[there] that two planets of lesser brilliance encounter him, and embrace him, and gradually ascend with him, eventually stretching themselves forward in front of him in the manner of a ram with its antlers.
Taurus	The hostile, charging bull	these [planets] impel the sun before them with excessive power, in the manner of a bull, thrusting mightily with its horns
Gemini	The twins; bilateral symmetry	[when] he arrives in the sign of the Twins, the sun and the planets thereby separate themselves, one moving to one side [of the Sun], the other to the other side of it.
Cancer	The crab; back and forth or sideways motion; repetitious movements; timidity and indecisiveness under duress	[sensing] its warmth that [planet] moves backwards a little. Soon after, another planet appears, and sensing the backward motion, attempts its advance but is forced to turn back and so follows the other. For a second time, the inferior planet which had been sensed by the first planet returns once more, only to be turned back; and so for some period of time there is proceeding and then turning back around, as crabs when walking go back and forth.
Leo	The lion; can be ill-tempered, impatient, can roar to communicate its intentions	[the] Sun, for its part, became enraged because of the difficult experiences it had in turning itself around [to descend]; because of this difficulty in turning to its descent, it discharged a great amount of passionate fire such that lightning, and thunder resounded.
Virgo	The maiden soft and gentle (sic); early autumn with the burden of bearing fruit for the harvest is now over	he [the Sun] proceeded more softly and with a soothing gentleness, because his fiery passion and bitterness had been alleviated; his burden lighter as earth no longer brings forth her fruit but almost stands still, delighting in the fullness of her maturity.
Libra	Nature held in the balance; warm gives way to cool; vitality (*viriditas*) and dryness of decay (*ariditas*) are in the balance.	[the planets] proceed with the Sun into the sign of The Scales [Librae], when the luminous vigour of youth and the dim dryness of old age are balanced as if on a set of scales. Youthful vigour withdraws as the dryness draws near.
Scorpius	The beginning of the 'sting' of colder weather; scorpion-like crawling animals must find a den for the winter months	[then], in the sign of the scorpion, all things which crawl must seek after their small lairs, where they will be in hiding for the winter.

[159] The selected texts in the third column all derive from the MS evidence presented in translation earlier in this chapter or, for the full extended prose narrative, see Appendix 'C'.

For Dronke, an important characteristic of *fabula* was the intimate association of concept and image. I propose that the text provides the conceptual frame connecting similar stories of the past and the imagination provides the imagery. This pairing alone can define much of Hildegard's prose and poetry, and it is not always clear what her own imagination intended. The allegory of the *Duodecim signis et planetis* illustrates this point. What may have initially been derived from recollections or discussions with colleagues about the motions of the sun and planets is the beginning. The writing is rich, multi-layered, with a stratigraphy of its own in the prose. For instance, where the upward-glancing astronomer sees the suddenness of a close pairing of 'new stars' (*cometes*), Hildegard situates these objects as having drawn immense energies and forcefulness from the nearby sun to be used as powerful thrusts of the horns of a bull. And so, astronomically, little doubt remains that she may have witnessed (as many did worldwide) not one but two bright comets with proximity to the sun, and in Taurus in the year 1145. The fable, then, is the complementary and very imaginative astrological perspectives which enhance both awe and wonder at what nature can offer. That year, for Hildegard, had the sun facing apprehension about continuing its ascent towards Cancer. It was going to take more than her dedicated servants of the sun, namely Mercury and Venus, to give the sun impetus to carry on; it would require a spectacular celestial intervention to do so. On occasion, there is a confluence of conditions which can be revelatory. In this study, a single *sententia* in *Liber I* of *Causae et Curae* raised a question as to what Hildegard may have intended as she mentions – conventional wisdom or not - the rarity of an association of two planets coming into the path of the sun, its portentiousness, and occurring in the one zodiac sign capable of thrusting upwards – a bull (*ut Taurus*). Where Ptolemy had separated the heavenly sciences into two distinct traditions, *astrologia* and *astronomia,* the *logos* and the *gnomon,* the word and the measure of angles, Hildegard sees not simply their complementarity but the necessity of their integration.

Plate VI:

The *Tripartitum Psalterium Eadwini* (The Eadwine Psalter), MS R.17.1, folio 10r.[160]

[160] This folio likely depicts the well-documented comet of 1145 CE (1P/Halley) or possibly the Great Comet of 1147. Size: 46cm x 33cm. Wren Digital Library, Cambridge, Trinity College. Used with permission.

Chapter 4 – Summary and Conclusions

The principal focus of this study was to examine selected extracts from two manuscript sources dated to the earliest decades of the thirteenth century attributed to the twelfth century Benedictine St. Hildegard of Bingen. The two MS sources are the *Berlin Fragment* and its complement, the *De duodecim signis et planetis* of Hildegard's medico-scientific treatise, *Causae et curae de mundi creatione.*[161] Prior to this study, both sources remained untranslated to a modern language from the original, now digitised, parchments.[162] In particular, this examination sought evidence from these MSS sources to extend earlier cursory scholarship to include Hildegard's ideas and imaginative thinking on topics which are cosmological, medico-astrological (melothesiac), and allegorical-astronomical. Chapter Two focused on a discussion of how these MSS sources informed, and were shaped by, the twelfth century renaissance in the Latin west within the contexts of the re-birth of lyric poetry, the revival of astrology, and the spread of apocalyptic literature. Chapter Three featured new, translated excerpts from the *Berlin Fragment* providing evidence to re-engage and extend recent work on Hildegard's planetary and anemographic melothesia, particularly through a 'text to imagery' approach. Chapter Four utilised a new translation of an allegorical-astronomical prose section of Hildegard's *Causae et Curae* – the *De duodecim signis et planetis* – to determine if there were contemporaneous, mid-twelfth century eyewitness accounts which could have provided the basis for, and astronomical explanation supporting, the crafting of this astrological allegory of the sun's annual movement through the zodiacal constellations.[163]

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[161] See Chapter 1, this study, to refresh on the details of these MSS sources. The title *Causae et curae de mundi creatione* derives from the incipit of the source MS used in this study, the København, Det Kongelige Bibliotek, Ny royal collection. 90b.2° (ca. 1200 CE). *Causae et Curae* has been used in this study as the abbreviated title most seen in the literature.

[162] Latin transcriptions of these MSS sources are available and directly inform the translations in this study. See Chapter 1. Prior to this study, brief excerpts from both MSS appeared in publications recognising the 900th anniversary of the birth of Hildegard (ca. 1097/1098 CE). As for the *Berlin Fragment,* this was in Peter Dronke, 'The Four Elements in the Thought of Hildegard of Bingen: Cosmology and Poetry', *Studi Medievali,* 54 (2013), 905-922. For *De duodecim,* see Charles Burnett, 'Hildegard of Bingen and the Science of the Stars', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), pp. 111-120. These sources have been treated in earlier chapters, this study.

[163] The complete translation of *De duodecim signis et planetis* is available in Appendix 'B'.

4.1 Findings and Analysis

With respect to the nature and structure of the *Berlin Fragment,* the current consensus among anglophone writers is that it is a non-unitary, fragmentary manuscript prepared and assembled in the scriptoria of the Rupertsberg monastery in the early 1220s. The suggested purpose of this effort was to butress the first attempt at initiating the cause for formally canonising Hildegard which began in 1227; the consequence of a wide regard for her sanctity and the favourable reception of her writings.[164] Peter Dronke, in his commentary on the *Berlin Fragment,* essentially demolished any prospect that together with *Causae et Curae* it was once a part of a 'single origainally coherent text'.[165] Dronke's invective against the position of Hildebrandt and Gloning in the introduction to their 2010 publication of a transcription of the *Berlin Fragment* reinforced the academic divide between the German Hildegardian scholarly community and others.[166] More recently, Santos Paz took a more cautious approach to this issue by framing the debate as remaining hypothetical and subject to further analytical work.[167] There is direct visual evidence which supports the 'fragmentary', discontinuous nature of the *Berlin Fragment,* giving its name an important distinction. As noted in the introduction to this study, the *Codex Berolinensis, MS Lat. Qu. 674* begins with a verbatim reproduction of two folios of *Causae et Curae,* but the relationship between the two MSS ends there. The many marginal *paragraphus* notations and the thirty-one occasions of the copyist's insertion of the word, *quere,* argue for an explanation both theoretical and structural. For instance, of all the occasions the word *quere* ('inquire about this') appears in the *Berlin Fragment,* all but two occur in Folios 103 to 107; the very folios in which Hildegard writes about the four elements, the four winds, the four humours, the five planets, and the sun and moon. Theoretically, it was her *cosmology* which invited further enquiry in the scriptorium. Structurally and linguistically, Hildegard's inspiration vindicates Dronke's description of the *Berlin Fragment* as 'different in kind from

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[164] For the reception of Hildegard and her works in the twelfth century, see José C. Santos-Paz, 'Aspetti Della Ricezione Dell'Opera Di Ildegarda Nel Duecento', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), pp. 211-223.

[165] Peter Dronke, 'The Four Elements in the Thought of Hildegard of Bingen: Cosmology and Poetry', p. 140.

[166] For details, see note 42, p. 14 in Chapter 1, this study.

[167] See José Carlos Santos Paz, 'Dal progetto all'immagine: il Frammento di Berlino e le illustrazioni del Liber Divinorum Operum', in *Ildegarda di Bingen, Nel Cuore Di Dio: Liber Divinorum Operum* le miniature di Lucca, ed. by Sara Salvadori (Milano: IT: SKIRA Editore S.p.A., 2022), p. 140.

any other writing of Hildegard's that survives'. This provokes fresh thinking about style, focused on 'certain moments from [the *Fragment]* where her genius shines brightly'.[168]

Though it is beyond the scope of the present study to present the entirety of the *Berlin Fragment* in this form, it has been ascertained that virtually the entire contents of the *Berlin Fragment* possess the architecture of medieval lyric poetry. The only section which does not is the fragmentary portion of *Causae et Curae* which appears at the beginning of Folio 103. There is more. Hildegard's poetic genius has a stratigraphy embedded in it which is cosmological. In the verses above, one can clearly make out the hierarchical sequence of the celestial bodies. Wherever the planets are mentioned in the *Berlin Fragment,* not only do they appear by name (*nominatim*) for the only time among any of her works, the same quasi-Tychonic sequence is applied. In Hildegard's cosmography, the moon and Venus are an inseparable, ever-cycling pair sharing each other's light, Mercury receives perpetual fire from the sun, Mars is the 'charioteer of the sun', and the two highest planets are always mentioned in the context of extraordinary events occurring in addition to either great societal joy (Jupiter) or intense personal human suffering (Saturn).[169]

According to the seminal studies of medieval lyric love poetry of Brittain, the very prayer life of the Benedictine community was grounded in both lengthy prose and poetic lyrics which were sung; all components of the *officio divina.*[170] In the twelfth century, the voice of the 'feminine rhyme became more elaborate' and reached its climax with rare forms, having many words of the same ending and therefore sound, and the rhyming scheme was often repeated but not always in an established order.[171] It is postulated here that the *Berlin Fragment* comprises a heretofore unknown and unpublished suite of lyric poetry, and could have been provided to Hildegard's amanuensis, Volmar, from her own wax tablet.[172] The apparent disordered nature of the presentation may have originated from informal conversations within her monastic community and were not considered for formal

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[168] Peter Dronke, 'The Four Elements in the Thought of Hildegard of Bingen: Cosmology and Poetry', p. 142. It is notable that an exceptionality occurs with respect to the copyist's use of the word *quere.*

[169] See Chapter 2, this study, for details and analysis.

[170] F. Brittain, *The Medieval Latin and Romance Lyric to A.D. 1300* (Cambridge, UK: Cambridge University Press, 1937), p. 7.

[171] F. Brittain, *The Medieval Latin and Romance Lyric to A.D. 1300* , p. 25.

[172] In all illuminations in the Lucca Codex 1492 of Hildegard's *Liber Divinorum Operum* where Hildegard and Volmar are depicted, she is holding a wax tablet and Volmar a quill. The illumination of her *Visio Prima* in that codex is the type example of this collegial relationship which lasted until Volmar's death in 1163. See Sara Salvadori, *Ildegarda di Bingen nel Cuore di Dio: Liber Divinorum Operum le Miniature di Lucca* (Milano: IT: SKIRA Editore S.p.A., 2022), pp. 30-33. The use of poetry as a didactic strategy and a mnemonic device for didactic purposes and remembrance of articles of faith has a long history in Benedictine religious life.

publication. The use of parchment which already had a seemingly random selection from *Causae et Curae* supports this argument.

The connections among the sections of the *Berlin Fragment* in which Hildegard focuses particularly on the interrelationships of the planets and the winds of the macrocosm, and the humours and anatomy of the human body of the microcosm, were examined in Chapter Two. What has troubled the analysis thus far is the sheer recency and rarity of scholarly treatment. Santos Paz is the sole academic presently working in this area, and his work is available solely through translation from his native Spanish or in Italian.[173] His work concludes that there are 'questions raised by the data…[and] there is clearly a relationship between numerous passages in the *Berlin Fragment* and the *rota* of [Hildegard's] second vision in the *Liber Divinorum Operum (LDO).*[174]

Chapter Two also examined select text passages from Folios 106 to 108 and then mapped these spatially onto the androgynous human being in *Visio secunda* of the *LDO*; supportive of Santos Paz's hypothesis that these interrelationships are not imaginal on Hildegard's part but were merely instructions for the illuminators. One difficulty with his restrictive view is that there may be more to these stanzas than a literal version of text to image. When viewed as allegorical, as poetic, as visionary the stratigraphic layers are on full display. Additionally, as suggested by Gunzburg, the assumption that text alone is the only way the modern observer can peer retrospectively into the thinking of times past has a crucial test in this instance.[175] In agreement with Santos Paz's position, these folios of the *Berlin Fragment* would remain inevitably incomprehensible, possibly in complete isolation, unless juxtaposed to an image. However, upon consideration of the enigmatic structure of the verses in these folios, impossibly non-poetic in English translation though they may be, there is evidence of astrological melothesia written in a lyric-poetic style.

The content may be about how certain fixed stars are in relation to the corollary winds, the planets, and the human being, but the phrasing asks for deeper meaning. This is the case

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[173] Santos Paz's two key publications in this area are: : 'El Fragmento de Berlin Atribuido a Hildegarde De Bingen y la Actividad del Scriptorium de Rupertsberg', *Anuario De Estudios Medievales,* 52 (2022), 857-886, and his 'Dal progetto all'immagine: il Frammento di Berlino e le illustrazioni del Liber Divinorum Operum', in *Ildegarda di Bingen, Nel Cuore Di Dio: Liber Divinorum Operum* le miniature di Lucca, ed. by Sara Salvadori (Milano: IT: SKIRA Editore S.p.A., 2022), pp. 134-140.

[174] Santos Paz, 'Dal progetto all'immagine: il Frammento di Berlino e le illustrazioni del Liber Divinorum Operum', p. 140. Reference to the *rota* is the circular, nested spheres of the firmament in the illumination of *Visio secunda* in the Lucca Codex 1492 of Hildegard's *Liber Divinorum Operum.* See Plate 4, this study.

[175] Darrelyn Gunzburg, 'Giotto's Sky: The Fresco Paintings of the First Floor Salone of the Palazzo Della Ragione, Padua, Italy.', p. 407.

with the ordering of the seven *planetae.* The order of the planets has increased visibility to the modern reader when displayed in stanza form, then relates to an illuminated image, and this poetic structure continues to then refer to the fixed stars and the winds. If these words were intended merely as instructions for illuminators in the scriptoria as has been suggested, it bears further consideration as to why Hildegard would choose the style of medieval lyric poetry to advance her ideas and see them to completion among her illuminators. Reverberating with the position of Gunzburg, Madeline Caviness has argued that 'text and image were inseparably linked together as bearers of meaning' for Hildegard, and this was taking shape in the 1140s under her direct supervision in the monastery at Disibodenberg, prior to her move to the new Rupertsberg facility in 1151.[176] The complex stratigraphy of Hildegard's visionary approach appears to include layers of textual *poesis* which subsume her astrological melothesia, her view of the androgynous human being at the centre of the macrocosmos, and the eventual artistic expression which illustrates it all. It becomes problematic in the face of the evidence that the *Berlin Fragment* comprises 'provisional, discarded drafts of notes' with unintended readership and unintentional outcomes as offered by Santos Paz.[177] Vellum was expensive in the twelfth century, and these texts eventually headed for Rome in 1227.

Turning now to the analysis of the *De duodecim signis et planetis,* it should be noted that not only is there little in the way of commentary as to sources for Hildegard in the otherwise exceptional critical edition of Laurence Moulinier and Rainer Berndt SJ, only one commentator has addressed a portion of this astrological allegory.[178] This situation may be by scholarly expedient due to the *problematica Hildegardiana* where her astrological inclinations show themselves. It may also be affected by the continuing echoes of the imaginal shock which began to reverberate through academia early in the twentieth century in the person of Aby Warburg and how text to image had been overlooked among scholars of art. As suddenly as Haskins had overturned conventional wisdom on what was thought to be a continuing dimness in human cosmological thought in the twelfth century,

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[176] Madeline H. Caviness, 'Hildegard as Designer of the Illustrations in Her Works', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), p. 31.

[177] José Carlos Santos Paz, 'Dal progetto all'immagine: il Frammento di Berlino', p. 137.

[178] For the critical edition contribution of Moulinier & Berndt SJ, and the essay of Charles Burnett, see Chapter 4 for reference details.

so Warburg peeled back the scales from the eyes of art history to illuminate the decans of Abū Ma'shar upon the frescoes of Europe. All in the year 1927.[179]

Here, an opportunity presented itseld to test a hypothesis. Was this notably astrological narrative in *Liber I* of *Causae et Curae* one which had no astronomical merit or grounding? Merely a dance of the sun and planets through the zodiac, cloaked in the abstruse allegory so characteristic of Hildegard? The test made itself evident from two lines:

> [Two] new stars advance into the Sun's path to attack him, foretelling events to come in that year. These planets are rarely observed and seldom reveal themselves, unless as portents; omens of miraculous events somewhere.[180]

A probable answer revealed itself though retrospective digital simulation of the twelfth century skies over Hildegard's environs and the world. It was determined that the planets' positions could only represent the skies in a three-year period of 1145 to 1147. Further precision – especially with this portentious celestial event occurring with the sun in the 'sign of the Bull' – left only 1145 as an option if it were to occur at a time when Hildegard was actively writing. Not only was this sun-zodiac allegory pointing to an apparition of the return of comet 1P Halley, the spring of 1145 graced the skies with *two* comets with the return of comet 96P Macholz. Though the narrative could have been related to the Great Conjunction of Saturn-Jupiter in 1146-1147, the presence of two comets offered the prospect of a truly spectacular event for Hildegard; and worth writing about.[181] In his *Fabula,* Dronke had proposed that medieval fable and allegory relied upon an association of concept an image that had intimacy. Up to this point, the imagery of this year-long trip of the sun and planets through a solar year had to come from the individual's imagination. This study now provides further, defensible visual evidence – including digital iconography – that *De duodecim signis et planetis* does have an astronomical foundation upon which the astrological fable could have been constructed. Put another way, the re-birth of astrology in the twelfth century may well have included celestial signs; the heavenly sciences had possessed two distinct traditions, *astrologia* and *astronomia,* the *logos* and the *gnomon.* In

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[179] See Dieter Blume, 'Picturing the Stars: Astrological Imagery in the Latin West, 1100–1550', in *A Companion to Astrology in the Renaissance* (Brill, 2014), pp. 333-398.

[180] *álii duo ei óbviam véniunt, qui rari sunt ad vidéndum et qui raro ostendúntur, nisi áliqua mirácula portent. Liber I, Causae et Curae,* Fol. 5rb, K 12. 17-19.

[181] See Chapter 3, this study, for a detailed synopsis of the technique and digital simulation images. All comet data was drawn from multiple, available records from the occident and the orient for the year 1145 CE. These records indicate that both comets featured bright, lengthy tails which spanned as much as thirty degrees of the sky at their peak brightness.

a century preoccupied with the consummation of the world, Hildegard may have seen fit to set down in her own poetic voice, an omen for her times.

4.2 Recommendations for Further Research

The intention of this research was to take initial steps, through first of kind translations, into two manuscripts considered by consensus to have originated either from Hildegard herself or brought forward in the decades after her death in 1179. Posthumously, her Benedictine colleagues effectively participated in an emergent Hildegardian tradition of preserving her legacy. The volume of her *oeuvre* testifies to her own desire to fulfill what she claimed to be a divine calling to write down what she saw, in waking state visions. The aim and objectives of this research combined to bring to light, or give new potential to, aspects of astrological, melothesiac and astronomical perspectives from the *Berlin Fragment* and *Causae et Curae* which have remained mostly unattended to. For instance, without a sophisticated background in modern astronomy, enacting the necessary and precision simulations of the night skies in the year 1145 could have been easily overlooked as relevant to the otherwise poetic allegory of Hildegard's *De duodecim signis et planetis.* Scholars of the history and practice of astrology are needed to appreciate the deeper levels of her astrological and melothesiac stratigraphy, and those who specialise in medieval liturgical music and poetics have at their disposal a novel opportunity with respect to the *Berlin Fragment.* Peter Dronke, who essentially founded the late-twentieth century scholarly field of medieval lyric poetry, somehow did not see the stanzas and rhyme in the folios of the *Berlin Fragment.* There is much to do. What follows, in brief, is an encouragement for continuing scholarship in these areas:

I. Produce a comprehensive critical edition of the *Berlin Fragment* ia modern language with attendent complete translation.

II. Continue the work of seeking, if any, text-to-image relationships among the sententiae of the *Berlin Fragment* and the illuminations of Visions II, III and IV of the Lucca Codex of Hildegard's *Liber Divinorum Operum.*

III. Continue with retrospective digital simulations of astronomical and zodiacal relationships and luni-solar considerations in *Liber I* and *Liber VI* of *Causae et Curae.*

IV. Address, through new scholarship, the present consensus position that the *Berlin Fragment* is an inchoate set of notes which have no bearing on Hildegard's cosmology or her eschatology.

V. Through sophisticated codicological, lexicographical, and orthographical analysis seek improved understanding of the interactions of Hildegard and her amanuensis, Volmar, as witnesses to the contents now appearing in the *Berlin Fragment.*

Appendix 'A' - Approaches and Principles of Translation

In this text-based study, a standard methodology which would be underpinned by an established framework or methodological approach is substituted with what I would describe as a *continuous, in-line literature review.* The manuscripts which are the foundations of this study – though referenced in the introductory chapter – are repeated here for efficiency.[182] Chapter 2 of this study – *From the Imaginal to Text in the Berlin Fragment* – exclusively uses the single MS source available, being the *Codex Berolinensis, MS Lat. Qu. 674.* Chapter 3 of this study – *A Benedictine Science of the Stars* – primarily uses Latin transcriptions of *Liber I* of *Causae et Curae* from the 2003 critical edition of Laurence Moulinier and Rainer Berndt SJ as identified in note 1 below. Cross-referencing for this MS was the digitally imaged *Cause et Cure de Mundi Creatione,* København, Det Kongelige Bibliotek, Ny royal collection. 90b.2°. A complete translation to English of the entirety of the *Berlin Fragment* (Folios 103ra to 116ra) has been completed by me, to be published elsewhere.

The process I used for translation is as follows. First, folios 103ra to 116ra of the *Berlin Fragment* were copied by hand into a journal, directly from the digital MS *Codex Berolinensis, MS Lat. Qu. 674, folios 103-116ra. Sammelhandschrift mit Texten von und über Hildegard von Bingen: Thuringiae Revelationes.* The rationale for this was to get a *feel* for

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[182] In order from earliest to most recent, the Latin texts and critical editions used in translation in this study derive from one or more of the following:

- Hermann Degering, *Neue Erwerbungen der Handschriftenabteilung, II.* Die Schenkung Sir Max Waechters (1912) Mitteilungen aus der Königlichen Bibliothek Bd. III, herausgegeben von der Generalverwaltung (Berlin: Weidmannsche Buchhandlung 1917). pp. 12-18.
- Heinrich Schipperges, 'Ein unveröffentlichtes Hildegard Fragment, (Codex Berolin. Lat. Qu. 674)', *Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften,* 40(1) (1956), pp 41-77.
- *Beate Hildegardis Cause et Cure*, *Rarissima Mediaevalia Opera Latina Volumen I,* ed. by Laurence Moulinier and Rainer Berndt SJ (Berlin: Germany: Akademie Verlag GmbH, 2003).
- Hildegard von Bingen, *Physica*, Edition der Florentiner Handschrift (Cod. Laur. Ashb. 1323, ca. 1300) im Vergleich mit der Textkonstitution der *Patrologia Latina* (P. Migne), Herausgegeben von Irmgard Müller und Christian Schulze unter Mitarbeit von Sven Neumann (Georg Olms Verlag AG, Hildesheim, 2008).
- Hildegard von Bingen, *Physica: Liber Subtilitatum diversarum naturarum creaturarum*, Text mit Berliner Fragment im Anhang, Textkritische Ausgabe, Volume 1, ed. by Reiner Hildebrandt and Thomas Gloning (Berlin – New York: De Gruyter, 2010).
- *Beate Hildegardis, Cause et Cure de Mundi Creatione,* København, Det Kongelige Bibliotek, Ny royal collection. 90b.2° (ca. 1200 CE; Skt. Maximin Kloster, Trier). Digital MS online at: http://www5.kb.dk/manus/vmanus/2011/dec/ha/object61066/da/.
- *Hildegardis Bingensis, Codex Berolinensis, MS Lat. Qu. 674, folios 103ra-116ra. Sammelhandschrift mit Texten von und über Hildegard von Bingen: Thuringiae Revelationes (Fragmente),* (Berlin, Staatsbibliothek Preussischer Kulturbesitz, 2014). Digital MS online at: https://digital.staatsbibliothek-berlin.de/werkansicht/?PPN=PPN654043922 .

the text, to sense the labours involved in the scriptoria of Hilegard's Rupertsberg monastery, and to see each word in context in the only MS witness presently available. Translation was conducted over a nine-month period from October 2022 to July 2023. The procedure for translation was to produce *lemmas* for each *paragraphus* of the MS. The lemma has an advantage over *stemming* of words as this latter process de-contextualises the Latin such that the translation is literal at best and is no more accurate than using online AI-based translation.[183] In my estimation, AI-based or machine translation (MT) is to be avoided. MT has been available since the 1950s and was the first non-numerical use of computers according to Christian Boitet of the Université de Joseph Fourier in Grenoble. He cited 'unavoidable ambiguities and insufficient contextual knowledge' and the 'monolingual reader' as the most notable difficulties in using MT. Nevertheless, he did argue that perfect understanding of a language is extremely rare and that a 'combinatorial approach to linguistic analysis' allows for multiple possible solutions to be weighed and filtered.[184] The lemmatisation process used in translation for this study tends to incline towards this approach. With each word and phrase lemmatised to include and group together all possible tenses, inflected forms, and syntactical nuances the translation has improved ability to be faithful to the original MS. What can never be attained is what the medieval author *truly* meant to say in the written word. This study, then, relies upon translation such that the sole product is my own. For words of rare usage and for the frequent *teutonicisms* which are a hallmark of the *Berlin Fragment,* I relied upon the notes provided in the transcription of Schipperges and to a lesser extent on corroborating evidence in the appendix of Hildebrandt and Gloning, their *Vocabular lateinisch-deutsch.*[185]

In terms of evidence for sources in the *Berlin Fragment,* Luc Herren has noted that 'in antiquity, people were not as strict as modern scholars in terms of the precision with which one was expected to follow the source when quoting classical authors, [and] may or may not provide explicit markers in their texts helping readers to note that they are quoting from or alluding to prior texts.[186] This perennial difficulty as to sources does provide

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[183] See Christian Boitet, 'Automated Translation', *Revue Française De Linguistique Appliquée,* 8, Ėditions Publique Linguistiques, (2003), 99-121. Online at https://www.cairn-int.info/revue-francaise-de-linguistique-appliquee-2003-2-page-99.htm> [accessed 17 April 2023].

[184] Christian Boitet, 'Automated Translation', p. 100, 109.

[185] *Physica: Liber Subtilitatum diversarum naturarum creaturarum*, Text mit Berliner Fragment im Anhang, Textkritische Ausgabe, Volume 1, ed. by Reiner Hildebrandt and Thomas Gloning, pp. 384-406.

[186] Luc Herren, 'Quotation Finder - Searching for Quotations and Allusions in Greek and Latin Texts and Establishing the Degree to which a Quotation Or Allusion Matches its Source', *Journal of Data Mining and Digital Humanities,* (2017), p.3.

opportunities for the modern scholar to conjecture with regularity as to potential, likely, or critical sources within the manuscript. The notes in this study seek to provide as many leads as possible for continuing work in this area with respect to the *Berlin Fragment.*

Heinrich Schipperges, in his volume *Hildegard of Bingen: Healing and the Nature of the Cosmos,* cautioned that understanding Hildegard's works in their entirety through translation involves an appreciation of - if not a full facility with – translating by 'degrees' on several hierarchical levels:

> The singular output of this medieval woman must first be translated on *several levels*: from basic yet ponderous Latin into the *vernacular* of modern scholarship; from the *symbolism* and *iconography* of the Middle Ages – largely unfamiliar to us – into a form of information that we can comprehend; and finally, if possible, from the *visionary language* that is so unmistakably characteristic of Hildegard into a *picture of the world* based on her visions.[187]

Translating the text of the *Berlin Fragment* is exceptionally challenging for just these reasons, for it is not entirely clear whether sections in the original MS were meant to be conversation notes, prose, poetic verse, narratives, aphorisms, *ejaculariae,* or some combination of these. Responsibility for clarity of both design and purpose is important for the translations presented in this study or the reader could be left to ponder, "So, what has been lost in the translation?" One strategy used in this study at its outset was to manually re-write the entire suite of folios in the *Berlin Fragment* into a journal – in Latin. Translations were to follow, and in an appeal to medieval manuscript form, was also by hand. The aspiration was to fulfill the well-known aphorism *Qui scribit, bis legit* << The one who writes, has read twice >>, or, its corollary, *Qui scribit, bis discit* << The one who writes, has learned twice >>. As one solution to the problem of translating the complexities of Hildegard's style to English for a modern audience, I have adopted an approach utilized (and justified) by Barbara Newman in her critical edition of Hildegard's songs – the *Symphonia Harmonie Celestium Revelationum* << Symphony of the Harmony of Celestial

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[187] Heinrich Schipperges, *Hildegard of Bingen: Healing and the Nature of the Cosmos,* trans. by John A. Broadwin (Princeton: Markus Wiener Publishers, 1997), p. 6. *emphases* added to highlight the nature of the translation problem(s). That is, from a base level which is nothing less than exporting the vernacular of the 12th- century to a modern audience and then on to the higher realms of Hildegard's rich symbolism, her unparalleled and fresh iconography, and her visionary language which so often takes the form of allegory, simile and *fabula* (fable). And if this were not enough, yet another 'degree' of understanding produces Hildegard's *Weltbild* (worldviews) which are always image intensive. Hence, just as Hildegard's visions required translation from the Teutonic idioms to Latin by her *amanuensi,* these same visions informed her iconographers and illustrators. The production of miniatures for manuscripts (i.e. from text to images), and then to text *plus* image(s) contributed to Hildegard's exposition of her worldview within her voluminous theological treatises; that is, her *Weltbild.* Translation, when taken to the full, should mirror the nested spheres *(sphaerae)*so common in Hildegard's cosmological visionary field.

Revelations >>. Newman summarised it thus: "in a spirit of desperation, I resorted to a compromise of providing *two* sets of translations; one more literal for students [of Latin] and another for readers of [medieval] poetry; and at times blithely interpretive [for] Hildegard approached the ineffable by making the strongest positive statement her tongue could express."[188] There is further support for this literal-to-poetic approach to translation. In his eulogy to the late Peter Dronke (†April 19, 2020) – a consummate medievalist scholar and lover of ancient lyric poetry – Charles Burnett of the Warburg Institute had this to say about Dronke's preferences regarding medieval Latin translations:

> He (Dronke) was intent on producing elegant translations of his own, which were faithful precisely because of their elegance, and he was dismissive of the literal translation, which was alright for a crib, but not worthy to be placed opposite the original of a fine example of medieval literature.[189]

An example serves to illustrate the technique of Newman, the 'elegance' attributed to Dronke, and the possibilities in translation arising with Hildegard's esoteric use of terminologies, syntax, and her *poesis*. In her translation of the antiphon *O nobilissima viriditas* – a responsory song for virgins – Newman's versions are presented in Table 3 to which is appended a third, fresh possibility which fuses the literal and free-verse approaches to offer an alternate version; that of the poetic:

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[188] See Barbara Newman, Saint Hildegard of Bingen. *Symphonia*. Critical edition of the *Symphonia armonie celestium revelationum* (Ithaca NY: Cornell University Press, 1998); pp. 60-63. *Italics* in original.

[189] See Charles Burnett. "In Memoriam Peter Dronke (30. V. 1934–19. IV. 2020)." *Mediterranea: International Journal on the Transfer of Knowledge* 6 (2021): p. 159. https://www.uco.es/ucopress/ojs/index.php/mediterranea/article/download/13146/12119. Accessed [12 September 2023]. The "crib" in this instance I would equate to Newman's 'students' of medieval Latin. Further on in the eulogising, Burnett quotes from a letter of Peter Dronke as follows: [The translation] may always have a slightly outlandish air to it; even when correct, it's an English that doesn't respond to the nuances of [the original author's] thought. [When] an *editio maior* is published, it would be very nice to have a 'crib' of this kind […] to help a wider range of students with the text – but it isn't quite of a level of English to stand opposite the [original MS] text […it] is the sheer command of nuances that will count most. Burnett went on to note that [Medieval texts…] are representative of key literary traditions […] which offer penetrating insights into the culture of medieval Europe; Medieval politics, society, humour, and religion are represented.

Table 3: Example of Translation Styles, from Original Latin to Literal and Free-Verse.

Original	Literal Translation	Free-Verse Translation	New Translation *(poet.)*
O nobilissima viríditas, *qve radícas in sole* *et Qve in cándida* *serenitáte* *luces in rota* *quam nulla terréna* *excelléntia* *comprehéndit:* *Tu circúmdata es* *ampléxibus divinórum* *ministeriorum.*[190]	O most noble verdure,/ You who are rooted in the sun / and who shine in bright serenity / In a wheel / that no earthly eminence / comprehends: / You are enfolded / in the embraces of divine / Ministries.[191]	Most noble evergreen, with your roots in the sun: you shine in the cloudless sky of a sphere no earthly eminence can grasp, enfolded in the clasp of ministries divine.[192]	O, most celebrated One, vigorous as the greenest branch taking root in the sun; You who are clothed in the serenity of spotless white; resplendent, surrounded by a heavenly sphere of perfection which no terrestrial things can possibly express. You are enveloped by the loving embraces of the attendants of the sacred.

Taking a lead from Columba Hart in her 1990 edition of Hildegard's *Scivias*[193], the *sententiae* of the *Berlin Fragment* will first be presented in their original Latin transcription together with translation into one of three modes (or more as the context permits): a) a colloquial mode of 21st-century modern English identified in-text by *(colloq.)*; b) a closely literal mode from the Latin with regard to ecclesiastical forms where necessary and identified by *(lit.)* and; c) a poetic, free-verse mode inspired by Barbara Newman's approach about which was justified by the author herself in her critical edition of the *Symphonia.* Such instances are identified by *(poet.)*. The use of these modes is considered with care among the individual *sententia* and the nuances of the surrounding text of each of the folios of the *Berlin Fragment* MS. The translation attempts to be neither arbitrary nor claim certainty of precision as to Hildegard's original intentions. An implication of this is

[190] *Symphonia*, op. cit., pp. 218. Cf. note 2 above. In Peter Dronke's introduction to the critical edition of the *Liber Divinorum Operum* (The Book of Divine Works), words similar to those appearing in this excerpt from the Symphonia were accredited to Hildegard, including *circumdata* (encompassed) and *impléxibus* (enmeshed). See Hildegard of Bingen. *Liber Divinorum Operum*. Edited by Albert Derolez and Peter Dronke. CCCM 92. (Turnhout: Brepols, (1996; Part 1, Vision 2, v. 45 (pp. XLII and XLVI). It is worth noting that *amplexibus* in some circumstances describes an embrace which is sexual, erotic, and perhaps serpentine in its suffocating erotic tightness.

[191] Barbara Newman, *Symphonia*, pp. 219. See note 7 *supra.*

[192] Barbara Newman, *Symphonia*, pp. 219.

[193] Saint Hildegard of Bingen, *Scivias*. Trans. by Mother Columba Hart and Jane Bishop. Introduced by Barbara J. Newman. Preface by Caroline Walker Bynum (New York: Paulist Press, 1990).

that on occasion there are *sententiae* for which the translation forces a blend of the literal and the poetic. Moreover, there are the unknown linguistic opinions of the script writer with respect to the philology and flow of the Latin text and the larger question of the uncertainty surrounding the authenticity of the contents of the *Berlin Fragment.* Table 4 below provides a sample translation using two of the modes just outlined in the context of the influences of the planets:

Table 4: Example of Translation Styles, from Original Latin to Literal and to Poetic Forms (*BFrag*ment, Folio 106ra, v. 35).

Original	Literal Translation *(lit.)*	New Translation *(lit. + poet.)*
Saturnus ad maiorem arculam dextri pedis tendit; *Iovis ad sinistrum genu, Mars ad dextrum genu, Iovis planeta ad humerum dextrum tendit;* *Mars planeta ad sinistrum humerum tendit. Sol ad cerebrum, Mercurius ad dextram lune tendens, ipsi vires administrans.* *Venus ad lunam in sinistra tendit, lumen illius subtrahere iuvans.*[194]	Saturn stretches a line in the direction of the large arch [digit] of the right foot; Jupiter to the left knee, Mars to the right knee, and the planet Jupiter stretches a line toward the right shoulder; the planet Mars stretches a line to the left shoulder [upper arm]. The sun to the top of the head [brain], Mercury stretches a line to the right of the moon, as her strong support. Venus stretches a line to the left of the moon, helping to take away her light.	Saturn strains, reaching out to touch and make tensile the arch of the right foot, as if he were drawing the bowstring; Jupiter, accordingly, genuflects to the left knee of the human being; Mars, the servant of Jupiter, bends in honour to the right knee of the human being; and the planet Jupiter exerts his influence to the arm which draws the bowstring; the planet Mars exerts its influence to the arm which draws the bow. The sun reaches to the place of intelligence, the faculties, and reason, Mercury reaches to lay hold of the right cusp of the crescent-shaped moon, himself the youthful strength in aid of her.[195] Venus strains in her turn to the left of the crescent-shaped moon, delighted to carry away her light as she is eclipsed by the sun.

With respect to pronouns in the Latin, Bishop identified 'correcting a practice' in translation which predominantly masculinised terminologies referring to humans, humanity, persons or people in general.[196] A good example is the Latin word *'homo',* which for centuries is often translated as "man". Here, the word *homo* will most often be translated as "human being", or "person" with the former used when the context is grand, large-scale and cosmological. The words *mulier / femineam* and *vir* will be reserved exclusively for "female"

[194] *BFragment,* folio 106ra, v. 35. All translations and punctuation by J. Murray.

[195] Here, *administrans* refers to the assistance of a female attendant, and can also refer to a handmaiden.

[196] See Hildegard von Bingen, *Scivias,* Columba Hart, OSB and Jane Bishop. 1990; p. 56.

and “male” – not woman and man - unless the context refers to a spousal arrangement or situations for which Hildegard is invoking the collective experiences of *mulieres* or *viri*. Since the Latin pronouns are in agreement with the gender of the nouns they modify, this constitutes a continuing challenge to producing an inclusive and sensitive translation. Hence, on occasion, it may be difficult to not give offence to the modern audience with respect to the evolving and broad-spectrum nature of gender characterisations in our time.

One final thought with respect to the translations contained in this study of the *Berlin Fragment*, and also an appeal to Newman’s thinking; ‘the reader should bear in mind that mere words, even in their original tongue, cannot faintly approximate the experience of music and prayer….[so] the English should be read less as translations in the normal sense than as adaptations for a wholly new medium’.[197] In the twelfth century, that medium for Hildegard and her sisters was the prayer of the *Ordo divina* (“The Divine Office”), which was sung across seven of the canonical hours of the Benedictine day. In the twenty-first century, we do not yet have a *proprium medium* (“a proper medium”), but what begins to capture the melismatic transcendence which is Hildegard’s poetry and prose occurs in our own time with the 3D digital planetarium model developed by Christian Jara and Margot Fassler at Notre Dame University in South Bend, Indiana USA. Their *Cosmos and Creation* sets Hildegard’s cosmological visions from her treatise *Scivias* (“Know the Ways of the Lord”) and the ethereal harmonies from her *Symphonia* to a full-dome visual digital presentation. The foundation stones of new Hildegardian media are being laid.[198]

This study eschews a formal literature review *per se* as being a separate section of the study. The rationale is the nature of the study as text based as opposed to a field study, a phenomenological study, or a study design which appeals to an established framework. As mentioned at the outset of this section, what has been adopted could be classed as a continuous, in-line literature review. By this I mean that the reader has access to a continuous stream of relevant literature as needed throughout the main body of the work and most voluminously in the notes.

It is of importance to reveal that this study, though an examination of the astrological and astronomical contexts as revealed through writings attributed to Hildegard of Bingen, does

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[197] Barbara Newman, *Symphonia, Op. cit.,* p. 63.

[198] See Margot E. Fassler, ‘Images and Chants for a Digital Model of the Cosmos’. *Journal of the Alamire Foundation*, *9* (1), pp.161-178. https://www.brepolsonline.net/doi/pdf/10.1484/J.JAF.5.114053, and; for details of the upcoming 2024 tour of the digital production, see: https://www.unl.edu/medren/cosmos-and-creation-and-ordo-motion [both accessed 08 November 2023].

not require specialised knowledge in either of these broad disciplines.[199] The emphasis is, rather, on providing to the anglophone - and to the *auctoribus anglicus* - a first translation of certain portions of the *Berlin Fragment* not yet available in a modern language.[200]

[199] I do possess over fifty years of watching the skies as an avid amateur astronomer; a *citizen-astronomer* to provide a name for the approach. In addition, lengthy periods of monastic and/or academic experiences – especially among the Benedictines, the Oblates of Mary Immaculate, and the scholastics among the Society of Jesus (Jesuits) – allows for important contextualisations when viewing this study both as a whole and as a first step.

[200] Prior to this study, the entirety of the folios of the *BFragment* remained untranslated. Occasional excerpts have appeared in the medieval scholarly literature, and where appropriate these are cited in this study.

Appendix 'B'- The *Stellæ hildegardis* of 1145 and the Great Conjunction of 1146

K 11.14-21 [De Stellis]

Stellæ namque non sunt æquális magnitúdinis nec æquális splendóris, sed quædam sunt majóres, quædam minóres, quædam majóris splendóris, quædam minóris. Firmaméntum autem a sole supérius continétur, ne supra modum sursum ascéndat, et subtus ab ære [áere] terre, qui terram et nubes cóntinet, ne modum suum subtus excédat. Et ita supra et infra continétur, ut præosténsum est, ut rectos modos suos excédere [excedére] non possit.

K 11.14-21 Regarding the Stars

For the heavenly lights are not equivalent in their magnitude and luminosity, nor are they equivalent in their brilliance; for certain ones are distinguished and certain others are unimportant; some have great magnificence, some are of lesser. Moreover, the firmament holds the sun in its position from above so that it cannot ascend on high without proper bounds; and lest the sun exceed its lower limits, the atmosphere of the earth, possessing the breezes and clouds, restrains the sun. And so, as has just been demonstrated, [the sun] is held in place from above and below, such that he cannot be granted the power to exceed the limits set out for him.

K 11.23 – 14.11 De Duodecim Signis et Planetis

Sed sicut a septem planétis in cursu suo dúcitur, sic et ipsi in duódecim signis quasi famulátum ei éxhibent et sérviunt. 11.25. Nam cum sol ad signum Capricórni pervénerit, duo planétæ, qui eum ad signum *sagitarii* comitáti erant, ipsi quasi nutum fáciunt, ut sursum ad priórem cursum suum rédeat, et eum ad priórem ascénsum exhortántur. Et hoc signum Capricórni dícitur, qui étiam sursum ascéndere [ascendére] nítitur.
11.30. *Hec* enim duódecim signa *nichil* áliud in nomínibus suis sunt, nisi quod relíqui [réliqui] quinque planéte secúndum offícia sua solem aut in *estate* sursum ascendéndo impéllunt aut in híeme deórsum descendéndo suscípiunt et quod ei hoc modo sérviunt.

K 11.23 – 14.11 Regarding the Twelve Signs and the Planets

Ah!...are you aware that there are seven wandering stars [planets] under a command to journey among the twelve signs, sustaining in servitude the firmament as if they were in slavery? 11.25 For when the sun made its arrival in the sign of Capricornus, two planets, [namely Mercury and Venus] which had accompanied [the sun] to the sign of Sagittarius, themselves gestured as if beckoning to one another to return to their former course, exhorting the sun to urgently resume its former journey of ascent. For as its name implies, it is said of the sign of Capricornus that it endeavors to ascend by climbing carefully. 11.30 There is nothing more to be implied about the names of the twelve signs, with this exception: the remainder of the five wandering stars [i.e., planets Mars, Jupiter and Saturn], in accordance with their appointed tasks,

11.35. Sed cum sol ad signum Capricórni pervénerit, relíqui [réliqui] tres planéte sub eo currunt et eum paulátim sursum impéllunt usque ad signum aquárii.

either impel the sun in its ascent into summer, or receive it as it makes its descent, climbing down into the winter time of storms; it is in this way that they are in slavery to the needs of the sun.

11.35 In truth, when the sun had almost reached the sign of Capricornus, and once it arrived there, the remaining three celestial wanderers [namely, the planets Mars, Jupiter and Saturn] hastened [to meet the sun] in their courses, urging it from below to ascend incrementally toward the sign of Aquarius.

K 12.1 Qui cum jam ibi súrgere [surgére] íncipit, terram circa fundum ejus caléfacit et aquas, ove sub terra sunt, et ídeo aque sub terra calidióres in *hieme* sunt quam in *æstate*. Tunc ibi in signo aquárii planéta ille, qui 12.5 ignem suum a sole semper récipit, scílicet ille, qui in signo cancri inférius sole stat, et álii planéte adveniéntes retrórsum incédunt. Solem comitántur usque ad signum píscium. Et cum ad signum illud pervénerit, jam quasi in medietáte aquárum est. Et pisces, qui se prius a frígore [frigóre] abscónderant,

K 12.1 When it [the Sun] emerged to rise [in Aquarius] above the eastern horizon, the earth around its foundations warmed such that the waters above and under the earth were warmer to the touch in winter than they in the summer. Then, that planet in the sign of Aquarius, which eternally receives its fire from 12.5 the sun [i.e. Mercury], well-known for this; and the one which was stationed in its attentiveness underneath the sun [at the time the sun was] in the sign of Cancer [i.e., Mercury], together with all the other arriving planets, appear to approach the sun in the reverse direction [i.e. retrograde]. They [the planets] accompany the sun as faithful servants to the sign of Pisces without interruption; and upon arriving at that sign, it is as if it is already in the midst of the waters. The fishes [i.e., Mercury and Venus] which had previously hidden themselves from winter's cold, now

12.10 jam calórem ejus séntiunt et ad fecunditátem procédunt. Et álius [alíus] planéta, qui in signo cancri ad dextram solis erat, ei hic occúrrit et ipsum sursum trahit usque ad signum aríetis. Et cum sol sic ad signum aríetis pervénerit, et ibi duo inferióres planéte ei occúrrunt et eum suscípiunt et cum eo 12.15 paulátim ascéndunt et in ante tendunt velut áries

12.10 perceive the effects of its heat, going forth in their fertility. The other planet [i.e., Venus], which was to the right of the Sun in the sign of Cancer, encounters him there and draws him upward into the sign of Aries [i.e., the Ram]. And when the sun arrives in the sign of Aries, it is there that the two planets of lesser brilliance encounter him, and embrace him, and 12.15 gradually ascend with him, eventually stretching themselves forward in front of

cum córnibus. Sed cum áltius ascéndit quasi ad signum tauri, isti duo planéte ibi rémanent [remánent], et álii duo ei óbviam véniunt, qui rari sunt ad vidéndum et qui raro ostendúntur, nisi áliqua mirácula portent.

him in the manner of a ram with its antlers. With the Sun ascending ever higher, as if climbing the cliffs into the sign of the Bull, there in that place two planets remain [i.e., Mercury and Venus] and two [new stars] advance into the Sun's path to attack him, foretelling events to come in that year. These planets are rarely observed and seldom reveal themselves, unless as omens intending to announce and convey messages of miraculous events somewhere.

12.20 Et *hii* solem ante impéllunt multa potestáte, ut taurus, qui fórtiter trudit córnibus, et solem ad altitúdinem tránsferunt, ita ut, cum ad signum geminórum vénerit, alter eórum áltera parte solis, alter in áltera parte ejus vadunt se ita separántes, usque dum ad summam altitúdinem suam pervéniunt. Et 12.25 tunc circa signum cancri, cum sol jam ad descénsum revérti debet, planétæ, qui ad dextram ejus vadit, módicum eum *praecedit* et álium quemdam planétam inférius solem stantem ínvenit [invénit], et mox planéta ille planétam istum séntiens retrórsum incédit parúmper, et iste illum 12.30 séquitur. Et íterum ille revértitur, et iste prior recédit, et ille séquitur; et sic per áliquod tempus *praecedentes* et *redeuntes* velut cancri incédunt, usque dum solem ad descénsum convértunt.

12.20 And these [planets] impel the sun before them with excessive power, like unto a bull, that thrusts mightily with its horns, and these [planets] convey the sun to such a height, so that when it comes to the sign of the Twins, the sun and the planets thereby separate themselves, one moving to one side [of the Sun], the other [Jupiter] to the other side of it. 12.25 Thereupon at that time, nearing the bounds of the sign of Cancer, when the Sun must return to its descent, one among the planets which had moved to its [i.e., the Sun's] right now furtively and with haste precedes the Sun slightly [i.e. Mercury]. Then, it alights upon another of the inferior planets [i.e., Mars], and sensing its warmth it moves backwards a little. Soon after, another planet appears, [i.e., Venus] and sensing the backward motion, attempts its advance but is turned back and 12.30 so follows the other. For a second time, the inferior planet [Mars] which had been sensed by the first planet returns once more, only to be turned back; and so for some period of time there is proceeding then turning back around, as crabs when walking go back and forth. This continues without interruption until the Sun has been convinced to turn back into its descent.

Et planéta ille, qui ad sinístram solis erat, ibi rémanet [remánet], et isti duo comitántur eum, et in descénsu tenent 12.35 eum, ne supra modum in descénsu

And the one remaining planet which was on the left side of the Sun [i.e., Mercury] is reacquainted with the other inferior planet [i.e., Venus] to form a pair;

currat. Et ita ducunt eum usque ad signum leónis. Et tunc planétæ illi, qui in signo aríetis erant, sua ibi soli occúrrunt

K 13.1 submurmurántes, et sol tunc, quasi irascátur propter difficultátem reversiónis, multum æstum emíttit, ita ut inde fúlgura et tonítrua sonent, quóniam ad descénsum difficúlter vértitur. Sed cum ad signum vírginis pervénerit, ibi ei illi duo 13.5 planéte occúrrunt, qui in signo tauri ei óbviam venérunt, et tunc suávius et mítius incédit, quia calor et acérbitas ejus mitigátur jam terra nullum fructum proferénte, sed fere in delectatióne maturitátis stante. Et ita cum eo incédunt usque ad signum libræ, ubi viríditas et

13.10 aríditas quasi in libra sunt, ita quod viríditas abscédit et aríditas accédit. Et ibi alter eórum áltera parte solis, alter áltera parte ejus vadunt se ita separántes, ita ut in signo geminórum fecérunt, ita eum ducéntes usque ad signum scorpiónis, et ibi alter eórum rémanet [remánet].

these two then accompany the Sun, cradling it, such that its path cannot exceed its limits as it is 12.35 descending. And so these acted as escorts of the Sun all the way to the sign of Leo. Subsequently, those two planets which had been in the sign of Aries [*sc.* Mercury and Venus], ran with haste to challenge the Sun, silently murmuring with discontent **K 13.1** at their appointment; and so then the Sun, for its part, became enraged because of the difficult experiences it had in turning itself around [to descend]; because of this difficulty in turning to its descent, it discharged a great amount of passionate fire such that lightning and thunder resounded. However, when he [the Sun] made its arrival at the sign of the Virgin, there two 13.5 planets came to meet him [the Sun]; the ones which had run to meet him excitedly, brightening in the sign of Taurus, and are still there [i.e., Mercury and Venus]; the very planets which announced him, harbingers of the ones rarely observed and seldom revealing themselves.[201] So he [the Sun] proceeded more softly and with a soothing gentleness, because his fiery passion and bitterness had now been alleviated; his burden lighter as earth no longer brings forth fruit but almost stands motionless [still], delighting in the fullness of her maturity. In this way, [the planets] proceed with the Sun into the sign of The Scales [i.e. *planetae Librae*], when the vigour of youth 13.10 and the dryness of old age are balanced as if on a set of scales. Youthful vigour [*viriditas*] withdraws as the dryness [*ariditas*] draws near. There the planets are separated with haste and equanimity; one on one side of the Sun, the other on the other side as they were in the sign of the Twins [*planetae geminorum*]. In this way, they escorted him [the Sun] through to the sign of the

[201] i.e., likely the morning/evening apparitions of the comet of 1145 CE. If this narrative, however, is describing the planetary movements of the year 1146 CE – the year of the Great Conjunction of Saturn-Jupiter in Taurus – these *planetae* would have to be the primary and secondary outer planets.

Sed et 13.15 tunc soli álius [alíus] planéta ibi occúrrit, scílicet ille, qui inférius cancri veniébat. Et étiam planéta, qui ad eum ibi cucúrrit et retro et ante incéssit, adhuc cum sole manet, et *sie* cum eo ambo incédunt. Tunc étiam in signo scorpiónis ómnia reptántia cavérnulas suas quærunt, ubi per híemem abscondántur.

13.20 Sed *præfati* duo planéte cum sole ita incédunt usque ad signum sagittárii, et ibi rémanent [remánent]. Et tunc in signo sagittárii nullus planéta cum sole ámodo incédit, ut prius cum ipso incedébant, sed suáviter et léniter per se ipsum incédere [incedére] permíttunt, quia iam in inferiori descénsu est, velut 13.25 sub navis in descénsu flúminis intérdum per se léniter ire permíttunt sublátis remis et eis per áliquam moram aliquándo cessántibus. Sed quóniam sol in descénsu est, calor ejus præcípue sub terra est et étiam in aquis a terra remótis.

Illi étiam duo 13.30 planéte, qui eum usque ad signum sagittárii comitáti sunt, se in nubes tunc sursum tollunt et calóre suo áerem plus sólito calefáciunt. Alióquin ómnia, Qve in terra sunt, frígore [frigóre] perírent. Et hoc modo usque ad signum Capricórni soli sérviunt, ubi eum idem planéte ad ascénsum prióris cursus sui exhortántur et ádjuvant, ut prædíctum est. 13.35

scorpion [Scorpius], where the more brilliant of them was to remain [i.e., Venus]. 13.15 But thereupon, the other planet brightened and hurried to reencounter [the Sun] – the one which we know as having been beneath the sign of the Crab [i.e., Mercury]. This planet which had run to meet it [the Sun], the one which had proceeded backwards and forwards, remains there hitherto with the Sun; the duality of planets progressing with the Sun. Then, in the sign of Scorpius, all things which crawl must seek after their small lairs, where they will 13.20 be in hiding for the winter. Nevertheless, the aforesaid two planets [i.e., Venus / Mercury] then proceed together with the Sun the entire way into the sign of Sagittarius, and it is there they remain. And so it was, while [the Sun is] in the sign of Sagittarius, no planet could advance forward with the Sun, as had been the case earlier; and this quiet and gentle time permitted the Sun to proceed forward smoothly, slowly, and on its own since it was now nearing the lowest part of its descent. Just as a vessel, when 13.25 travelling in its course downriver is permitted to float freely and gently on its own, requiring no oars, and need not function for a period of time. Since at this time the Sun is in its descent, its fiery heat is principally directed underneath the earth and to those waters which are remote from the earth. The two 13.30 planets which had accompanied the Sun without reservation to the sign of Sagittarius [i.e., Mercury / Venus] now elevate themselves into the clouds, warming the atmosphere [*aerum*] with their heat more than what is customary. Otherwise, all that is beneath on earth would vanish, lost in the coldness. And so, in this manner in the sign of Capricornus, the planets are enslaved in service to the Sun where they exhort and assist him, as if he, as the male, were incubating what will provide the

ascent to his prior celestial course; as has been said since the beginning. 13.35

Appendix 'C'- Latin-English Translations of Folios 105ra to 108rb, Berlin Fragment with Astrological, Anemographic or Melosthesiac Orientations[202]

Folio 105ra – 105vb

22. Stelle que sunt inter austrum et occidentem et inter occidentem et septentrionem[203], ignitis speris suis oppositas nubes perfundunt. Et cum tunc humida aura in tempestatibus perfunditur, humores in femoribus et in renibus commoventur, ita quod inde *lanchsuth*[204] nascitur. [quere][205]
Iste *wackun*[206], qui in aquis reperiúntur, ad ignem calefáciat et assum bálneum ex eis fáciat et bálneo hoc sepe utátur, ut vires recípiat, atque bálneum istud renes caléfacit et injústum humórem eórum exsíccat. [207] [quere]

26. Planeta iovis minister solis, qui sub primo [saturnus] est. Cum iste in humida aura est, humores de genibus in viscera transeunt, ita

(this column continues numbering of notes from end of column 1)

22. *(poet.)* The stars which are between the east and the west, and between the west and the north, pervade the clouds opposite to their fiery spheres. These stones to which I refer, obtained in the waters [of the rivers], can be heated in the fire and used frequently [*sæpe*] for a hot sauna to remedy such a joint dis-ease, suppressing it and restoring strength; and let such a bath warm the genitalia and so dry up their excessive humours. [ask about this]

26. The planet Jupiter, which is beneath the first [i.e., planet Saturn], is at hand to serve and promote the sun. When it [Jupiter] is in moist air, the fluids cross over (migrate) from the

[202] This section comprises the first translation into a modern language of complete folios 105ra to 108vb of the *Berlin Fragment.* These folios contain the allegorical text sequences which refer to the sun, moon, planets, winds, and human health and well-being. The dominant themes are planetary melosthesia, the four elements, the humours, and symptoms of disease states in the body with suggestions for treatments or curatives.

[203] Septentrionem - sēptēntrĭŏ, *onis, m.*: Big/Little Dipper (s./pl.); north, northern regions/wind; or a brooch with seven stones. Note the similarity in form of *sententiae* 18 and 22 of Folio 104vb. In the context here, Hildegard is using the word *stelle* to denote subsets of the sixteen fixed stars in the sphere of fire; a place among the spheres of the firmament also shared with the sun which is situated in the *sphaera ignis nigra* (sphere of black fire) immediately nested underneath the sphere of fire.

[204] The Teutonic word *lanchsuth,* according to Schipperges the condition is the medieval equivalent of a Galenic disease of the joints with similarities to bony or rheumatoid arthritis (1956; line 131, note on pp. 51). The juxtaposition of this disease state (linking moist storms with arthritic responses) with the poetic, almost erotic "fill her with a kind of fire of longing as if she were a bride hidden in the opposing clouds" is remarkable. The literal translation offers a very different flavour to the sententia.

[205] In the *Berlin Fragment* MS, the copyist has inserted another "quere" at the end of this paragraph (line 22) which was not transcribed by Schipperges (1956; pp. 51) nor in the reiterative transcription of Hildebrandt & Gloning (2010; pp. 413).

[206] The Germanic *wackun* appears in *Liber V (v. 20)* of Hildegard's *Causae et Curae* in the context of health benefits from taking sauna baths in an enclosure containing hot stones: *sed* ***wackun*** *non accipiat, quia illi fortem ignem in se habent et quia diuersis humoribus in aqua repieti sunt:* << do not accept the use [of field stones], for these have strong fire within which can explode violently due to the various humours expelled by water >>. According to Schipperges, the word refers to quartz-rich, siliceous slate (i.e. flint) or in my estimation field stones such as *phyllites* which are rich in layered silicate minerals and have a tendency to shatter explosively if heated due to the high water content in the hydrated crystal structure of the phyllosilicate minerals comprising this rock type (1956; line 132, note on pp. 51). Cf. P. Kaiser (1903; pp. 234, 20) and Moulinier & Berndt SJ (2003) who identify the term as occurring in Folio 104vb in the *Berlin Fragment.*

[207] From *sepelere* "to submerge frequently" or "bring to an end"; *renes* = loins.

quod homo in visceribus dolet, <105rb> velut ibi incisus sit, ita quod nec se recte erigere nec incedere valet. Iste in *mȯldam* ponatur et aqua cum *betonia* et *kerbela* modice cocta in idem vas fundatur, et sic ille balneum accipiat; ac eisdem herbis ventrem et genua illius sepe *bewe*, usque dum sanetur. (quere). [208]

knees[230] into the viscera (internal organs), so that the human being suffers pain in the viscera, <105rb> as if she had been cut open there; and so, she is unable to stand up or walk properly. (inquire about this).

27. Si planetae iste siccam auram habet, homo tediosus et tristis erit, quia rectum humorem non habet. [Cum] in aura temperatus est, homines in consilio prudentes fiunt multaque locuntur.

27. If the planets [*sc.* Jupiter, Saturn] to which we refer come to be in arid atmosphere, the person will be tired and saddened [afflicted with melancholy], because she does not have the right balance of humors. [When] the atmosphere is temperate once more, people

[208] See the section *De planetarum significatione* ("On the Meaning of the Planets") in *Causae et Curae Liber I.* Folio 6rb-6va, 11-23, 1-7 (K 15, 16-37; K16, 1-8) in (Beate Hildegardis Bingensis 1220). This is the first instance in the *Berlin Fragment* where the "higher planets" Jupiter and Saturn are explicitly indicated (though in the case of Saturn here it is implied by virtue of the phrase *sub primo est* (i.e., Jupiter is beneath the 'first' planet, and therefore a lowly slave to it). There is much more to examine here. In *Causae et Curae,* Hildegard describes the five planets of antiquity through personifications in a rather curious manner, as follows: *oculus* (Saturn, the "eye"), *pauper* (Jupiter, "humility"), *pupilla* (Mars, "the pupil of the eye"), *dives* (Mercury, "the plentiful") and *comes* (Venus, "the companion"). These are fabulous, fanciful titles for the planets of antiquity, and may well have been borrowed from a literary source accessible to Hildegard unless these are further examples of her "neologisms". Moreover, in this same section of *Causae,* Hildegard refers to Saturn and Jupiter as two planets which are capable of symbolically reflecting the works of humankind in the realm below, and as portents of spectacular events of great public interest: *Quoniam summus planeta, qui oculus dicitur, et ille, qui proximus supra lunam est, qui dicitur pauper, in profunditate firmamenti velut duo clavi positi sunt et hominibus non apparent, nisi quod aliquando…[cum] aliquid futurum esse presignant. Sed quod in sole aliqua signa interdum ostenduntur, hoc ideo evenit, quod isti duo planete solem aggrediuntur, ita quod hoc modo signa in ipso fiunt, cum aliquid miraculi futurum erit.*; << For the highest planet - which is called "the eye" (i.e., Saturn) - and the other which is next to it in the region above the moon – which is called "humility" (i.e., Jupiter) – are set into the depth of the firmament like two nails, and humanity is caught unprepared, for there are occasions….when certain signs are shown in the sun, due to these two planets approaching the sun which then produces the signs when something miraculous is about to happen >>. See also *Liber Divinorum Operum, Pars Prima, Visio II*, XXXI, v. 1-4; 7-9; (Derolez & Dronke 2008, pp. 92; Patrol. Lat. 197 v. 775A-775B) *Sed et super caput predicte imaginis septem planete sursum ab invicem signati sunt, tres in circulo lucidi ignis, unus etiam in subiecto illi circulo nigri ignis, tres autem in subjecto illi circulo puri etheris.... [Et] tres in predicto lucido igne, unus etiam in subjecto illi circulo nigri ignis, tres autem sub ipsis in puro ethere cursus suos habent....[Et] primus splendore suo splendorem solis illustrat.* << But there are also marked out above the head of the aforesaid image seven celestial bodies, one above the other: three in the circle of bright fire [i.e., Saturn, Jupiter, Mars], one also in the circle of black fire underneath [i.e., Sun], and finally three others beneath that one in the circle of pure ether [i.e., Mercury, Venus, Moon descending]. The first planet [Saturn] embellishes the brilliance of the sun with its own brilliance. >> (adapted from tr. N. Campbell 2018; pp. 82-83).

[230] In Part I of his larger work – *The Great Introduction to Astrology* - the Arabic astrologer, Abū Ma'šar (ca. 787 CE - †886 CE) declares that there are 'two species' of sciences: the 'science of the universe' which we would described as astronomy (*αστρονομία*) and the 'science of the nature of every planet' which we would define as astrology (*αστρολογία*). In this section of the Berlin Fragment, Hildegard is much more inclined to the second of these 'sciences of the stars', for her interests were principally in health and healing of the body. At first glance, there are strong indications that her medicine and connections to the planets was informed – at least partially – by *melosthesia* and quite possibly direct (or indirect) contact with the *Astronomica* of Manilius (fl. 20 CE – 40 CE). See Abū Ma'šar, esp. Part I. It can be noted that in the more condensed *Abbeviation to the Great Introduction*, the planet Jupiter is in its 'exhaltation' in the constellation of Sagittarius. The two planets mentioned by Hildegard in this section of the *Berlin Fragment* are Saturn and Jupiter. For Abū Ma'sar, 'Sagittarius is the house of Jupiter' and is therefore its planetary *ruler.* Saturn belongs to the third *decan* in Sagittarius, and the upper legs are the planetary melothesia locations on the human body (a *decan* = 10-degree span within a 30-degree zodiacal sign). See also, Abū Ma'šar, Part 1, *I.61* p. 21.

28. Planeta mars sub isto minister et *reithman* solis est. [209] Cum de tempestatibus in humida aura humidus est, humores venarum in genu

then become able to engage in discussions with clear intent, and many fortuitous events can take place. [231]

28. The planet Mars is beneath and close to the one which provides service to the Sun and is his sword-bearing charioteer. [232] When the weather

[209] The German neologism of Hildegard here has been translated by Schipperges as a "sword-bearing charioteer" which would have acted in military service to the Sun. (1956, p. 52).

[231] Cf. *Causae et Curae Liber I.* Folio 5rb, 13-18 (K 12, 16-19): *Et cum sol sic ad signum arietis pervenerit, et ibi duo inferiores planete ei occurrunt et eum suscipiunt et cum eo paulatim ascendunt et in ante tendunt velut aries cum cornibus. Sed cum altius ascendit quasi ad signum tauri, isti duo planete ibi remanent, et alii duo ei obviam veniunt, qui rari sunt ad videndum et qui raro ostenduntur, nisi aliqua miracula portent;* << And when the sun has thus reached the sign of the ram, Aries, and there the two inferior planets [*sc.* Venus and Mercury], running to meet him and receive him, and ascend with him little by little and stand before him like a ram with horns. But when the sun ascends higher, as if to the sign of the bull, Taurus, these two [inferior] planets remain there, and two others come to present themselves, the ones that are rarely to be seen together, unless as prodigies announcing unimaginable wonders. >> Correctly, Hildegard continues with the description to note that after about a month (the time required for the sun to move from Taurus to Gemini), these two planets begin to separate from one another to eventually end up on opposite sides of the sun much later: Cf. *Causae et Curae Liber I. Folio 5rb, 13-18 (K 12, 19-24): Et hii solem ante impellunt multa potestate ut taurus, qui fortiter trudit cornibus, et solem ad altitudinem transferunt, ita ut, cum ad signum geminorum venerit, alter eorum altera parte solis, alterin altera parte eius uadunt se ita separantes, usque dum ad summam altitudinem suam perveniunt*; << And these [planets] push the sun before them with much power, like a bull that thrusts mightily with its horns, and they convey the sun to such a height, so that, when it comes to the sign of the twins, they thereby separate themselves, one of them on one side of the sun, the other on the other side of it >>. Hildegard has provided us a description of two unnamed *planetae*, at closest approach in the constellation Taurus. Hildegard borrows the same logic as to the event being a 'portent' in *Causae*, but it is within a narrative of the sun's annual travel through the twelve zodiacal signs, and she mentions no specific 'miracle' or 'portent'. In the years 1145 to 1146, at the time she was assembling *Scivias,* her first major theological work, Hildegard could have positioned herself to witness two such 'portents' – the return of comet 1P/Halley (dual morning and evening apparitions) in April-May 1145 and comet 96P/Macholz. These comets were widely seen in Asia and Europe. In addition, the very lengthy Great Conjunction in Taurus lasting from late May to December of 1146 (see Chapter 3, this study). The return of 1P/Halley was recorded in the *Annales Brunwilarenses* (1179), the year of Hildegard's death. At the time of closest approach of Saturn-Jupiter, which was on June 4 1146 at 0428 Universal Time, it was the feast of – ironically – St. Saturnina, a virgin and martyr recognised in the calendar of the saints which guided the prayer of the Benedictines for feasts of the saints throughout the catholic liturgical year - the Roman Martyrology,. The conjunction of 1146 CE known to modern astronomers as a "triplet conjunction", with Earth lining up with the two outer planets Jupiter-Saturn at their opposition and hence at their brightest to the observer's eyes. This event would be seen throughout a portion of the night for months by Hildegard, her companions, her amanuensi, and for that matter the world. The pre-dawn event would be especially easy to witness from late May to late June at the time of *matins,* the canonical hour of prayer of the *lectio divina* taking place from 4am to 5am each day. It is tempting to speculate that Hildegard and her companions drew cosmological inspiration from either the dual comet event or this conjunction event which over the course of many weeks featured Saturn-Jupiter-Mars-Mercury-Venus and the waning crescent moon (twice) all visible prior before sunrise in May-June, 1146 CE. The time of year would encourage a walk outdoors at the Rupertsberg monestary as the sisters made their way to chapel. I am grateful to Sr. Dorothy Levandosky OSB of the Sisters of St. Benedict, Winnipeg, Canada, for insights into Benedictine monastic life while I was there on a writing retreat.

Cf. Pseudo-Bede, *De constitutione,* ed. by Charles Burnett, p. 36: *ipsorum quoque planetarum alii sunt hypolitici, alii stationarii, alii retrogradi, alii anomali... ad posteriora tendunt, quod numquam stent, numquam retrogradiantur*; << ...[and] of these planets at any one time, some have direct motion, some stationary, some retrograde, some anomalous…[portents] tend to the latter, for they are never direct, never stationary, never retrograding. >> Note: *(hypolytici*, fr. Greek *ὑπολειπτικός* meaning "having only direct motion" W-E).

[232] Cf. *Liber Divinorum Operum, Pars Prima, Visio II,* XXXI, v. 1-4; 7-9; (Derolez & Dronke 2008, pp. 92) *Sed et super caput predicte imaginis septem planete sursum ab invicem signati sunt, tres in circulo lucidi ignis, unus etiam in subiecto illi circulo nigri ignis, tres autem in subjecto illi circulo puri etheris.... [Et] tres in predicto lucido igne, unus etiam in subjecto illi circulo nigri ignis, tres autem sub ipsis in puro ethere cursus suos habent....[Et] primus splendore suo splendorem solis illustrat*. << But there are also marked out above the head of the

commovet et vene illius humores viscerum et faciunt homines in defectu ruere[210], velut caducum morbum habeant, et caducus morbus non est. Iste dictapnum pulverizet, cui pulveri similam addat et sic tortellos faciat eosdemque tortellos conterat; et sic in frigidam aquam fontis ponat et ipsam aquam sepe pransus bibat; deinde cum *swertdela* balneum sibi sepe faciat. [quere].

is stormy and produces a humid breeze, it agitates the fluids in the blood vessels in the knee and through that vein to the fluids of the (internal organs) viscera; and it causes people to become weak to the point of failure, as if they had suddenly taken on a wasting disease; however, it is not a wasting disease. The person so affected shall have the finest of wheat pulverized to a fine powder, and to this powder one shall add flour, and thus fashion small cakes; the same mixture is crumbled and placed in cold water from the spring, to be drank as the morning meal and again the same water after midday; afterwards, she should frequently make a bath for herself with gladiolus flowers. [inquire about this].

29. Cum siccus in aura est, tunc <105va> vene in genibus et in visceribus siccantur, et sic illi stulti fiunt nec se regere sciunt. [quere].

29. When the atmosphere and winds are dry, the blood vessels of the knee and in the internal organs are drained of their fluids and dry up; thus, a certain foolishness develops in them, and they are not able to know how to manage themselves. [inquire about this].

30. Cum temperatus in temperata aura est, velociter in certabili ira inimicos suos superat eosque fugat. [quere]

30. When the climate is temperate, so too the breezes (winds) are made to be temperate; in such an environment, anger and resentment among one's own personal enemies can quickly turn to rage; but she can surpass them and put them to flight with her mildness. [inquire about this].

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aforesaid image seven celestial bodies, one above the other: three in the circle of bright fire [i.e., Saturn, Jupiter, Mars], one also in the circle of black fire underneath [i.e., Sun], and finally three others beneath that one in the circle of pure ether [i.e., Venus, Mercury, Moon]. Three of them have their courses in the bright fire [i.e., Saturn, Jupiter, Mars], one in the circle of black fire laid beneath that [i.e., Sun], and three in the pure ether beneath those [i.e., Venus, Mercury, Moon]. (adapted from tr. N. Campbell 2018; pp. 82-83). *Cf. Liber Divinorum Operum, Pars Prima, Visio II, XXXI,* v. 16-19; (Derolez & Dronke 2008, pp. 92); *Et primus splendore suo splendorem solis illustrat, secundus vero ardore suo ardorem soli administrat, tercius autem cursu suo cursum solis ad rectitudinem retentat*. << [And] the first planet (i.e., Saturn) illuminates the brightness of the sun by its brightness; the second planet (i.e., Jupiter) controls the sun's burning heat with its own ardor, and the third planet (i.e., Mars) - by its own course - restrains the sun as it traverses its course >>. In the *LDO,* the "third planet" (i.e., Mars) is associated with the gift of "a spirit of understanding pouring forth through the intellect" (*spiritus intellectus effusio intelligente*), one the seven gifts of the holy spirit, and this is accomplished by a restraining effect on potentially unbridled "fortitude and zeal", yet another of the seven gifts and personified by the sun. See *Pars Prima, Visio II,* XXXIIII, v.22-25; (Derolez & Dronke 2008, pp. 100).

[210] It can be noted that in the *Abbeviation to the Great Introduction* by the Arabic astrologer, Abū Ma'šar (787-886 CE), the planet Mars is in its 'exhaltation' in the constellation of Capricornus. The two planets mentioned by Hildegard in the immediately preceding narrative are Saturn and Jupiter. For Abū Ma'sar, 'Capricorn is the house of Saturn' and is therefore its planetary *ruler.* Jupiter and Mars occupy the first and second *decans* in Capricorn, and the knees are the planetary melothesia locations on the human body (a *decan* = 10-degree span within a 30-degree zodiacal sign). See Abū Ma'šar, Part 1, *I.68* p. 23.

31. Cervus ad sinistram: Si ventus humidus est, homo contra lepram carnes animalium, que non ruminant, devitet, alioquin pre pinguedine lepre, cum carnes pingues habet, cito morietur. [quere][211]

Cum siccus in sicca aura est, homo temperatum aerem querat et crus in venis manu commoveat, id est *striche*, et modicum ambulet. [quere]

31. There is a stag (deer) near the left-hand side[233]: If this wind is humid, a human being shuns the meat of animals that are not ruminants, and if it appears leprous; otherwise, death can occur quickly, since it has fat meat. [inquire about this]. When the atmosphere is dry, and the breezes are dry, the human being complains of this temperate air and its effects on circulation in the veins; and the person should massage the shins moderately with the hand; that is to say, stroking them, and then take a brief walk. [inquire about this].

32. Caput cancri ad suram: Cum corpus hominis in eundo fatigatur, homo quiescat et crus et suram fricet ac per illud manum sursum et deorsum trahat. [quere].

32. The head of the crab has its effect on the calf of the leg: when the body of a person has grown fatigued from walking, the person rests; and the calves and shins of the leg are rubbed with the hand in a downward motion and upwards to draw it out [the fatigue]. [quere].

33. Ventus ursus ea, que in sinistra sunt, tangit. Cum in aura superflua humidus est, humores viscerum in umbilico movet, et illi ad cerebrum ascendunt; et sic homo ille aliquandiu freneticus erit. Tunc insanas herbulas, id est cicutam et *nathscathdo*[212] contundat capitique suo circumponat et sic dormiat; et frenesis minor fiet. [quere].

33. The wind emanating from the bear touches those things on the left-hand side. When the air is overflowing with moisture, it agitates the fluids of the internal organs at the navel, and these ascend towards the seat of intelligence (the brain) in the human being causing a delirium which can last for a considerable time; thereupon the mind is unsound. A small

[211] The word *ventus* appears in the original MS but is stated as a proper noun; hence, it is more likely an entity or object misnamed by the copyist. José Carlos Santos Paz also makes the suggestion that this is an editorial error by the copyist, and that the intended word was the planet Venus. The most illustrative argument supporting this position rests in the text sequence itself. This section is a poetic prose discussion about the sun and moon and their relationship to the "highest planet", namely Saturnus (II, 48; lines 287-292 using Schipperges's numbering system). The word *ventus* does not immediately imply a 'wind' or a 'breeze', but it could well have denoted the "leopard wind" which in Hildegard's cosmic bestiary is definitively the east wind as is placed in the layer of the aether just as the west (wolf) wind is (the *aer lumina* or 'clear air'). The term could also be a pseudonym for the easterly wind known as *Solanus* or *Subsolanus* which would imply a wind which emanates physically from beneath the sun and actually belongs "to the sun". In the *rota* of the cosmos featured in *Parte I, Visio II, XXXI* of the *Liber Divinorum Operum (LDO),* there is extensive treatment of the arrangement of the planets, including placing the moon in the aether together with the "first planet above the moon" which in the *LDO* is Venus, not Mercury. The description in the *BFragment* is consistent with this view. See Derolez and Dronke (1996; pp. 93-93) and the capable translation in N. Campbell (2018; pp. 82-88. In addition, the southwesterly wind known as *subvesperus* not only provides for a collateral wind which figured prominently in Hildegard's cosmological view, but *Heperus* traditionally denotes the planet Venus in its masculine apparition in the eastern sky as the Morning Star. Such a view assists Santos Paz in solving his issue about whether *ventus* is a pedestrian misspelling of *Venus* (a view of which I am not sanguine) or erroneous versions of *Venus* or *Venere.* Cf. Santos Paz (2022; pp. 868). The moon goddess Phoebe, the sister of Phoebus, is also associated with the winds of the east. It is attractive to advance the hypothesis that this section of the *BFragment* is a fable (*fabula*) involving the deities Saturnus, the Sun-god and the Moon-goddess.

[212] Nathscathdo = *Solanum nigrum* which is black nightshade, a flowering plant of the genus *Solanum* which produces edible berries. The sap from this plant, however, is considered toxic and has been recommended for ailments such as stomach irritations, cramps, spasms and periods of anxiety or nervousness.

[233] A reference to the illumination, Book 1, Visio 2, of the *Liber Divinorum Operum.*

33. (cont'd; <105vb> begins here)

amount of the "herb of madness" - the hemlock herb, usually administered to criminals as poison – combined with black nightshade, pounded and crushed, is placed around the head; the person will behave as if asleep and the disturbance of the mind will become reduced; [quere].

Cum in sicca aura siccus est, humores in umbilico hominis exsiccantur et indurescunt; sicque caro hominis velut squamosa et ulcerosa erit, quasi ille leprosus sit, cum leprosus non sit. Iste de u*lwurm* et de iecore talpe et de arvina et sepo hircino unguentum faciat et sepius cum illo se perungat et inmundicia istorum illius inmundiciam aufert. [quere] Cum temperatus est, homo nec letus nec secures est, sed stultus.

When the air is dry in a dry place, the fluids in the navel of a person become dried up and harden; and thus the flesh of a person will become scaly and ulcerated (full of sores), just as if leprous; when in fact the person is not a leper.[234] Concerning the use of the liver (as for medicine; divination) let the person fashion an ointment of pineworm, mole's liver, the hard suet from the male goat, and frequently smear it upon himself, applying the ointment by use of the *ulwurm*[235] [lamprey or leech]; the filthiness of these things then removes this filth from the person. [inquire about this] Some people who seem to be in control of themselves will use a vinedresser's blade (to remove the sores) but this is not only foolish; it is irrational.

34. Serpens ventus lumbos tangit. Cum in aura humida superflue humidus est, humores in sinistra movet et in lumbis; ibi vermes et pediculi in visceribus nascuntur. Tunc ille sulphur et vivens argentum, hircinum sepum[213] ac butyrum accipiat et unguentum inde faciat seque cum illo sub umbilico unguat et idem vermes morientur. [quere] Cum in sicca aura siccus est, viscera hominis arefacit, ita quod in carne profectum non habet, sed tamen sanus non est. Cum in aura temperatus est, celer et sanus est, et certans et iracundus.

34. The serpent wind influences the seat of sexual arousal; the loins. When it is excessively moist and the air is superabundant with humidity, it mobilizes the fluids in the left side [of the body] and in the genitals; and there, worms and lice are born in the internal organs. When this occurs, let the person take brimstone (sulphur), quicksilver (native mercury), and butter to fashion an ointment from it, with some goat's hide to apply it [to the skin].

Anoint the body beneath the navel with this preparation, and these same worms will perish. [inquire about this] When it is dry and the

[213] The use of the word *sepum* is curious here, as it refers to a serpent whose bite tends to lead to putrifaction of the skin. The "goat" reference here (*hircinum*) seems qute out of place unless it is referring back to the grease derived from goat's liver.

[234] This form of leprous ulcerations on the skin demonstrates close affinity with the "scales" which fall to earth from the layer of fire in the firmament, attach to the ground and then on to the skin of the human being. Cf. Liber I, Visio IV of LDO and the illumination of same in the Lucca Codex MS of the LDO.

[235] Very likely the use of the lamprey (*Petromyzon branchialis*) to apply the unguent to the sores directly. Cf. Note pp. 53 in Schipperges (1956) where the word *ulwurm* could also refer to the pineworm or to linseed oil. It would appear that Hildegard is directing the patient with skin ulcerations to apply the ointment made from goat's liver grease with the additional medicinal properties of the mouth of the lamprey eel. The technique is still used today with the application of leeches along the axis of a newly-sutured wound.

winds are dry, it dries up the soft, fleshy parts of a person and the internal organs, so that there is a slowed improvement in the flesh; nevertheless, the person is by no means healthy yet. When the air has become balanced, the person is quickened, and is healthy, competitive, and can confront things which are driven by rage.

Folio 106ra – 106vb

35. Ad sinistram ventus ut cervus. Saturnus ad maiorem arculam dextri pedis tendit[214]; Iovis ad sinistrum genu, Mars ad dextrum genu, Iovis planeta ad humerum dextrum tendit; Mars planeta ad sinistrum humerum tendit.[215] Sol ad cerebrum, Mercurius ad dextram lune [216] tendens, ipsi vires administrans. Venus ad lunam in sinistra tendit[217], lumen illius subtrahere iuvans.

35. On the left-hand side, the wind is as a stag (deer); Saturn exerts its influence in the direction of the large arch [digit?] of the right foot; Jupiter to the left knee, Mars to the right knee, and the planet Jupiter exerts its influence toward the right shoulder; the planet Mars exerting its influence toward the left shoulder [upper arm]. The sun to the seat of intelligence and reason, Mercury extends its reach to the right of the crescent-shape [moon], itself the

[214] Folio 106ra begins in the middle of the word "*tendit"* ("touches" or "influences" or "striving to make a connection"); a continuation of the previous Folio 105vb. The word *sinistram* complicates the issue of cardinal directions in terms of whether Hildegard has adopted the Roman or the Greek *auspices.* That is, according to the Roman traditions, the favourable or auspicious direction would have been to one's *left* because the directions for divination would have the person facing the south with the favourable eastern quadrant of the sky to one's left. The Greek tradition, however, had the person facing north, with the favourable quadrant to one's *right* (i.e., *dextram*), For the most part here, the Roman auspices will be used in translation, which implies that the left (*sinistram*) is fortuitous and advantageous, the right (*dextram*) unfortunate and at disadvantage.

[215] Cf. Abū Ma'šar and Adelard of Bath, in *The Abbreviation of the Introduction to Astrology: Together with the Medieval Latin Translation of Adelard of Bath*, ed. by, Islamic Philosophy, Theology and Science. Texts and Studies, vol. 15 (Brill, 2021). esp. *I.2-3* p. 13 and *1.5-89* pp. 14-27.

[216] The choice of the word *lune* as distinct from the physical object *"luna"* has some importance in the *Berlin Fragment*. The word *luna* (or its variant *lunam*), is identified here as the physical, astronomical planet in the heavens, and appears twenty-one times in the *Berlin Fragment*; especially in the portion of the MS which has almost verbatim alignment with *Liber 1* of Hildegard's *Causae et Curae* (folios 103 and 104) or considers the interrelationships among the winds, the sun, the five planets and the crescent moon. *Lune* appears on fourteen occasions in the folios: four times in f. 106, five in f. 107, twice in f. 109, and three times in f. 110. It is unlikely that this is an erroneous spelling or references to a male "moon-god" but is more likely for descriptive and/or explanatory purposes – not of the astronomical/celestial object itself. For instance, a *'lune'* is any crescent-shaped object formed from two intersecting arcs of a circle in a flat plane or on a 3D spherical surface. Therefore, its use here could be instructional for the designers and illustrators of Hildegard's illuminated manuscripts. In folios 106 and 107, all instances of the word *lune* are consistent with relationships among other celestial objects, the bestiary of winds, etc. which be interpreted as instructional. Alternatively, the word *lune* may be of an old Saxon or Old Low German spoken dialect familiar to Hildegard. It may also be a convention used by Hildegard's copyists that is obscure and mixes at random with *luna* and *lunam*. A good example of both versions of the word being used in the same sententia occurs in Hildegard's *Liber Vitae Meritorum (LVM;* The Book of Life's Merits): cf. LVM, II 316: *stelle enim de luce* ***lune*** *coruscant, et* ***luna*** *de igne solis lucet* (see note pp. 28 in Moulinier, 2003).

[217] The variant on the neuter "tendit" is translated here as "extends its reach", or, "to stretches itself toward….". cf. Of things concrete or abstract, *to go*, *proceed*, *extend*, *stretch*, etc.: in quem locum quaeque (imago) tendat, Lucr. 4, 179*: levibus in sublime tendentibus*, Plin. 2, 5, 4, § 11: *sursum tendit palmes*, Col. 5, 6, 28: *simulacra viis derectis omnia tendunt*, Lucr. 4, 609. *Poet.*, with accentuation of *having a direction*: *tunc aethera tendit*, Lucanus. 7, 477: dextera (via), *quae Ditis magni sub moenia tendit*, Verg. A. 6, 541: *gula tendit ad stomachum, is ad ventrem*, *reaches*, *extends*, Plin. 11, 37, 66, § 176: *Taurus mons ad occasum tendens*, id. 5, 27, 27, § 97; and, id. 5, 5, 5, § 35; 16, 30, 53, § 122.

strength and youthfulness which assists and directs her place.[236] Venus extends her reach to the left of the crescent-shape [moon], aiding in the effort to carry away her light.[237]

36. Dextrum cornu lune ad dextrum supercilium tendit; sinistrum cornu ad sinistrum supercilium. Sol ad lunam et ipsa ad eum, quoniam ab eo accenditur. Et quod sol ad cerebrum et quod luna ad supercilia tendit, quasi libra est.

36. The right horn (cusp) of the crescent-shape [moon] extends its reach to the right eyebrow; the left horn (cusp) to the left eyebrow. The Sun comes near to the Moon and she to him for he is the one who ignites and enflames her.[238] And what the sun extends to the seat of intellect and intelligence (the mind; brain) the moon then bends this into a crescent and thereafter extends its reach to the eyebrows like unto a set of scales (balance).[239]

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[236] These sententiae warrant closer attention with respect to planetary *melosthesia* and the possible availability of newly translated Arabic astrological texts – especially that of Adelard of Bath and his translation to Latin of the *Abbreviation of the Introduction* of Abū Ma'šar Ǧa'far ibn Muhammad ibn 'Umar al-Balhī (ca. 787 CE - †886 CE). It is noted here that in Chapter I of the *Abbeviation,* Abū Ma'šar announces to the 'lovers of philosophy and the higher sciences' that they are the 'possessors of long speculation on the wonders of the conditions of the wanderers in the universe' (i.e., the celestial bodies) *I.2-3.* For Abū Ma'šar, the planet Saturn is in its 'domicile' in the constellations of Capricornus and Aquarius. He writes, 'Capricorn is the house of Saturn' and is therefore, astrologically, its planetary *ruler.* It is the same for Aquarius. The planetary melothesia locations on the human body signified by Saturn are the lower legs (Aquarius) and feet (occupying the first *decan* of Pisces; a *decan* = 10-degree span within a 30-degree zodiacal sign). Jupiter and Mars are the next planets mentioned by Hildegard here, and she connects their influences to the knees of the body. The planetary melothesia locations for the knees are as follows: Jupiter occupies the first *decan* of Capricorn and Mars the second. As for Jupiter and Mars having influences on the shoulders, Abū Ma'šar states that these planets occupy, respectively, the first two decans of Gemini which inclines itself to the shoulders, upper arms (*humerum*) and the hands. The Sun, for Abū Ma'šar, is in the second decan of Aries which is the zodiacal sign of the head and the face, which would include the *cerebrum,* the seat of intelligence and anatomically, the brain. See Abū Ma'šar, (Brill, 2021). esp. *I.2-3* p. 13 and *1.5-89* pp. 14-27.

[237] Poetically, Mercury and Venus draw away the "curtain of light" which describes a waning crescent (or, for that matter, an early-cycle waxing crescent in the western sky just after sunset); each located at one of the sides of the crescent moon; astronomically, one can imagine a pre-dawn sky with a waning, balsamic moon in conjunction with Mercury on the one cups and Venus on the other. The next *paragraphus* (line 36) then begins to specify the actual cusps (horns) of the crescent moon. Other than the treatment of the day of conception during the lunar cycle in *Liber VI* of *Causae et Curae,* Hildegard only ever references the crescent moon

[238] For the ignition of the fires of the moon by virtue of coming near to the Sun at New Moon and the fourteen days following, Cf. *Causae et Curae, Liber 1, Folio 3vb, v. 13-17: Illam accendit, sed et cetere planete et stelle atque aer et cetera luminaria, que circa lunam sunt, ad eam flagrant et ad accensionem eius ipsi succurrunt. Et postquam incensa fuerit, paulatim crescit usque ad plenitudinem suam, sicut etiam rogus vel domus incensa paulatim incipit ardere, usque dum tota incendatur.* << He (the Sun) enkindles her (the Moon), but the rest of the planets, the stars, the air and the other luminaries that are around the moon are also inflamed with passion and they themselves assist her as the attendants of the new moon (i.e., *accensionem* = new moon). And after she has been set on fire, she [the moon] gradually grows to her ardent fullness, just as a pyre or a house on fire first begins to burn gradually, until it is completely consumed by fire >>. See Moulinier & Berndt, (2003; incl. note on pp. 28).

[239] In this paragraph, the gender of the moon is not consistent. At the opening of line 36, the *masculine* form *"lune"* is used, more appropriately a reference to a male moon-god (from **Lūnus**, *i, m.* : the Moon-god). In the line which follows, the feminine *"lunam"* is used in an eroto-petic phrase with a masculine sun enflaming the desires of the feminine moon. The lovers are drawn – almost by nature - into a "balance" involving the human mind and that which protects the eyes ("libra est").

37. Ventus ut agnus ad umbilicum hominis utraque parte tendit. Ventus ut serpens ad lumbos utrimque tendit. Ventus ut cancer ad suram dextram tendit. Ventus ut cervus ad sinistram suram tendit.

37. The wind that is the lamb extends its blasts in the direction of the navel area of the human being [and to parts nearby; on both sides of the navel]. The wind that is the serpent extends (sends) its blasts to the seat of sexual excitement in the loins; on one side and the other [testes]. The wind that is the crab extends [sends] its blasts to the region of the lower right leg. The wind that is the stag extends [sends] its blasts to the region of the lower left leg.

Mercurius vento, qui ut cancri est, vires ad dextram tribuit. Venus vento, qui ut cervus est, vires ad sinistram tribuit. Dextrum cornu lune ad dextrum talum dextri pedis hominis tendit. Sinistrum cornu ad sinistrum talum.

The winged god Mercury is in the winds of the crab, bestowing youthful bodily strength (youthful, vigorous greenness) to the right-hand side. The goddess Venus is in the winds of the stag, bestowing youthful bodily strength to the left-hand side. The right horn [cusp] of the moon extends its reach to the right ankle of the right foot of the human being. The left horn [of the moon] to the left ankle.

38. Secundus planeta ex quatuor inter orientalem et australem ventum sub ascellam[218] sinistram tendit. Secundus planeta ex quatuor <106rb> inter australem et occidentalem ventum ad medullam dich sinistre partis tendit. Secundus planeta ex quatuor inter aquilonam et occidentalem ventum ad medullam dich dextre partis tendit.

38. The second planet [fixed star] of the four that are between the east and south winds – exerts itself [extends its reach] through the left underarm region.[240] The second planet [fixed star] out of the four between the south and west winds extends its reach [in a perverse way] to the innermost regions of the left thigh [‘dich’].[241] The second planet [fixed star] out of the four between the north and west winds extends its reach to the innermost regions of the right thigh [‘dich’].

[218] The latin “*sub ascellam*” *(pl. ascellae*; underneath the arm; armpit) is not a classical term in human anatomy, but one which occurs in Christian texts from the 6th to 10th centuries. Cf. https://latin-dictionary.net/definition/4960/ascella-ascellae. The use of the term here provides some constraints (restrictions) on the span of writings in natural history to which Hildegard had access.

[240] This reference to the *secundus planeta* is not Jupiter, but one of the sixteen “fixed stars” in the ring of *lucid fire* of the firmament. If we appeal to the illumination contained in the Lucca Codex of the *LDO, Liber I, Visio II,* there are four of these “fixed stars” in each quadrant of the lucid fire. Here, the reference is to the second ‘star’among the four in the quadrant between the east and south winds. It is notable that the MS does not include a sententia about the *right underarm* (*dextrum*) region.

[241] Schipperges (1956; note, pp. 54) indicates that the Germanic gloss ‘dich’ refers to the inner thigh of the human anatomy.

39. Lingua superior ad stomachum in dextra et sinistra parte. Lingua inferior [ad] femur ex utraque parte.[219,220]

39. *(lit.)* The upper clouds of the watery air are near the right and left regions of the abdomen; the lower clouds of the watery air are near the upper legs; either of these.[242]

(lit.) The right and left sides of the abdomen comprise the upper "tongue" of the human body; the upper legs are like a tongue underneath (inferior).

40. Planeta summus scilicet saturnus ad maiorem arculam dextri pedis mittit, et cum in humida aura humidus est, podagram parat. Ergo laterem, qui de pulvere terre factus est, ad ignem valde calefaciat et podagre ita calidum superponat, et hoc sepe faciat et evanescet.

40. When the highest of the planets, which one knows as Saturn, casts itself towards the great arch of the right foot, and when the atmosphere is moist and it is humid, make preparations for the onset of gout [in the feet]. Therefore, the person should frequently do this: take a piece of tile (or brick), which was fashioned from the powdered sands of the earth, heat it in fire to make it warm and place it upon the gout in the fashion of a barrier, and this will cause the gout to disappear.

Cum autem in sicca aura siccus est, medulla hominis et vene cruris eius marcescunt, ita quod claudicat.
Iste medullam lupi accipiat eamque cum oleo olyve dissolvat et hoc temperamento se iuxta ignem sepe inunguat, et sic medulla hominis iterum crescit viresque suas recipit. [quere].
Cum in aura temperatus est homo, medulla et venis in sanguine plenus est; et sanus et velox est.

On the other hand, when the atmosphere is dry and the breezes have no moisture, the marrow of the human being and the veins of the lower legs wither; and so the person will lean to one side and walk with a limp. In this instance, let the person take the marrow of the wolf bone, dissolve it in correct proportion with olive oil, and bring this close to the fire to warm it, and anoint himself with this; and thus the marrow of the person comes forth with vigour once again and [the person] recovers their strength.

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[219] Here, "*lingua"* is not referring to the anatomical tongue, nor speech or dialect, but is translated as being "of the human voice" (esp. that of singing). In the literal sense, the reference is to the abdomen and upper legs as being like "two tongues", one above and the other below. In the *Liber I, Visio II* of the *Liber Divinorum Operum,* the illustrator of the miniatures has drawn these two sections of the human body in a quasi "tongue and groove"; the abdomen being the larger and slotted into the pelvic region making a "V" with the upper legs.

[220] Schipperges (note, pp. 54) aligns this verse to the following from another work of Hildegard (the *Liber Divinorum Operum*); cf. *Pars Prima, Visio Secunda, c. 1-2 170-175;* Derolez & Dronke, 2008, pp. 65): *Circulus quoque puri etheris, circulus quoque fortis et albi lucidique aeris quasi stellis pieni erant, que velut fulgores suos ad sibi oppositas nubes mittebant. Unde et ille, in dextra parte prefate imagines quemamodem duas* ***linguas*** *ab invicem separatas de se proferentes, ab eis ut quosdam rivulos in supradictam rotam, et versus eandem imaginem dirigebunt.* In this verse, the clouds are seen to separate from one another as if two 'tongues'. The illumination of *Visio secunda* clearly elucidates this 'text to image', especially in the NW and SE quadrants of the miniature.

[242] Here, Hildegard (or her scribal partner(s) uses the word "lingua" in a manner consistent with the vernacular latin of her times; that is, a reference to the human voice (esp. that of singing). For those trained in voice, it is a fundamental that the strength derives from the proper use of the diaphragm which is abdominal. To indicate that a "less desirable human voice" derives from the upper legs borders on comical. If only the literal sense is to be understood here, it reads more like a prescription of how the illuminator is to draw the lower abdomen as it fits – tongue-and-groove - into the pelvic region and the upper legs (*femuræ*).

[inquire about this]. When the person is in the more temperate air, the marrow and veins are full of blood; and that person is both healthy and quick on their feet.

41. Supercilia posita sunt, ut *vach flute* aquas, ne superinundent. Humor cerebri et calor aquosi oculi supercilia educunt ad defensionem sudantis sudoris; et ideo cerebrum et omnia sibi apposita forcia sunt, cum cerebrum crescit et debiles, cum decrescit, velut de vi illius orta et confortata sunt.[221,222]

41. The eyebrows are placed such that they prevent streams of water [or perspiration] from overflowing [into the eyes]. When the forehead overheats, the eyebrows defend the eyes against the warm waters of perspiration by drawing the sweat of hard labours unto themselves; and for this reason, the [eyebrows] have been brought forth in all persons and placed near the top of the head. In this way, the head and all accessories appointed to it come into being when required, just as if strength arises when something else experiences weakness.[243]

42. Deus omnia creaverat ante hominem. Cum limus iacebat, deus spiraculum rationalitatis in illum misit, id est viventem ventum. Et cum mitteret omnia elementa, que in verbo iussionis dei processerant, ei occurerunt quasi famulando, que spiraculum illud comprehendit, et sic secum in eundem limum duxit. Unde homo omnia scit. Ignem, aerem, aquam, terram et cetera in se habet; et hec omnia animam non ledunt, corpori autem sepe nocent.[223]

42. Creator-god brought everything into being prior to the appearance of the human being. Then, as the dust of the earth lay dormant, He breathed the breath of life into the opening to the lungs of the human being. And when He had sent forth all of the elements which had proceeded from the command of the Creator-god through the Λόγος , these were as obedient attendants who had embraced the same breath which had commanded the dust of the earth. Thus, the human being can know and

[221] The Germanism *'vach flnte'* was understood by Schipperges as referring to a barrier similar to a dam which is constructed in order to harvest fish, or, a structure to ward off the flow of water (*vach fluentes*) (cf. note on pp. 54). Hildebrandt & Gloning objected to this conjecture, maintaining that the term is a misspelling of the transitive German subjunctive and is open to question (cf. note 5, pp. 415).

[222] Here, the word *forcia (pl. forciae)* is translated as "an accessory". Used principally in the 11th to 15th centuries, the term more literally refers to an "accessory to crime".

[223] With respect to the four elements, cf. Hildegardis *Causae et Curae, Folio 1vb, De Elementis et firmament,* 2:37 to 3:4 in P. Kaiser (1903) and v. 6-9 in Moulinier & Berndt SJ (2003; pp. 22): *Et eleménta mundi deus fecit, et ipsa in hómine sunt, et homo cum illis operátur. Nam ignis, aer, aqua, terra sunt. Et hec quátuor eleménta sibi intricáta et conjúncta sunt, ut nullum ab ália separári possit, et se ita ínsimul cóntinent, quod dicúntur firmaméntum;* << And God made the elements of the world, and they are in humankind, and therefore the human being works with them. For they are: fire, air, water, and earth. And these four elements are so entangled and intricately joined among themselves that none can be separated out from the others; and they hold themselves together in such a way – and together at all times - that they are called the firmament >>.

[243] Cf. *Liber Divinorum Operum, Pars Prima, Visio Secunda, c. 32, line 128-133* (Derolez and Dronke (2008) pp. 97: *A signo quoque lune, ut uides, quasi radius super utrumque supercilium ac super utrunique talum prefate imaginis radiat;* quia luna naturali uirtute sua corpus hominis temperat, ita ut, sicut ***supercilium oculum*** *ad uisum conseruat et ut talus hominem portat, sic per dispositionem Dei uiribus lune membra hominis a sursum usque deorsum temperantur*. In her description of the vision, Hildegard observes that as the moon's powers radiate over both eyebrows and on downward to the ankles, this is an anatomical statement that the ankles carry the person (from below) and the eyebrows 'fix the sight of the eyes' (above). Allegorically, she goes on to

understand all things. Fire, air, water, earth and all that exists besides can be considered as being within the human being [244]; and so, all these [created] things cannot cause harm to the soul but can cross the barrier to do harm to the body.

43. Cum ventus flat, vestimentum et corpus penetrat, animaque eum suscipit et sive ad aurem sive ad suram sive ad alia membra ducit et ibi operatur, ita quod homo aut sanus aut infirmus exinde fit usque ad signum femoris eius extitit.

43. When the winds blow, they penetrate the clothing and the body, and are then taken up to the sense of hearing in the ear or to the lower part of the leg (calf) by the vital principle (the soul which animates the body); or, to other members and operates there such that a person becomes either sound in body and mind or has crippling infirmity. Thereafter, consider the region of the upper leg (thigh) for indications emerging.[245] In a similar manner, these are of equivalent measure [design] on the body: from that which marks the knee through to the ankle; the same measure marks the distance from the upper thigh to the knee; and the distance marking the ankle to the terminus of the largest digit of the foot is of similar design as the distance from the wrist (*junctura manus*) to the terminus of the longest digits of the hand (*summitatem finis digiti*).[246]

Item a signo genuum usque ad signum tali eadem mensura fuit, qua a signo femoris usque ad signum genuum habebat; et a signo tali usque ad finem maioris arcule eius atque a iunctura manus usque ad summitatem finis digiti, qui medius dicitur, par mensura erat.

44. Saturnus igneam sphaeram ad dextrum pedem cancri et ad dextrum cornu cervi mittit, fortitudinem illorum tenens, ne modum suum bachando transeant.[224]
Mars igneam sphaeram solem ad dextram mittit, quoniam semper soli quasi minister eius

44. Saturn in the sphere of fire extends its reach [In the form of a fiery ray]] towards the right foot of the crab and also towards the right horn of the stag, providing guidance and strength to (the sun) in the manner of a shepherd's crozier

write that it was the disposition of God - via the powers afforded the moon – that the limbs of the human being are regulated from above and from below.

[224] The use of the feminine noun *speram* presents a translation difficulty as it is an unique word in terms of spelling without compare in other works of Hildegard. Its root is not *spere* ("to hope for"), but *sphaera (pl. sphaerae)* which refers to a sphere in the cosmos, an orb, or technologically as a component of a mechanical orrery; that is, a working model of the spheres of the planets. The irregular verb *mittit* derives from *mittere,* meaning "to cast", "to throw", "to hurl", "to discharge" or "to release" in this context.

[244] Cf. Folio 107vb, v. II.49 (325-326): *Ignis medulla hominis, aer vox eius, aque vene ipsius, terra ossa eius;* << O Fire! The quintessence of being human, air the human voice, water the blood of human veins, earth the dust of human bones >>.

[245] In verse II.43, Hildegard appears to suggest that it is the winds which are responsible for health or illness, dependent upon how they are acted upon in the members of the human body. It is notable that she continues to identify the upper and lower regions of the body as both being affected by the incursion of winds; and the soul takes up the winds to then distribute to other members of the body.

[246] Just as occurs later in the sequence in verses II.49-50 of Folio 107vb-108ra, there is a poetic, single stanza reference to the four elements here immediately followed by equivalent measures of the design of the human body. In addition to this being of interest *medically*, such proportions are also of interest to the *artist*. Cf. Figure 1 this study for intercomparisons.

adest in prosperitate et adversitate et solem retinet, ne ad aquilonem tendat.
Iovis igneam sphaeram super dextrum humerum mittit et ad sinistram cum ignea sphaera solem tenet, ne ad septentrionem currit.[225]
Mercurius igneam sphaeram ad dextram lune mittit, ei in augmento et detrimento a sole succurrendo, ut hec omnia iuste disponat.

so that it will not exceed its proper limits.[247] Mars, in the sphere of fire nearest the sun, extends its reach to the right of the sun, since he is always present as though he were a servant of the sun in times of [the sun's] prosperity; restraining it in its adversity, preventing its course into the place of the northern winds. [248, 249] Jupiter in the sphere of fire extends its reach [with its fiery ray] to the right shoulder of the human being and another fiery ray towards the left of the sun to restrain it from moving too quickly in a course [pathway] toward the northern constellations.[250] Mercury, in the sphere of the [sun's] fire, releases a ray to the right side of the moon such that whether she is enlarging [waxing] or declining [waning] in her light from the sun, (s)he runs quickly [hastens] to her aid, to arrange properly all as it should be.[251]

Cum in humida aura humidus est, homines de humore cerebri et flecmatis [phlegmatis] habent.[226] Unde bace lauri et mirra[227] in ignem ponatur, ut fumus eorum naribus moderate excipiatur. Cum in sicca aura siccus est, in pulmone homines tussitant et isti mirram et

When it is humid, and the air is moist, the humours of the human brain are moistened as phlegm is directed there. Henceforth, a sprig of laurel mixed with myrrh is placed on the fire such that the smoke is breathed in through the nostrils, in moderation; relief will follow. When

[225] Note: *currat* appears in the MS text. *Solem* = "of the sun" in this context.

[226] The scribe uses the spelling *flecmatis,* though the 11th to 15th century Latin vernacular would customarily be spelled as *phlegmatis* (lit. "phlegm").

[227] A branch or sprig of laurel (with the berries) is mixed with myrrh; a traditional folk remedy (magic) for this condition. Alternatively, the spelling as *mirra* (as opposed to *myrrha*) could be an abbreviation.

[247] In this verse 44, the writer is invoking the planets Saturn, Mars, and Jupiter (the three "highest planets") in this particular order as placing celestial limits on the northward 'drift' of the sun during its apparent seasonal movements with respect to sunrise and sunset. Mercury has its influence on the moon which waxes and wanes with respect to the nature of the atmosphere (moist or dry) and to the bodily humours.

[248] In the miniature of the Lucca Codex (fol. 9r), *visio secunda* illustrates two yellow boldface "rays" emanating from the planet Mars. The ray 'to the right' of the sun (left to the viewer) would restrict (*retinet*) the sun's annual path northward to a point consistent with the summer solstice sunrise in the NNE in mid-latitude Europe. This same miniature shows that this same 'ray' ends up in the mouth of the *serpent wind,* the most feared wind (NW wind) due to the severe weather which can attend this wind. Refer to Plate IV in Chapter 2, page 26, this study.

[249] Here, the word *aquilonem* is translated as being in relation to the northerly winds; contrasted in the sententium which follows using the word *septentrionem* which refers (relatedly) which better fits a translation "to the place of the northern constellations". Traditionally since antiquity, there are seven circumpolar constellations easily visible to the naked eye, namely: Ursa Major, Ursa Minor, Draco, Cassiopeia, Cepheus, Perseus, and Camelopardalis. The word can also denote Ursa Major (the Great Bear) which has seven prominent naked-eye stars in its asterism.

[250] Cf. note 249 above.

[251] The word *succorrendo* is used only once in the Berlin Fragment, and in this verse using the third declension of the verb *succurro*. Equating the swift planet Mercury with 'running to the aid of" is descriptive and imaginative linguistically and archetypally.

andorn [228] in vino calefaciant atque fumum inde egredientem ore sepius excipiant et postea de eodem vino modicum bibant.

in a dry place and the air is dry, and a person develops a persistent cough in the lungs, mix horehound leaves with myrrh in red wine which is warmed, and breath the vapours several times throughthrough the opening of the mouth; afterwards, drink in small amounts of the very same wine.

<107ra> Si temperata aura temperatus est, homines in discendo studiosi sunt et novos mores habere student.[229]

<107ra> If the air is mild and temperate, the person feels eager to engage in study, learns new ways of doing things, or considers new customs and behaviours.

Folio 107ra – 107vb

45. Venus lunam in sinistra parte tangit, ita soli ministrando. Cum iste in humida aura humidus est et elementorum humiditate perfusus, ita ignis in eo minoratur; quod fumum avide mortis emittit, unde et homines et pecora subitanea morte moriuntur. Tunc homines per omnia elementa ad deum clament, quatinus pestem pestilentie huius auferat, quia omnes medicinales artes tunc infecte sunt. Cum autem in sicca aura siccus est, mali humores in homine erumpunt, ita quod homines ulceribus

45. When Venus approaches the left side of the moon, touching it, she is providing attentive service to the sun.[268] When it is humid and the breeze is moist, the elements comprising matter are bathed in moisture, and therefore the fire within that place is diminished; and a vapour that makes death desirable is emitted such that humans and animals alike die suddenly and are strewn as corpses. Then, the people will cry out to their gods and deities and through all the elements, until the curse of the pestilence has been taken away; because the healing arts have been rendered suppressed and hence, ineffective. On the other hand, when in a dry place and the air is dry, evil pestilent humours can enter the body of the human being causing ulcerous swellings which eventually burst; human beings then develop scabrous skin as animals do when they are mangy. In this instance, the cattle are released from their fences and kept near the river while a fire is made close to them from beechwood and hawthorn bushes; the smoke from which

[228] The Teutonic word *andorn*, according to Schipperges' translation is the plant horehound, or *Marrubius vulgare.* Cf. note in Schipperges (1956), pp. 55.

[229] Cf. Moulinier (2003; pp. 195), *Causae et Curae*: *Et tunc homini illi est, quasi novus sit et quasi novos mores habeat*. <<And then it is to that person as if she were made new, and as if she had adopted new behaviours.>> (trans. J. Murray)

[268] Astronomically, it can be envisioned that in the waxing crescent phase of the lunar cycle, the moon will advance eastward toward Venus as the "evening star" at certain times. To the eye, with Venus near the left side of the moon in conjunction, the illuminated portion of the moon could appear to provide light to the growing crescent. Alternately, in its waning phase, with Venus to the left of the moon (hence, to the right of the sun), it could appear yet again to be supplying light to the illuminated portion of the moon. Cf. *Liber Divinorum Operum, Pars Prima, Visio II*, XXXI, v. 22-34; (Derolez & Dronke 2008, pp. 93);

inplentur et pecora scabrosa, id est *scebech*, erunt.[252, 253]

Tunc pecora in flumina sepe mittantur et fumus de ligno fagi et ***hagenes*** sub pecoribus fiant, ut inde tussitent et hoc sepe fiat; homines autem, qui pingues sunt, in vena sanguinem minuant; qui vero macillentes sunt, scarifationem faciant. Cum aura temperata est, ita quod ipse etiam temperatus existit, homines iocunditatem habent et habundanciam frugum.[254]

causes the animals to cough and be healed. In addition to this, people who are fat have diminished blood flow in their veins while those who are lean and emaciated are easily scratched open and bleed. When the breezes are mild and temperate, people are more inclined to step outside to enjoy their surroundings; and people are also more congenial and honest with others.

46. <107rb (following "luna crescit, tunc…)

Cum luna crescit, tunc et cerebrum hominis crescit; cum autem decrescit, cerebrum etiam decrescit. Et si cerebrum in uno statu semper esset, homo freneticus fieret, ita quod etiam

46. As the moon is in her increase, so too the faculties of the human mind increase; however, as the moon wanes and grows smaller, to vanish, so too the faculties of the human mind are diminished.[269] For if the mind of the human

[252] The Teutonic word *scebech* is translated by Schipperges (1956) as "shabby" or "mangy" (cf. his note p. 56).

[253] See Cicero, *De natura deorum, II, 53,* trans. H. Rackham, (Loeb Classical Library, 1933), p. 175. And so, Hildegard's planetary sequence adopts the Egyptian system as did Cicero and eventually Tycho Brahe (14 Dec. 1546 CE to 24 October 1601 CE) whose model had the planets orbiting the Sun and the Sun in turn revolving around Earth. This is then a helio-geocentric system in the inner solar system as: Sun-Mercury-Venus-Moon. See also *Commentarii in Somnium Scipionis* (Commentary on the Dream of Scipio) where the writer notes the difference between the Babylonian (i.e., Ptolemaic) and the Egyptian (i.e., Tychonic) systems which disagreed on the positions of Mercury and Venus. In the *Liber Primus,* XIX, 1-27*,* Macrobius writes: *His adsertis, de sphaerarum ordine pauca dicenda sunt, in quo dissentire a Platone Cicero uideri potest, cum hic solis sphaeram quartam de septem, id est in medio locatam, dicat, Plato a luna sursum secundam, hoc est inter septem a summo locum sextum tenere commemoret. Ciceroni Archimedes et Chaldaeorum ratio consentit, Plato Aegyptios, omnium philosophiae disciplinarum parentes, secutus est, qui ita solem inter lunam et Mercurium locatum uolunt ut rationem tamen et deprehenderint et edixerint cur a non nullis sol supra Mercurium supraque Venerem esse credatur: nam nec illi qui ita aestimant a specie ueri procul aberrant.* << Having said this, a few things must be said about the order of the spheres, in which Cicero can be seen to disagree with Plato, when he says that Plato holds the sphere of the sun as the fourth of the seven, that is, placed in the middle; to remember, Archimedes also disagrees with Cicero and the reasoning of the Chaldeans (Babylonians). Plato followed the Egyptians, the fathers of all the disciplines of philosophy, who want the sun to be so placed between the moon and Mercury that they nevertheless discovered and published a reason why the sun is believed by some to be above Mercury and above Venus >>. Cf. Note 60, p. 20 this study.

[254] *Hagenes* is a Teutonic word translated as hawthorn or thornbush by Schipperges (1956; cf. his note p. 56).

[269] Here, translating the word *cerebrum* invites a conjecture that the sense of the word here is not so much the physical brain, but refers to the waxing – or increasing abilities - of the faculties of the mind. More rarely, it could also be as "anger or wrath", but this is less likely given the context. Since the previous text in the verse above speaks to human behaviours, this is a possibility. Cf. *Liber Divinorum Operum, Pars Prima,XXXII, v. 156-160*, Derolez & Dronke 2008, pp. 98: *Nam cum luna in incremento est, cerebrum et sanguis hominis in ipso augmentatur; cum vero luna in detrimento est, cerebrum et sanguis in homine minuuntur*. *Si enim cerebrum hominis in uno statu esset, homo frenesim incurreret, ita ut etiam magis quam bestia indomitus appareret;* Nathaniel Campbell objects to the more allegorical form of *cerebrum* in his recent translation of the sententiae written above in the *LDO* (2018; pp. 88-89). There, Campbell takes the term quite literally, in the context of the physical brain itself for it occurs together with that of blood flow: << *For when the moon is waxing, a person's brain and blood are increased in him; but when the moon is waning, the brain and blood are diminished in a person. For if the human brain were to remain in a single state, a person would experience madness, so that he would appear even more untamed than a beast.* >> In the passage of the *LDO,* Hildegard uses the wording: *luna in incremento est* which is literally <<the moon is on the increase>> whereas *crescit* refers to "waxing" when translated literally. This is followed in the *LDO* by *luna in detrimento est* which in the literal sense means "that which is worn away" or even "loss" or ruin". Cf. *Vulgata, (Matthaeum 16:26) …[si] mundum universum lucretur animae vero suae detrimentum patiatur:* << [gaining] the wealth of the entire

magis quam bestia indomitus esset ad tenendum. Cum humida aura est, homo caput ad **nach** et ad supercilia ad ignem et veste calefaciat, ut cerebrum siccetur et sanitatem recipit. Cum aura sicca est, capite ignem et calorem fugiat et aer [255] ei bonus et sic caput sanitatem habet.

being were to always be appointed one state, delirium or madness would come about, and the person would be as fierce, untameable and uncontrollable as any wild animal.[270] When the winds are moist, a person should wrap themselves in a warm blanket from the fire to warm oneself from the top of the head to the back of the neck (*nach = necken;* back of the neck) and towards the eyebrows thereby drying the faculties of the mind and to recover one's sanity [or well-being]. When the breezes or winds are dry, seize the opportunity to flee from fire and sources of heat to where the air is pleasant and healthy such that the head can maintain its sanity.

47. A fossula precordii usque ad inicium humeri et a iunctura manus usque ad summitatem finis digiti, qui medius dicitur, equalis mensura est.[256]

47. A measure taken from the indentation above the heart to the beginning of the shoulder, and from the wrist to the tip of the longest finger, which is the middle finger; these are the same.

48. Saturnus in summitate summi circuli.[257] Sol in igneo.[258] Venus in æthere. Luna deorsum pendens in eodem æthere sub vento. Virgula de utroque cornu lune ad supercilia

48. Saturn occupies the summit of the highest of circles. The sun is in the [black] fire. Venus in the aether. The moon's crescent suspended downwards – pendulum like - in the same place within the aether underneath the [easterly]

world while suffering the loss of his very soul >>. See also (Latin Vulgate, *Luke 9:25*): *Quid enim proficit homo si lucretur universum mundum se autem ipsum perdat et detrimentum sui faciat:* << So, what does it profit a person if in gaining the wealth of the entire world, he causes the loss of both himself and the soul? >>.

[255] In this sententium, Hildegard uses two terminologies for air in the atmosphere: *aura* which includes the breezes and winds, and *aer* which connotes one of the four elements. In typical fashion, we are reminded that when the elements are disturbed, so too the state of the human being undergoes perturbations.

[256] This sententium appears to be an instruction for the illuminator(s), for it provides proportions for the human figure. The term *fossula precordia* refers to the v-shaped indentation at the junction of the left and right clavicle; the sternoclavicular joint. Embryonically, being the only large bone which is oriented horizontally, the clavicle is the first to begin the process of ossification at 5-6 weeks gestation, and at 21-25 years of age in the human, it is the last bone to fully ossify and become solid.

[257] It could be illusory or erroneous to claim that the proper name *Saturnus* here refers exclusively to Saturn as we know the solar system planet. It must also be recognised that *Saturnus* acted in antiquity as the god of agriculture and of civilization among Roman citizens. Otherwise, the word would best be *Saturnius* (of, or relating to, or belonging to, Saturn as a planet or a deity). The sententia includes the description of "that which occupies the highest sphere (or orbit; *ciculi*) as *summitate summi circuli.* Hence, it is most likely a reference to the position of Saturn as the "highest planet". What complicates this interpretation is what comes next. See note 6 below.

[258] "The Sun-god is in the [sphere] of fire", or literally "the Sun-god is in the fire".

[270] Cf. Note 19 above. This verse lends credence to the position that Hildegard is focused more on the state of mind in the human being during the waxing and waning of the moon, and not its physical size or physical state. It may also support the translation of the word *cerebrum* in the previous sententia as "anger" or "wrath" which in the human can wax and wane with regularity. The context remains indeterminate.

descendens. [259] Venus dextra parte cancrum in æthere, in sinistra cervum in æthere.

wind. A streak [of light] descends to the eyebrows from both cusps of the moon. The wind which is the crab was to the right in the upper air [aether], and on the left side in the upper air, the stag wind.

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[259] *Virgula* and its declensions of the Latin word has been considered as unique to the *Berlin Fragment* in the lexicon of Hildegard. The word occurs precisely forty (40) times in the MS. Recent scholarship, however, leaves the origin and usage of *virgula* in the realm of an unsolved problem. José Carlos Santos Paz has claimed in two locations that the term is: a) the "most significant example….[of a] word which does not belong to the Hildegardian lexicon…[and] used to describe a line between two components of the *rota*" in the illuminations of the Lucca Codex of the *Liber Divinorum Operum* (2021; pp. 140) and; b) more recently, "it is a term foreign to the Hildegardian lexicon and denotes a line which seems to indicate that – rather than meteorological phenomena – it describes an image" << *es un término ajeno al léxico hildegardiano y denota una línea, lo que parece indicar que - más que fenómenos meteorológicos - describe una imagen*. >> (2022; pp. 879). This view is provisional for Santos Paz, but requires fresh eyes, deeper probing, and translation alternatives which appeal morel to Hildegardian allegory. We can begin with the error that *virgula* is not in Hildegard's lexicon. In Hildegard's *Symphonia armonie celestium revelationum* ("A Symphony Revealing the Celestial Harmony"), which is a masterful collection of liturgical songs, sequences, antiphons and poetry set to soaring, melismatic feminine voices, the sequence celebrating St. Maximin – the fourth-century bishop and patron saint of the monastery at Trier – is illustrative. In this hagiophonic piece, the *Columba aspexit* ("As the dove beheld"), key lyrics are as follows*: O pigmentarii, qui estis in suavissima viridate hortorum regis….[Tu] es fortis et suavis in ceremoniis, et in choruscatione altaris, ascendens ut virgulam fumus aromatum, ad columpnam laudis*: << O fragrances, perfumers!!, who abide in the sweetest of the royal gardens, [you who are] strong and sweet in the sacred rites and in the dazzling chorus at the altar, you rise like a column of incense, toward the stone table upon which our praise is perfected >> (tr. adapted from Barbara Newman (1998; pp. 214-215). In her recent biography of Hildegard's periods of music composition, Honey Meconi (Meconi 2018) has described this sequence as "one of the most beautiful of Hildegard's compositions, the work created on a sensual text filled with rich images and numerous Old Testament references" (pp. 55). Compare the above with this from the old testament *Canticum Canticorum* (Song of Songs) *3:6* : *quae est ista quae ascendit per desertum sicut aurea virgula fumi incensum ex aromatibus myrrae et turis et universi pulveris pigmentarii?:* << who is she that riseth up from the desert, as a golden pillar of incense smoke from aromatic myrrh, and frankincense, and all the spices ground by the perfumers?"; The consistency of language between the biblical text and Hildegard's lyrics is striking if not demonstrating complete intertextual dependence. The word *virgula* can now be safely included in Hildegard's lexicon with this new evidence from the *Berlin Fragment.* The word can be variously translated - dependent upon context or dialect - as "a line", "a shoot or twig", "a streak or mark", a "line in a diagram", a "line in the musical notation of plainchant" which would connect two adjacent tones, or a "thin column of smoke" as with incense (cf. *Canticum Canticorum*, Ch. 3: 6). Note also the reference in the *Canticum Canticorum* to the three gifts of the foreign astrologers, the *mathematicii*, the *magi* as they attend to the newborn Christ in the Gospel of Matthew, NT 2:11 : *et apertis thesauris suis obtulerunt ei munera aurum, tus, et myrram.*). In folios 107rb through 108rb of the *Berlin Fragment* , the variants *virgula, virgulas* and *virgulam* appear forty-one times in a confined space (31 times in Folios 107^{rb-vb}; 10 times in Folios 108^{ra-rb}) in a lengthy narrative (esp. II, 48, 289-323 and 51, 340-345). These paragraphs speak to numerous aspects of the interrelationships among structures of the cosmos and their interconnectedness with the human body – the cosmic human being. Arguably, these sententiae concentrate Hildegard's thinking - as exotic, artistic and unusual textual passages - within the *Berlin Fragment,* and resemble or have the appearance of *instructions* for the preparation of miniatures in an illuminated manuscript. If Santos Paz is correct in his view that *virgulae* are not actual natural phenomena but can only be interpreted geometrically as lines in an illustration destined for the Lucca Codex (Fol. 9r) of the *Liber Divinorum Operum (LDO)* (*Parte 1, visio II*), the question remains: if *virgula* is indeed foreign to Hildegard's lexicon and her *oeuvre,* why are there eighteen references to the *Canticum canticorum* (The Canticle of Canticles) in the *index locorum s.scripturae* in the critical edition of the *Liber Divinorum Operum* (Derolez & Dronke (1996; pp. 471))? There are two direct references in the *LDO* to the *Canticum canticorum* (Vulgate *3: 4,6*). More work is required on these sections of the *Berlin Fragment* to resolve this important *cruce* (crossroad). The large number of repetitions, line by line, lead me to propose a novel explanation or advance a hypothesis: that these sections of the *Berlin Fragment* are not prose, they are not instructions for the illuminators *per se,* but are lyric-poetic; possibly a *sequentiae* intended as a didactic / mnemonic device to commit to memory certain instructions among Hildegard's illustrators at Rupertsberg, or more seductively, intended to be sung as a sequence in the actual presence of an iconographic image of the cosmic human being. The veneration of, and not worship of, iconographic imagery is an ancient tradition in the Christian church; especially among the eastern rites. Cf. note 260 below.

Cancer virgulam ad dextram mamillam, cervus ex ore suo virgulam ad sinistram aurem. Sol virgulam per ventum ad cerebrum. Planeta sub saturno in igneo virgulam ad solem et virgulam ad dextrum humerum. Planeta sub secundo in igneo virgulam ad solem et virgulam ad sinistrum humerum. Planeta primus super lunam in æthere, virgulam ad dextrum cornu lune et virgulam ad flexuram dextri brachii.	From the Crab, a blast of wind extends to the right side of the [human being's] breast, out of it's own mouth, together with the stag, whose blast is towards the places of hearing. A streak of colour from the sun towards the place of reason and intelligence passes through the winds. A streak of colour from the star in the fire [i.e., Jupiter in the 'lucid fire'] strives toward the sun and another streak to the right shoulder. A streak of colour from the planet in the [bright] fire beneath the second planet [i.e., Mars] is towards the sun and another to the middle of the left arm. From the first planet above the moon in the aether [i.e. Venus], a streak of colour is drawn towards the right cusp of the crescent moon and another streak of colour to where the right arm bends.
Planeta secundus super lunam in æthere, virgulam ad sinistrum cornu lune et virgulam ad flexuram sinistri brachii. Ventus ut cancer ab ore leopardi id est orientalis venti exiens, virgulam ad dextram mamillam mittit.[260] Ventus ut cervus ab ore eiusdem venti egrediens, virgulam ad sinistram aurem mittit.	From the second planet above the moon in the aether [i.e., Mercury], a streak of colour is drawn towards the left cusp of the crescent moon and another streak of colour to where the left arm bends. The wind of the crab in the arch of heaven issues forth and is cast towards the mouth of the leopard, which is the place where the easterly winds come forth, whence it then departs as a streak of colour to the area of the right breast. The wind that issues forth from the opening of the mouth of the stag, this same wind as the one which passes through the mouth of the leopard, is as a streak of colour to the left ear.
Saturnus in summitate summi circuli sub pedibus virgule ad finem dextre maioris arcule mittit.[261] Secundus planeta in igne virgulam ad	A line is cast forth from Saturn - which occupies the highest and most distinguished place among the orbits even so far as underneath the

[260] The word *mittit* (from the verb *mittere,* to release, to send, to cast) appears in Lucanus' *Pharsalia* (v. 3.722-723): *Hoc habet ex magna defunctum parte cadaver: viventis feriere loco. Sic fatus in hostem Caeca tela manu, sed non tamen irrita**, mittit***. Lucanus is referred to by name in the *Berlin Fragment* in Folio 109ra, v. 13. The form of the verb also appears in Boethius' poetic *Consolatio Philosophiae* (5.P3.31) and is also common to Pliny's Natural History with almost two dozen occurrences. In addition, the Latin Vulgate contains twenty verses which use the word (esp. Prov. 26:8): *sicut qui mittit lapidem in acervum Mercurii ita qui tribuit insipienti honorem.* The most common context in English would be forms of the verb meaning "to be sent".

[261] The word *arcule* is untranslatable as it is used here by Hildegard or her amanuensis and is most likely not a variant of *arculus* or *arcula* (i.e., a Medieval stringed instrument bow or jewel box respectively). According to Santos Paz, the correct word should probably have been *articulam (?)* meaning the large toe of the foot given the context with the lower limbs of the body (see Salvadori, 2021; pp. 139 and Santos Paz, 2022; pp. 882). The word *artus* and its variant *artula*, meaning a "joint in a limb" is another literal possibility, but given that the word comes through Hildegard, a more poetic or tropical meaning is possible, meaning "strength or power" in

sinistrum genu mittit. Tercius planeta in igne virgulam ad dextrum genu mittit.[262]	foot [of the human being] – striving to reach the large arch underneath the right foot which has a mark upon it [*virgule*]. There is a streak of colour cast forth from the second of the planets in the fire [Jupiter], striving to reach the left knee. There is a streak of colour cast forth from the third planet in the fire [Mars], striving to reach the right knee.
Sol in igne virgulam ad lunam mittit. Dextrum cornu lune in æthere, virgulam ad dextrum talum mittit. Sinistrum cornu lune in æthere, virgulam ad sinistrum talum mittit. Ventus ut cancer ab ore lupi, id est occidentalis venti, in aquoso aere exiens, virgulam ad dextram suram mittit.[263] Ventus ut cervus ab ore eiusdem venti egrediens, virgulam ad sinistram suram mittit.	The sun in the sphere of fire releases a streak of colour towards the moon. In its turn, the moon in the aether sends forth from its right cusp a streak of colour to the right ankle [of the human being]. Then, the moon in the aether sends forth from its left cusp a streak of colour to the left ankle [of the human being]. The wind which comes out of the mouth of the wolf, issuing forth from the watery air, is the westerly wind which releases a streak of colour to the rear of the lower right leg [of the human being], having its origins and agency in the wind which is the crab. This same [westerly] wind also receives the wind coming out of the mouth of the stag, releasing a streak of colour to the rear of the lower left leg [of the human being].
Ventus ut agnus ab ore ursi aquilonalis venti in æthere exiens, virgulam sinistra parte ad umbilicum mittit. Ventus ut serpens ab ore eiusdem venti exiens, virgulam sinistra parte ad lumbos mittit.[264] Primus planeta sub pedibus virgulam ad fornicem cancri mittit.[265]	The winds which come out of the mouth of the northern bear which is in the aether have their origins and agency in the wind of the lamb; and these send forth a streak of colour towards the area of the navel on the left side [of the human being]. This same [northerly] wind also receives

a limb. The word *is* translatable if the spelling has been intentionally changed for the sake of a rhyming with *virgule,* and before that, *summitate.* See https://logeion.uchicago.edu/artus [accessed 29 October 2023].

[262] Cf. folios 105vb - 106ra, v. 35 in the *Berlin Fragment*.

[263] The use of the word *aere* for air is *elemental* as one of the four natural elements as opposed to the more common *aura* in the *Berlin Fragment* (used for atmosphere, breezes, zephyrs, etc.).

[264] Here, *lumbos* is translated as the *genital organs* and not simply literally as the *loins.*

[265] The term *fornicem* is difficult to translate, as it is rare and does not seem to appear elsewhere in Hildegard's *oeuvre* of medico-scientific texts; though a comprehensive search has not yet been done. That said, there is a database bias at work here: most Hildegardian scholars make use of the CETEDOC Library of Christian Latin Texts (CLCLT) database maintained by the University of Chicago Library or the Cetedoc Library of Latin Texts Online available from the Brepols' Centre '*Traditio Litterarum Occidentalium*' (CTLO) at https://www.brepols.net/series/LLT-O [accessed 13 October 2023]. The bias for Hildegard scholars is that these databases (according to information provided by the University of Chicago) "include only critical editions from the volumes published in the *Corpus Christianorum*, both the *Series Latina* (SL), and *Continuatio Mediaeualis* (CM), the *omnia opera* of major authors such as Augustine, Jerome, and Gregory the Great, as well as several works not yet available in the *Corpus Christianorum* but included in the *Corpus Scriptorum Ecclesiasticorum Latinorum* (CSEL), the *Patrologia Latina* (PL), the Latin *Vulgate* and Les Sources Chretiennes

the wind out of the mouth of the serpent as its agent, sending forth a streak of colour towards the area of the genital organs on the left side [of the human being]. The fixed star nearest the underside of the [right] foot of the human being casts a streak of colour to the crab's pincers.

Secundus planeta sub pedibus virgulam ad cornu cervi mittit. Secundus planeta ex quatuor ad austrum sub manu virgulam ad dich sinsitra parte mittit.[266] Secundus planeta ex quatuor ad aquilonem sub manu virgulam ad dich dextra parte mittit. Secundus planeta ex quatuor ad austrum versus sinistrum humerum, virgulam sub sinistram ascellam mittit. Secundus planeta ex quatuor ad aquilonem versus dextrum humerum, virgulam sub dextram ascellam mittit. Alii duodecim planete ad tenebrosam pellem tendunt.[267]

Near this, a second fixed star beneath the [left] foot of the human being casts a streak of colour in the direction of the antlers of the stag. The second of the fixed stars of the four which occupy the region of the south winds, and is beneath the hand [of the human being], casts a streak of colour which causes rain to fall on the area of the left thigh. The second of the fixed stars of the four which occupy the region of the north winds, having its place beneath the hand [of the human being], casts a streak of colour which causes rain to fall on the area of the right thigh. The second of the fixed stars of the four near the south winds and in the direction of the left upper arm, casts a streak of colour

(SChr; in French)" https://www.lib.uchicago.edu/e/ets/ [accessed 13 October 2023]. The implication is that no medico-scientific work or minor work of Hildegard is digitally searchable in order to locate linguistic and etymological synergies between the *Berlin Fragment* and other of her works with the exception of her three primary theological works. Therefore, here is the present nature of this crossroad, this *cruce* and a possible solution: the association with the crab may indicate that the word is descriptive of the claws or pincers of the crab. Santos Paz has recently condemned Schipperges' transcription of the original *fornicem* as "poorly edited" << *mal editado por Schipperges* >> (2022; pp. 877); which, if correct, would similarly indict the more recent critical edition by Hildebrandt & Gloning for reproducing the alleged error (2010; pp. 417-418). In the *Berlin Fragment* MS, folio 107vb (v. II, 48 and v. II, 51) where the word occurs twice in the identical manner, a new translation is as follows of *ad fornicem Cancri mittit*: << [it] sends to the crab in the arch of the heavens >>. The word *fornicem* may have been misspelled by the scribe (according to Santos Paz (2022; pp. 877) but this is a misreading of the original MS. The orthography notably mirror-reverses the "n" to write it as "u" so that the word appears as *foruicem* which is simply not translatable. Santos Paz is determined to link the contents of the *Berlin Fragment* to the *Liber Divinorum Operum* on the issue, and so in desperation claims that *fornicem* is some vulgarisation or phonetic variant (<< *foruicem parece una variante fonética* >>). Though rare, a poetic use of the word *fornicem* translates from the noun *fornix* which is an "arch or vault" and so the derivative "the arch of the heavens", or "the firmament" fits the context here. The precedent is in the classical lyric poetry of the tragedian Quintus Ennius (ca. 239 BCE to 169 BCE) as *caeli ingentes fornices* << the enormous vault of the heavens >> as found in M. Terentius Varro, *de Lingua Latina (5, para. 19).* There is no need to invoke the crab's claws which are better worded as *pes* or *forpex* and do occur in the *Liber Divinorum Operum.*

[266] The vernacular Germanic gloss *dich* refers to the thigh, or upper leg of the human anatomy.

[267] The word *pellem* can refer to a thin membrane, a covering of skin, thin layers of parchment or the skin of a drum made from hide. Anatomically, it also refers to the thin membrane surrounding the testicles in male mammals (*epididimii*); an unlikely allusion in this instance. Cf. Hildegard's *Cause et Curae* (2.128) where the variant of the word *pellis* describes the thin skin of the female, allowing air to penetrate the body to nourish the foetus. In Hildegard's cosmos, certain of the major fixed stars have the ability to exert their influences into the deeper layers of the firmament and Earth's atmosphere, while others are restrained to the ring of black fire only and so cannot bring such influences to humanity and life on earth. It is perhaps important to recall that the sun is similarly confined to the *orbis* (circle) of the black fire (*ignis niger*).

underneath the left armpit. The second of the fixed stars of the four near the north winds and in the direction of the left upper arm, casts a streak of colour underneath the left armpit. Others of the remaining twelve fixed stars extend their reach, straining to draw tight the skin of the firmament; that membrane enclosing the gloomy darkness which contains the black fire, but no further.

49. Ignis medulla hominis, aer vox eius, aque vene ipsius, terra ossa eius.

49. Fire is the marrow of the human being, air the expressive voice, water the veins, and earth the bones.

Folio 108ra to 108vb

50. A vertice usque ad inicium frontis et ab inicio frontis usque ad genas et a genis usque ad mentum et a mento usque in fossulam inicii pectoris paris mensure est. Ab inicio pectoris usque ad inicium divisionis costarum in pectore et ab eadem divisione inicii costarum usque ad umbilicum et ab umbilico usque ad locum, ubi aut mulier aut vir aut in divisione crurium[271] discernitur, equalis mensure est. Ab humeris usque ad ilia et ab iliis usque ad genua, a genibus usque ad calcaneum equalis mensure est.

Ab humero usque ad flexuram brachii et ab eadem flexura usque ad finem pollicis paris mensure est. A fossula inicii pectoris usque ad humerum eiusdem mensure ut manus. Ab inicio humeri usque ad proximam fossulam finis colli et ab eodem fine usque ad fossulam precordii equalis mensura est. A vertice capitis usque ad foramen auris et ab eodem foramine usque ad inicium humeri equalis mensura est.

50. These are in equal measure: from the crown of the head to the beginning of the forehead, and from the beginning of the forehead to the cheeks, and from the cheeks to the tip of the chin, and from the chin to the scallop of the top of the chest. From the scallop at the top of the chest to the beginning of the division of the ribs in the chest [at bottom of the sternum], and from this same division of the beginning of the ribs to the navel, and from the navel to the place where either woman or male is distinguished at the division of the legs, is an equal measure. From the shoulders to the hips, and from the hips to the knees, from the knees to the heel, it is of equal measure.

It is an equal measure from the shoulder to the bend of the arm [at the elbow] and from the same bend to the end of the thumb. From the scallop of the top of the breast to the shoulder, this is of the same measure as the hand length. It is an equal measure from the beginning of the shoulder to the scallop at the base of the neck and from the same place to the tip of the sternum. It is an equal measure from the crown of the head to the opening of the ear and from the same opening to the beginning of the upper arm [at the shoulder].[280]

[271] The use of the word *crurium* is an ecclesiastical and not classical reference to the legs. The noun *crurifragium* was the state of broken legs of the crucified felon, the final act within the process of Roman crucifixion to ensure that breathing was impeded.

[280] Sententium 50 is a very detailed set of measurements which could have acted to guide the illustrator(s) in the anatomical proportions of the human being contained in the illuminations of *Visio II and Visio III* of the Lucca

51. Saturnus ad cornu cervi virgulam a capite mittit et virgulam ad fornicem cancri mittit. Lingua ad dextrum latus virgulas mittit et stelle ibi vicine virgulas ad ipsam. Lingua ad dextrum femur virgulas mittit et stelle ibi vicine virgulas ad ipsam. Lingua ad sinistrum latus virgulas mittit et stelle ibi vicine virgulas ad ipsum. Lingua ad sinistrum femur virgulas mittit et stelle ibi vicine virgulas ad ipsam.[272]

51. In the vault of heaven, a streak of colour is cast forth from Saturn to the place where the stag's antlers join with its head (*sc. capite*) while another streak of colour is cast forth towards the crab.[281] The tongue-like clouds towards the right side [of the human being] send out their dark streaks and are pierced by streaks of colour as if by shooting stars from the nearby fixed stars. The tongue-like clouds send out their dark streaks towards the right thigh as they are themselves pierced by streaks of colour as if by shooting stars [lightning?] from the nearby fixed stars. The tongue-like clouds towards the left side [of the human being] send out their dark streaks and are pierced by streaks of colour as if by shooting stars from the nearby fixed stars. The tongue-like clouds send out their dark streaks towards the left thigh as they themselves are pierced by streaks of colour as if by shooting stars from the nearby fixed stars.

52. Ut favus cum melle vasculo suo adheret, ita terra aquoso aeri conexa est;[273] et aquosus aer terram humectat, ne in pulverem vertatur et calor solis supra et subtus eam coquit, ut firma sit.

52. (poetic) As the honey in the honeycomb adheres to its calyx [cup] in the hive, so the earth is connected to the watery air [282]; and the watery air moistens the earth, so that it does not turn to dust, and the sun provides vital warmth from above and from underneath

Codex 1492 *Liber Divinorum Operum.* In the next verse, 51, there is a sudden return to the characteristics of the *rota* and the primary position of Saturn and its mythical connections to the cosmic bestiary, and the four quadrants of the *rota*.

[272] The appearance of the word *lingua* on four occasions in this verse cannot be understood (or translated) without an appeal to the *Parte I, Visio secunda* of Hildegard's creation treatise, the *Liber Divinorum Operum.* The word can refer only to clouds having a "tongue-like" appearance and so is likely metaphorical and linked to the four humours. In addition, the word *stelle* in this context is unusual and is a departure from the earlier use of *planeta* to connote either a fixed star in the bright lucid fire of the firmament or one of the five planets (proper) of antiquity. Literally, it would refer to a 'star', but observationally (i.e., in the eyes of the seer and visionary) and/or allegorically *stelle* are *meteors* or "shooting stars". The Renaissance term *meteorum* (pl. meteorii) does not appear until at least the post-15th century treatises in natural philosophy. The translation here opts for the allegorical. Cf. Lucretius, *De Rerum Natura* 2, 208: *discursus stellarum*, Pliny, 2, 36, 36, § 100: *discurrere eae (stellae) videntur;* This instance may also provide a possible source for Hildegard's cosmological view on meteors, coming through Boethius' *Consolatio Philosophiae* (1.M2.10, 1.M5.7 and 2.M3.4).

[273] Cf. *Hildegardis Bingensis Liber Divinorum Operum, Parte I, Visio 4*, LXXX *Terra enim in medio aeris ut favus in medio mellis est* / << For the earth is in the midst of the atmosphere, as the honeycomb is in the midst of the honey. >>

[281] Cf. *Berlin Fragment* folio 107vb, v. 48 and the discussion on the word *fornicem* in note 11 in that section. In the context here, *fornicem* refers to the 'arch' or 'vault' of the heavens.

[282] Cf. *Liber Divinorum Operum, I.4, 80;* pp. 203 in N. Campbell (*LDO;* 2018). "bee" and "honey" and "honeycomb" occur in seven passages in *Visio quarta* of the *LDO.* This sententium is a type example of Hildegard's metaphorical allegory, with all four elements involved in the metaphor: the sun (fire) = dries the earth to dust, the atmosphere (watery air) = honey and moisture (water), and earth = honeycomb and dry dust.

which parches her, matures her, so that she comes to be enduring and substantial.

III.1 Circulus terre paradysum habet; ab oriente usque ad austrum paradysus maior est quam habitabilis terra, in qua homines habitant.

III.1 The circle above the earth contains the garden, the dwelling place of the first human beings; from the east towards the place of the southern winds, the celestial paradise is much broader and more extensive than the inhabitable earth in which humanity dwells.[283]

2. Tertia pars minime stelle maior est terra et stelle firmamento infixe sunt, illud tenent, ut clavi domum.

2. The other three regions [eastern, northern, and western skies] above the earth where the great fixed stars are is the least by size[284]; there, the fixed stars are driven into the firmament to hold it together, affixing it to the earth in the way that nails hold together a house [home].[285]

3. Venti igni resistunt, aquam compescunt, orbem tenent.[274]

3. The winds resist the fire, the water quenches, preserving the world.

4. Terra vitalis sustentatio et domus animarum est, quia anima pertransiret, si domus eius destrueretur; et deus eam posuit, ut cum anima vita esset et anima vita cum illa in corpore, quia corpus terra.

4. Earth endures in bringing forth life and is like unto the dwelling place of the soul; because if the breath of life were to pass into it and this dwelling place were to be destroyed, there is no life; and so the Creator-god placed it there, for where there is soul there is life, and the soul

[274] All four elements are represented in this sententium: winds (*venti*) = air, fire (*igni*), water (*aquam*), earth (*orbem*). These cooperate in such a way that the world is inhabitable. The word *tenent*, a second conjugation of the verb *tenere*, can refer to "being held together", "supported", or "preserved". The word appears only here in the *Berlin Fragment.*

[283] This bulging of the firmament in the southerly direction is an echo of the "cosmic egg" which features prominently in Hildegard's vision of the cosmos from her *Scivias*; esp. *Liber I.3, visio tercia.* In addition, the sun reaches its daily apex as it transits the meridian in the south, and moves apparently more slowly across the sky midday. Geometrically, it would be a sound argument to have the firmament bulge to the south in order to explain the observed phenomena just mentioned.

[284] In this phrase, Hildegard (or the copyist) has clearly illustrated for the reader that the firmament is asymmetrical, with the northern regions the smaller and expansion towards the southern regions. The expanded boundaries of the southern skies can then accommodate all proper motions of the sun, moon and planets as from the position of a northern mid-latitude observer.

[285] Here, Hildegard's vision of the cosmos is geometrically *lecythiform* (i.e., pear-shaped), narrower to the north and broadening towards the south. Not only is this consistent with her vision of the cosmic egg in *Scivias* but is the actual modern-day geophysical description of the shape of Earth (having an equatorial bulge due to its axial rotation). In the second vision of the *Liber Divinorum Operum* the bright yellow streaks (*virgulas*) lend the appearance of spikes driven into the firmament from all sixteen of the great fixed stars which Hildegard describes; six of which are located in zodiacal constellations (Aldebaran – Taurus, Spica – Virgo, Antares – Scorpius, Pollux – Gemini, Castor – Gemini, and Regulus – Leo); of the remaining ten stars in the list would include four which seasonally appear in the southern skies (Sirius, Rigel, Betelgeuse and Fomalhaut), four circumpolar stars in the northern skies (Vega, Capella, Al-tair, and Deneb) and the remaining two of the brightest stars are also seasonal but have heliacal risings and settings according to the seasons (Arcturus, Deneb).

	gives life to the body: because earth is the body, the breath of life animates the soul. [286]
5. Firmamentum servicium est luminis et terra firmamentum vite vitalium animarum, quia eas retinet. Firmamentum est servicium et obsequium luminarium terre et terre ministrat, quoniam ignis eam firmat, aer retinet, aqua perfundit; quoniam firmamentum circuit sicut qui <108va> ministrat, et terra stat velut qui dominando sedet.	5. The lights of the firmament are as earth is; she is life-giving and strengthening, giving vitality to souls. Through its obedience, the firmament strengthens the earth with its light and is her feminine attendant and handmaiden, since her fire fortifies, her air preserves, and her water bathes; for in the same way the firmament goes around as one which provides the works of a slave, as if the earth stood still in the manner of one who has dominion and is seated on a throne.
6. Sicut cor patris vis et potestas est, ita terra cor firmamenti est.[275]	6. As the heart of a father has both strength and power, so too earth is the heart of the firmament.
7. Anima ignea est, et cerebrum ingenio et sensualitate[276] calefacit; et quod ibi intelligit, in corde cogitando et dictando cum rationalitate disponit et ibi maiorem vim quasi in sede sua habet; et deinde ea que in corde dictat, cum brachiis velut alis [277] cum pennis volat. Nam ut ignis de loco ubi iacet sursum ascendit et aerem	7. *(poet.)* The soul is fiery, and provides in the brain both the capacity for intelligence and the warmth of troublesome [vexing] sensuality; and so what is understood there in that place is pondered [reflected upon] in the heart and considered with rationality; and in that distinguished place of power and might, it is as

[275] Cf. *Causae et Curae, Liber I, De firmamenti consonantiis* (Moulinier, 2003, pp. 33): *Nam firmamenturn est velut capud hominis, sol, luna et stelle ut oculi, aer ut auditus, venti velud odoratus, ros ut gustus, latera mundi ut brachia et ut tactus. Et alie creature, que sunt in mundo, sunt ut venter, terra autem ut cor, quia, quemadmodum cor superiora et inferiora corporis continet* ("For the firmament is like the head of a human being with the sun, moon and stars as eyes; as for the body, the air as the hearing sense, the winds odours, the dew taste, the two sides of the world as arms and as touch. And all other creatures that exist in the world are as the varied organs of the belly; but earth is like the heart, to the extent that the heart sustains both the upper and lower parts of the body").

[276] The word *sensualitate* is in the 3rd declension feminine and occurs in Medieval manuscripts from the 11th to the 15th centuries with its meaning strictly as human sensuality through sense perception. Source: Roy J. Deferrari, *Dictionary of St. Thomas Aquinas*, 1960.

[277] The *Berlin Fragment* MS has the word *ales,* referring to a large raptor such as the eagle (*regis ales*) or more appropriate to Hildegard, a large-winged deity which destroys monsters of evil. Both Schipperges (1956; pp. 58 line 367) and Hildebrandt & Gloning (2010; note 8, pp. 419) corrected the copyist as if this were an error, substituting the word *alis* in its place which is an older form of the word *alius* meaning "another". An absurdity arises if *alis* is translated literally, meaning "garlic". Perhaps the latter authors carried over Schipperges' error which creates an untranslatable phrase in these critical editions. The best evidence of the correctness of *ales* is the spectacular illumination in the Lucca Codex of the *Liber Divinorum Operum* of Hildegard's Vision 1, the Theophany of Divine Love. See Nathaniel Campbell (2018; pp. 33): "At the tip of the arc where the right wing curves back, I saw as if the head of an eagle that had eyes of fire, in which appeared the brilliance of the angels as in a mirror. Furthermore, from each shoulder of this image, a single wing stretched forth down to her knees."

[286] In a very poetic and passionate metaphor, earth is the vessel which holds all animate living things without which vessel there can be no life (macrocosm); the human body by virtue of the closing simile is the *tabernaculum* or dwelling place, of the human soul, taking its place in the dusty clay of the earth which is the human body (microcosm). No earth, no life; no corporeal body, no life of the soul.

superius calefacit, sic anima ad cerebrum, quod frigidum est, ascendit et intellectu perfundit.

if one is in her own habitation, composing and considering things; and when the heart speaks, she feels as a winged god, her arms feathered as if she had wings to fly. In another way, as the fire of passion ascends from the place of the woman's vulva [female genitals], ascending with excitement ever higher, so the breath of life ascends to the mind, which is lifeless and indifferent, and bathes the intellect with calm discernment.

8. Cor fundamentum vite est et tabernaculum sciencie boni et mali; et sicut fundamentum inmobile est, ita cor in sinistra positum est, que non operatur, sed operando adiutrix est dextre et sinistra portat dextra vero circuit.[278] In aquilone malum exortum est, et ideo aquilo in sinistra throni est et inde vita vigil effecta est; et vita dextra est, sinistra malum; unde quasi gravis iactura lapidis non movetur velut sinistra. Dextra studiose operatur, quia malum cognoscit in sinistra, sinistra malum habet, quod dextra ad operandum provocat, ut cor dextram.[279]

8. The heart is the basis and foundation of life and the hidden tabernacle of the knowledge of good and evil; and as any foundation is immovable, and so the heart is situated on the unfavourable left side where it cannot perform proper service on its own; however, it is [as] a devoted feminine attendent, skillfully and inauspiciously carrying both the right and left [of the body] while the right completes its work.[287] Evil comes into the world through the northern winds, and so for this reason the northern region is situated to the left of the throne which [acts as] a sentinel; vigilant and watchful of life on its right and punishing evil to its left; as if it were a great and heavy stone unmovable on its left. The right-hand side devotes itself to its affairs assiduously, for it knows that evil is on its left; the left can only consider evil. The right-hand side [of the body] is challenged to come forth to toil in service, as the heart does.

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[278] The noun *adiutrix* occurs only once in all of Hildegard's oeuvre, and it is here in this sententium of the Fragment. Literally, a female assistant or helper at liturgical services in the ecclesiastical sense but in the vernacular Latin of the time it would have been a very unsavoury description for a woman, or about a woman's role in that 'assistance. Given her personal correspondence - in the mid-1140s CE - with Bernard of Clairveaux, there is another path by which this word could have entered Hildegard's lexicon but with a novel spelling and perhaps through what Dronke claimed was "exuberant sacred composition [which] could assimilate and transmute even erotoc motifs that in their daring went beyond the love-language of the Song of Songs."; cf. Note 4, pp. 113 in P. Dronke (1991) of *Virgines Caste* in *Latin and Vernacular Poets of the Middle Ages* where he writes: It is worth noting that St. Bernard uses the expressions *assistere* and (somewhat disdainfully) *addextrare* together, of those who accompany the bnide in the Song of Songs: *Non omnes sunt amici sponsi, quos hodie sponsae hinc inde assistere cernis, et qui, ut vulgo aiunt, eam quasi addextrare videntur* (P. Migne, *Patrilinea Latina* t. 583, col. *ii).*

[279] In translation, the words *operatur* and *operandum* could be construed as in the ecclesiastical Latin context of "devotion to religious service", or "in religious service"; not simply "works".

[287] Describing the heart as akin to a female assistant which can "carry the workload" of both sides of the body is a perceptive statement. Hildegard – who is always pictured in illumination miniatures as right-handed – would have likely adopted the view that the left side is prone to evil and that the right side is virtuous. It may have been troubling to her that the heart is physically situated on the left side of the human body; therefore, is in need of the "feminine assistant" who is able to conduct the work of the entire body. The next sententium more clearly posits the left as the source of evil with particular reference to the north winds as that source.

Fundamentum fert domum velut sinistra cor et fundamentum inmobile est, domus illuminatur et homines continet; sic sinistra habet cor et non operatur, sed dextre ad operandum opera dat cor. Malum non operatur in utilitate et scientia est ita, quod vita malum cognoscens, opera iusta operatur.

Just as the foundation of the home is immovable and supports it; so the heart is like an immovable foundation and situated on the left. The home contains living human beings and is illuminated to keep its occupants safe from harm; in the same way, the heart is immovable on the left side [of the body] but dedicates itself to the service of just works. Evil, therefore, cannot perform any useful service to religion or have right knowledge; a life of evil is known by the works that it performs.

Appendix ‘D’ - Folios from the Copenhagen Codex of *Causae et Curae;*
Incipit *De duodecim signis et planetis*

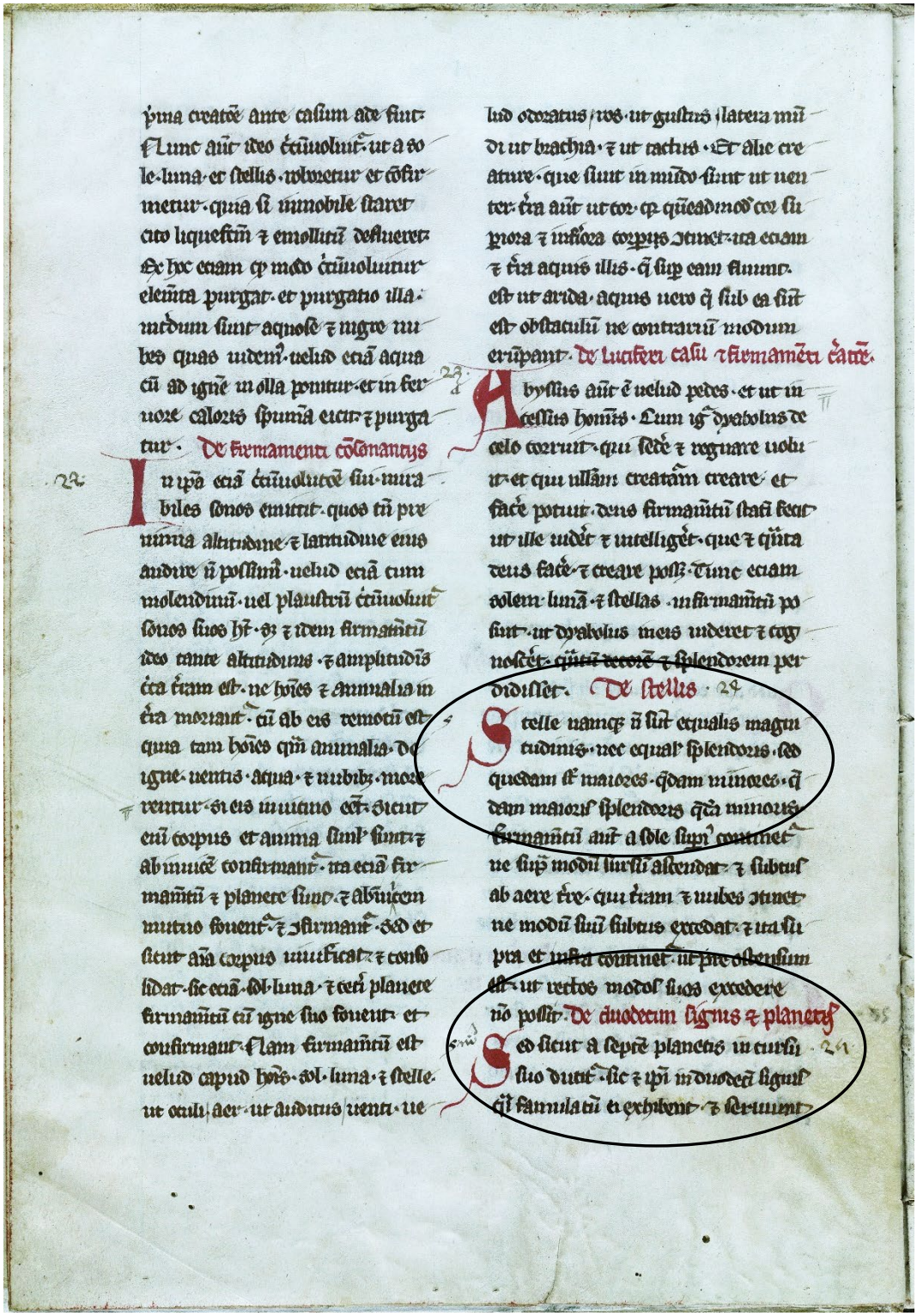

Plate 7:

Incipit and opening lines of “On the Stars” and “On the Twelve Signs and the Planets”, *Causae et Curae*_MS Kongelige Bibliotek Ny kgl. saml. 90b, fol. 4vb. Skt. Maximin Kloster, Trier

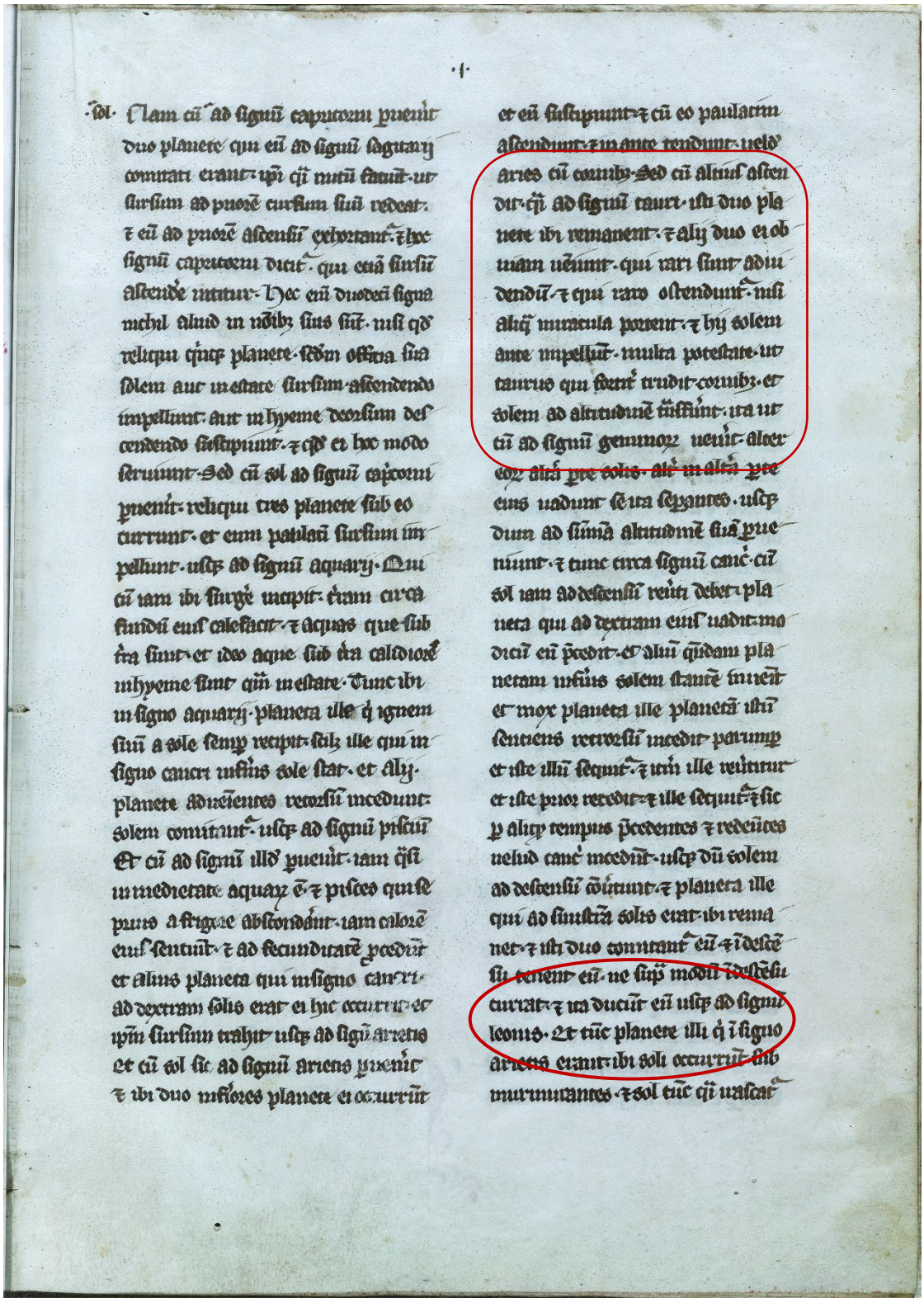

Plate 8

"The Twelve Signs and the Planets", *Causae et Curae*_MS Kongelige Bibliotek Ny kgl. saml. 90b, fol. 5r. Skt. Maximin Kloster, Trier. Oval is the text describing the sun entering Taurus and being 'confronted' by the 'two rare *planetae*' ('stars'). The folio ends with the sun 'venting its rage with thunder' as it enters Leo.

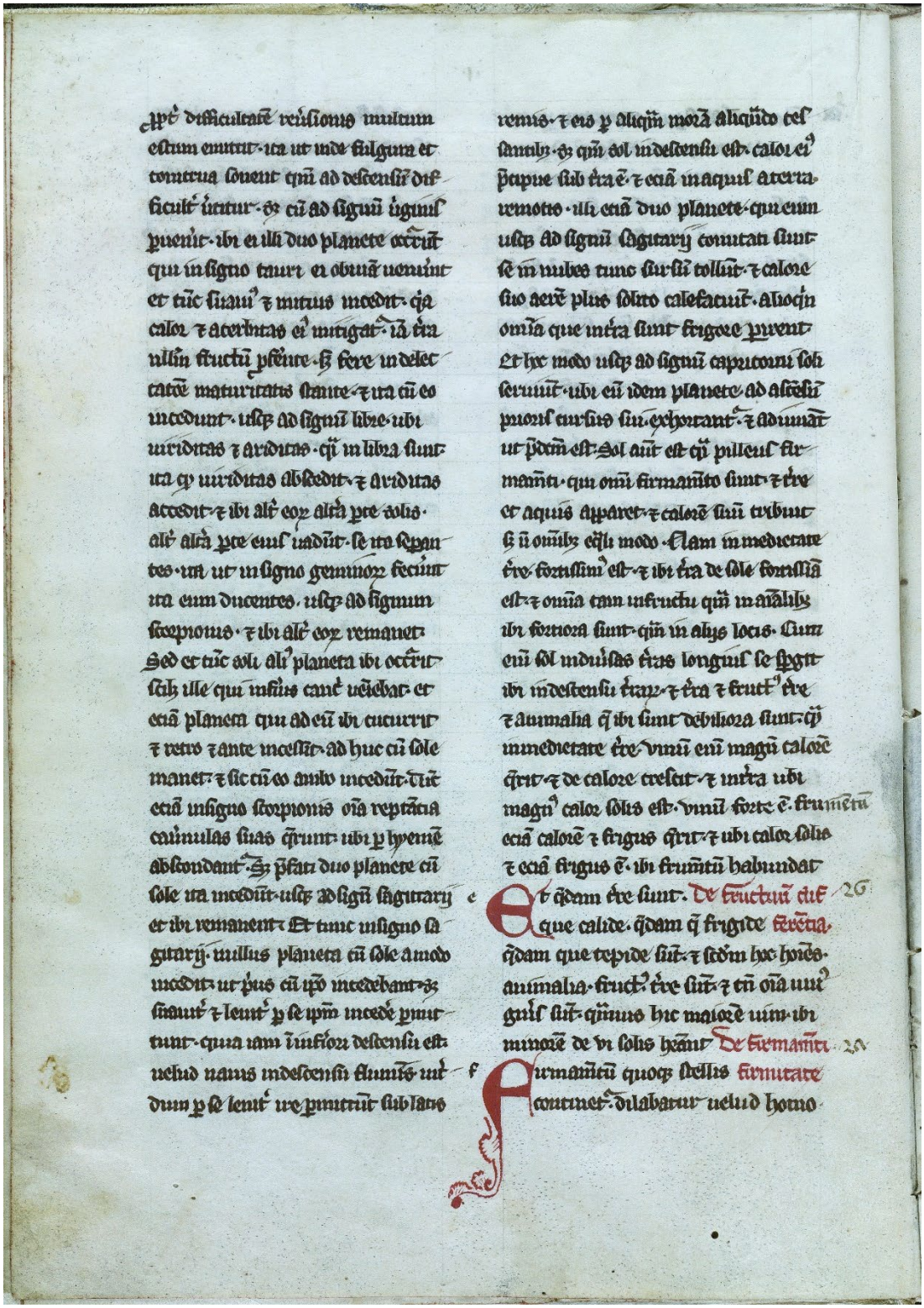

Plate 9

"The Twelve Signs and the Planets", *Causae et Curae*_MS Kongelige Bibliotek Ny kgl. saml. 90b, fol. 5v.
Skt. Maximin Kloster, Trier. The conclusion follows the sun in its path from Libra to Sagittarius/Capricornus.

BIBLIOGRAPHY

Manuscripts

Ambrosius Aurelius Theodosius Macrobius, *Commentarii in Somnium Scipionis* (Commentary on the Dream of Scipio), The Walters Art Museum Collection. Digital MS online at: https://art.thewalters.org/detail/28877/commentarii-in-somnium-scipionis-2/.

Beate Hildegardis, Causae et Curae de Mundi Creatione, (København, Det Kongelige Bibliotek, Ny royal collection. 90b.2°, ca. 1200 CE); Skt. Maximin Kloster, Trier). Digital MS online at: http://www5.kb.dk/manus/vmanus/2011/dec/ha/object61066/da/.

Hildegardis Bingensis, Codex Berolinensis, MS Lat. Qu. 674, folios 103ra-116ra. Sammelhandschrift mit Texten von und über Hildegard von Bingen: Thuringiae Revelationes (Fragmente), (Berlin, Staatsbibliothek Preussischer Kulturbesitz, 2014). Digital MS online at: https://digital.staatsbibliothek-berlin.de/werkansicht/?PPN=PPN654043922 .

Hildegardis Bingensis, *Liber Divinorum Operum,* (The Book of Divine Works). Lucca Codex 1492, (Biblioteca Statale di Lucca, Italy, (1210 to 1230 CE). Digital MS online at: https://www.loc.gov/item/2021668244/ .

Hillman, James*,"Heaven Retains within its Spheres Half of all Bodies and Maladies",* Address to the ISIS Institute, San Francisco, California on February 12, 1997. Archive Box Hillman 162A, Folder 02, Opus Archives and Research Center, Santa Barbara, CA, (unpublished, 1997).

Liber Nemroth (Book of Nimrod the Astronomer), Vatican Pal. lat. 1417 fol. 3r, (1100 – 1199 CE), Biblioteca Apostolica Vaticana, Universitats-Bibliothek Heidelberg. Digital MS online at https://doi.org/10.11588/diglit.13059#0007.

Très Riches Heures du duc de Berry, Chantilly, MS 65, fol. 14v, (1406-1426 CE), Bibliothèque et Archives du Château, https://portail.biblissima.fr/ark:/43093/mdata2ed44cf11cd47fa1dcf490d50af276190b628900 .

Primary Literature

Abū Ma'šar and Adelard of Bath, *The Abbreviation of the Introduction to Astrology: Together with the Medieval Latin Translation of Adelard of Bath*, ed. by Michio Yano Yamamoto and Charles Burnett, Islamic Philosophy, Theology and Science. Texts and Studies, vol. 15 (Brill, 2021).

Beate Hildegardis, Causæ et Curæ, Introduction and transcription by Paul Kaiser (Lipsiae: B.G. Teubneri, 1903).

Beate Hildegardis, *Cause et Cure*, Rarissima Mediaevalia Opera Latina Volumen I, ed. by Laurence Moulinier and Rainer Berndt SJ (Berlin: Germany: Akademie Verlag GmbH, 2003).

Benedictus PP. XVI, 'Apostolic Letter Proclaiming Saint Hildegard of Bingen, Professed nun of the Order of Saint Benedict, Doctor of the Universal Church'. https://www.vatican.va/content/benedict-xvi/en/apost_letters.index.html .

Cicero, *De natura deorum II,* trans. by H. Rackham (Loeb Classical Library, 1933).

Hildegard von Bingen, *Physica*, Edition der Florentiner Handschrift, Cod. Laur. Ashb. 1323 (ca. 1300), im Vergleich mit der Textkonstitution der *Patrologia Latina* (P. Migne), Herausgegeben von Irmgard Müller und Christian Schulze unter Mitarbeit von Sven Neumann (Georg Olms Verlag AG, Hildesheim, 2008).

_____, *Physica: Liber Subtilitatum diversarum naturarum creaturarum*, Text mit Berliner Fragment im Anhang, Textkritische Ausgabe, Volume 1, ed. by Reiner Hildebrandt and Thomas Gloning (Berlin – New York: De Gruyter, 2010).

_____, *Scivias*, Hart OSB, trans. by Mother Columba OSB and Jane Bishop, ed. by Bernard McGinn, Classics of Western Spirituality (Mahwah, NJ USA: Paulist Press: The Abbey of Regina Laudis: Benedictine Congregation Regina Laudis of the Strict Observance, Inc., 1990).

_____, *Symphonia, A Critical Edition of the "Symphonia Armonie Celestium Revelationum" [Symphony of the Harmony of Celestial Revelations],* trans. and ed. by Barbara Newman, (Cornell University Press, 1998).

Lucanus, Marcus Annaeus. *Pharsalia,* Edited with English Notes by C.E. Haskins, with an Introduction by W.E. Heitland, (London (UK): George Bell & Sons, 1887). <https://archive.org/details/pharsaliaeditedw00lucauoft> .

Macrobius, Ambrosius T., *Commentarii in Somnium Scipionis* (ca. 1150), in Catalogus codicum Latinorum mediiævi Bibliothecæ Regiæ Hafniensis. (Copenhagen 1926) <http://www5.kb.dk/permalink/2006/manus/33/> .

Pseudo-Bede, *De Mundi Celestis Terrestrisque Constitutione : A Treatise on the Universe and the Soul. Edition, Translation and Commentary,* Edition, translation and commentary, ed. by Charles Burnett, Warburg Institute Surveys and Texts 10th edn. (Warburg Institute, University of London, 1985).

Pseudo-Hieronymus, *The Cosmography of Aethicus Ister: Edition, Translation, and Commentary*, ed. and trans. by Michael W. Herren (Belgium: Brepols, 2011).

Ptolemaeus, Claudius (Ptolemy), *The Quadripartite Mathematical Treatise, or 'Tetrabiblos' of Claudius Ptolemy*. Introduction Book 1.I.1. trans. by F.E. Robbins, (Loeb Classical Library, 1940).

Schipperges, Heinrich, 'Ein unveröffentlichtes Hildegard Fragment, (Codex Berolin. Lat. Qu. 674)', *Sudhoffs Archiv für Geschichte der Medizin und der Naturwissenschaften,* 40(1) (1956), pp 41-77.

Secondary Literature

Ashley, Scott, 'What did Louis the Pious See in the Night Sky? A New Interpretation of the Astronomer's Account of Halley's Comet, 837 CE', *Early Medieval Europe,* 21 (2013), 27-49.

Blume, Dieter, '10. Picturing the Stars: Astrological Imagery in the Latin West, 1100–1550', in *A Companion to Astrology in the Renaissance* (Brill, 2014), 333-398.

Bober, Harry, 'The Zodiacal Miniature of the Tres Riches Heures of the Duke of Berry: Its Sources and Meaning', *Journal of the Warburg and Courtauld Institutes,* 11 (1948), 1-34.

Boitet, Christian, 'Automated Translation', *Revue Française De Linguistique Appliquée,* 8 (2003), 99-121. <https://www.cairn-int.info/revue-francaise-de-linguistique-appliquee-2003-2-page-99.htm>

Brady, Bernadette, *Cosmos, Chaosmos and Astrology: Rethinking the Nature of Astrology* (University of Wales Trinity Saint David: Ceredigion, Wales, UK.: Sophia Centre Press, 2014).

Brittain, F., *The Medieval Latin and Romance Lyric to A.D. 1300* (Cambridge, UK: Cambridge University Press, 1937).

Burnett, Charles, 'Hildegard of Bingen and the Science of the Stars', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), 111-120.

_____,'In Memoriam, Peter Dronke (30. V. 1934–19. IV. 2020)', *Mediterranea.International Journal on the Transfer of Knowledge,* 6 (2021), 157-161.

Burnett, Charles and Peter Dronke, *Hildegard of Bingen: The Context of Her Thought and Art,* Warburg Institute Colloquia 4, (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998).

Campion, Nicholas, *Astrology and Cosmology in the World's Religions* (NYU Press, 2012).

_____, *A History of Western Astrology Volume II: The Medieval and Modern Worlds* (London, UK: Bloomsbury Academic Publishing, 2009).

Campos Ribeiro, Luis, 'Jesuit Astrology: Prognostication and Science in Early Modern Culture', *Time, Astronomy, and Calendars,* (2023).

Carey, Hilary M., 'Astrology in the Middle Ages', *History Compass,* 8 (2010), 888-902.

Carey, Mark, 'Climate and History: A Critical Review of Historical Climatology and Climate Change Historiography', *Wiley Interdisciplinary Reviews: Climate Change,* 3 (2012), 233-249.

Caviness, Madeline H., 'Hildegard as Designer of the Illustrations in Her Works', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), 29-62.

Chenu, M., L'Homme et la Nature: Perspectives sur la Renaissance du XIIE Siècle', *Archives D'Histoire Doctrinale Et Littéraire Du Moyen Âge,* 19 (1952), 39-66, in *JSTOR* <http://www.jstor.org.uml.idm.oclc.org/stable/44403031>

Churaqui, Marielle, 'An Examination of James Hillman's Views on Astrology' (MA Dissertation, Institute of Education and Humanities, University of Wales Trinity Saint David, 2011).

Cirlot, Victoria, *Hildegard Von Bingen Y La Tradición Visionaria De Occidente*, 2nd edn (Barcelona: Spain: Herder Editorial, 2012).

Clark, Charles W., 'The Zodiac Man in Medieval Medical Astrology', *Quidditas,* 3 (1982), 13-39.

_____, *The Zodiac Man in Medieval Medical Astrology.* (University of Colorado at Boulder, 1979)

Clynes, Frances, (ed.), *Skylights: Essays in the History and Contemporary Culture of Astrology* (Ceredigion: Wales UK: Sophia Centre Press, 2022).

Dall'Olmo, Umberto, 'Latin Terminology Relating to Aurorae, Comets, Meteors and Novae', *Journal for the History of Astronomy,* 11 (1980), 10-27.

De Armas, Frederick A., 'Saturn in Conjunction: From Al-Bumasar to Lope De Vega', in *Saturn from Antiquity to the Renaissance*, ed. by Amilcare A. Iannucci and Massimo Ciavolella, 8 vols (Ottawa, Canada: Dovehouse Editions, 1992), 151-172.

de Grijs, Richard, 'Roger of Hereford: The Twelfth-Century Astronomer Who Put Hereford on the Map, Literally', *arXiv Preprint arXiv:2301.06610,* The Local Historian (Journal of the British Association for Local History], vol.53 no.2 (April 2023), pages 98-111 (2023).

Degering, Hermann, *Neue Erwerbungen der Handschriftenabteilung, II.* Die Schenkung Sir Max Waechters (1912) Mitteilungen aus der Königlichen Bibliothek Bd. III, herausgegeben von der Generalverwaltung (Berlin: Weidmannsche Buchhandlung 1917), 12-18.

Dekker, Elly, 'Carolingian Planetary Observations: The Case of the Leiden Planetary Configuration', *Journal for the History of Astronomy,* 39 (2008), 77-90.

_____'The Provenance of the Stars in the *Leiden Aratea* Picture Book', *Journal of the Warburg and Courtauld Institutes,* 73 (2010), 1-37. <https://www.jstor.org/stable/41418712>

Derolez, Albert, 'Manuscript Transmission of Hildegard's Writings', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), 17-28.

Doyle, Dennis, 'Vision Two of Hildegard of Bingen's Book of Divine Works: A Medieval Map for a Cosmic Journey', *Pacifica,* 20 (2007), 142-161.

Dronke, Peter, 'Further Lyrics by Hildegard of Bingen?', in *Sacred and Profane Thought in the Early Middle Ages* (SISMEL, Edizioni del Galluzzo, 2016), 121-137.

_____, 'The Four Elements in the Thought of Hildegard of Bingen: Cosmology and Poetry', in *Sacred and Profane Thought in the Early Middle Ages*, ed. by Peter Dronke (Firenze: Italy: SISMEL - Edizioni del Galluzo, 2016), pp. 139-154; reprinted from The Four Elements in the Thought of Hildegard of Bingen: Cosmology and Poetry', *Studi Medievali,* 54, (2013),

_____,'The Allegorical World-Picture of Hildegard of Bingen: Revaluations and New Problems', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter

Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), 1-16.

_____'Problemata Hildegardiana', in *Intellectuals and Poets in Medieval Europe*, ed. by Peter Dronke (Roma, IT: Edizioni di Storia e Letteratura, 1992), 143-191.

_____,*Latin and Vernacular Poets of the Middle Ages*, Variorum Collected Studies Series, Volume CS352 (Hampshire UK: Variorum, 1991).

_____*Poetic Individuality in the Middle Ages: New Departures in Poetry, 1000-1150*, Vol. 1 (Brepols Pub, 1986).

_____'The Fable of the Four Spheres', in *Fabula: Explorations into the Uses of Myth in Medieval Platonism*, ed. by Peter Dronke (Leiden, Netherlands: E.J. Brill, 1985a), 144-153.

_____'Fables of the Cosmic Egg', in *Fabula: Explorations into the Uses of Myth in Medieval Platonism*, ed. by Karl Langosch, (Leiden, Netherlands: E.J. Brill, 1985b), 79-99.

_____,'Bernard Silvestris, Natura, and Personification', *Journal of the Warburg and Courtauld Institutes,* 43 (1980), 16-31.

Eastwood, Bruce S., 'Origins and Contents of the Leiden Planetary Configuration (MS Voss. Q. 79, Fol. 93v): An Artistic Astronomical Schema of the Early Middle Ages', *Viator,* 14 (1983), 13-39.

_____, 'Carolingian Diagrams for Astronomy and Cosmology', in *Ordering the Heavens: Roman Astronomy and Cosmology in the Carolingian Renaissance, Medieval and Early Modern Science,* Vol. 8., ed. by Bruce S. Eastwood (Leiden, The Netherlands: Brill, 2007), 373-425.

_____,*The Revival of Planetary Astronomy in Carolingian and Post-Carolingian Europe* (Routledge, 2017).

Elliot, R. H., 'Migraine and Mysticism', *Postgraduate Medical Journal,* 8 (1932), 449-459.

Embach, Michael and Martina Wallner, *Conspectus Der Handschriften Hildegards Von Bingen* (Munster: Aschendorff Verlag GmbH & Co., 2013).

Evans, Richard J., *In Defence of History* (New York: W. J. Norton, 1997).

Fassler, Margot E., *Cosmos, Liturgy, and the Arts in the Twelfth Century: Hildegard's Illuminated "Scivias"*, The Middle Ages Series Ed. by Ruth Mazo Karras (Philadelphia: University of Pennsylvania Press, 2023).

_____ 'Images and Chants for a Digital Model of the Cosmos', *Journal of the Alamire Foundation,* 9 (2017), 161-178.

Ferreira, Ermelinda M. A., 'Migraine and Aura in the Genesis of Mystical Visions and Artistic Creation: The Case of Hildegard Von Bingen', *Headache Medicine,* 2 (2011), 25-32.

Foxhall, Katherine, 'Making Modern Migraine Medieval: Men of Science, Hildegard of Bingen and the Life of a Retrospective Diagnosis', *Medical History,* 58 (2014), 354-374.

Geller, Markham J., *Melothesia in Babylonia. Medicine, Magic, and Astrology in the Ancient Near East* (Munich, Germany: de Gruyter, 2014).

Glaser, Rüdiger and Dirk Riemann, 'A Thousand-year Record of Temperature Variations for Germany and Central Europe Based on Documentary Data', *Journal of Quaternary Science: Published for the Quaternary Research Association,* 24 (2009), 437-449.

Goosse, Hugues and others, 'The Origin of the European" Medieval Warm Period"', *Climate of the Past,* 2 (2006), 99-113.

Gössmann, Elizabeth, 'Ipsa Enim Quasi Domus Sapientiae: The Philosophical Anthropology of Hildegard Von Bingen', *Mystics Quarterly,* 13 (1987), 146-154.

Green, Stephen J. and Katerina Volk, eds., *Forgotten Stars: Rediscovering Manilius' Astronomica* (Sacramento, CA: 2013).

Green, Steven J. and Katharina Volk, 'Forgotten Stars: Rediscovering Manilius' Astronomica', *(No Title),* (2011).

Green, Steven J., Katharina Volk and Mark Riley, 'Forgotten Stars: Rediscovering Manilius' *Astronomica*', *Aestimatio: Sources and Studies in the History of Science,* 10 (2013), 166-174.

Greenbaum, Dorian G., 'Hellenistic Astronomy in Medicine', in *Hellenistic Astronomy*, ed. by Alan C. Bowen and Francesca Rochberg (Leiden, The Netherlands: Brill, 2020), 350-380. <https://doi.org/10.1163/9789004400566_034> .

_____, 'Astronomy, Astrology, and Medicine', in *Handbook of Archaeoastronomy and Ethnoastronomy*, ed. by Clive L. N. Ruggles (New York: NY: Springer Science and Business Media, 2015), 117-132.

Gunzburg, Darrelyn, 'Giotto's Sky: The Fresco Paintings of the First Floor Salone of the Palazzo Della Ragione, Padua, Italy.', *Journal for the Study of Religion, Nature & Culture,* 7 (2013).

Halley, Edmond, 'Astronomiæ Cometicæ Synopsis; Autore Edmundo Halleio Apud Oxonienses Geometriæ Professore Saviliano, & Reg. Soc.', *Philosophical Transactions of the Royal Society of London,* 24 (1705), 1882-1899.

Halsted, Chris, '*Annales Sangallenses Maiores* (1056CE): Introduction, Translations, and Notes', *Leeds Medieval Studies,* 3 (2024), 25-57.

Hasegawa, Ichiro, 'Catalogue of Ancient and Naked-Eye Comets', *Vistas in Astronomy,* 24 (1980), 59-102.

_____, 'Orbits of Ancient and Medieval Comets', *Publications of the Astronomical Society of Japan,* 31 (1979), 257-270.

Haskins, Charles H., 'Nimrod the Astronomer', *The Romanic Review,* 5 (1914), 203-212.

_____, *Studies in the History of Mediaeval Science*, vol. 27 (Harvard University Press, 1927).

Hayton, Magda S. J., 'Inflections of Prophetic Vision: The Reshaping of Hildegard of Bingen's Apocalypticism as Represented by Abridgments of the Pentachronon' (University of Toronto (Canada), 2015).

Herren, Luc, 'QuotationFinder-Searching for Quotations and Allusions in Greek and Latin Texts and Establishing the Degree to which a Quotation or Allusion Matches its Source', *Journal of Data Mining & Digital Humanities,* (2017), 1-12.

Herren, Michael W. (ed.), *The Cosmography of Aethicus Ister: Edition, Translation, and Commentary*, (Belgium: Brepols, 2011).

_____, 'The "Greek Element" in the "Cosmographia" of Aethicus Ister', *The Journal of Medieval Latin,* 11 (2001), 184-200*,* in *JSTOR* <http://www.jstor.org.uml.idm.oclc.org/stable/45019530> .

Ho Peng Yoke (Ho Ping-Yü), 'Ancient and Mediaeval Observations of Comets and Novae in Chinese Sources', *Vistas in Astronomy,* 5 (1962), 127-225. <https://www.sciencedirect.com/science/article/pii/0083665662900077>

Jasanoff, Sheila, 'A New Climate for Society', *Theory, Culture & Society,* 27 (2010), 233-253. <https://journals.sagepub.com/doi/pdf/10.1177/0263276409361497>

Juste, David, 'On the Date of the "Liber Nemroth"', *Journal of the Warburg and Courtauld Institutes,* 67 (2004a), 255-258*,* in *JSTOR* <http://www.jstor.org.uml.idm.oclc.org/stable/40026032>

_____'On the Date of the Liber Nemroth', *Journal of the Warburg and Courtauld Institutes,* 67 (2004b), 255-258*,* in *CrossRef* <https://www.jstor.org/stable/40026032>.

Juste, David and others, *Ptolemy's Science of the Stars in the Middle Ages*, Vol. 1 (Leiden, The Netherlands: Brepols Publishers, 2020) <https://doi.org/10.1484/M.PALS-EB.5.120189>

Kiang, T., 'The Past Orbit of Halley's Comet', *Memoirs of the Royal Astronomical Society,* 76 (1972), 27 <https://ui.adsabs.harvard.edu/abs/1972MmRAS..76...27K>.

Kronk, Gary W., *Cometography: A Catalog of Comets, Volume 1: Ancient-1799 CE* (Cambridge U.K.: Cambridge University Press, 1999).

Lapidge, Michael, 'Lucan's Imagery of Cosmic Dissolution', *Hermes - Zeitschrift Für Klassische Philologie Wiesbaden,* 107 (1979), 344-370 <http://www.jstor.org/stable/4476123>

Lee, Ki-Won, Byeong-Hee Mihn and Young Sook Ahn, 'Korean Historical Records on Halley's Comet Revisited', *Journal of Astronomy and Space Sciences,* 31 (2014), 215.

Liebeschütz, Hans, *Das Allegorische Weltbild Der Heiligen Hildegard Von Bingen*, 2nd edn (Wissenschaft Buchgesellschaft, 1964).

Livesey, Steven J. and Richard H. Rouse, 'Nimrod the Astronomer', *Traditio,* 37 (1981), 203-266*, JSTOR* <http://www.jstor.org.uml.idm.oclc.org/stable/27831093>.

Maddocks, Fiona, *Hildegard of Bingen: The Woman of Her Age* (Faber & Faber, 2013).

McCluskey, Stephen C., 'Cultural Interpretation of Historical Evidence Relating to Astronomy', in *Handbook of Archaeoastronomy and Ethnoastronomy*, ed. by Clive L. N. Ruggles (2015), 325-339.

Mews, Constant J., 'Hildegard and the Schools', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke(London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), 89-110.

Mitchell, Christopher, 'Signs from Heaven or a Dark Art? How the Church Embraced Arabic Astrology and Introduced it into the Christian West', in *Skylights: Essays in the History and Contemporary Culture of Astrology*, ed. by Frances Clynes (Ceredigion: Wales UK: Sophia Centre Press, 2022), 45-58.

Mitchell, Christopher J., 'Roger of Hereford's Judicial Astrology: England's First Astrology Book?' (PhD, University of Leicester, 2020). <https://leicester.figshare.com/articles/thesis/Roger_of_Hereford_s_Judicial_Astrology_England_s_First_Astrology_Book_/11793636>

Moreton, Jennifer, 'Before Grosseteste: Roger of Hereford and Calendar Reform in Eleventh-and Twelfth - Century England', *Isis,* 86 (1995), 562-586.

Moser, Thomas C., *A Cosmos of Desire: The Medieval Latin Erotic Lyric in English Manuscripts* (Ann Arbor: University of Michigan Press, 2004).

Mosley, Adam, 'The History and Historiography of Early Modern Comets', in *Christoph Rothmann's Discourse on the Comet of 1585* (Brill, 2014), 282-325.

Mostert, Richard and Marco Mostert, 'Using Astronomy as an Aid to Dating Manuscripts the Example of the Leiden Aratea Planetarium', *Quaerendo,* 20 (1990), 248-261.

Moulinier, Laurence, 'Et Papa Libros Ejus Canonizavit. Réflexions Sur L'Orthodoxie Des Écrits De Hildegarde De Bingen', *Et Papa Libros Ejus Canonizavit.Réflexions Sur L'Orthodoxie Des Écrits De Hildegarde De Bingen,* (2000a), 1000-1022.

_____'Et Papa Libros Ejus Canonizavit. Réflexions Sur L'Orthodoxie Des Écrits De Hildegarde De Bingen', *Et Papa Libros Ejus Canonizavit.Réflexions Sur L'Orthodoxie Des Écrits De Hildegarde De Bingen,* (2000b), 1000-1022 <https://shs.hal.science/halshs-00078059/document>

_____*'Hildegarde ou Pseudo-Hildegarde? Réflexions sur L'Authenticité du Traité" Cause Et Cure"',* in Angesicht Gottes Suche Der Mensch Sich Selbst". Hildegard Von Bingen (1098-1179), (Berlin, Akademie Verlag, 1998).

_____*Le Manuscrit Perdu À Strasbourg: Enquête Sur L'Oeuvre Scientifique De Hildegarde*, 35 vols (Publications de la Sorbonne, 1995).

N.F.P., 'Editions of Texts: Hildegard Von Bingen: Physica. Liber Subtilitatum Diversarum Naturarum Creaturarum. Textkritische Ausgabe', *Medium Aevum: Society for the Study of Medieval Languages and Literature,* 1 (2011), 164-165. <https://www.jstor.org/stable/43632504>

Newman, Barbara, *God and the Goddesses: Vision, Poetry, and Belief in the Middle Ages* (Philadelphia: University of Pennsylvania Press, 2003).

_____'A Poor Little Female', in *Sister of Wisdom* (University of California Press, 1998a), pp. 1-41.

____'Three-Part Invention: The Vita S. Hildegardis and Mystical Hagiography', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998b), 189-210.

_____*Voice of the Living Light: Hildegard of Bingen and Her World* (Univ of California Press, 1998c).

Obermeier, Anita and Rebecca Kennison, 'The Privileging of Visio Over Vox in the Mystical Experiences of Hildegard of Bingen and Joan of Arc', *Mystics Quarterly,* 23 (1997),137-167.

Obrist, Barbara, 'Twelfth-Century Cosmography, the De Secretis Philosophie, and Māshā'Allāh (Attr. to), Liber De Orbe', *Traditio,* 67 (2012a), 235-276 <https://www.jstor.org/stable/24712365>

____'Visual Representation and Science: Visual Figures of the Universe between Antiquity and the Early Thirteenth Century', *Spontaneous Generations: A Journal for the History and Philosophy of Science,* 6 (2012b), 15-23.

____'William of Conches, Māshā'Allāh, and Twelfth-Century Cosmology', *Archives D'Histoire Doctrinale Et Littéraire Du Moyen Age,* 76 (2009a), 29-87*,* in *JSTOR* <http://www.jstor.org.uml.idm.oclc.org/stable/44514683>

____'William of Conches, Māshā'Allāh, and Twelfth-Century Cosmology', *Archives D'Histoire Doctrinale Et Littéraire Du Moyen Age,* 76 (2009b), 29-87*,* in *JSTOR* <http://www.jstor.org.uml.idm.oclc.org/stable/44514683>

____'Wind Diagrams and Medieval Cosmology', *Speculum,* 72 (1997), 33-84 <https://www.jstor.org/stable/2865863>

Peng-Yoke, Ho, 'Ancient Chinese Astronomical Records and their Modern Applications', *Physics Bulletin,* 21 (1970), 260. <https://iopscience.iop.org/article/10.1088/0031-9112/21/6/018/pdf>

Peng-Yoke, Ho and Ang Tian-Se, 'Chinese Astronomical Records on Comets and 'Guest Stars' in the Official Histories of Ming and Ch'Ing and Other Supplementary Sources', *Oriens Extremus,* 17 (1970), 63-99.

Pereira, Michela, 'The Fullness of Creation. Incarnation and Humanity in the *Liber Divinorum Operum*', in *Hildegard Von Bingen: In the Heart of God; Liber Divinorum Operum, the Lucca Miniatures*, ed. by Sara Salvadori (Milano: IT: SKIRA Editore S.p.A., 2023), pp. 9-13.

Pfeffer, Michelle, 'Reassessing the Marginalization of Astrology in the Early Modern World', *The Historical Journal,* (2023), 1-25.

Ramirez-Weaver, Eric, '"So that You can Understand this Better": Art, Science, and Cosmology for Courtiers in William of Conches' *Dragmaticon Philosophiae*', in *Diagramm Und Text: Diagrammatische Strukturen Und Die Dynamisierung Von Wissen Und Erfahrung*, ed. by Eckart Conrad Lutz, Vera Jerjen and Christine Putzo (Weisbaden: Germany: Reichert Verlag, 2014), 319-348.

Ramírez-Weaver, Eric M., 'William of Conches, Philosophical Continuous Narration, and the Limited Worlds of Medieval Diagrams', *Studies in Iconography,* 30 (2009), 1-41.

Ribeiro, Luís, (ed.), *Jesuit Astrology: Prognostication and Science in Early Modern Culture* (Brill, 2023).

Ribeiro, Luís C., 'Early Modern Astrology: An Overview', in *Jesuit Astrology: Prognostication and Science in Early Modern Culture*, Series: 'Time, Astronomy, and Calendars, ed. by Dáibhí Ó Cróinín, Benno van Dalen, Gad Freudenthal, Tony Grafton, Leofranc Holford-Strevens, Bernard R. Goldstein, Alexander Jones, Daryn Lehoux, Jörg Rüpke, Julio Samsó, John Steele (Brill, 2023), pp. 9-21. <https://brill.com/display/title/65079>.

Rodriguez-Arribas, Josefina, 'Science in Poetic Contexts: Astronomy and Astrology in the Hebrew Poetry of Sepharad', *Miscelanea De Estudios Arabes Y Hebraicos Seccion Hebreo,* 59 (2010), 167-202.

Ronca, Italo, 'A New Critical Edition of the Dragmaticon Philosophiae of William of Conches', *Akroterion,* 22 (1977), 27-29.

Ruggles, Clive L. N., ed., *Handbook of Archaeoastronomy and Ethnoastronomy*, (New York: Springer, 2015) <https://link.springer.com/referencework/10.1007/978-1-4614-6141-8>

Salvadori, Sara, *Ildegarda di Bingen nel Cuore di Dio: Liber Divinorum Operum le Miniature di Lucca* (Milano: IT: SKIRA Editore S.p.A., 2022).

Santos Paz, José Carlos, 'Dal progetto all'immagine: il Frammento di Berlino e le illustrazioni del Liber Divinorum Operum', in *Ildegarda di Bingen, nel Cuore di Dio: Liber Divinorum Operum* le miniature di Lucca, ed. by Sara Salvadori (Milano: IT: SKIRA Editore S.p.A., 2022), 137-140.

_____, 'El Fragmento de Berlin Atribuido a Hildegarde de Bingen y la Actividad del Scriptorium de Rupertsberg', *Anuario De Estudios Medievales,* 52, julio-diciembre (2022), 857-886.

_____, 'Aspetti della Ricezione dell'Opera di Ildegarda nel Duecento', in *Hildegard of Bingen: The Context of Her Thought and Art*, ed. by Charles Burnett and Peter Dronke (London, UK: The Warburg Institute, University of London, School of Advanced Study, 1998), 211-223.

Schipperges, Heinrich, *Hildegard of Bingen: Healing and the Nature of the Cosmos,* trans. by John A. Broadwin (Princeton, NJ: Markus Wiener, 1997).

Schräder, Marianna and Adelgundis Fürkhötter, *Die Echtheit Des Schrifttums Der Heiligen Hildegard Von Bingen: Quellenkritische Untersuchungen* (Cologne: Bö.hlau, 1956).

Seargent, David A. J., 'The Greatest Comets from A.D. 1000 to 1800', in *The Greatest Comets in History: Broom Stars and Celestial Scimitars*, ed. by David A. J. Seargent (New York: Springer New York, 2009a), pp. 91-124 <https://doi.org/10.1007/978-0-387-09513-4_4>.

_____*The Greatest Comets in History - Broom Stars and Celestial Scimitars*, Astronomers' Universe (New York, NY: Springer New York, 2009b) <https://doi.org/10.1007/978-0-387-09513-4_4>

_____'The Nature of Comets', in *The Greatest Comets in History: Broom Stars and Celestial Scimitars*, ed. by David A. J. Seargent(New York, NY: Springer New York, 2009c), pp. 1- 30 <https://doi.org/10.1007/978-0-387-09513-4_4>.

Singer, Charles, 'The Visions of Hildegard of Bingen', *The Yale Journal of Biology and Medicine,* 78 (1928), 57-114.

Spiegel, Gabrielle M., 'History, Historicism, and the Social Logic of the Text in the Middle Ages', *Speculum,* 65 (1990), 59-86, in *JSTOR* <http://www.jstor.org.uml.idm.oclc.org/stable/2864472>

Stephenson, F. R. and Kevin K. C. Yau, 'Far Eastern Observations of Halley's Comet: 240 BC to AD 1368.', *Journal of the British Interplanetary Society,* 38 (1985), 195-216.

Sweet, Victoria, 'Body as Plant, Doctor as Gardener: Premodern Medicine in Hildegard of Bingen's "Causes and Cures"' (Ph.D., University of California, San Francisco, 2003).

_____'Hildegard of Bingen and the Greening of Medieval Medicine', *Bulletin of the History of Medicine,* 73 (1999), 381-403.

Volk, Katharina, *Manilius and His Intellectual Background* (New York: NY: Oxford University Press, 2009).

Wallis, Faith, 'What a Medieval Diagram Shows: A Case Study of" Computus"', *Studies in Iconography,* 36 (2015), 1-40.

Williams, John, *Observations of Comets: From 611 BC to AD 1640: Extracted from the Chinese Annals* (London UK: Strangeways and Walden; Leicester Square, 1871). <https://ia800202.us.archive.org/22/items/observationsofco00willrich/observationsofco00willrich.pdf>.

Witt, Reginald E., 'Plotinus and Posidonius', *The Classical Quarterly,* 24 (1930), 198-207 <https://www.jstor.org/stable/637134>.

Woods, Angela and others, 'Interdisciplinary Approaches to the Phenomenology of Auditory Verbal Hallucinations', *Schizophrenia Bulletin,* 40 (2014), S246-S254.

Yamamoto, Keiji and Charles Burnett, *Abū Maʿšar on Historical Astrology: The Book of Religions and Dynasties (on the Great Conjunctions): Volume II: The Latin Versions: Albumas* (Leiden, The Netherlands: Brill, 2022).

Yeomans, Donald K. and Tao Kiang, 'The Long-Term Motion of Comet Halley', *Monthly Notices of the Royal Astronomical Society,* 197 (1981), 633-646.

Zatschek, H., *Mainzer Urkundenbuch, I. Band, Die Urkunden Bis Zum Tode Erbischof Adalberts I.(1137) Bearb. Von Manfred Stimming* , 49 vols (Wagnersche Universitätsbuchhandlung, 1935).

Explicitur iste liber, scriptor sit crimine liber. Amen…dicant omnia.