

3 Carolingian Consensus

In 1942, while German armies fought a multifront war, the keepers of the relics of Ewald the Dark and Ewald the Fair—two Northumbrian priests killed during the Saxon missions of the seventh century—removed the remains of the martyrs from their shrine in the church of St. Kunibert in Cologne. The cloth in which the bones had been wrapped for centuries was unfurled to its full length of over three meters, revealing its tripartite construction: a central piece of blue linen with two roughly square pieces of green silk stitched to either end, all three sections embroidered in colored silks of various hues ([fig. 31](#)).¹ If the cloth were laid flat, the eye would first be drawn to the labyrinthine pattern that covers most of the central piece. However, the orientation of the decoration on the two smaller pieces suggests that they were meant to hang as pendants to either side of a flat surface. For this reason, the piece has plausibly been described in the scholarly literature as an altar cloth, although any function prior to its interment with the Ewaldi must remain hypothetical.

The first pendant is anchored by a central medallion within which two affronted half-circles enclose standing figures bearing torches ([fig. 32](#)). The figure at left wears a radiate crown, and the head of the figure at right is framed by a crescent moon: Sol and Luna. Four chains connect the central medallion to the corners of the rectangular frame, dividing the surrounding field into four quadrants in which twelve smaller medallions appear, each tied to the central medallion by a radiating thread. In the lower quadrant we find, from left to right, a figure holding a pair of scales, an eight-legged creature with a stinger on its tail, and an archer with drawn bow: Libra, Scorpio, and Sagittarius. Together, the twelve medallions form a ring of the zodiac encircling the sun and the moon.

The second pendant ([fig. 33](#)) displays a similar, but more crowded, composition. The central figure is seated and is identified by a titulus as *annus* (the year). In his hands he holds two heads accompanied by the labels *dies* and *nox* (day and night), and he is bracketed by two pairs of fiery wheels. This composition is inscribed within two concentric circles. The inner circle contains eight bust-length figures in medallions, which are accompanied by the names of the four elements and the four seasons. The outer ring contains twelve medallions with the signs of the zodiac, unlabeled. In the upper corners of the rectangular frame appear the Greek letters alpha and omega, each crowned by a small cross, while the lower corners contain personifications of ocean and earth.²



FIGURE 31

Cloth of the Ewaldi. Central Europe, before 1000. Silk embroidery on silk and linen, 310 × 83 cm. Cologne, Pfarrkirche St. Kunibert.

The zodiac is the only iconographic element shared by both pendants, and on both its constituent constellations are unlabeled. Viewers were evidently expected to recognize them.³ The cloth of the Ewaldi, moreover, literally demands to be viewed, through the inscription that frames the second pendant. Executed in elaborate capitals, similar to those on the outer edge of the Star Mantle of Henry II, the inscription begins at upper left and runs clockwise around the rectangular frame: “populus qui conspicit omnis arte laboratu[m],” the entire people, which looks upon that which is produced by art.⁴

Both subject (*populus omnis*) and object (*arte laboratum*) demand further consideration. If the cloth originally adorned an altar, then the “entire people” can be understood as the community of the church, that same redeemed flock that was evoked in the inscriptions of St. Peter’s in Rome. “That which is produced by art” carries a potent double meaning. The primary connotation is the ordered universe, shaped by the divine art of its creator. But a secondary connotation must be the cloth itself, whose pendants distill that divine order into elegantly symmetrical, circular diagrams through a combination of scientific knowledge and embroiderer’s art.⁵ The cloth of the Ewaldi exemplifies what Gottfried Semper described as the “cosmogonic” function of art: “We make for ourselves a tiny world in which the cosmic law is evident within the strictest limits, yet complete in itself and perfect in this respect.”⁶

Of equal interest is the relationship between the two terms “populus omnis” and “arte laboratum.” The phrase is oddly structured. Without the “qui” it would easily resolve as a statement of fact (“the entire people looks upon that which is produced by art”), but the introduction of the relative pronoun renders it incomplete. We might punctuate the phrase by ending with an ellipsis, as if some further statement about the people had been omitted, or with a colon, as if the inscription labeled the composition that it enframes as an image of the people. In both versions, the image of the cosmos constitutes the *populus*, either as the object of its collective gaze or as its reflection.



FIGURE 32
Cloth of the Ewaldi (detail).



FIGURE 33
Cloth of the Ewaldi (detail).

Commentators are divided between a late Carolingian date for the cloth of the Ewaldi, which would set it close to the Cathedra Petri, and a late tenth-century date, which would set it close to the star mantle. However, we can extract from its decoration a relative date, or a set of conditions that must have obtained when it was made. To begin, such objections to Christian use of the “pagan” constellations as

Gregory of Tours had expressed must have been forgotten or overcome for such an object to find a place in a reliquary or on an altar. Furthermore, the signs of the zodiac must have been familiar enough to function without labels, even while other personifications (the elements, the seasons, day and night) still required tituli. The notion of an image of the cosmos that constitutes a people, evoked by the inscription, requires a public for whom that image forms part of a shared visual culture.

The cloth of the Ewaldi therefore addresses its viewers in a different mode from the objects examined in the previous chapter. While the star mantle and the silver table gained significance through transactions, the cloth proposes a more immediate confrontation between a corporate viewer and a static image. Instead of structuring an asymmetrical relationship—like that between the commissioner and recipient of a gift, the author of a will and its executor, or a princely patron and his clients—the cloth conjures an *omnis populus*, a people united in the act of viewing.

Indeed, the zodiac enjoyed a long career as a public good in medieval Europe. By the twelfth century, it had become a familiar component of the sculptural decoration of church portals.⁷ Similar conditions of familiarity and public display are satisfied by the monuments of the high medieval Islamic world. For example, in the twelfth century the signs of the zodiac, paired with figures of the planets in a set of eight “exaltations,” formed a fitting decoration for a bridge across the Tigris built by the emir of Mosul.⁸

Thus in both contexts the image of the cosmos returned in the high Middle Ages to the monumental ubiquity that it had known in Roman antiquity.

In both Europe and the Islamic world, the wide distribution of images of the constellations in illuminated manuscripts underpinned their familiarity for an elite public. In this chapter we will be concerned with the first proliferation of astronomical images (rings of the zodiac, cycles of constellation images, and celestial maps) in European manuscripts. Already from the ninth century we can count well over twenty preserved manuscripts containing such images.⁹ The strongest correlate to this phenomenon in the Islamic world is the later popularity of the *Book of the Fixed Stars* by the scholar Abd al- Rahman al- Sufi (d. 986), which contained descriptions of the constellations accompanied by their images “as seen in the sky” and “as seen on the globe.”¹⁰ Over seventy manuscript copies of al- Sufi’s treatise survive.¹¹ The abundance of cosmic images in the European and Islamic Middle Ages is all the more striking when set alongside their scarcity in Byzantium. As we shall see in the next chapter, although there was robust elite interest in astronomy, very few illuminated Byzantine astronomical manuscripts survive.

The success of this “pagan” imagery in medieval Europe is conventionally understood as a triumph of court culture over monkish intransigence, even though the earliest preserved manuscripts with astronomical images were produced in monasteries.¹² In fact, the refinement and distribution of images of the cosmos was a collaborative project that engaged multiple elements of Frankish society: courtly, episcopal, and monastic. Dissemination of astronomical images was one of several means through which a shared identity was forged among the geographically, linguistically, and culturally disparate elites of the Frankish state. Through collaboration and distribution, images of the constellations became an element of the shared visual culture of learned, or even moderately well-educated, Europeans.

The following sections are devoted to four clusters of manuscripts, all of which date to between 800 and 820 or depend on prototypes from that period. The manuscripts in each cluster share certain characteristics, such as the milieu in which they were produced, their size, and the texts and images that they contain. Interpretation of these characteristics is guided by Arno Borst’s monumental studies of the development of the *computus* (the study of the reckoning of time) in the Frankish state. For Borst, the early Carolingian period was marked by an increase in the physical size of computistical manuscripts and a shift in their content, from a preference for the antiquarian works of Isidore of Seville (ca. 568–636) to the more systematic computistical treatises of the Venerable Bede (ca. 673–735).¹³

The first cluster unites two small handbooks produced in monastic scriptoria that contain extracts from the works of Isidore and his followers. Astronomical imagery in these manuscripts is limited to a simple wheel of the zodiac. They do, however, share a number of diagrams with the second cluster of manuscripts, of which the most important representative was produced at the episcopal scriptorium in

Cologne in 805. Manuscripts of the second cluster also include the texts of Isidore, but placed alongside works by Bede. They are further distinguished by cycles of constellation images that accompany texts derived from the poem of the Hellenistic scholar Aratus.

The third cluster consists of four copies of a primarily computistical anthology that is often called the “Aachen Encyclopedia.” Each manuscript contains an identical selection of texts, within which the works of Bede predominate, and very similar sets of figures, including an Aratean cycle. In the fourth cluster, we encounter two copies of a revised and expanded version of the Aachen Encyclopedia, both of which were produced in Bavaria around 818. These two manuscripts introduce several innovations, including a map of the fixed stars that allowed the individual constellations depicted within the Aratean cycle to be viewed in their spatial relationships to each other.

The manuscripts that make up all four clusters are practical volumes, mostly handbooks for the reckoning of time, in which the role of the Aratean cycles, once introduced, is not immediately obvious. They were produced across a wide geographical area, from Saint-Denis to Salzburg, and in monastic, imperial, and episcopal milieux. Imperial initiative helped to motivate scholarly attention to the computus, but illuminated computistical handbooks were first produced in monastic and episcopal scriptoria, and the Aachen Encyclopedia emerged in dialogue with handbooks that were produced at such provincial centers as Cologne and Salzburg.

Each cluster is linked to the next by substantial shared elements: the first to the second by a shared series of diagrams, and the second to the third by the adoption of the Aratean cycle. The selection of texts in the fourth cluster depends directly on that of the third. These shared elements suggest mutual awareness among the producers of various types of computistical handbooks in early ninth-century Francia. For example, the production of the Bavarian compendium was clearly motivated by familiarity with the Aachen Encyclopedia. However, intense engagement with astronomical imagery in this period did not lead to the formation of a rigid textual or visual canon. Instead, producers of individual manuscripts treated their prototypes as malleable exempla susceptible to improvement. Steady appraisal and adaptation lent a momentum to astronomical iconography beyond the occasional copying of venerable exemplars and promoted its adoption as a central element of a shared visual culture.

THE MONASTIC HANDBOOKS

The first cluster consists of two primary exponents: one manuscript today held in Basel, and a second in Munich.¹⁴ Both were produced in monastic scriptoria (Fulda, and St. Emmeram in Regensburg, respectively) in the early ninth century.¹⁵ Both are relatively small: the manuscript in Basel measures 978 by 7½ inches (25 × 19 cm) and that in Munich 9¼ by 778 inches (23.5 × 20 cm). They also share similar textual profiles. The Basel manuscript begins with excerpts from Isidore’s *De natura rerum*, followed by medical texts and charms in old German, and a series of figures and diagrams, including a number of astronomical-calendrical rotae. For example, one folio (fig. 34) contains three rotae: at the top, a personification of the sun surrounded by the names of the zodiacal signs and the corresponding months; at bottom left, a rota containing a personification of the moon; and at bottom right, a rota devoted to the lunar month.¹⁶ The Munich manuscript opens with an excerpt from Isidore’s *Etymologies* and contains a series of diagrams closely related to those in Basel (compare figs. 34 and 35).¹⁷ Other texts include a copy of the so-called Irish computus of 719, an essentially Isidorean work, and the only complete copy of the so-called Regensburg protest letter of 809, which Borst understood as a reaction against the rising influence of Bede’s computistical works.¹⁸

The zodiac of the Basel manuscript (fig. 36) appears in the series of diagrams. It is composed of two concentric circles, each divided into twelve parts. The outer ring contains ink drawings of the twelve signs of the zodiac, which frequently exceed the allotted spaces. There is no discernible order in the orientation of the individual figures. For example, four-legged beasts face clockwise (Leo) and counterclockwise (Taurus), their feet resting on the inner circle (Aries) and the outer (Capricorn). Some constellations display elements consistent with ancient iconography, but the attributes of other figures have mutated beyond recognition.¹⁹ For example, Sagittarius appears as a recognizably hybrid beast, but his arrowless “bow” has become an arc connecting his neck to a rear hoof. Similarly, Aquarius’s water

vessel resembles a long blade attached to a short handle. Most baffling is the figure of Libra, whose head and torso issue in a pair of winglike appendages. Perhaps the flask- shaped object at the field's outer edge preserves a dim reminiscence of her conventional scales.

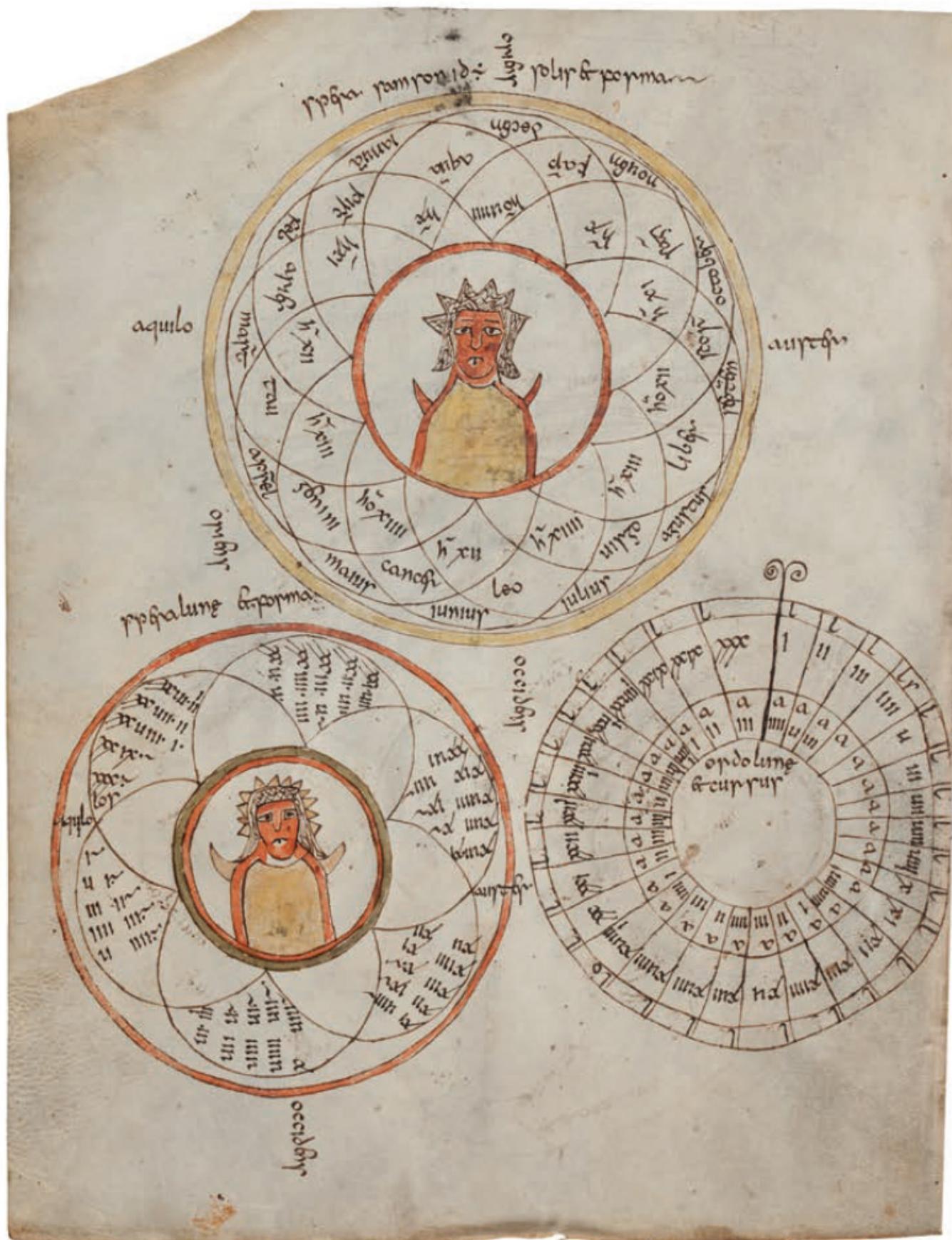


FIGURE 34

Rotae with figures of the sun and moon. Collection of astronomical and medical texts. Fulda, early 9th century. 25 × 19 cm (full folio). Basel, Universitätsbibliothek, F III 15a, fol. 22v.

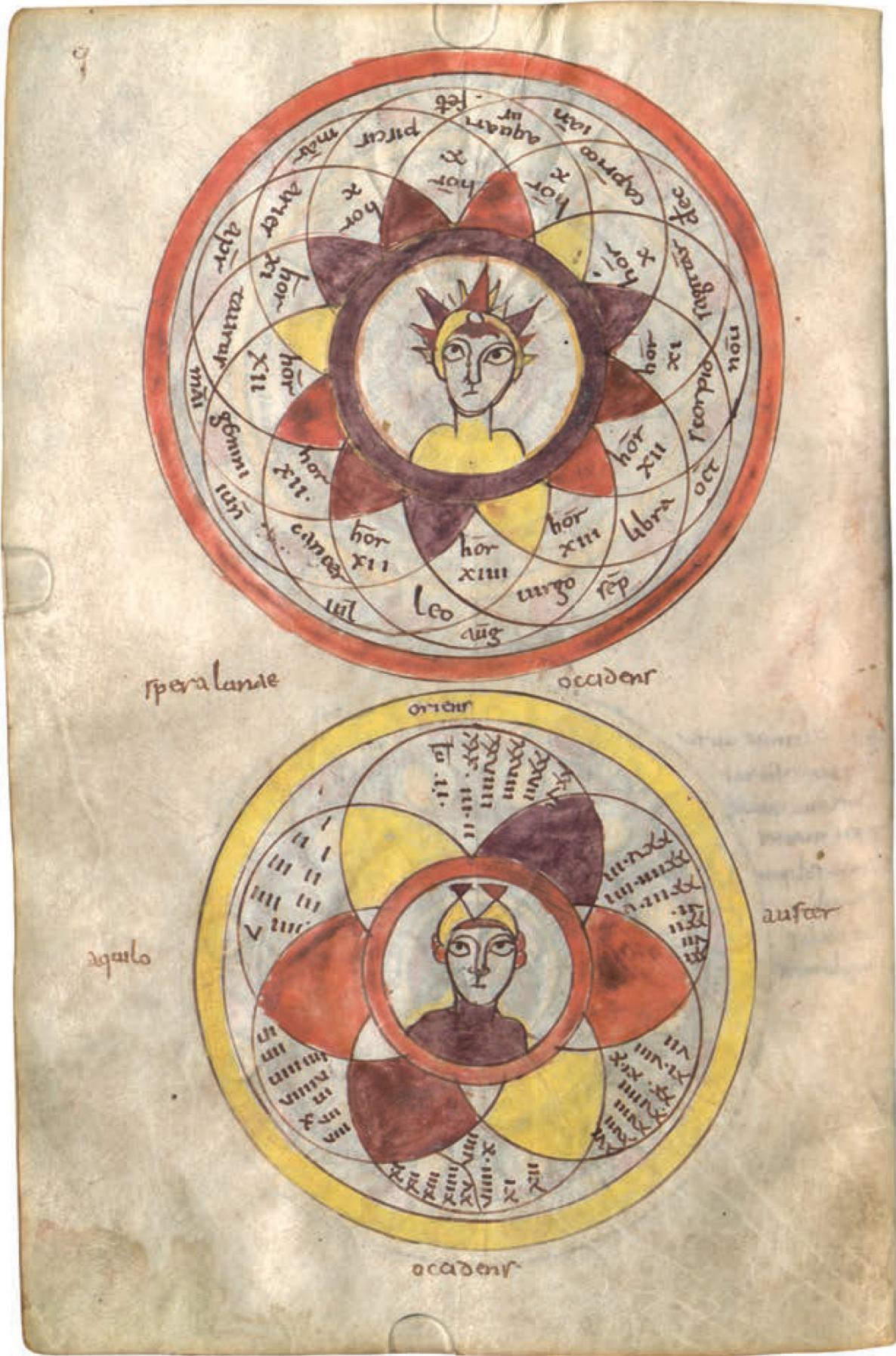


FIGURE 35

Rotae with figures of the sun and moon. Collection of astronomical and computistical texts. St. Emmeram in Regensburg, early 9th century. 23.5 × 20 cm (full folio). Munich, Bayerische Staatsbibliothek, Clm 14456, fol. 72v.

Each sign is accompanied by a series of texts.²⁰ Names of apostles and of sons of Jacob appear outside the circle (thus Gemini is paired with Thomas and Zabulon), while the names of the signs appear alongside the figures, together with the names of divinities, months, and specific hours (with Gemini we find Saturn, May, and the ninth hour). The innermost circle contains descriptions of the illnesses that await persons born under the corresponding sign, thus invoking that branch of astrology that associates “the twelve signs of the zodiac with specific parts of the soul or the body,” and which Isidore had condemned as superstitious.²¹ Together with the medical texts and vernacular charms preserved elsewhere in the manuscript, these descriptions indicate an interest in the relationship of cosmology to medical knowledge and demonstrate that monastic scholarly activity was not limited by a strict interpretation of Christian orthodoxy.

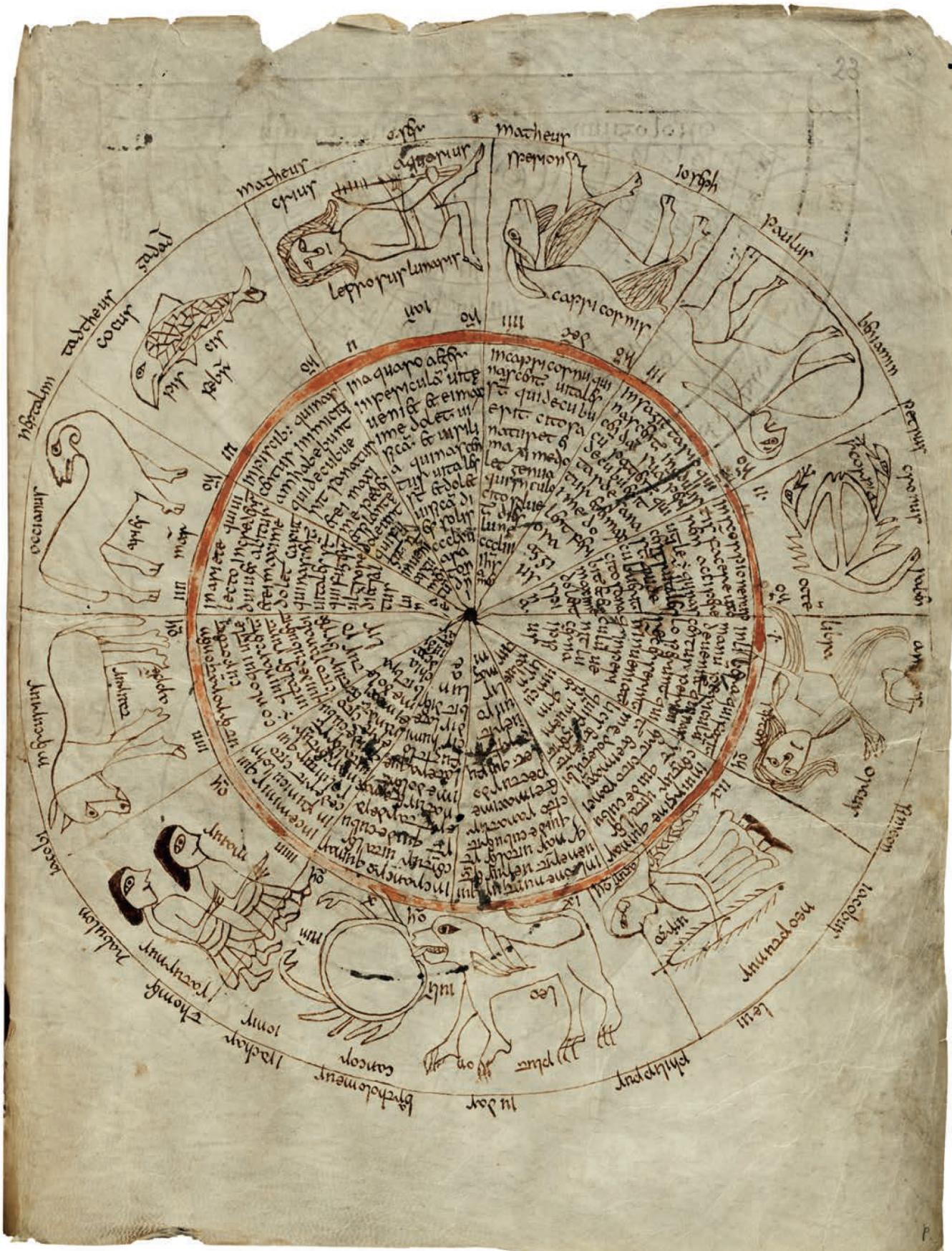


FIGURE 36

Zodiac. Collection of astronomical and medical texts. Fulda. Basel, Universitätsbibliothek, F III 15a, fol. 23r.

The zodiac of the Munich manuscript (fig. 37) is superficially similar to that in Basel, but closer inspection reveals differences of both composition and content. It is composed of three concentric circles, with the two outer rings divided into twelve and the central medallion occupied by the figure of the sun wearing a radiate crown. The outermost ring contains the signs of the zodiac, with the individual figures outlined in black and filled in with yellow, purple, and red. There is no obvious pattern to the orientation of the figures, but each constellation remains within the confines of the space provided. Like the Basel manuscript, that in Munich contains some surprising descendants from ancient iconographic conventions: Sagittarius's bow and arrow here form a beaklike appendage issuing from his chest, and Aquarius's water vessel resembles a lobster's claw. However, fewer and less outlandish texts accompany the figures than in the Basel manuscript.²² The purported names of the constellations in Egyptian and in Greek are written outside the ring, while the inner ring contains the Latin names of the constellations and the corresponding months in Latin and Hebrew. These texts betray none of the "superstitious" interests of the Basel zodiac, displaying instead an affinity with standard texts on the computus.²³ The only truly unexpected element on this folio is the two-headed figure located beneath the circular diagram and labeled "C" ("biceps" written backward and in Greek).²⁴

The Basel and Munich zodiacs may be compared with a third drawing from the ninth century (fig. 38), found on a fragmentary folio preserved in the binding of a fifteenth-century manuscript today in Darmstadt.²⁵ The full breadth of the diagram, which is composed of two concentric circles, is preserved, but its lower quarter has been lost. The central medallion houses a figure of Sol wearing an unruly radiate crown. The outer ring is divided in twelve and contains the signs of the zodiac, each of which is identified by a simple titulus placed directly outside the circle. The composition follows a stricter logic than in the Munich or Basel manuscripts, with the feet of all preserved figures pointing toward the inner circle.

Instead of attempting to fit the entire figures of Aquarius, Sagittarius, and Libra within the spaces provided, the draughtsman has selectively cropped them. For example, only half of Sagittarius's torso and a single leg are represented, so that he is no longer identifiable as a hybrid beast. Perhaps such variations indicate that no reliable prototypes were available in the scriptorium that produced the diagram, or perhaps they serve to emphasize the signs' defining attributes.²⁶ Indeed, of the three zodiacs examined here, only the Darmstadt version clearly depicts Sagittarius's bow and arrow, Aquarius's water jug, and Libra's scales.

Barbara Obrist has understood the Basel zodiac as a witness to the kind of astronomical iconography that circulated in the early medieval monasteries of England and Ireland.²⁷ Indeed, it is clear that the zodiac was a subject of interest in monastic milieux around the year 800, little hindered by whatever religious scruples might, in principle, have opposed its depiction. This interest was no doubt provoked by discussions of the zodiac in standard texts, including those same Isidorean and pseudo-Isidorean works that were included in the Munich and Basel compilations.



FIGURE 37



FIGURE 38

Zodiac. Fragment of 9th-century manuscript preserved as the endpaper of a later theological compilation. 14.5 × 22.5 cm. Darmstadt, Universitäts- und Landesbibliothek, Hs. 684.

The functions of these figures will have varied according to the contexts in which they appeared. The iconographic eccentricities of the Basel and Munich zodiacs likely result from fidelity to corrupt or partially understood models, a fidelity also expressed by the manuscripts' conservative textual profiles. In both cases, while the figural representation of the zodiac was a desideratum, it was not executed by trained artists. In this respect, the Darmstadt zodiac is of particular interest despite its fragmentary preservation and total lack of context. It exhibits limited regard for the conventions of ancient iconography, instead depicting figures that could easily be matched to the names of the signs. Thus, while Sagittarius looks more like an archer than in Basel and Munich, he no longer resembles his ancient, hybrid kin. The Darmstadt manuscript might betray dissatisfaction with available models for astronomical iconography, but its solution was diametrically opposed to that of the manuscripts of the second cluster, to which we now turn.

COLOGNE AND LAON

A computistical compendium preserved in Cologne, where it was produced at the turn of the ninth century, testifies to a desire for representations of the constellations that were both clearly legible and faithful to ancient convention.²⁸ Measuring 1438 by 10716 inches (36.5 × 26.5 cm), twice the size of the monastic handbooks, it was produced under the patronage of Hildebald (d. 818), Archbishop of Cologne.²⁹ As presently bound, the Cologne manuscript contains two sections: a short chronicle copied in 798 and a much longer computistical anthology copied in 805, which includes nearly complete versions of the *De temporum ratione* of Bede and the *De natura rerum* of Isidore. Illumination is limited

to the computistical section: a series of thirteen non-figural diagrams related to those in the Munich and Basel manuscripts, albeit without a zodiac; a second series of diagrams accompanying the text of Isidore's *De natura rerum*; and images of the constellations and other heavenly bodies accompanying the so-called Revised Aratus Latinus.³⁰

This last text and its kin, which played a major role in the dissemination of constellation images in medieval Europe, ultimately derive from the *Phaenomena* of Aratus, a poet active at the Antigonid court in Athens in the third century b.c. Consisting primarily of descriptions of the fixed stars and the constellations that they form, the *Phaenomena* became popular both as a work of literature and as a school text. It was translated into Latin at least three times, and the translations of Germanicus and Avienus enjoyed a sustained readership in the Middle Ages. Already in the Hellenistic era the *Phaenomena* attracted a number of scholia, commentaries, and supplementary texts. In the second or third century a.d., a selection of these texts was combined with the original in a new "edition." In the eighth century, this edition was translated into Latin by someone with a Greek dictionary but little or no knowledge of the language. The result was predictably unsatisfying, and a revision was produced shortly thereafter from which the text of Aratus's poem had largely disappeared, leaving "a series of astronomical fables, followed by star catalogs." This is the Revised Aratus Latinus, the source of the descriptions of forty-one constellations that follow the treatises of Bede and Isidore in the Cologne manuscript.³¹

After each description there follows a space for a miniature, though many of these were left unfilled or incomplete. The first prominent blank appears directly before the constellation images proper: an entire side which might have been reserved for the two hemispheres of a celestial globe.³² Typical of the completed miniatures is the folio dedicated to Hercules (fig. 39). The text describes the hero's memorialization by Zeus in the form of a constellation and states that his location above the constellation of the serpent depicts one of his labors.³³ In the miniature, Hercules lifts his club as if about to strike the serpent, which is coiled within the branches of a tree. Presumably we are meant to think of the dragon that guarded the apples of the Hesperides. A lion's skin, one of the standard attributes of Hercules in ancient art, is prominently draped across his arm. There is no indication of the positions of the stars that compose these constellations in the night sky. The miniaturist has instead produced a dynamic, narrative scene that is faithful both in style and iconography to ancient conventions.



FIGURE 39

Hercules. Compendium of computistical, natural-scientific, and astronomical texts. Cologne, 805. 36.5 × 26.5 cm

This naked, fleshy Hercules stretches and strides in a fashion both wholly corporeal and entirely dissimilar to the scribal sketches in the monastic handbooks. It is certainly the work of a professional painter. It is also one of only six miniatures of the constellations in the Cologne manuscript that were fully painted, all of which appear within the first few pages of the Revised Aratus Latinus.³⁴ The next description, of the constellation Corona, is followed by a blank space. Other constellations, such as Pisces, are depicted in preliminary drawings that include verbal indications of the colors required to complete the painting. Still others, including Centaurus, were confidently executed in pen and ink.

It has been proposed that the Aratean cycle remained without figures until roughly 820, its putative aniconism tied to the “revulsion” and “fear” inspired by images of the constellations.³⁵ The argument does not convince. We have already seen that the zodiac was depicted in contemporary manuscripts produced in monasteries. Nor is it clear why, if the decision to add the images was reached fifteen years after the texts were copied, the cycle was still left radically incomplete.³⁶ A more plausible hypothesis was advanced by Anton von Euw: the six completed paintings were executed around 805 by a traveling artist who was also responsible for the initials at the start of the Revised Aratus Latinus ([fig. 40](#)) and who left before finishing the cycle.³⁷ Thus the incomplete nature of the Cologne illuminations would result from an insistence on paintings executed by skilled artists on the basis of authoritative models. Similarly, the manuscript includes the complete texts of Isidore and Bede, while the first page of the Revised Aratus Latinus emphasizes the text’s attribution to a named authority: “Arati” is set off by a fine initial “A” in which the head of a young man emerges from behind three interlocking staffs (see [fig. 40](#)). The textual excerpts and visual adaptations in the manuscripts of the first cluster may demonstrate respect for ancient authorities, but the Cologne manuscript promotes the faithful replication of integral models.

Within the broader context of the Cologne manuscript, the Aratean cycle represents an intrusion of astronomical material into an otherwise uniformly computistical anthology. Of course, knowledge of the constellations could be useful in the reckoning of time. However, the Aratean cycle in Cologne consists of isolated figures lacking any indication of the individual stars that were understood to compose them. It would thus have been of little use in the practice of the computus and was “more suited for mythological edification than for astronomical observation.”³⁸

The Cologne manuscript is rendered all the more significant by its patron’s close association with Charlemagne, whom he had served as first chaplain since 791. Hildegard was the first witness to sign the emperor’s testament in 811 and administered the last rites to him in 814.³⁹ The anthology that he commissioned, moreover, occupies an intermediate position between the manuscripts of the first cluster, with which it shares its cycle of diagrams, and the Aachen Encyclopedia, to which we turn in the next section, and which also contains an Aratean cycle. However, the Cologne manuscript shares still more with another manuscript of the early ninth century, originally produced in northern France and preserved today in Laon.⁴⁰

The Laon manuscript shares with Munich, Basel, and Cologne a textual emphasis on the Isidorean tradition, in particular the *De natura rerum*; although, like Cologne, it also includes portions of the systematic texts of Bede, including that author’s own *De natura rerum*. It furthermore includes a series of diagrams very similar to those found in Munich and Basel (compare [fig. 41](#) with [figs. 34](#) and [35](#)), while simultaneously including, like Cologne, an Aratean cycle.⁴¹ Unique to the Laon manuscript is an extract from the *De cursu stellarum* of Gregory of Tours, illuminated by simple drawings of stars.⁴² Since in this manuscript Gregory’s text is bound together with images and discussions of those very “pagan” constellations that it rejects, the compilers of the manuscript must have been drawn not to its polemical but to its practical aspects, including methods for determining the appropriate hour for pre-sunrise prayer.⁴³

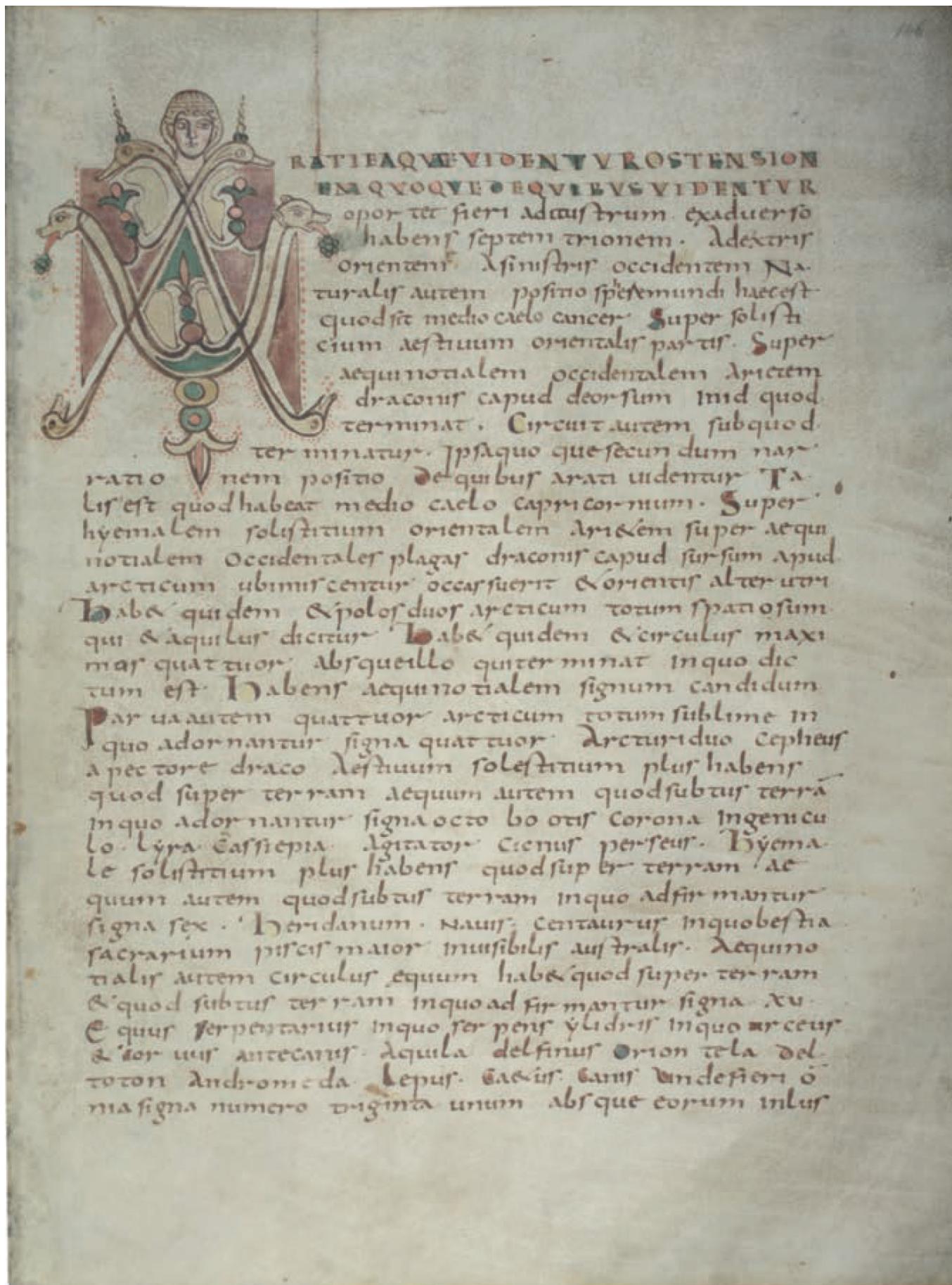


FIGURE 40

Initial “A” of the Revised Aratus Latinus. Compendium of computistical, natural-scientific, and astronomical texts. Cologne, Diözesan- und Dombibliothek, Hs. 83 II, fol. 146r.

The constellation images accompany the *De signis caeli* of “Pseudo- Bede,” comprising descriptions of forty constellations. Although these draw on the Aratean tradition, like the Revised Aratus Latinus they contain little of Aratus’s original poem.⁴⁴ In the Laon manuscript, the *De signis* occupies nine sides, each of which carries from three to six descriptions of individual constellations. The images of the constellations are consistently set at the left of the page beside the corresponding description. The nude figures, as for example of Hercules (fig. 42) and Boötes, are as fleshy and articulated as their kin in the Cologne manuscript.⁴⁵ The Laon constellations also indicate the positions of individual stars on or within the figures and could therefore, in theory, be used to identify the constellations in the night sky, however difficult that might have been in practice.⁴⁶

Thus, while both Cologne and Laon separate the constellation images from the series of diagrams in which they appeared in Basel and Munich, Laon more fully exploits the capacity of the individual figures to serve as carriers of information. Still, missing, however, is a map that might depict the constellations together as seen in the sky.



FIGURE 41

Rotae with figures of the sun and moon. Compendium of computistical, natural-scientific, and astronomical texts. Western Europe, early 9th century. 29.5 × 18.5 cm (full folio). Laon, Bibliothèque Municipale, Ms. 422, fol. 53r.



FIGURE 42

Helix, Draco, Fenix, Hercules, and Corona vero. Compendium of computistical, natural-scientific, and astronomical texts. Laon, Bibliothèque Municipale, Ms. 422, fol. 26v.

If the Cologne manuscript were viewed as an intermediary step between the manuscripts of the first and third clusters, then the patronage of Hildebald might serve to anchor the impetus for improvement of the constellation images in the circles immediately surrounding Charlemagne. This approach does have a certain heuristic value, but the Laon manuscript shows that the desire for more authoritative and useful images of the constellations was not limited to court. Furthermore, both manuscripts demonstrate that suspicion of the “pagan” constellations, if indeed it existed at all, did not hinder their use both as bearers of information and as vehicles for the depiction of the human form.

THE AACHEN ENCYCLOPEDIA

While the first two clusters of manuscripts are united by broad similarities in their origins and in their textual and artistic profiles, the second two are much “tighter,” comprising copies of two standardized compilations with remarkably consistent figural components. The third cluster is the most widely distributed and best studied among the four.⁴⁷ It consists of four ninth- century manuscripts, of which one is preserved today in Madrid,⁴⁸ one in Monza,⁴⁹ and two in the Vatican, which will be distinguished here after their presumed places of origin, the abbeys of Saint- Denis⁵⁰ and Saint- Quentin.⁵¹

In size, three of the four manuscripts are situated between the manuscripts of the first cluster and the volume in Cologne: the largest, Monza, measures 13 $\frac{3}{4}$ by 10 $\frac{1}{4}$ inches (35 × 26 cm); Saint- Quentin, at 7 $\frac{1}{2}$ by 6 $\frac{1}{4}$ (19 × 16 cm), is exceptionally small. Each manuscript contains a computistical compilation that Borst christened the “Aachen Encyclopedia of 809.”⁵² Both date and location refer to the Aachen Council of 809, which was convened to resolve a dispute between Frankish and Byzantine monks in Jerusalem over the proper wording of the Nicene Creed.⁵³ A text containing a series of questions and answers on computistical matters was interpreted by Borst as the record of a meeting held on the council’s margins.⁵⁴ Borst understood the dialogue as an attempt to harry a group of conservative experts into accepting Bede’s systematic approach to the computus, and thus the first step toward the compilation of a new, comprehensive handbook for the reckoning of time: the Aachen Encyclopedia.⁵⁵

The evidence for dating this compilation to 809 is equivocal, and the evidence for its composition in Aachen is purely circumstantial. The similarity between the four manuscripts supports characterization of the Encyclopedia as a coherent work.⁵⁶ Three manuscripts, moreover, share a table of contents that divides the work into seven books.⁵⁷ A short chronicle included in the compilation gives the present year as the ninth since Charlemagne’s imperial coronation while several other passages use the year 809 as the basis for calculations.⁵⁸ However, three of the manuscripts include another brief chronicle in the margin of the Easter tables, with a common entry for Charlemagne’s death in 814.⁵⁹ If these entries reflect a common prototype, then the Encyclopedia may not have been distributed as a coherent work until the reign of Louis the Pious. Although the compilation is sometimes accorded a quasi- official status in the secondary literature, it contains no prologue, dedication, or subscription that asserts an imperial origin, which is rather assumed due to the ambition of the project and the large number of books and personnel that would have been necessary to complete it.⁶⁰ Also suggestive is the existence of three manuscripts copied shortly after 810 that contain some of the earliest and least corrupt witnesses for specific sections of the compilation, all of which were copied in the neighborhood of Aachen.⁶¹

Taken as a whole, the compilation represents a more systematic approach to the computus and allied disciplines than the monastic handbooks or the volumes in Cologne and Laon. The first book contains calendars and chronicles, while the second contains practical formulas for the reckoning of time. The third addresses the solar year and the fourth the lunar. The fifth book turns to astronomy and the sixth to metrology, addressing not only the weighing of metal and the measuring of fields but also the weight of the earth and the size of the universe. The seventh and final book contains the entirety of Bede’s *De natura rerum* (thus providing a link to the manuscript in Laon) followed by additional metrological texts. The whole work has been justly characterized as “a synthesis of the ancient understanding of natural history and the Christian consciousness of time.”⁶²

Although the compilation contains a variety of tables and rotae, the diagram cycles of the first two clusters find no echo here. Figural illumination is limited to the fifth book, on astronomy, and consists of

a cycle of constellation images and a set of planetary diagrams. The images accompany yet another variation on the Aratean corpus, which contains descriptions of forty- two constellations.⁶³ The descriptions are more literally descriptive and less entertaining than those of the Revised Aratus Latinus. Most relate only the name of the constellation, the locations of the individual stars, and their number. Whereas the Cologne manuscript describes Hercules by reference to his heroic deeds, the Aachen Encyclopedia simply relates that he has one star on his head, one in his arm, one in his shoulder, and so forth— sixteen stars in all.⁶⁴ The four planetary diagrams accompany excerpts on planetary motion from the *Natural History* of Pliny.⁶⁵

The Madrid manuscript is the earliest preserved copy of the compilation and the most artistically ambitious. A *terminus post quem* is provided by two chronologies in which the primary scribe's last entry is the year 820.⁶⁶ Its localization depends largely on stylistic analysis of the miniatures. Two pairs of painters were responsible for the constellation images. The figures executed by the first team, which stopped after the figure of Aquarius on folio 59v (fig. 43), were boldly outlined in ink before being filled in with delicately modeled washes of color. The figures by the second team, which picked up with the figure of Capricorn on the same page, are fluid and painterly, mostly abjuring the bold outline and dissolving at their edges into vigorously executed fringes.⁶⁷ The miniatures of the first group resemble the work of the “Group of the Coronation Gospels,” which is conventionally localized in Aachen, while those of the second group resemble the initials of the Drogo Sacramentary, which was executed in Metz between 845 and 855.⁶⁸ Wherever it may have originated, the manuscript had arrived in the Abbey of Prüm by the mid- to late ninth century, where the Easter tables were furnished with an important series of annalistic notices.⁶⁹

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A quarius habet stellas in capite obscuras. ii. in numeris singulis
claras singulas in sinistro cubito. i. claram. index dextro cubito. i.
& in manu. i. in mammis singulas. index dextro crure. i. in pedibus
singulas claras. summa. xii. Effusio aquae notata est
ex stellis. xxx. ex quibus duas claras. cæterae obscure sunt.



Capricornus habet stellas in singulis cornibus singulas
in naso claram. i. in capite. ii. sub collo. i. in pectore. ii.
in pede priori. i. in summitate pedis. i. in dorso. vii. in uentre.
v. in cauda. ii. claras. summa. xxiii.



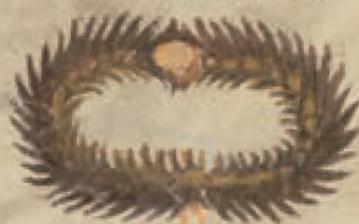
FIGURE 43

Aquarius and Capricorn. So-called Aachen Encyclopedia of 809. Central Europe, early 9th century. 30 × 24 cm (full folio). Madrid, Biblioteca Nacional de España, Ms. 3307, fol. 59v.

Hercules qui & ingenuo dicitur habet stellam in capite
unam. in brachio unam in umeris singulas claras insinatis
cubito. i. in ipsa manu. i. in utrisque ilibus. i. in dextro
femore ii. impede. i. supra dextram manum. id est in
clava. i. in pelle leonis. iii. summa. xvi.



Corona habet stellas viii. in orbem positas quarum. iii.
claras quae contra caput serpentis septentrionalis.



Serpentarius qui grece ophiucus uocatur habet stellam
in capite claram unam in singulis umeris claras in singulis
pedibus claras insinatis manu. iii. indextra. iii. claras. incubi-
tis singulis singulas. insinguis genibus singularis indextro erunt
claras. summa. xvii.

Serpens quem manibus tenet habet stellas more. ii. in
capite parvas. iii. usque ad manum se tenentis. ii. in flexu
corporis. xv. summa. xxiii.

FIGURE 44

circum caput gorgonis clara sunt. Caput autem & harpes
singulis stellis nota sunt



Lyra quae & fidis habet stellas in utroque pectine singulas.
in excuminibus cornuorum singulas. in umeris singulas
in fundo unam. in dorso unam fiant viii.



Cignus habet stellam in capite claram. in utroque ala
quinquies. in corpore. in cauda. fiant xiii.



FIGURE 45

Perseus, Lyra, and Cygnus. Aachen Encyclopedia of 809. Madrid, Biblioteca Nacional de España, Ms. 3307, fol. 59r.

As in the Cologne manuscript, the figures of the constellations follow their descriptions in the text. Just as the textual descriptions are simple enumerations of the stars that compose the individual constellations, so too have the miniatures been reduced to the most essential elements. Whereas Hercules in the Cologne manuscript strode forcefully toward serpent and tree, in an explicit allusion to his labors (see [fig. 39](#)), in Madrid he appears in isolation, if still wielding his club and carrying his lion's pelt ([fig. 44](#)). Narrative content is retained only when required by the accompanying star catalog. For example, Perseus still carries the head of the Gorgon, which is explicitly mentioned in the accompanying description ([fig. 45](#)).⁷⁰ Thus the constellation cycle betrays a rationalizing impulse that reduces the figures to those forms necessary to locate the individual stars.⁷¹

The remaining three manuscripts may be dealt with more briefly. Saint-Denis was located in that monastery by 885 (*terminus ante quem*) and occasionally cites 859 as the present year (*terminus post quem*).⁷² The drawings are executed in ink, with extensive use of wash used to model the figures; the effect can be quite compelling, as in the elegant figure of Virgo ([fig. 46](#)). They also clearly depict the individual stars as small circles radiating short lines interspersed with dots. Monza and Saint-Quentin are closely related: either one is a copy of the other, or they share a common prototype.⁷³ Saint-Quentin was located in the abbey of that name by the end of the ninth century.⁷⁴ The only clear dating criterion is a *terminus post quem* of 827.⁷⁵ The Monza manuscript probably originated in the Abbey of Lobbes and was copied between 868 and 885.⁷⁶ In both Monza and Saint-Quentin, the constellations are depicted by simple ink drawings without the color of Madrid or the extensive ink washes of Saint-Denis. Modeling is achieved through sparing use of cross-hatching, and the positions of individual stars are not indicated (e.g., [fig. 47](#), from Saint-Quentin).

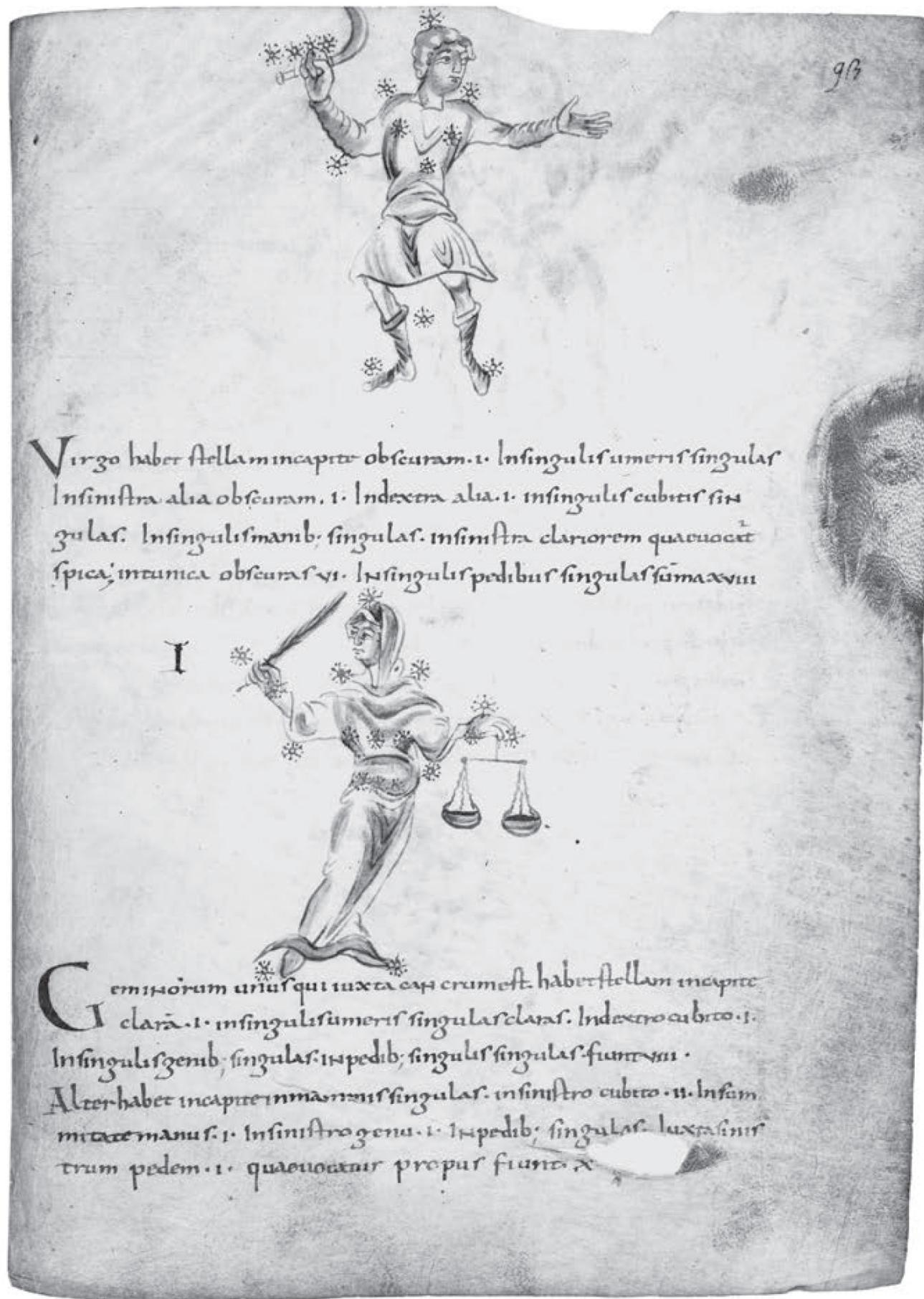


FIGURE 46

Boötes and Virgo. Aachen Encyclopedia of 809. Probably Saint-Denis, ca. 859. 29 × 27 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Reginensis latinus 309, fol. 93r. © 2017 Biblioteca Apostolica Vaticana.

The early distribution of the Aachen Encyclopedia tracks the gradual decentralization of the Carolingian *capella*, whose officials supervised both the notarial work of the chancellery and the regular observance of the divine service.⁷⁷ Hildebald of Cologne served Charlemagne and Louis as first chaplain until his death in 818, thus providing administrative continuity between the two reigns.⁷⁸ Likewise, although Charlemagne's will specified that his own books were to be auctioned off, the *capella* was to be "kept intact and not suffer any division."⁷⁹ As we have seen, the prototype of the Aachen Encyclopedia was maintained after Charlemagne's death. Hildebald was primarily resident in Aachen, as were his successors, Hilduin and Fulco.⁸⁰ Around 835, Fulco was succeeded as arch-chaplain by Drogo, the Bishop of Metz and the illegitimate son of Charlemagne.⁸¹ Drogo was not relieved of the duty of residence at his episcopal see.⁸² As we have seen, the second set of miniatures in the Madrid manuscript resembles one of Drogo's Metz commissions. In 834, Drogo's brother, Hugh, was appointed as *summus sacri palatii cancellarius* (arch-chancellor), the second-highest office within the *capella* and the direct supervisor of the court notaries. At around the same time, Hugh also became abbot of Saint-Quentin, where a new copy of the encyclopedia was produced at some point after 827.⁸³ The fragmentation of the empire after the death of Louis in 840 led to a proliferation of *capellae*. The Abbey of Saint-Denis, where a copy of the encyclopedia was produced after 859, was closely associated with the *capella* of Charles the Bald.⁸⁴ Finally, the Monza manuscript was produced in Lobbes in the period when a series of Carolingian sovereigns served that monastery as lay abbots.⁸⁵

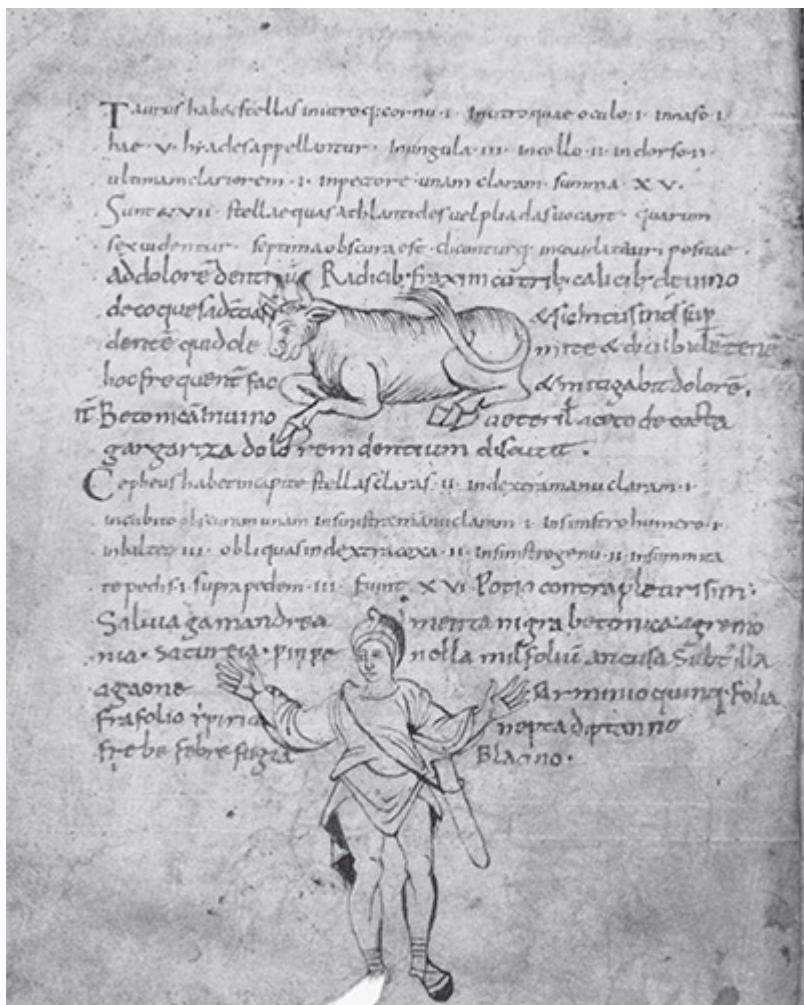


FIGURE 47

Taurus and Cepheus. Aachen Encyclopedia of 809. Probably Saint-Quentin, mid-9th century. 19 × 16 cm (full folio). Vatican City, Biblioteca Apostolica Vaticana, Vaticanus latinus 645, fol. 59v. © 2017 Biblioteca Apostolica

Vaticana.

The Aachen Encyclopedia could be used both to determine the dates of church feasts and to produce official documents, such as charters, whose date clauses recorded the day and month of a transaction according to multiple calendrical systems.⁸⁶ Perhaps it served as a handbook for multiple Carolingian capellae. This would explain both its wide distribution and the absence of any explicit reference to the court: its distribution was driven more by praxis than by propaganda. However, it cannot explain the evident need for images of the constellations. Nor are the illuminations the only elements of the encyclopedia that exceed its practical utility in the interest of a broader comprehensiveness. This comprehensiveness was both chronological, as in the chronicles that spanned the ages of the world from Adam to the present, and spatial, as in the discussion of the size of the universe. In other words, these volumes present the entire world as a rational and comprehensible whole. Elements of obvious practical value, in particular the computistical, are set within a framework that gives a higher purpose to the day-to-day practice of governing.



FIGURE 48

Planispheric celestial map. Collection of astronomical-computistical and natural-scientific texts. Region of Salzburg, 818. 32 × 23 cm (full folio). Munich, Bayerische Staatsbibliothek, Clm 210, fol. 113v.

Viewed in this perspective, it is not the presence of the constellation images that is surprising but the absence of a celestial map. As we have already seen, such an image may have been planned for the Cologne manuscript of 805. Similarly, the Madrid manuscript contains two incomplete diagrams that must have been intended as celestial hemispheres: a circle divided into two hemispheres and six latitudinal zones, and the scored outline of a circle.⁸⁷ It was left, however, for the manuscripts of the fourth cluster to pair the individual figures of the constellations with a view of the firmament as a whole.

THE BAVARIAN COMPENDIA

The final cluster consists of two nearly identical manuscripts that were copied in Bavaria in the second decade of the ninth century. The first, preserved today in Munich, gives the present year as 818, and its production has been localized in Salzburg or its surroundings (perhaps the abbey at Mondsee).⁸⁸ Annalistic entries indicate that it had arrived in the abbey of St. Emmeram in Regensburg by the later ninth century. The second manuscript, preserved today in Vienna, may also be dated to 818, when it was copied in Salzburg, where it likely remained in the episcopal library until secularization.⁸⁹ The Munich manuscript was copied by multiple hands, while one scribe copied the entirety of the Vienna manuscript; furthermore, the miniatures of Munich are of appreciably lower quality than those of Vienna. On these grounds, Borst plausibly argued that Munich is a “rough draft” from which the “perfect copy” of Vienna was prepared.⁹⁰

Both manuscripts contain an anthology divided into 115 chapters, with four primary sources: Bede’s *De temporum ratione*, the Aachen Encyclopedia, and two computistical handbooks of the eighth century. They are therefore compilations made out of compilations, and they represent both the summation of a century of computistical debate in Frankish lands and “the final and complete victory of Bede’s computus” over Isidore’s.⁹¹ The decorative program also builds upon those of the earlier handbooks. In both manuscripts, the primary figural elements are, in order of appearance: a full- page miniature depicting the labors of the months, a planispheric celestial map, an Aratean cycle, two planetary diagrams, a series of five diagrams accompanying an extended excerpt from Bede, and a final full- page miniature depicting the courses of the sun and moon through the ring of the zodiac (discussed above; see fig. 24). Of these six elements, only the Aratean cycle and the planetary diagrams could have been borrowed from the Aachen Encyclopedia. The remaining four are additions to, or indeed improvements over, the prototype. Although the Bavarian compilers had access to a copy of the Aachen Encyclopedia, it was not sufficient to their purposes.

unam Indosso una flunt. viii.



Perseus habet stellas in
singulis umeris singulari
claras. In dextera manu
claram. i. In sinistra ma
nu in qua caput gorgonis
tenet. ii. In ventre. i.
In dextro lacte clara. i.
In genu. i. In pede clara. i.
In sinistro femore clara. i.
In tibia. ii..



Lyra quae & fidis habet
stellas in utroq; pectine
singulari. In cæcum imbus
cornuorum singulari. in
umen singulari. infundo



Cignus habet stellam in
capite claram. i. In utroq;
ala quinas. incorpore. i.
in cauda unam flunt. xiii..



Aquarius habet stellas inca
pite obscuras. ii. innumeris
singulis claras singulari.
In sinistro cubito. i. clara. In
dextro cubito. i. & in manu. i.
Innamiss singulari. In dextro
crupe. i. in pedibus singulari
claras. summa xii. effusio

FIGURE 49

Perseus famulus



Perseus habet stellas in
singulis umeris singu-
lar clavos. Index extre-
ma nu clavem. i. In sinistro
manu in qua caput gorgo-
nis tenet. Inuentus. i.
Index extro latero clavem. i.
In genu. i. In pede clavis. i.
In sinistro femore clavis.
Intibia. ii.



Lyrae quae & fidis habet
stellas in utroq: pectine
singular. In acuminibus
coeniorum singular. In u-
meris singular. in fundo

unam in dorso unam fiuntur.



Cignus habet stellam in cap-
te claram. i. in utroq: ali-
quinas. incorposit. i. in
cauda unam fiunt. xiii.



Aquarius habet stellas in capite
obscures. ii. innumerissim-
gulis clavos singular. In si-
nistro cubito. i. clavem. In
dextro cubito. i. & in manu. i.
In manis singular. Index et
crux. i. impedit. singular
claves. sum maxii. effusio

FIGURE 50

Perseus, Lyra, Cygnus, and Aquarius. Collection of astronomical-computistical and natural-scientific texts. Salzburg, 818. 32 × 25 cm (full folio). Vienna, Österreichische Nationalbibliothek, Cod. 387, fol. 118v.

The most striking addition is the planispheric celestial map, a projection of the sphere of the fixed stars onto a single sheet.⁹² The image is listed as Chapter 100 (“De circulis signifiori”) in both tables of contents, but only the miniature in Munich is preserved (fig. 48), where it faces Chapter 101, a text that describes the spatial interrelations of the constellations.⁹³ A green ground covers the entire page, and the space of the celestial sphere is delimited by a thick orange circle. The figures of the constellations are executed in reds, browns, and greens. The interior of the map is structured by eccentric and concentric circles. The concentric circles were not painted but were scored with the compass, and include, for example, the “circle of constant visibility” around the northern celestial pole, within which the serpent and the two bears appear. Among the eccentric are the two red circles delimiting the ring of the zodiac and a white circle marking the Milky Way. Many of the constellations are accompanied by dark red tituli, which are difficult to distinguish against the green ground. The individual stars are not marked.

The text on the positions of the stars is followed by the same catalog of forty- two constellations included in the manuscripts of the third cluster, with accompanying figures. This Aratean cycle occupies thirteen sides in the Munich manuscript and nine sides in the Vienna manuscript, but the layout of both is identical: the discrepancy reflects the loss of two folios from Vienna. Compare, for example, two corresponding folios from Munich (fig. 49) and Vienna (fig. 50). Not only do the images and texts occupy the same relative positions, but in both cases the final line of the description of Lyra is stranded at the top of the second column. The comparison supports Borst’s hypothesis that Munich was the rough draft for Vienna, whose scribe has squeezed the concluding number, “VIII,” at the end of this line so as not to fall behind the exemplar.

The layout of the Aratean cycle marks another innovation. In the Cologne manuscript and the manuscripts of the third cluster, the constellations appeared after the corresponding texts, but in the Bavarian manuscripts they were placed before. The Aratean cycle is furthermore the only non- tabular text in the compilation that is copied in two columns per side. This is a form of spatial rationalization. Since most of the miniatures of the Aratean cycle consist of a single figure, in the earlier manuscripts they were bracketed by large areas of empty parchment. The “waste” was noted by later users of Saint- Quentin, who used the empty space on either side of multiple constellation figures to enter additional tables and texts (see, e.g., fig. 47). A final innovation involves the treatment of the stars in the Bavarian manuscripts. Although individual stars are also marked in Laon and in some copies of the Aachen Encyclopedia, the Bavarian manuscripts introduce internal differentiations corresponding to the textual descriptions. Thus, for example, the two stars that make up the left hand of Perseus, in which he holds the Gorgon’s head, are distinguished by color from the remaining stars (see figs. 49 and 50).

The planispheric map and the innovations in the Aratean cycles seem to represent conscious improvements over earlier compendia. The decoration of these manuscripts functions as a fully integrated and carefully considered element of the whole, suggesting extended experience with early handbooks and consideration of their shortcomings. The question naturally arises of who commissioned them, and to what purpose. Nearly every commentator has inferred the patronage of Arn of Salzburg from annalistic entries, found only in the Vienna manuscript, that refer to his ordinations as abbot and as bishop.⁹⁴ Arn was a regular at Charlemagne’s court, the third bishop to witness his will in 811, and a participant in the ongoing debates surrounding the computus.⁹⁵ If indeed the Munich manuscript were copied at the abbey of Mondsee, then Hildegard, who served there as abbot, could also have been involved in its production.⁹⁶

The involvement of court insiders should not, however, distract from the local significance of the two manuscripts.⁹⁷ Arn himself was a descendant of the local Bavarian aristocracy and served as a mediator between indigenous elites and imperial authority.⁹⁸ Both manuscripts were produced immediately after the *Ordinatio imperii* of 817, in which the young son of Louis the Pious (the future Louis the German) was promised the east Frankish lands, with Bavaria at their core. The implicit promise of administrative autonomy was eventually realized with the establishment of Louis the German’s own capella around 830.⁹⁹ More generally, the limited regional distribution of the Bavarian

compendia stands in contrast to their ambition to improve upon a handbook with pretenses to comprehensiveness and universality. Regional elites exercised considerable freedom in adapting the model of the Aachen Encyclopedia to their own purposes.

A DISTRIBUTIVE APPROACH TO KNOWLEDGE

In presenting these four clusters of manuscripts in order of increasing complexity and ambition, I do not mean to imply a chronological development from the “early” monastic handbooks to the “mature” Bavarian compendia. Even if the evidence for dating the individual manuscripts were sufficiently refined to propose such a high-resolution chronology, it would probably reveal a variety of parallel tracks that occasionally intersected but could also follow independent courses. As it stands, the available evidence cannot preclude that (for example) the monastic handbook in Munich, the manuscript in Laon, and the hypothetical prototype of the Aachen Encyclopedia were all produced in the same year.

Nor would it be correct to say that all manuscripts were created with the same goal in mind. Those of the first cluster, for example, betray far more parochial concerns than those of the other three. The aim in the monastic handbooks was not to establish a system that could unite disparate institutions and locales but rather to meet the needs of specific small-scale communities. The manuscripts of the second cluster share some contents with those of the first, but they simultaneously betray a desire for a logical system based on integral and authoritative sources that might subsume those local concerns under a more capacious, rationalized structure. The initiative behind the Aachen Encyclopedia must have issued from a similar rationalizing drive. What distinguishes the manuscripts of the third cluster from those of the second is not so much their intended function as the success of the Encyclopedia as an exemplar. If its distribution was related to the business of the *capellae*, then this success was not based on a programmatic imperial campaign to disseminate an authoritative compendium but on its adoption within an administrative framework whose gradual geographic decentralization required the production of multiple copies.

The fourth cluster poses the most intriguing questions. On the one hand, the Bavarian manuscripts betray the clearest understanding of the potential utility of the Aratean cycle. Each constellation figure is keyed to its description on three interconnected levels: the individual stars, the intermediate groupings, and the constellation as a whole. Moreover, the Bavarian compendia meet a need that was expressed, but not fulfilled, in the planning of the Cologne and Madrid manuscripts: the inclusion of a celestial map that labels and represents the individual constellations as they appear in the firmament. It therefore represents the peopled sphere across the full continuum of possible scales: from the individual star, through the isolated limb, to the entire figure, all the way up to the teeming empyrean. These two manuscripts fully realize one possible function of the cosmic image, namely to connect the smallest possible element with the largest, just as their metrological excerpts linked the extent of a single field to the size of the whole earth, and their computistical formulae linked a single day with the entire span of creation.¹⁰⁰

Remarkably, the very manuscripts that execute this task better than any of their kin were not the fruits of a centrally directed imperial initiative but of a regionally circumscribed undertaking. Similarly, the copies of the Aachen Encyclopedia that found their way to the monasteries of Prüm, Saint-Quentin, and Saint-Denis were not held sacrosanct as relics of imperial power but instead served local scribes who copied in their margins events of local and global significance alike. “Ansbalodus abba obiit et Farabertus eius successit, et Carolus imperator tercius huius nominis obiit,” as a scribe at the Abbey of Prüm wrote in the margin of the Madrid manuscript’s Easter tables under the year 886, with the death of the local abbot and the name of his successor taking priority over the death of Emperor Charles (“the Fat”), third of his name.¹⁰¹

Therefore the computistical compendia do not reveal the imposition of an authoritative spatial and temporal framework, but its gradual emergence through a regional-imperial dialectic of mutual recognition. Although this process transpired in the context of the Carolingian enterprise of state building, its fruits survived the ultimate fragmentation of the state. The manuscripts allowed people to inscribe themselves within a universal framework, while also forcing them to recognize the existence of numberless peers in far valleys, many weeks’ walk from home. As Arno Borst observed, “which saint was venerated in the village church, which star was visible over the neighboring hill—local worthies

knew these things without the help of the handbooks. But now they had to learn that behind the furthest mountains, and under the strangest stars, dwelt creatures just like them, who directed their daily labors according to the same temporal scales.”¹⁰²

Just as the manuscripts mediated a relationship between region and empire, so too did their illustrations mediate a relationship between individual and community, star and cosmos. The distribution of the constellation images in such a fitting context promoted their familiarity across a broad geographic expanse and among members of various overlapping elites: courtly, aristocratic, ecclesiastic, and monastic. It also lent them a potency that transcended their immediate referents, be they astral or mythological. It produced, in other words, the conditions assumed by the cloth of the Ewaldi, under which an image of the cosmos could constitute a community.

Frankish production of astronomical manuscripts between 800 and 820 presents the clearest case for the mutual dependence of the political and didactic functions of cosmological imagery in the early Middle Ages. Much more than such isolated, albeit spectacular, monuments as Charlemagne’s silver table or the Star Mantle of Henry II, these manuscripts established knowledge of the constellations as a patch of common ground shared by various European elites. But although an image of the cosmos could serve as an element of a common identity, it could also become an object of disagreement and contention. Knowledge could be shared, but it could also be hoarded. It is to these latter possibilities that we turn in the final chapter.

NOTES

Introduction

1. Cassius Dio, *Roman History* LXXVII.11; *Dio's Roman History* IX, trans. Ernest Cary (London: William Heinemann, 1927), 261.
2. Herodian, *History* II.9.3–6; *Herodian of Antioch's History of the Roman Empire*, trans. Edward C. Echols (Berkeley: University of California Press, 1961), 63.
3. Compare the domestic mosaics of the third and fourth centuries collected in Hans Georg Gundel, *Zodiakos: Tierkreisbilder im Altertum* (Mainz: Philipp von Zabern, 1992), 234–237.
4. *Panegyrici Latini* IX.20; *In Praise of Later Roman Emperors*, trans. C. E. V. Nixon and Barbara Saylor Rodgers (Berkeley: University of California Press, 1995), 176–177. On this passage see Giusto Traina, “Mapping the World Under Theodosius II,” in *Theodosius II: Rethinking the Roman Empire in Late Antiquity*, ed. Christopher Kelly (Cambridge: Cambridge University Press, 2013), 155–158, with references to earlier literature.
5. Tamsyn Barton, *Ancient Astrology* (London: Routledge, 1994), 46–49.
6. From the *Akbarname*, cited in Eva Orthmann, “Circular Motions: Private Pleasure and Public Prognostication in the Nativities of the Mughal Emperor Akbar,” in *Horoscopes and Public Spheres: Essays on the History of Astrology*, ed. Günther Oestmann, H. Darrel Rutkin, and Kocku von Stuckrad (Berlin: Walter de Gruyter, 2005), 103.
7. Walter Benjamin, “Zum Planetarium,” in *Gesammelte Schriften*, IV.1, ed. Tillman Rexroth (Frankfurt am Main: Suhrkamp, 1972), 146–147.
8. A phrase of Louis Auguste Blanqui, as cited by Walter Benjamin, *The Arcades Project*, trans. Howard Eiland and Kevin McLaughlin (Cambridge, Mass.: Belknap Press, 1999), 113.
9. Lisa Saltzman, *Anselm Kiefer and Art After Auschwitz* (Cambridge: Cambridge University Press, 1999), 54–62 and 115.
10. For a similar geographic frame and a more capacious chronological frame, compare Garth Fowden, *Before and After Muhammad: The First Millennium Refocused* (Princeton: Princeton University Press, 2014).
11. Aby Warburg, “Italienische Kunst und internationale Astrologie im Palazzo Schifanoja zu Ferrara,” in *Gesammelte Schriften: Die Erneuerung der heidnischen Antike*, ed. Gertrud Bing (Leipzig: B. G. Teubner, 1932), II.478–479.
12. Dieter Blume, *Regenten des Himmels: Astrologische Bilder in Mittelalter und Renaissance* (Berlin: Akademie Verlag, 2000), 8.
13. So too Thomas F. Mathews, *The Clash of Gods: A Reinterpretation of Early Christian Art* (Princeton: Princeton University Press, 2003), 142–150; e.g., at 149: “Gazing at night at the heavens, the Christian beheld a different universe from his pagan neighbor.”
14. On this treatise, *De cursu stellarum*, see Stephen C. McCluskey, “Gregory of Tours, Monastic Timekeeping, and Early Christian Attitudes to Astronomy,” *Isis* 81 (1990): 8–22.
15. From the *Doctrina Iacobi nuper baptizati*; cited here after John Haldon, *Byzantium in the Seventh Century: The Transformation of a Culture* (Cambridge: Cambridge University Press, 1990), 39.
16. Barbara Obrist, “Les manuscrits du *De cursu stellarum* de Grégoire de Tours et le manuscrit, Laon, Bibliothèque municipale 422,” *Scriptorium* 56 (2002): 335–345.
17. From a treatise by Stephanos the Philosopher, cited here after David Pingree, “Classical and Byzantine Astrology in Sassanian Persia,” *Dumbarton Oaks Papers* 43 (1989): 239.
18. On these technologies see fundamentally Barbara Obrist, *La cosmologie médiévale: Textes et images. I: Les fondements antiques* (Florence: Sismel–Edizioni del Galluzzo, 2004).
19. Michael W. Herren, “The ‘De imagine Tetrici’ of Walahfrid Strabo: Edition and Translation,” *Journal of Medieval Latin* 1 (1991): 132.
20. Franz Alto Bauer, “Statuen hoher Würdenträger im Stadtbild Konstantinopels,” *Byzantinische Zeitschrift* 96 (2008): 511–512.
21. *Parastaseis Syntomoi Chronikai* 38; *Constantinople in the Early Eighth Century: The Parastaseis Syntomoi Chronikai*, ed. and trans. Averil Cameron and Judith Herrin (Leiden: E. J. Brill, 1984), 103 and 217.
22. Ibn Askir, *Trkh madnat Dimashq, La Description de Damas d'Ibn Askir*, trans. Nikita Elisséeff (Damascus: Institut français du Proche- Orient, 2008), 69–70.
23. See especially Dale Kinney, “The Horse, the King and the Cuckoo: Medieval Narrations of the Statue of Marcus Aurelius,” *Word & Image* 18 (2002): 372–398.

24. See especially Ja Elsner, *Art and the Roman Viewer* (Cambridge: Cambridge University Press, 1997).
25. G. R. D. King, “The Paintings of the Pre- Islamic Kaba,” *Muqarnas* 21 (2004): 219–229.
26. G. R. D. King, “Islam, Iconoclasm, and the Declaration of Doctrine,” *Bulletin of the School of Oriental and African Studies* 48 (1985): 267–277.
27. Charles Barber, *Figure and Likeness: On the Limits of Representation in Byzantine Iconoclasm* (Princeton: Princeton University Press, 2002).
28. Thomas F. X. Noble, *Images, Iconoclasm, and the Carolingians* (Philadelphia: University of Pennsylvania Press, 2009).
29. See, e.g., Eva R. Hoffman, “Pathways of Portability: Islamic and Christian Interchange from the Tenth to the Twelfth Century,” *Art History* 24 (2001): 17–50; Leslie Brubaker, “The Elephant and the Ark: Cultural and Material Exchange Across the Mediterranean in the Eighth and Ninth Centuries,” *Dumbarton Oaks Papers* 58 (2004): 175–195; Matthew Canepa, *The Two Eyes of the Earth: Art and Ritual of Kingship Between Rome and Sasanian Iran* (Berkeley: University of California Press, 2009); Matthew Canepa, “Theorizing Cross-Cultural Interaction Among Ancient and Early Medieval Visual Cultures,” *Ars Orientalis* 38 (2010): 7–29.
30. Carpet: S. D. Goitein, *A Mediterranean Society: The Jewish Communities of the Arab World as Portrayed in the Documents of the Cairo Geniza*. IV: *Daily Life* (Berkeley: University of California Press, 1983), 124 and 129; although the word translated by Goitein as “zodiac” could simply denote “a kind of embroidered fabric.” S. D. Goitein and Mordechai A. Friedman, *India Traders of the Middle Ages: Documents from the Cairo Geniza* (Leiden: Brill, 2007), 325 n. 25. Globe: Dietrich Lohrmann, “Das ‘Himmelszelt’ des Sultans al- Kamil von 1232 für Kaiser Friedrich II,” *Historische Zeitschrift* 294 (2012): 297–327; and note the contexts adumbrated by Suzan Yalman, “Ala al- Din Kayqubad Illuminated: A Rum Seljuq Sultan as Cosmic Ruler,” *Muqarnas* 29 (2012): 151–186.
31. For Byzantine- Islamic polemic on the preservation of Greek learning, see Maria Mavroudi, “Translations from Greek into Latin and Arabic during the Middle Ages: Searching for the Classical Tradition,” *Speculum* 90 (2015): 38–41 and 45 n. 76.
32. “Neutral technology of life”: the phrase used to characterize the role of the “classical” or “pagan” tradition in late antiquity by Peter R. L. Brown, “Art and Society in Late Antiquity,” in *Age of Spirituality: A Symposium*, ed. Kurt Weitzmann (New York: Metropolitan Museum of Art, 1980), 23. For a survey of ancient images of the zodiac and their contexts, see Gundel, *Zodiakos*.
33. Palmyra: Henri Seyrig, Robert Amy, and Ernest Will, *Le temple de Bêl à Palmyre* (Paris: Paul Geuthner, 1975), 45 and Album 58. Jerusalem: Josephus, *Bellum Judaicum*, V.214; trans. H. St. J. Thackeray (London: William Heinemann, 1961), III.265.
34. For an introduction to the monuments and the modern literature, see Lee Levine, *Visual Judaism in Late Antiquity: Historical Contexts of Jewish Art* (New Haven: Yale University Press, 2012), 317–336.
35. Charles Barber, “The Truth in Painting: Iconoclasm and Identity in Early- Medieval Art,” *Speculum* 72 (1997): 1019–1036.
36. Alois Riegl, “Die mittelalterliche Kalender-illustration,” *Mittheilungen des Instituts für Österreichische Geschichtsforschung* 10 (1889): 29–31. On the place of this essay within the development of Riegl’s thought, see Margaret Olin, *Forms of Representation in Alois Riegl’s Theory of Art* (University Park: Pennsylvania State University Press, 1992), 10–16; and Michael Gubser, *Time’s Visible Surface: Alois Riegl and the Discourse on History and Temporality in Fin- de- Siècle Vienna* (Detroit: Wayne State University Press, 2006), 27–50.
37. From a lecture on “Die antike Götterwelt und die Frührenaissance im Süden und im Norden,” cited in E. H. Gombrich, *Aby Warburg: An Intellectual Biography* (Chicago: University of Chicago Press, 1986), 189.
38. On Saxl see Dorothea McEwan, *Fritz Saxl: Eine Biografie* (Vienna: Böhlau, 2012). On Panofsky see Michael Ann Holly, *Panofsky and the Foundations of Art History* (Ithaca, N.Y.: Cornell University Press, 1984).
39. Fritz Saxl, Hans Meier, and Patrick MacGurk, *Verzeichnis astrologischer und mythologischer illustrierter Handschriften des lateinischen Mittelalters* (Heidelberg: C. Winter, 1915), I.x.
40. Erwin Panofsky and Fritz Saxl, “Classical Mythology in Medieval Art,” *Metropolitan Museum Studies* 4 (1933): 228.
41. Panofsky and Saxl, “Classical Mythology,” 236.
42. Panofsky and Saxl, “Classical Mythology,” 238.
43. Erwin Panofsky, *Renaissance and Renascences in Western Art* (Stockholm: Almqvist & Wiksell, 1960), 84. On the “principle of disjunction,” see Dale Kinney, “Interpretatio Christiana,” in *Maxima Debetur Magistro Reverentia: Essays on Rome and the Roman Tradition in Honor of Russell T. Scott*, ed. Paul B. Harvey and Catherine Conybeare (Como, Italy: New Press, 2009), 117–125; Alexander Nagel and Christopher S. Wood, “Toward a New Model of Renaissance Anachronism,” *Art Bulletin* 88 (2005): 403–415.

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44. Rembrandt Duits, "Reading the Stars of the Renaissance: Fritz Saxl and Astrology," *Journal of Art Historiography* 5 (2011): 3–5.
 45. Panofsky and Saxl, "Classical Mythology," 233–234.
 46. The narrative finds a precise analogue in twentieth- century histories of science and philosophy, on which see Mavroudi, "Translations," 28–36.
 47. A volume of essays has been devoted to this term: Martin Treml, Sabine Flach, and Pablo Schneider, eds., *Warburgs Denkraum: Formen, Motive, Materialen* (Paderborn, Germany: Wilhelm Fink, 2014).
 48. Aby Warburg, "Heidnisch- antike Weissagung in Wort und Bild zu Luthers Zeiten," in *Gesammelte Schriften: Die Erneuerung der heidnischen Antike*, ed. Gertrud Bing (Leipzig: B. G. Teubner, 1932), II.491–492.
 49. Aby Warburg, "Die Einwirkung der Sphaera Barbarica auf die kosmischen Orientierungs-versuche des Abendlandes," in "Per Monstram ad Sphaeram": *Sternglaube und Bilddeutung*, ed. Davide Stimilli (Munich: Döllig und Galitz Verlag, 2008), 70.
 50. Aby Warburg, *Schlangenritual: Ein Reisebericht* (Berlin: Verlag Klaus Wagenbach, 2011), 75.
 51. Gombrich, *Aby Warburg*, 224.
 52. Ernst Dümmeler, ed., *Poetae Latini Aevi Carolini* (Berlin: Weidmann, 1881), I.546.
 53. On Herzfeld, see Ann C. Gunter and Stefan R. Hauser, eds., *Ernst Herzfeld and the Development of Near Eastern Studies, 1900–1950* (Leiden: Brill, 2004).
 54. Ernst Herzfeld, "Der Thron des Khosrō: Quellenkritische und ikonographische Studien über Grenzgebiete der Kunstgeschichte des Morgen- und Abendlandes," *Jahrbuch der Preußischen Kunstsammlungen* 41 (1920): 1–24.
 55. Fritz Saxl, "Frühes Christentum und spätes Heidentum in ihren künstlerischen Ausdrucks formen," *Wiener Jahrbuch für Kunstgeschichte* 2 (1923): 102–121. On the tendency of European scholars to interpret Islamic "domes of heaven" as "pleasure domes," see Oleg Grabar, "From Dome of Heaven to Pleasure Dome," *Journal of the Society of Architectural Historians* 49 (1990): 15–21, esp. 20–21.
 56. Karl Lehmann, "The Dome of Heaven," *Art Bulletin* 27 (1945): 1–27. "Antique background" at 1; "cosmic speculation" at 22.
 57. Thomas Mathews, "Cracks in Lehmann's 'Dome of Heaven,'" *Source* 1 (1982): 12–16; Mathews, *Clash of Gods*, 143–149.
 58. Suetonius, *Nero*, 31.2. *Suetonius*, ed. and trans. J. C. Rolfe (London: Heinemann, 1959), II.136–137.
 59. For a critical review of the evidence, see Marianne Bergmann, *Der Koloß Neros, die Domus Aurea und der Mentalitätswandel im Rom der frühen Kaiserzeit* (Mainz: Philipp von Zabern, 1993). For a hypothetical reconstruction of the rotating dining hall on the basis of recent excavations, see Françoise Villedieu, "La cenatio rotunda de la Maison Dorée de Néron," *Comptes Rendus des Séances de l'Académie des Inscriptions et Belles-Lettres* 154, no. 3 (2010): 1089–1114.
 60. Lehmann, "Dome of Heaven," 26.
 61. Hans Peter L'Orange, *Studies on the Iconography of Cosmic Kingship in the Ancient World* (Oslo: H. Aschehoug, 1953). On L'Orange, see Hjalmar Torp, "Hans Peter L'Orange," *Acta ad Archaeologiam et Artium Historiam Pertinentia* 5 (1985): vii–xv; and Dale Kinney, "Hans Peter L'Orange on Portraits and the Arch of Constantine: A Lasting Legacy," *Acta ad Archaeologiam et Artium Historiam Pertinentia* 25, N.S. 11 (2012): 107–126.
 62. L'Orange, *Studies*, 103.
 63. L'Orange, *Studies*, 13.
 64. L'Orange, *Studies*, 118.
 65. Johannes Fried, "In den Netzen der Wissensgesellschaft: Das Beispiel des mittelalterlichen Königs- und Fürstenhofes," in *Wissenskulturen: Beiträge zu einem forschungsstrategischen Konzept*, ed. Johannes Fried and Thomas Kailer (Berlin: Akademie Verlag, 2003), 141–193.
 66. Plato, *Republic*, 576a; *The Republic of Plato*, trans. Allan Bloom (New York: Basic, 1991), 256.
 67. Marshall Sahlin, "The Stranger- King, or, Elementary Forms of the Politics of Life," *Indonesia and the Malay World* 36 (2008): 190.

1. Tyranny and Splendor

1. Ferdows, *Shh-nma*, *The Sháhnáma of Firdausí* VIII, trans. Arthur George Warner and Edmond Warner (London: Kegan Paul, Trench, Trübner, 1923), 394.
2. For Ferdowsi's life and the stages in the composition of the *Shh-nma*, see Djalal Khalegi- Motlagh, "Ferdows, Abu'l- Qsem. i. Life," in *Encyclopedia Iranica*. For his centrality to Iranian cultural identity, see Mahmoud Omidsalar, *Poetics and Politics of Iran's National Epic, the Shhnme* (New York: Palgrave

- Macmillan, 2011).
3. Ferdows, *Sháhnáma of Firdausí* VIII.407.
 4. For *tqdis* as “arch- like” see Herzfeld, “Thron des Khosrô,” 1 fn. 3 (“fornici similis”).
 5. Al- Thalib, *Tarkh Ghurar al- siyar, Histoire des rois des Perses*, ed. and trans. H. Zotenberg (Paris: Imprimerie Nationale, 1900), 698–699. Balam, *Trkh, Chronique de Tabari, traduite sur la version persane d'Abou- Ali Mohammed Belami*, trans. Hermann Zotenberg (Paris: Imprimerie Impériale, 1869), II.304.
 6. Nikephoros, *Short History*, ch. 12; ed. and trans. Cyril Mango (Washington, D.C.: Dumbarton Oaks, 1990), 56–57; for the date, 8–12.
 7. Stephan Borgehammar, “Heraclius Learns Humility: Two Early Latin Accounts Composed for the Celebration of *Exaltatio Crucis*,” *Millennium* 6 (2009): 182, with the apparatus (five of the manuscripts read *thronum*; the sixth reads *thorum*, on which basis Borgehammar emends to *tholum*; discussion of the emendation at 166 n. 71). There are “200–300” extant medieval manuscripts: Borgehammar, “Heraclius,” 146; for the date, 159.
 8. L’Orange, *Studies*, 116.
 9. Compare “the central challenge of early Islam: how, in the absence of sophisticated ruling traditions of their own, were Muslims to institutionalize God’s dispensation without assimilating the traditions that they had replaced?” Chase F. Robinson, “Crone and the End of Orientalism,” in *Islamic Cultures, Islamic Contexts: Essays in Honor of Professor Patricia Crone*, ed. Behnam Sadeghi et al. (Leiden: Brill, 2015), 607; characterizing the argument of Patricia Crone, *Slaves on Horses: The Evolution of the Islamic Polity* (Cambridge: Cambridge University Press, 1980).
 10. Finbarr Barry Flood, *The Great Mosque of Damascus: Studies on the Makings of an Umayyad Visual Culture* (Leiden: Brill, 2001), 110.
 11. For Khosrow’s accession and early reign, see James Howard- Johnston, “Khosrow II,” in *Encyclopedia Iranica*.
 12. Richard Payne, “Cosmology and the Expansion of the Iranian Empire, 502–628 CE,” *Past and Present* 220 (2013): 3–33; “destruction of the Roman empire” at 30. For an analysis of Khosrow’s fall and the dissolution of the alliance between aristocratic “Parthian” families and the Sasanian dynasty, see Parvaneh Pourshariati, *Decline and Fall of the Sasanian Empire* (London: I. B. Tauris, 2008); summary, e.g., at 172–173. For the end of Khosrow’s reign, see James Howard- Johnston, “Pride and Fall: Khusro II and His Regime, 626–628,” in *La Persia e Bisanzio* (Rome: Accademia nazionale dei Lincei, 2004), 93–113.
 13. Holger Klein, *Byzanz, der Westen, und das ‘wahre’ Kreuz: die Geschichte einer Reliquie und ihrer künstlerischen Fassung in Byzanz und im Abendland* (Wiesbaden: Reichert, 2004), 28–31.
 14. Mary Whitby, “A New Image for a New Age: George of Pisidia on the Emperor Heraclius,” in *The Roman and Byzantine Army in the East*, ed. Edward Dbrowa (Krakow: Drukarnia Uniwersytetu Jagiellónskiego, 1994), 197–225; quote at 214. Recently on George’s work, see James Howard- Johnston, *Witnesses to a World Crisis: Historians and Histories of the Middle East in the Seventh Century* (Oxford: Oxford University Press, 2010), 16–35.
 15. *Chronicon Paschale*, s.a. 628; ed. Ludwig August Dindorf (Bonn: Weber, 1832), 728; trans. Michael Whitby and Mary Whitby (Liverpool: Liverpool University Press, 1989), 183. On this remarkable document, see Howard- Johnston, *Witnesses*, 48–49.
 16. Yuri Stoyanov, *Defenders and Enemies of the True Cross: The Sasanian Conquest of Jerusalem in 614 and Byzantine Ideology of Anti- Persian Warfare* (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2011).
 17. Al- Tabar, *Tarkh*, ed. M. J. de Goeje et al. (Leiden: Brill, 1879–1901), I.1009; translation edited by Ehsan Yarshater, various translators for individual volumes (Albany: SUNY Press, 1985–2007); trans. Bosworth, V.300.
 18. Al- Tabar, *Tarkh*, ed. de Goeje et al., I.1010; ed. Yarshater, trans. Bosworth, V.332.
 19. Al- Tabar, *Tarkh*, ed. de Goeje et al., I.1005– 1006; ed. Yarshater, trans. Bosworth, V.325 (translation modified). On the range of exegetical responses to this verse, see Sarah Bowen Savant, *The New Muslims of Post- Conquest Iran: Tradition, Memory, and Conversion* (Cambridge: Cambridge University Press, 2013), 179–183; Nadia Maria El Cheikh, “*Srat al- Rm*: A Study of the Exegetical Literature,” *Journal of the American Oriental Society* 118 (1998): 356–364; Nadia Maria El Cheikh, *Byzantium Viewed by the Arabs* (Cambridge, Mass.: Center for Middle Eastern Studies of Harvard University, 2004), 24–33.
 20. Sebeos, *The Armenian History Attributed to Sebeos*, trans. R. W. Thomson (Liverpool: Liverpool University Press, 1999), 13 (translation modified).
 21. Theophylaktos Simokattes viii.15.7, *The History of Theophylact Simocatta*, trans. Michael Whitby and Mary Whitby (Oxford: Clarendon, 1986), 234 (translation modified).
 22. Theophanes, *Chronographia*, s.a. 6114; ed. Carl de Boor (Leipzig: Teubner, 1883–1885), 308; trans. Cyril

- Mango and Roger Scott (Oxford: Clarendon, 1987), 440 (translation modified).
23. Theophylaktos Simokattes iv.13.7–8; *The History*, 121 (translation modified).
24. Theophylaktos Simokattes iv.11.2; *The History*, 117 (translation modified).
25. Herzfeld, “Thron des Khosrō,” 17–20; Saxl, “Frühes Christentum,” esp. 102–112; Phyllis Ackerman, “Preliminary Report on Takht- i Sulayman. IV. The Throne of Khusraw (The *Takht- i Taqdis*),” *Bulletin of the American Institute for Iranian Art and Archaeology* 5 (1937): 106–109; Lars- Ivar Ringbom, *Graltempel und Paradies: Beziehungen zwischen Iran und Europa im Mittelalter* (Stockholm: Wahlström & Widstrand, 1951), 68–75.
26. Canepa, *Two Eyes*, 146–149.
27. All of the many cubits in use in the medieval world measured at least 20 in. (51 cm): W. Hinz, “*dhir*,” in *Encyclopedia of Islam, Second Edition*.
28. Ferdowsi’s primary source was a text now called the “prose *Shh- nma* of Abu Mansur,” of which only the preface is preserved: Ferdows, *Sháhnáma of Firdausí*, I.108–111, with Khaleghi- Motlagh, “Ferdows”; and Parvaneh Pourshariati, “The Parthians and the Production of the Canonical Shhnmas: Of Pahlav, Pahlavn, and the Pahlav,” in *Commutatio et Contentio: Studies in the Late Roman, Sasanian, and Early Islamic Near East in Memory of Zeev Rubin*, ed. Henning Börm and Josef Wiesehöfer (Düsseldorf: Wellern, 2010), 377–380. This work in New Persian was sponsored by a Samanid governor of Tus and supervised by his minister, Abu Mansur al- Mamari, who oversaw the collection and analysis of Pahlavi texts on Sasanian history. Zeev Rubin, “Hamza al- Isfahn’s Sources for Sasanian History,” *Jerusalem Studies in Arabic and Islam* 35 (2008): 46–50; Pourshariati, “Parthians,” 357–375. Balami’s history is a Persian adaptation of the work of al- Tabari, supplemented with additional sources on Sasanian history, including a “*Shhnma* of Hamza al- Isfahani” and an anonymous history of Iran. See A. C. S. Peacock, *Mediaeval Islamic Historiography and Political Legitimacy: Balam’s Trkhnma* (London: Routledge, 2007); esp. 90. Al- Thaalibi’s *Ghurar akhbar muluk al- Furs*, dedicated to a Ghaznavid governor of the early eleventh century, has received less scholarly attention than Ferdowsi and Balami; even the identity of the author, who may be the famous literary critic of the same name, is unclear. (In favor of their identity, with references to earlier literature, see Savant, *New Muslims*, 133–134 fn. 9.) The text’s first editor identified its primary source as a version of a lost Arabic work based on Pahlavi histories conventionally attributed to the eighth- century litterateur Ibn al- Muqaffa, while its many similarities with Ferdowsi have led to the hypothesis that its author knew the prose *Shah-nama* of Abu Mansur: al- Thalib, *Tarkh*, xxv–xliv, including a substantial collection of divergences between Ferdowsi and al- Thaalibi; C. E. Bosworth, “al- Thalib, Ab Mansr,” in *Encyclopedia of Islam, Second Edition*. For a skeptical discussion of the view of “Ibn al- Muqaffa” as a unitary source, see Zeev Rubin, “Ibn al- Muqaffa and the Account of Sasanian History in the Arabic Codex Sprenger 30,” *Jerusalem Studies in Arabic and Islam* 30 (2005): 52–93. Rubin concludes (87) that early medieval authors had access to “many sources of different types” for late Sasanian history.
29. For “horizontal transmission,” see Peacock, *Mediaeval Islamic Historiography*, 59–66; Rubin, “Hamza al- Isfahn,” 54.
30. A long- standing theory held that all early Islamic accounts of Sasanian history derived from a single Pahlavi “Book of Kings”: see especially Theodor Nöldeke, *Das iranische Nationalepos* (Berlin: de Gruyter, 1920). More recent scholarship holds that, while there was a single official history produced at the Sasanian court, “Book of Kings” may also name a genre, from which many different works circulated throughout the early Islamic period: Rubin, “Hamza al- Isfahn.”
31. Ferdows, *Sháhnáma of Firdausí*, VIII.394–395. A useful analytical summary of Ferdowsi’s account is given by Herzfeld, “Thron des Khosrō,” 2.
32. Al- Thalib, *Tarkh*, 699; Herzfeld, “Thron des Khosrō,” 2–3.
33. On early Islamic literary representations of these ruins, see Sarah Bowen Savant, “Forgetting Ctesiphon: Iran’s Pre- Islamic Past, c. 800–1100,” in *History and Identity in the Late Antique Near East*, ed. Philip Wood (Oxford: Oxford University Press, 2013), 169–186.
34. Al- Thalib, *Tarkh*, 698–711.
35. Ferdows, *Sháhnáma of Firdausí*, VIII.392.
36. Al- Thalib, *Tarkh*, 687; Ferdows, *Sháhnáma of Firdausí*, VIII.354.
37. Ferdows, *Sháhnáma of Firdausí*, VIII.407–408; so too al- Thalib, *Tarkh*, 713–714.
38. Al- Thalib, *Tarkh*, 718.
39. Nikephoros, *Short History*, 56. This account was adopted with minor changes by the ninth-century *Chronicle* of George Hamartolos and the tenth- century *Chronicle* of Symeon the Logothete: Georgios Monachos, *Chronicon*, ed. Carl de Boor (Leipzig: Teubner, 1904), II.671–672; Symeon Magister, *Chronicon*, ed. Staffan Wahlgren (Berlin: Walter de Gruyter, 2006), 160. Since Herzfeld (“Thron des Khosrō,” 17–20), a passage in

the twelfth- century chronicle attributed to Georgios Kedrenos (*Chronicon*, ed. Immanuel Bekker [Bonn: Weber, 1838–1839], I.721–722) has figured prominently in discussions of the “Throne of Khosrow.” Herzfeld believed that Kedrenos’s account could fill a lacuna in the ninth- century *Chronographia* of Theophanes. This argument rested on an incomplete understanding of the sources of Kedrenos, and should be discarded. The account of Kedrenos is better understood as a further variation on that of Nikephoros. See Borgehammar, “Heraclius Learns Humility,” 164–165. For the current understanding of Kedrenos, see Warren Treadgold, *The Middle Byzantine Historians* (Hounds Mills: Palgrave Macmillan, 2013), 339–341.

40. Borgehammar, “Heraclius Learns Humility,” 182, with the apparatus. Two Carolingian accounts will be discussed later in this chapter. See further, e.g., Herzfeld, “Thron des Khosrō,” 20–24; Barbara Baert, *A Heritage of Holy Wood: The Legend of the True Cross in Text and Image*, trans. Lee Preedy (Leiden: Brill, 2004), 140–163.
41. Nikephoros, *Short History*, 56–57.
42. Borgehammar, “Heraclius Learns Humility,” 184–185.
43. Nikephoros, *Short History*, 56; Borgehammar, “Heraclius Learns Humility,” 182 (“in fano”). In the earlier sources, no location is specified. Thus “no Greek source with any claim to originality locates the object... to a named place”: Borgehammar, “Heraclius Learns Humility,” 165. In the twelfth- century chronicle of Georgios Kedrenos (*Chronicon*, I.721), this is located in “the city of Gazakos,” which has suggested to some commentators an identification with the sanctuary of the Sasanian imperial fire, Adur Gushnasp, in western Iran: Ackerman, “Preliminary Report,” 108; Rudolf Naumann, *Die Ruinen von Tacht-e Suleiman und Zendan-e Suleiman* (Berlin: Reimer, 1977), 44 (confidently placing the Taqdis throne in the west iwan); Canepa, *Two Eyes*, 148. For a critical analysis of the literary and archaeological evidence regarding Adur Gushnasp, see Matthew Canepa, “Building a New Vision of the Past in the Sasanian Empire: The Sanctuaries of Kaynsh and the Great Fires of Iran,” *Journal of Persianate Studies* 6 (2013): esp. 77–84.
44. Nikephoros, *Short History*, 12–14. This (lost, hypothetical) source has been called the “continuation of John of Antioch” (Treadgold, *Middle Byzantine Historians*, 3–4 and 29) and the “second continuation of John of Antioch” (Howard- Johnston, *Witnesses*, 244–250).
45. Borgehammar, “Heraclius Learns Humility” (158–160) writes that it was “composed between the end of the seventh century and c. 750, using material from the 630s.” He is keen to posit oral transmission via “a Greek or Oriental monk,” but a textual intermediary is also possible.
46. *Chronicon Paschale*, ed. Dindorf, 729–730; trans. Whitby and Whitby, 184.
47. Borgehammar, “Heraclius Learns Humility,” 182–183, with apparatus.
48. Nikephoros, *Short History*, 56.
49. Borgehammar, “Heraclius Learns Humility,” 182–183.
50. Nikephoros, *Short History*, 56–57.
51. Borgehammar, “Heraclius Learns Humility,” 184–185.
52. Traditions of universalism: Canepa, *Two Eyes*, 144–149; Garth Fowden, *Empire to Commonwealth: Consequences of Monotheism in Late Antiquity* (Princeton: Princeton University Press, 1993).
53. Pace Saxl, “Frühes Christentum,” 107–112.
54. Al- Tabar, *Tarkh*, ed. de Goeje et al., I.2857; ed. Yarshater, trans. Humphreys, XV.63.
55. M. J. Kister, “A Booth like the Booth of Moses... : A Study of an Early Hadth,” *Bulletin of the School of Oriental and African Studies* 25 (1962): 50–55. On early uses of this tradition, see David Cook, *Studies in Muslim Apocalyptic* (Princeton, N.J.: Darwin, 2002), 82.
56. A. Fischer et al., “Kaysar,” in *Encyclopedia of Islam, Second Edition*.
57. Avinoam Shalem, “The Fall of al- Madin: Some Literary References Concerning Sasanian Spoils of War in Mediaeval Islamic Treasures,” *Iran* 32 (1994): 77–81.
58. Nasser Rabbat, “The Dome of the Rock Revisited: Some Remarks on al- Wasiti’s Accounts,” *Muqarnas* 10 (1993): 71–73.
59. Shalem, “Fall of al- Madin,” 78–79.
60. Al- Tabar, *Tarkh*, ed. de Goeje et al., I.2451; ed. Yarshater, trans. Juynboll, XIII.30.
61. J. Pedersen, “Minbar,” in *Encyclopedia of Islam, Second Edition*; Fritz Meier, “Der Prediger auf der Kanzel (Minbar),” in *Studien zur Geschichte und Kultur des vorderen Orients: Festschrift für Bertold Spuler zum siebzigsten Geburtstag*, ed. Hans R. Roemer and Albrecht Noth (Leiden: Brill, 1981), 225–226; Heribert Busse, “Die Kanzel des Propheten im Paradiesgarten,” *Die Welt des Islams* 28 (1988): 99–111.
62. For the introduction of the maqsura, see the references collected by K. A. C. Creswell, *Early Muslim Architecture* (Oxford: Clarendon, 1969), I.42. For sitting between the two parts of the khutba, see Fred M. Donner, “Umayyad Efforts at Legitimation: The Umayyads’ Silent Heritage,” in *Umayyad Legacies: Medieval Memories from Syria to Spain*, ed. Antoine Borrut and Paul M. Cobb (Leiden: Brill, 2010), 199. For receiving

- petitions, see al- Masd, *Murj al- dhahab, Les Prairies d'Or*, ed. and trans. C. Barbier de Meynard and Pavet de Courteille (Paris: Imprimerie Impériale [/Natio nale]), 1861–1877, V.74–75. Muawiya was also said to have displayed the mantle of the third caliph, his murdered kinsman Uthman, on his minbar in Damascus. Since revenge on Uthman's killers was often invoked to justify Umayyad rule, this converted the minbar into a display of caliphal legitimacy. Al- Tabar, *Tarkh*, ed. de Goeje et al., I.3255; ed. Yarshater, trans. Brockett, XVI.196–197.
63. For the Umayyad minbar as a throne, see, e.g., C. H. Becker, “Die Kanzel im Kultus des alten Islam,” in *Orientalische Studien Theodor Nöldeke zum siebzigsten Geburtstag (2. März 1906) gewidmet*, ed. Carl Bezold (Gieszen, Germany: Töpelmann, 1906), I.341–344.
 64. Andrew Marsham, *Rituals of Islamic Monarchy: Accession and Succession in the First Muslim Empire* (Edinburgh: Edinburgh University Press, 2009), 86–89.
 65. R. Stephen Humphreys, *Muawiya ibn Abi Sufyan: From Arabia to Empire* (Oxford: One-world, 2006), esp. 115–136.
 66. Suliman Bashear, *Arabs and Others in Early Islam* (Princeton, N.J.: Darwin, 1997), 18; Aram A. Shahin, “In Defense of Muwiya ibn Ab Sufyn: Treatises and Monographs on Muwiya from the Eighth to the Nineteenth Centuries,” in *The Lineaments of Islam: Studies in Honor of Fred McGraw Donner*, ed. Paul M. Cobb (Leiden: Brill, 2012), 189 fn. 48.
 67. Humphreys, *Muawiya*, 98–102; Patricia Crone, *God's Rule: Government and Islam* (New York: Columbia University Press, 2005), 46–47; for “inheritance of sovereign rights” as *sunnat kisra wa- qaysar*, see Ignaz Goldziher, *Muhammedanische Studien* (Halle: Niemeyer, 1889–1890), II.98 fn. 2.
 68. For *mulk*, see Crone, *God's Rule*, 44–47. For *jawr*, see Donner, “Umayyad Efforts,” 188.
 69. Jere L. Bachrach, “Marwanid Umayyad Building Activities: Speculations on Patronage,” *Muqarnas* 13 (1996): 27–44; Antoine Borrut, *Entre mémoire et pouvoir: l'espace syrien sous les derniers Omeyyades et les premiers Abbassides (v.72–193/692–809)* (Leiden: Brill, 2011), esp. 383–443.
 70. Most recently on Umayyad Damascus, see Nancy Khalek, *Damascus After the Muslim Conquest: Text and Image in Early Islam* (Oxford: Oxford University Press, 2011); and Flood, *Great Mosque*. Still essential is Karl Wulzinger and Carl Watzinger, *Damaskus: Die islamische Stadt* (Berlin: de Gruyter, 1924).
 71. Al- Yaqb, *Kitb al- Buldn*, ed. Michael de Goeje (Leiden: Brill, 1892), 326; trans. Gaston Wiet (Cairo: Institut français d'archéologie orientale, 1937), 174. Al- Muqaddas, *Ahsan al- taqsm*, ed. Michael de Goeje (Brill: Leiden, 1906), 159; trans. Basil Collins (Reading, U.K.: Garnet, 2001), 135. Jonathan Bloom (“The *Qubbat al-Khadra* and the Iconography of Height in Early Islamic Architecture,” *Ars Orientalis* 23 [1993], 135–36) understands al-Khadra as the earliest example of a group of Islamic urban palaces possessing “celestial” significance on the basis of his translation of the phrase “*qubbat al- khadra*” as “dome of heaven.” The interpretation goes back to Creswell (*Early Muslim Architecture*, I.31), who cites Ibn al- Faqh to argue that the palace “had a green dome (*qubbat al- khadra*) which gave its name to the whole edifice.” But Ibn al- Faqh mentions no dome, simply calling the palace “al- khadra” (*Kitb al- Buldn*, ed. Michael de Goeje [Leiden: Brill, 1885], 180; trans. Henri Massé [Damascus: Institut français de Damas, 1973], 133).
 72. Flood, *Great Mosque*, 147, citing Ibn Asakir; paraphrased after Humphreys, *Muawiya*, 11.
 73. The standard Abbasid histories of al- Tabar (*Tarkh*, ed. de Goeje et al., II.382; ed. Yarshater, trans. Howard, XIX.175) and al- Masd (*Murj al- dhahab*, V.158–159) set the presentation of the head to Yazid within the complex. Its display is already assumed in early Alid literature: e.g., the *Maqta al- Husain* published by Ferdinand Wüstenfeld, “Der Tod des Husein ben Alí und die Rache: Ein historischer Roman aus dem Arabischen,” *Abhandlungen der königlichen Gesellschaft der Wissenschaften in Göttingen* 30 (1883): 141. This text preserves substantial elements of the *Maqta* of Ab Mikhnaf (d. 774) via the intermediary of a *Maqta* by Hisham ibn al- Kalbi (d. 821?): see Ursula Sezgin, *Ab Mihnaf: Ein Beitrag zur Historiographie der umaiyadischen Zeit* (Leiden: E. J. Brill, 1971), 116–123.
 74. Al- Tabar, *Tarkh*, ed. de Goeje et al., II.470–471; ed. Yarshater, trans. Hawting, XX.51–53. On these events, see especially Gernot Rotter, *Die Umayyaden und der zweite Bürgerkrieg* (Wiesbaden: Kommisionsverlag F. Steiner, 1982), 139–143.
 75. Farazdaq, *Dwn*, trans. R. Boucher (Paris: Adolphe Labitte, 1870), I.285–288.
 76. For the characteristic structure of Umayyad panegyric, see Suzanne Pinckney Stetkevych, “Umayyad Panegyric and the Poetics of Islamic Hegemony: Al- Akhtal’s *khaffa al- Qatnu* (‘Those that dwelt with you have left in haste’),” *Journal of Arabic Literature* 28 (1997): 89–122; quote at 105.
 77. For adjacent mosques and cathedrals in greater Syria, see Mattia Guidetti, “The Contiguity Between Churches and Mosques in Early Islamic Bild al- Shm,” *Bulletin of the School of Oriental and African Studies* 76 (2013): 229–258. For later Islamic attempts to come to terms with al- Walid’s action, see especially Ibn Askir, *Trkh*, 29–38. On this section, see Zayde Antrim, “Ibn Askir’s Representations of Syria and Damascus in the

Introduction to the *Tarikh Madinat Dimashq*,” *International Journal of Middle East Studies* 38 (2006): 117–118.

78. Support for the essential elements of these reconstructions is provided below. Full arguments are given in Anderson, “World Image After World Empire: The Ptolemaic Cosmos in the Early Middle Ages, ca. 700–900” (PhD diss., Bryn Mawr College, 2012), 370–377 for the interior divisions and 378–392 for the decoration of the qibla wall.
79. The present masonry dome is a later construction, but al-Walid’s mosque certainly also possessed a dome, which is described already by the Umayyad poets, and may have been wooden. See Creswell, *Early Muslim Architecture*, I.167–169.
80. Flood, *Great Mosque*, 118–122 and 141–142.
81. Thus already Wulzinger and Watzinger, *Damaskus*, 157. I understand the Bab al-Khadra (as in Ibn Askir, *Trkh*, 19–20) to be identical to Bab al-Hadid (as in Ibn Jubayr, *Rihla*, ed. Michael de Goeje [Leiden: Brill, 1907], 261; trans. R. J. C. Broadhurst [London: J. Cape, 1952], 275; and Ibn Battuta, *Rihla*, ed. C. Defrémy and B. R. Sanguinetti [Paris: Imprimerie Nationale, 1874–1879], I.210–211; trans. H. A. R. Gibb [Cambridge: Cambridge University Press, 1958–1994], I.132) and the Bab al-Maqsura (as in al-Tabarī, *Tārikh*, ed. de Goeje, II.1790; ed. Yarshater, trans. Hillenbrand, XXVI.143). Flood (*Great Mosque*, 155) rejects the identification of the Bab al-Khadra with the eastern door of the triple gateway based on his belief in the “preeminence” of the maqsura of the Companions in the Umayyad period (e.g., 169, 182).
82. Dorothée Sack, *Resafa IV: Die Große Moschee von Resafa-Rusāfat Hišām* (Mainz: Philipp von Zabern, 1996), 48 for the date; and 69 for a discussion of the door.
83. Ibn Jubayr, *Rihla*, ed. de Goeje, 264; trans. Broadhurst, 274. Multiple traditions attribute construction of the new maqsura to al-Walid’s brother, Sulaymn. For example, al-Basrawī, *Tuhfat al-anmā fī fadil al-Shāh*, ed. Abd al-Azz Fayyad Harfsh (Damascus: Dr al-Bashir, 1998), 50, specifies that Sulayman built the maqsura of Khidr, another name for the central maqsura: see Ibn Askir, *Trkh*, 19–20. This is related to the tradition according to which al-Walid died before completion of the mosque, which was completed by Sulayman: e.g., Ibn Askir, *Trkh*, 29–30.
84. So too, e.g., Barbara Finster, “Die Mosaiken der Umayyadenmoschee von Damaskus,” *Kunst des Orients* 7 (1970–1971): 138: central mihrab as the “mihrab der Hutba.” A different interpretation is offered by Flood, who argues that the maqsura of the Companions was “religiously and politically pre-eminent” in the Umayyad period: *Great Mosque*, 169–170. Compare Anderson, “World Image,” 374–377.
85. Sack, *Resafa IV*, 9–10 and 21–24.
86. Marsham, *Rituals*, 134–144.
87. A photograph of this segment of wall from after the fire of 1893 is essential for reconstruction of its medieval appearance: Flood, *Great Mosque*, fig. 35.
88. I identify the inscription described as running at the level of the ceiling by al-Istakhrī (*Kitāb al-Maslik*, ed. Michael de Goeje [Leiden: Brill, 1889], 60) and al-Idrisī (*Idrisī's Palaestina und Syrien*, ed. Johann Gildemeister [Bonn: Georg, 1885], 14) with the inscription of Sura 102 described by Yqt (*Mujam al-Buldūn*, ed. Ferdinand Wüstenfeld [Leipzig: Brockhaus, 1866–1873], II.593). Sura 102 was also part of the decoration of al-Walid’s rebuilt Mosque of the Prophet in Medina: Ibn Rusta, *Kitāb al-Alqā al-nafsa*, ed. Michael de Goeje (Leiden: Brill, 1892), 70; trans. Gaston Wiet (Cairo: Publications de la Société de géographie d’Égypte, 1955), 75. Cf. Finster, “Mosaiken,” 132; and Ghazi Bisheh, “The Mosque of the Prophet at Madnah Throughout the First Century A.H. with Special Emphasis on the Umayyad Mosque” (PhD diss., University of Michigan, 1979), 218.
89. E.g., Ibn Jubayr, *Rihla*, ed. de Goeje, 261–262; trans. Broadhurst, 272. Portions of the mosaics on the northern wall were preserved into the nineteenth century: see the watercolor of Spiers reproduced in Flood, *Great Mosque*, color pl. 2.
90. For cities, see al-Basrawī, *Tuhfat al-anmā fī fadil al-Shāh*, 50; for trees, see Ibn Jubayr, *Rihla*, ed. de Goeje, 262; trans. Broadhurst, 272.
91. Ibn Askir, *Trkh*, 66. Al-Basrawī, *Tuhfat al-anmā fī fadil al-Shāh*, 50. Henri Saladin, *Manuel d’art musulman. I: L’architecture* (Paris: A. Picard, 1907), 85, describing a visit of 1879.
92. Al-Basrawī, *Tuhfat al-anmā fī fadil al-Shāh*, 50; Yqt, *Mujam al-Buldūn*, II.593.
93. On the karma, see Flood, *Great Mosque*, 57–113.
94. For the jewels, see Ibn Sarrāj, *A Chronicle of Damascus*, ed. and trans. William M. Brinner (Berkeley: University of California Press, 1963), 120b and 161. For the expense, see Ibn Askir, *Trkh*, 53.
95. Ibn Sarrāj, *Chronicle*, 120b and 161; al-Muqaddasī, *Ahsan al-taqṣīm*, ed. de Goeje, 158; trans. Collins, 134.
96. So too Flood, *Great Mosque*, 247. This corresponds to the level of the inscriptions at the Mosque of the Prophet in Medina as reconstructed by Jean Sauvaget, *La Mosquée omeyyade de Médine* (Paris: Vanoest,

- 1947), 79–81 and fig. 3.
97. Ibn Askir, *Trkh*, 55–56. The traditionist is Abu Yusuf Yaqub ibn Sufyan. On Ibn Asakir's fidelity to his sources, see James E. Lindsay, ed., *Ibn Askir and Early Islamic History* (Princeton, N.J.: Darwin, 2001), especially the essays by Steven Judd and by James Lindsay.
98. Ibn Asakir writes that basmala, throne verse, and dedication were spread across the first three bands, while the three suras occupied the fourth, but this is a spatial absurdity.
99. The measurements of the wall are based on Creswell, *Early Muslim Architecture*, I. fig. 90. I follow the text of the foundation inscription as excerpted in Flood, *Great Mosque*, 252. Further discussion at Anderson, “World Image,” 384–385. For use of a geometrical grid in the preparation of the Umayyad- era mosaic inscriptions of the Dome of the Rock, see Alain George, *The Rise of Islamic Calligraphy* (London: Saqi, 2010), 60–68.
100. Al- Muqaddas, *Ahsan al- taqsm*, ed. de Goeje, 158; trans. Collins, 134.
101. Al- Nbigha al- Shaibn, *Dwn*, ed. Qadr My (Beirut: Dr al- Kitb al- Arab, 1995), 111; cf. Henri Lammens, “Le Calife Wald et le prétendu partage de la Mosquée des Omayyades à Damas,” *Bulletin de l’Institut Français d’Archéologie Orientale* 26 (1926): 45.
102. Yqt, *Mujam al- Buldn*, II.595; translation after Guy LeStrange, *Palestine Under the Moslems* (London: Alexander P. Watt, 1890), 263–264 (translation modified).
103. Al- Nbigha al- Shaibn, *Dwn*, 111–112. On this account, see especially Nasser Rabbat, “The Dialogic Dimension of Umayyad Art,” *Res* 43 (2003): 78–94.
104. Patricia Crone and Martin Hinds, *God’s Caliph: Religious Authority in the First Centuries of Islam* (Cambridge: Cambridge University Press, 1986), 39.
105. See especially the account attributed to Wahb ibn Munabbih in al- Thalab, *Qisas al- Anbiy* (Cairo: Maktabat al- Jumhrya al- Arabia, n.d.), 170; trans. William M. Brinner (Leiden: Brill, 2002), 512. For the Solomonic resonance of the karma, see Flood, *Great Mosque*, 57–113, esp. 101–111.
106. Al- Masd, *Murj al- dhahab*, ed. Barbier de Meynard and Courteille, V.398–399; Arthur Wormhoudt, *Adab al Minbar: Sermons from Umayyad Times* (Oskaloosa: William Penn College, 1988), 74. For the accession of Sulayman see Reinhard Eisener, *Zwischen Faktum und Fiktion: Eine Studie zum Umayyadenkalifen Sulaiman b. ‘Abdalmalik und seinem Bild in den Quellen* (Wiesbaden: Harrassowitz, 1987), 38–39.
107. Ibn Askir, *Trkh*, cited here after David Cook, “The Beginnings of Islam in Syria during the Umayyad Period” (PhD diss., University of Chicago, 2002), 232.
108. So too Rabbat, “Dialogic,” 93.
109. Cook, *Studies*, 122–136.
110. Al- Istakhr, *Kitb al- Maslik*, 60. Ibn Jubayr, *Rihla*, ed. de Goeje, 267–269; trans. Broadhurst, 278–280. Josef W. Meri, *The Cult of Saints Among Muslims and Jews in Medieval Syria* (Oxford: Oxford University Press, 2002), 44–45; Stephennie Mulder, *The Shrines of the Alids in Medieval Syria: Sunnis, Shiis and the Architecture of Coexistence* (Edinburgh: Edinburgh University Press, 2014), 201–220.
111. Syed Akbar Hyder, *Reliving Karbala: Martyrdom in South Asian Memory* (Oxford: Oxford University Press, 2006), 95–98.
112. Anthony Kaldellis, “From Rome to New Rome, from Empire to Nation- State: Reopening the Question of Byzantium’s Roman Identity,” in *Two Romes: Rome and Constantinople in Late Antiquity*, ed. Lucy Grig and Gavin Kelly (Oxford: Oxford University Press, 2012), 396. For a review of the modern debate regarding Roman/Byzantine identity, see Ioannis Stouraitis, “Roman Identity in Byzantium: A Critical Approach,” *Byzantinische Zeitschrift* 107 (2014): 175–220.
113. One may speak of “celestial coronation” in Byzantium throughout the medieval period: Andrea Torno Ginnasi, *L’incoronazione celeste nel mondo bizantino: Politica, ceremoniale, numismatica e arti figurative* (Oxford: Archaeopress Archaeology, 2014).
114. Lawrence Nees, *A Tainted Mantle: Hercules and the Classical Tradition at the Carolingian Court* (Philadelphia: University of Pennsylvania Press, 1991), 110–143, quote at 129. On Frankish perception of Rome the city and Rome the state, see Rosamond McKitterick, *Perceptions of the Past in the Early Middle Ages* (Notre Dame, Ind.: University of Notre Dame Press, 2006), 35–61.
115. Anne A. Latowsky, *Emperor of the World: Charlemagne and the Construction of Imperial Authority, 800–1229* (Ithaca, N.Y.: Cornell University Press, 2013).
116. Borgehammar, “Heraclius Learns Humility,” 146 and fn. 6.
117. In addition to Ado’s martyrologium, discussed below, see also Notker, *Patrologia Latina* 131: 1029–1164, description of the throne at 1151C. For the importance of the genre in constructing a Frankish sense of the past, see McKitterick, *Perceptions*, 51–56.
118. Ado, *Le Martyrologe d’Adon*, ed. Jacques Dubois and Geneviève Renaud (Paris: Éditions du Centre national de la recherche scientifique, 1984), 314; compare Borgehammar, “Heraclius Learns Humility,” 182–183.

119. Most forcibly by Nikolaus Staubach, *Rex Christianus: Hofkultur und Herrschaftspropaganda im Reich Karls des Kahlen*, part 2: *Die Grundlegung der “religion royale”* (Cologne: Böhlau, 1993).
120. Notably, a poem by John Scottus Eriugena known as the “Aulae siderae”: John Scottus, *Carmina*, ed. and trans. Michael W. Herren (Dublin: Dublin Institute for Advanced Studies, 1993), 116–121; English translation in John J. O’Meara, *Eriugena* (Oxford: Clarendon, 1988), 184–186. This may have been written for the dedication of the palatine chapel of Charles at Compiègne in 877, shortly before Charles’s death: May Viillard-Troïekouoff, “La chapelle de Charles le Chauve a Compiègne,” *Cahiers Archéologiques* 21 (1971): 89–94; and Paul Edward Dutton and Édouard Jeauneau, “The Verses of the *Codex Aureus* of Saint-Emmeram,” *Studi Medievali*, ser. 3, no. 24 (1983): 104–112. For an argument relating the poem to Charles’s celebration of Christmas in Aachen in 869, see Michael W. Herren, “Eriugena’s *Aulae Siderae*, the *Codex Aureus*, and the Palatine Church of St. Mary at Compiègne,” *Studi Medievali*, ser. 3, no. 28 (1987): 593–608. The beginning of the poem contains an elaborate reflection on the numbers four and eight, in the course of which the twelve signs of the zodiac are invoked, while its conclusion presents a brief ekphrasis of a church. But there is no reason to understand the invocation of the zodiac as “the description of the real decoration of a real church dome in the royal chapel of Charles,” as does Bianca Künnel, *The End of Time and the Order of Things* (Regensburg: Schnell & Steiner, 2003), 166.
121. For the attribution to the court of Charles the Bald, see Michael Peter et al., “Servatiusreliquiar, sog. Reliquienkasten Ottos I.,” in *Der Quedlinburger Schatz wieder vereint*, ed. Dietrich Kötzsche (Berlin: Kulturstiftung der Länder, 1992), 52–58; Danielle Gaborit-Chopin, *Ivoires du Moyen Age* (Fribourg, Switzerland: Office du livre, 1978), 190. The fundamental publication is Adolph Goldschmidt, *Die Elfenbeinskulpturen aus der Zeit der karolingischen und sächsischen Kaiser, VIII.–XI. Jahrhundert* (Berlin: Cassirer, 1914), I.32–34, which includes the panel of the Munich casket once housed in Berlin and now destroyed. 160 notes to pages 34–35
122. Peter et al., “Servatiusreliquiar.” More elaborate interpretations appear in Wolfgang Hübner, *Zodiacus Christianus: Jüdisch-christliche Adaptionen des Tierkreises von der Antike bis zur Gegenwart* (Königstein: Hain, 1983), 39; Evan Gatti, “Reviving the Relic: An Investigation of the Form and Function of the Reliquary of St. Servatius, Quedlinburg,” *Athanor* 18 (2000): 7–15; Eliza Garrison, “A Curious Commission: The Reliquary of St. Servatius in Quedlinburg,” *Gesta* 49 (2010): 17–29.
123. Fritz Vollbach, “Das Ellwanger Reliquienkästchen,” in *Ellwangen, 764–1964: Beiträge und Untersuchungen zur Zwölfhundertjahrfeier*, ed. Viktor Burr (Ellwangen: Schwabenverlag, 1964), 767–774.
124. Vollbach, “Reliquienkästchen,” 773–774.
125. These interpretations were advanced by Percy E. Schramm, “Neuentdeckte Bildnisse Karls des Kahlen, seiner Gemahlin und seines Sohnes (876/7): Ein Beleg für die den Byzantinern nachgeahmte Krone,” in *Festschrift Hermann Aubin zum 80. Geburtstag*, ed. Otto Brunner (Wiesbaden: Steiner, 1965), 614–624; reprinted in Percy E. Schramm, *Kaiser, Könige, und Päpste: Gesammelte Aufsätze zur Geschichte des Mittelalters* (Stuttgart: Hiersemann, 1968–1971), II.110–118. More cautious is Vollbach, “Reliquienkästchen,” 771.
126. Staubach, *Rex Christianus*, 101.
127. Thus already Vollbach, “Reliquienkästchen,” 769.
128. Concisely on the history of the Cathedra, see Nees, *Tainted Mantle*, 147–149; thoroughly, Michele Maccarrone, “La storia della cattedra,” in *La cattedra lignea di S. Pietro in Vaticano* (Vatican City: Tipografia Poliglotta Vaticana, 1971), 3–70.
129. For the enamels, precious stones, and alloy, see Antonio Ferrua, “Esame strutturale e archeologico,” in *La cattedra lignea*, 111–116.
130. Nees, *Tainted Mantle*, 156–157.
131. Nees, *Tainted Mantle*, 199–234.
132. On this drawing, see Arthur Ashpitel and Alexander Nesbitt, *Two Memoirs on Saint Peters Chair Preserved at Rome* (London: Nichols and Sons, 1870), 6 and pl. II.
133. In his other hand he originally held a scepter: Percy Ernst Schramm, “Kaiser Karl der Kahle: der Stifter des Throns in St. Peter,” in *La cattedra lignea*, 277.
134. For the identifications of the figures, see Kurt Weitzmann, “The Iconography of the Carolingian Ivories of the Throne,” in *La cattedra lignea*, 218–225. Staubach, *Rex Christianus*, 312–318, argues that the constellations are arranged in meaningful pairs.
135. Clearest discussion by Nees, *Tainted mantle*, 178–179; different interpretation by Staubach, *Rex Christianus*, 287–289; but compare Nikolaus Staubach, “Herkules an der ‘Cathedra Petri’,” in *Iconologia sacra: Mythos, Bildkunst und Dichtung in der Religions- und Sozialgeschichte Alteuropas*, ed. Hagen Keller and Nikolaus Staubach (Berlin: Walter de Gruyter, 1994), 393 with fn. 38.
136. Ernst Hollstein, “Die *cathedra lignea* von St. Peter im Vatikan: Jahrringchronologie,” in *Nuove ricerche sulla cattedra lignea di S. Pietro in Vaticano* (Vatican City: Tipografia Poliglotta Vaticana, 1975), 79–103.

137. The first unambiguous references date to the 1500s. See Maccarrone, “Storia,” 11, 16–17, and 35.
138. Schramm, “Kaiser Karl”; Florentine Mütherich, “Der Elfenbeinschmuck des Thrones,” in *La cattedra lignea*, 253–273; Lawrence Nees, “Charles the Bald and the *Cathedra Petri*,” in *Charles the Bald: Court and Kingdom*, ed. Margaret T. Gibson and Janet L. Nelson (Aldershot, U.K.: Variorum, 1990), 340–347; Nees, *Tainted mantle*, 151–152.
139. E.g., Maccarrone, “Storia,” 10; Schramm, “Kaiser Karl,” 287–289; Nees, *Tainted Mantle*, 152 and 178; Staubach, *Rex Christianus*, 332–334.
140. “Cosmocrator”: Weitzmann, “Iconography,” 232. An image of Charles as “cosmocrator,” and of his “deificatio” and “apotheosis,” was seen here by Chiara Frugoni, “L’ideologia del potere imperiale nella ‘Cathedra di S. Pietro,’” *Bullettino dell’Istituto Storico Italiano per il Medio Evo* 86 (1976–1977): 121. For “deificatio,” see further Staubach, *Rex Christianus*, 299; for “apotheosis,” Paul Edward Dutton, *Charlemagne’s Mustache and Other Cultural Clusters of a Dark Age* (New York: Palgrave Macmillan, 2004), 125.
141. Nees, *Tainted Mantle*, 244–250.
142. For Solomon, see Schramm, “Kaiser Karl,” 292.
143. Staubach, *Rex Christianus*, 292, believes that the portrait allowed the throne to project its intended message even when Charles sat somewhere else.
144. Schramm entertained this idea: see “Kaiser Karl,” 277 (“Begläubigung des Besitzers bzw. Ausstellers”), 282 (“Bildnis des Stifters”), and 288. Charles was consecrated three times, matching the three crowns depicted on the throne: in Orleans in 848; in Metz in 869; and in Rome in 875. See Janet L. Nelson, *Charles the Bald* (London: Longman, 1992), 155; Janet L. Nelson, “Inauguration rituals,” in *Early Medieval Kingship*, ed. P. H. Sawyer and A. N. Wood (Leeds: University of Leeds, 1977), 60.
145. Franz Alto Bauer, *Das Bild der Stadt Rom im Frühmittelalter: Papststiftungen im Spiegel des Liber Pontificalis von Gregor dem Dritten bis zum Leo dem Dritten* (Wiesbaden: Reichert, 2004), 104–106 (Charlemagne) and 117–118 (Constantine); on the triumphal arch, see Paolo Liverani, “Costantino offre il modello della basilica sull’arco trionfale,” in *L’orizzonte tardoantico e le nuove immagini*, 312–468, ed. Maria Andaloro (Rome: Jaca Book, 2006), 90–91. Further on the visible presence of the Carolingians within St. Peter’s, see Joanna Story, “The Carolingians and the Oratory of Saint Peter the Shepherd,” in *Old Saint Peter’s, Rome*, ed. Rosamond McKitterick et al. (Cambridge: Cambridge University Press, 2013), 257–273.
146. The inscription is preserved in the Einsiedeln syllogue (*Inscriptiones Christianae Urbis Romae* II.20, no. 6), a sign of Carolingian interest in the text.
147. For important discussion of this inscription, see Paolo Liverani, “Chi parla a chi? Epigrafia monumentale e immagine pubblica in epoca tardoantica,” in *Using Images in Late Antiquity*, ed. Stine Birk et al. (Oxford: Oxbow, 2014), 15–16, 24, and 26–28.
148. For Alcuin’s authorship, see Luitpold Wallach, *Alcuin and Charlemagne: Studies in Carolingian History and Literature* (Ithaca, N.Y.: Cornell University Press, 1959), 178–197.
149. Joanna Story et al., “Charlemagne’s Black Marble: The Origin of the Epitaph of Pope Hadrian I,” *Papers of the British School of Rome* 73 (2005): 157–190.
150. David Howlett, “Two Latin Epitaphs,” *Archivum Latinitatis Medii Aevi* 67 (2009): 241 and 243.
151. *Liber Pontificalis*, ed. D. Duchesne (Paris: E. de Boccard, 1955–1957), I.432; trans. Raymond Davis (Liverpool: Liverpool University Press, 1992), 44. For discussion of this passage, see Bauer, *Bild*, 63–66; John Osborne, “Papal Court Culture During the Pontificate of Zacharias (AD 741–52),” in *Court Culture in the Early Middle Ages: The Proceedings of the First Alcuin Conference*, ed. Catherine Cubitt (Turnhout, Belgium: Brepols, 2003), 227–229; John Haldon and Brian Ward-Perkins, “Evidence from Rome for the Image of Christ on the Chalke Gate in Constantinople,” *Byzantine and Modern Greek Studies* 23 (1999): 286.
152. L’Orange, *Studies*, 116.

2. Declaration and Transaction

1. E.g., Jürgen Habermas, *The Postnational Constellation: Political Essays*, trans. Max Pensky (Cambridge, Mass.: MIT Press, 2001), esp. 58–112.
2. Finbarr Barry Flood, “From the Golden House to Aisha’s House: Cosmic Kingship and the Rotating Dome as Fact, Fiction, and Metaphor,” in *Bamberger Symposium: Rezeption in der islamischen Kunst*, ed. Barbara Finster, Christa Fragner, and Herta Hafnerichter (Stuttgart: Steiner, 1999), 125.
3. Grabar, “Dome of Heaven,” 15.
4. For cartography see Elly Dekker, *Illustrating the Phaeonomena: Celestial Cartography in Antiquity and the Middle Ages* (Oxford: Oxford University Press, 2013); for the Aratean tradition see Dieter Blume, Mechtilde Haffner, and Wolfgang Metzger, *Sternbilder des Mittelalters: Der gemalte Himmel zwischen Wissenschaft und Phantasie* (Berlin: Akademie Verlag, 2012).

5. Eliza Garrison, *Ottonian Imperial Art and Portraiture: The Artistic Patronage of Otto III and Henry II* (Farnham, U.K.: Ashgate, 2012), 123.
6. Deborah Mauskopf Deliyannis, “Charlemagne’s Silver Tables: The Ideology of an Imperial Capital,” *Early Medieval Europe* 12 (2003): 169.
7. Thus, he took the concept of the “king of the universe,” or “cosmocrator,” from Babylonian royal titulature and traced its introduction into Roman political discourse to the reign of Nero: L’Orange, *Studies*, 13, 22, and 28–32.
8. L’Orange, *Studies*, 28–29.
9. On this object, see the catalog entry by Gudrun Bühl in Gudrun Bühl, ed., *Dumbarton Oaks: The Collections* (Washington, D.C.: Dumbarton Oaks Library and Collection, 2008), 166. A very similar roundel is preserved in the Campiello Angaran, Venice. Scholarly opinion on the origins of both (Byzantine or Venetian?) has long been divided: against a Byzantine origin see André Grabar, *L’empereur dans l’art byzantin: Recherches sur l’art officiel de l’empire d’Orient* (Paris: Les Belles Lettres, 1936), 21; and Kurt Weitzmann, review of *Three Byzantine Works of Art* by Hayford Pierce and Royall Tyler, *Art Bulletin* 25 (1943): 163–164.
10. L’Orange, *Studies*, 109.
11. Compare Henry Maguire, “Images of the Court,” in *The Glory of Byzantium: Art and Culture of the Middle Byzantine Era, A.D. 843–1261*, ed. Helen C. Evans and William D. Wixom (New York: Metropolitan Museum of Art, 1997), 189. For the political resonance of the tondo’s display in the Klosterhof of Prince Carl of Prussia, see Gerd-H. Zuchold, “Der ‘Klosterhof’ im Park von Schloß Glienicke: Privates Refugium oder Ausdrucksträger eines konservativen Staatsmodells?,” in *Schloss Glienicke: Bewohner, Künstler, Parklandschaft*, ed. Jürgen Julier, Susanne Leiste, and Margret Schütte (Berlin: Verwaltung der Staatlichen Schlösser und Gärten, 1987), 241; and Robert S. Nelson, *Hagia Sophia, 1850–1950: Holy Wisdom Modern Monument* (Chicago: University of Chicago Press, 2004), 42. Breakfast nook: Malve Rothkirch, *Prinz Carl von Preußen: Kenner und Beschützer des Schönen, 1801–1883* (Osnabrück: Biblio Verlag, 1981), 146.
12. “Sternenmantel Kaiser Heinrichs II”: e.g., in Luitgar Göller, ed., *1000 Jahre Bistum Bamberg, 1007–2007: Unterm Sternenmantel* (Petersberg, Germany: Imhof, 2007), 409. The cloak has a diameter of 9 ft. 9 in. (297 cm) and a radius of 5 ft. 1½ in. (154 cm): Renate Baumgärtel-Fleischmann, “Der Sternenmantel Kaiser Heinrichs II. und seine Inschriften,” in *Epi graphik 1988: Fachtagung für mittelalterliche und neuzeitliche Epigraphik*, ed. Walter Koch (Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 1990), 109 n. 20.
13. For a thorough discussion of the technical analysis and its implications for the study of the mantle, see Baumgärtel-Fleischmann, “Sternenmantel”; a hypothetical “reconstruction” of the original mantle is given at 116.
14. A useful schematic drawing of the arrangement of the figures on the star mantle is provided by Hendrik Breuer, “Das Weltgerichts astrolabium des Bamberger Sternen mantels Kaiser Heinrichs II. und die Metamorphosen des Ovid,” *Analecta Coloniensis: Jahrbuch der Diözesan- und Dom bibliothek Köln* 6 (2006): 141. On the “Kunigunden mantel,” see the catalog entry by Renate Baumgärtel-Fleischmann in Josef Kirmeier et al., eds., *Kaiser Heinrich II., 1002–1024* (Stuttgart: Theiss, 2002), 380–381.
15. So too Elizabeth Carroll Waldron O’Connor, “The Star Mantle of Henry II” (PhD diss., Columbia University, 1980), 113. Breuer, “Weltgerichtsastrolabium,” 91, finds in these apocalyptic elements the basis of a “hochkomplexes Weltgerichtsprogramm,” a possible line of interpretation that will not be further pursued here.
16. O’Connor, “Star Mantle,” 132.
17. For some possibilities (apostles? elders of the apocalypse?), see O’Connor, “Star Mantle,” 130–132.
18. Baumgärtel-Fleischmann, “Sternenmantel,” 116–117 and fn. 43.
19. Baumgärtel-Fleischmann, “Sternenmantel,” 118–119.
20. For virtues, e.g., O’Connor, “Star Mantle,” 138–140; for saints, e.g., Blume et al., *Sternbilder*, 154 n. 23.
21. For depictions of the “summer and winter hemispheres” in medieval manuscripts, see Dekker, *Illustrating the Phaenomena*, 118–142.
22. Blume et al., *Sternbilder*, 154.
23. Baumgärtel-Fleischmann, “Sternenmantel,” 119–121. For *usye = usu*, see O’Connor, “Star Mantle,” 46.
24. For this episode, see Stefan Weinfurter, *Heinrich II. (1002–1024): Herrscher am Ende der Zeiten* (Regensburg: Pustet, 1999), 242–244.
25. Baumgärtel-Fleischmann, “Sternenmantel,” 119–120. On the historical background, see Herbert Bloch, *Monte Cassino in the Middle Ages* (Cambridge: Harvard University Press, 1986), I.13–14.
26. A ceremonial use by the emperor has been assumed most recently by Garrison, *Ottonian Imperial Art*, 123, and by Blume et al., *Sternbilder*, 154: “Der kostbare Mantel... könnte bei einer sogennanten Festkrönung,

- einer zeremoniellen Wiederholung des Krönungsaktes den Kaiser ausgezeichnet haben.” The interpretation advanced here is shared by Breuer, “Weltgerichtsastrolabium,” 89; and Weinfurter, *Heinrich II.*, 267–268.
27. One still reads the occasional reference to an established tradition of medieval cosmic mantles, but the sources were critically assessed and the construct dismantled by O’Connor, “Star Mantle,” 147–158.
 28. So too Breuer, “Weltgerichtsastrolabium,” 139–140.
 29. Liudprand of Cremona, *Embassy*, ch. 12; *The Complete Works of Liudprand of Cremona*, trans. Paolo Squatriti (Washington, D.C.: Catholic University of America Press, 2007), 246–247.
 30. Wisdom 18, 24. See Percy Ernst Schramm, *Herr-schaftszeichen und Staatssymbolik: Beiträge zu ihrer Geschichte vom dritten bis zum sechzehnten Jahrhundert* (Stuttgart: Hiersemann, 1954–55), II.579.
 31. For the star mantle as an unusually well-documented medieval garment, see Renate Baumgärtel- Fleischmann, “Die Kaisermäntel im Bamberger Domschatz,” *Bericht des Historischen Vereins Bamberg* 133 (1997): 94–95.
 32. A relation between the two cloaks was first proposed by O’Connor, “Star Mantle,” 158–159.
 33. On the development of the legend of the healing, see Weinfurter, *Heinrich II.*, 168–169.
 34. *Chronica Monasterii Casinensis. Die Chronik von Montecassino*, ed. Hartmut Hoffmann (Hanover: Hahn, 1980), 250; translation after Armand O. Citarella and Henry M. Willard, *The Role of the Treasure in the History of Monte Cassino, 883–1058* (Montecassino, Italy: Pubblicazioni Cassinesi, 1996), 100 (translation modified).
 35. Weinfurter, *Heinrich II.*, 117.
 36. *Chronica Monasterii Casinensis*, ed. Hoffman, 250; translation after Citarella and Willard, *Role of the Treasure*, 99–100 (translation modified). See further the commentary of Bloch, *Monte Cassino*, I.15–18.
 37. Thus already O’Connor, “Star Mantle,” 158–159. Compare, e.g., Tertullian, *Adversus Marcionem*, V.6.3; ed. Claudio Moreschini (Paris: Cerf, 1990–2004), V.148; Bede, *De temporum ratione*, ch. 16; ed. Charles William Jones (Turnhout, Belgium: Brepols, 1977), 332; trans. Faith Wallis (Liverpool: Liverpool University Press, 1999), 54.
 38. See especially the catalog entry of Joachim M. Plotzek in Anton Legner, ed., *Monumenta Annonis: Köln und Siegburg, Weltbild und Kunst im hohen Mittelalter* (Cologne: Greven & Bechtold, 1975), 172.
 39. For this concept of “unwritten rules,” see Gerd Althoff, “Ungeschriebene Gesetze: Wie funktioniert Herrschaft ohne schriftlich fixierte Normen?” in *Spielregeln der Politik im Mittelalter* (Darmstadt: Primus, 1997), 282–304.
 40. Translation after Caecilia Davis- Weyer, *Early Medieval Art, 300–1150* (Englewood Cliffs, N.J.: Prentice-Hall, 1971), 116; text after Percy Ernst Schramm, *Kaiser, Rom und Renovatio: Studien und Texte zur Geschichte des römischen Erneuerungsgedankens vom Ende des karolingischen Reiches bis zum Investiturstreit* (Leipzig: Teubner, 1929), II.96.
 41. Herbert Bloch, “Der Autor der ‘Graphia aureae urbis Romae,’” *Deutsches Archiv für Erforschung des Mittelalters* 40 (1984): 55–175, esp. 158: “das einzige theoretische Dokument jener Revolutionsjahre.”
 42. The connection also drawn by Bloch, “Autor,” 102. Already, in more general terms, Schramm, *Kaiser, Rom und Renovatio*, I.206: the author of the Graphia “brauchte... nur den wirklichen Ornat seiner Zeit durch die Einzeichnung einiger antiker und byzantinischer Züge zu korrigieren.”
 43. Robert Eisler, *Weltenmantel und Himmelszelt: Religionsgeschichtliche Untersuchungen zur Urgeschichte des antiken Weltbildes* (Munich: C. H. Beck, 1910), I.22–25.
 44. For the division into three, which is expressed in the earliest manuscripts prior to the introduction of chapter divisions, see David Ganz, “Einhard’s Charlemagne: The Characterisation of Greatness,” in *Charlemagne: Empire and Society*, ed. Joanna Story (Manchester, U.K.: Manchester University Press, 2005), 39.
 45. Einhard, *Vita Karoli Magni*, ch. 25; ed. O. Holder- Egger (Hannover: Hahn, 1911), 30; translation after Thomas F. X. Noble, *Charlemagne and Louis the Pious: Lives by Einhard, Notker, Ermoldus, Thegan, and the Astronomer* (University Park: Pennsylvania State University Press, 2009), 42.
 46. On this remarkable document, see Alfred Schultze, “Das Testament Karls des Großen,” in *Aus Sozial- und Wirtschaftsgeschichte: Gedächtnisschrift für Georg von Below* (Stuttgart: Kohlhammer, 1928), 48–81; Matthew Innes, “Charlemagne’s Will: Piety, Politics and the Imperial Succession,” *English Historical Review* 112 (1997): 833–855.
 47. The Ravennate *Book of Pontiffs* confirms that the latter instruction was carried out: Agnellus, *Liber pontificalis ecclesiae Ravennatis*, ch. 170; ed. Deborah Mauskopf Deliyannis (Turnhout, Belgium: Brepols, 2006), 350–351.
 48. Einhard, *Vita*, ch. 33; ed. Holder- Egger, 40; translation after Noble, *Charlemagne*, 50.
 49. Einhard, *Vita*, ch. 33; ed. Holder- Egger, 41; translation after Noble, *Charlemagne*, 50.
 50. Thegan, *Gesta Hludowici imperatoris*, ch. 8; ed. Ernst Tremp (Hannover: Hahn, 1995), 188–90; translation after Noble, *Charlemagne*, 199 (translation modified).

51. For the author of the entries for the relevant years, see Janet L. Nelson, *The Annals of St-Bertin* (Manchester, U.K.: Manchester University Press, 1991), 8.

52. *Annales Bertiniani*, s.a. 842; ed. Félix Grat, Jeanne Vielliard, and Suzanne Clémencet (Paris: Klincksieck, 1964), 41; trans. Janet L. Nelson (Manchester, U.K.: Manchester University Press, 1991), 53 (translation modified).

53. So too Blume et al., *Sternbilder*, 45 n. 43; for skepticism, see Rosamond McKitterick, *Charle magne: The Formation of a European Identity* (Cambridge: Cambridge University Press, 2008), 375.

54. Deliyannis, “Charlemagne’s Silver Tables,” 160–165.

55. A cloverleaf arrangement was proposed by Schramm, *Kaiser, Könige und Päpste*, 318–319 fn. 38.

56. On the Leiden Aratus, see chapter 4 below.

57. The reconstruction by F. N. Estey (“Charlemagne’s Silver Celestial Table,” *Speculum* 18 [1943]: 112–117) inexplicably places the planets in the outermost ring and arbitrarily sets a “personification of the year” at the center. On the Vatican Kosmas see chapter 4 below.

58. Innes, “Charlemagne’s Will,” 849.

59. For the early date, see McKitterick, *Charlemagne*, 11–14; for the late date, see Noble, *Charle magne*, 9–13.

60. As argued by Mayke de Jong, *The Penitential State: Authority and Atonement in the Age of Louis the Pious*, 814–840 (Cambridge: Cambridge University Press, 2009), 67–69.

61. Einhard, *Vita*, ch. 33; ed. Holder-Egger, 24; translation after Noble, *Charlemagne*, 38.

62. For the events of 817–818, see Jörg Jarnut, “Kaiser Ludwig der Fromme und König Bernhard von Italien,” *Studi Medievali*, ser. 3, no. 30 (1989): 637–648. For their representation by court historians, see Rosamond McKitterick, *History and Memory in the Carolingian World* (Cambridge: Cambridge University Press, 2004), 265–273. For alternative currents, see Jong, *Penitential State*, 126–129 and 202–203; for the events of the 830s, see 214–259; and for a translation of the bishops’ report, see 271–277.

63. For Einhard’s courtly audience, see Ganz, “Einhard,” 41.

64. Thegan, *Gesta Hludowici imperatoris*, ch. 8; ed. Tremp, 188–190; translation after Noble, *Charlemagne*, 199.

65. Thegan, *Gesta Hludowici imperatoris*, ch. 23; ed. Tremp, 212; translation after Noble, *Charlemagne*, 206.

66. For Thegan as an apologist, see Jarnut, “Ludwig der Fromme,” 645–646.

67. A similar argument is made by Marcia Kupfer, “Medieval World Maps: Embedded Images, Interpretive Frames,” *Word & Image* 10 (1994): 268–269.

68. Innes, “Charlemagne’s Will,” 849; and compare Deliyannis, “Charlemagne’s Silver Tables,” 169.

69. *Anthologia Palatina* IX.822.

70. For the quote, see *Annales regni francorum*, s.a. 796; ed. Friedrich Kurze (Hannover: Hahn, 1895), 98. For wagonloads of gold and silver, see *Annales Nordhumbranis*, s.a. 795; ed. Reinhold Pauli (Hannover: Hahn, 1881), 155.

71. Theodulf, *Carmina*, XLVII; ed. Dümmler, *Poetae Latini*, I.547–548. Dümmler’s edition conflates two poems. The poem describing the table begins at line 41: “hoc opus ut fieret Theodulfus episcopus egi” (this work I, Bishop Theodulf, have ordered to be created), as was perceived by Dieter Schaller, “Philologische Untersuchungen zu den Gedichten Theodulfs von Orléans,” *Deutsches Archiv für Erforschung des Mittelalters* 18 (1962): 84. Against Schaller’s opinion (which I share) see Theodore M. Andersson, *Theodulf of Orléans: The Verse* (Tempe: Arizona Center for Medieval and Renaissance Studies, 2014), 147.

72. Thus already M. A. Vidier, “La mappemonde de Théodulfe et la mappemonde de Ripoll (IXe–XIe siècle),” *Bulletin de géographie historique et descriptive* (1911): 285–313, especially 307. Recent scholars tend to disassociate Theodulf’s table from the Ripoll map: see Andreina Contessa, “A Geography of Learning: The World of the Presumed Map of Theodulph of Orleans and Its Mid-Eleventh-Century Catalan Author,” *Miscellanea Bibliothecae Apostolicae Vaticanae* 28 (2011): 55–110, with references to the recent literature.

73. Theodulf, *Carmina*, XLVI; ed. Dümmler, *Poetae Latini*, I.544–547.

74. Alcuin, *Epistolae*, no. 148; ed. Ernst Dümmler, *Epistolae Karolini aevi* II (Berlin: Weidmann, 1895), 238; translation after Stephen Allott, *Alcuin of York, c. A.D. 732 to 804: His Life and Letters* (York: William Sessions, 1974), 94. On the exchange between Alcuin and Charles: Dietrich Lohrmann, “Alcuins Korrespondenz mit Karl dem Grossen über Kalender und Astronomie,” in *Science in Western and Eastern Civilization in Carolingian Times*, ed. Paul Leo Butzer and Dietrich Lohrmann (Basel: Birkhäuser, 1993), 79–114.

75. Bede, *De temporum ratione*, ch. 16; ed. Jones, 336; trans. Wallis, 58.

76. On this aspect of the correspondence see Lohrmann, “Alcuins Korrespondenz,” 87.

77. Alcuin, *Epistolae*, no. 148; ed. Dümmler, *Epistolae*, 251–253.

78. Arno Borst, *Die karolingische Reichskalender und seine Überlieferung bis ins 12. Jahrhundert* (Hannover: Hahn, 2001), I.337; Arno Borst, *Schriften zur Komputistik im Frankenreich von 721 bis 818* (Hannover: Hahn,

2006), III.1451. On the manuscript see chapter 3 below. A counterpart to this miniature is contained in Vienna, Österreichische Nationalbibliothek, Cod. 387, fol. 165v.

79. Here following Borst, *Karolingische Reichskalender*, I.337, who understands the innermost ring of dots as a representation of the days of the year or degrees of the zodiac, and suggests that the “suns” may also be the half-months of a tropical solar year. Compare Wesley M. Stevens, “Compotistica et astronomica in the Fulda School,” in *Saints, Scholars, and Heroes: Studies in Medieval Culture in Honor of Charles W. Jones*, ed. Margot H. King and Wesley M. Stevens (Collegeville, Minn.: Hill Monastic Manuscript Library, 1979), II.48–49.
80. Alcuin, *Epistolae*, nr. 121; ed. Dümmler, *Epistolae*, 176–177; translation after Allott, *Alcuin*, 12 (translation modified).
81. So too Schramm, *Herrschaftszeichen*, I.334; Percy Ernst Schramm and Florentine Mütherich, *Denkmale der deutschen Könige und Kaiser* (Munich: Prestel, 1962–1978), I.66. For Charlemagne’s persistent interest in astronomical questions, which continued after Alcuin’s death, see Dutton, *Charlemagne’s Mustache*, 97–102.
82. The quarries were identified by Alois Musil, *Kusejr Amra* (Vienna: Verlag der Kaiserlichen Königlichen Hof- und Staatsdruckerei, 1907), 62.
83. The quote is from John Lewis Burckhardt, *Travels in Syria and the Holy Land* (London: J. Murray, 1822), 665. On the well, see Claude Vibert-Guigue, “Les *sqiya* de Qasr at-Tba: Culture de l’eau et reflet iconographique,” *Syria* 85 (2008): 153–155; Ghazi Bisheh, Thierry Morin, and Claude Vibert-Guigue, “Rapport d’activités à Qusayr Amra,” *Annual of the Department of Antiquities of Jordan* 41 (1997): 380–384; Thorkild Schiøler, *Roman and Islamic Water-Lifting Wheels* (Odense: Odense Universitetsforlag, 1973), 93–96. For the significance of water installations at sites of Umayyad state power, Denis Genequand, *Les établissements des élites omeyyades en Palmyrène et au Proche-Orient* (Beirut: Institut français du Proche-Orient, 2012), summary at 392–393.
84. Ghazi Bisheh, “The Umayyad Monuments Between Muwaqqar and Azraq: Palatial Residences or Caravanserais?” in *The Near East in Antiquity: German Contributions to the Archaeology of Jordan, Palestine, Syria, Lebanon and Egypt*, ed. Susanne Kerner (Amman: Al-Kutba, 1992), III.35–41.
85. Al-Muqaddas, *Ahsan al-taqṣīm*, ed. de Goeje, 250; trans. Collins, 209.
86. Musil, *Kusejr Amra*, 3–4 for the itineraries and 88–89 for the graffiti. For some figural graffiti, see Alison V. G. Betts, “Graffiti from Qusayr Amra: A Note on the Dating of Arabian Rock Carvings,” *Arabian Archaeology and Epigraphy* 12 (2001): 96–102.
87. U. J. Seetzen, “Beyträge zur Geographie Arabiens, geschrieben in Jerusalem im May 1806,” *Monatliche Correspondenz zur Beförderung der Erd- und Himmelskunde* 18 (1808): 384.
88. For invaluable documentation of the frescoes, which however predates the most recent conservation measures, see Claude Vibert-Guigue and Ghazi Bisheh, *Les peintures de Qusayr Amra: Un bain omeyyade dans la badiya jordanienne* (Beirut: Institut français du Proche-Orient, 2007).
89. For detailed discussion and analysis of the iconography, see Garth Fowden, *Qusayr Amra: Art and the Umayyad Elite in Late Antique Syria* (Berkeley: University of California Press, 2004), with thorough coverage of earlier literature. For recent discussion of the building scenes, see Claude Vibert-Guigue, “Bilderreichthum im Wüstenschloß: Die Bauhandwerker zur Zeit der Umayyaden begegnen uns in Kusair Amra (Jordanien),” *Antike Welt* 35, no. 6 (2004): 59–65; Hana Taragan, “Constructing a Visual Rhetoric: Images of Craftsmen and Builders in the Umayyad Palace at Qusayr Amra,” *Al-Masaq* 20 (2008): 41–60. For the figures of Job and Jonah, see Gaetano Palumbo and Angela Atzori, eds., *Qusayr Amra: Site Management Plan* (Amman: World Monuments Fund, 2014), 33–34.
90. For the current conservation project, see Palumbo and Atzori, *Qusayr Amra*. My last visit to the site was in December of 2013.
91. See most recently Antoine Borrut, *Entre mémoire et pouvoir*, 418–421; and especially Garth Fowden, “The Umayyad Horizon,” *Journal of Roman Archaeology* 25 (2012): 981–982, with references to earlier discussions.
92. See especially Fowden, *Qusayr Amra*, 197–226.
93. Palumbo and Atzori, *Qusayr Amra*, 34. This confirms the hypothesis first advanced by Musil and developed by Fowden in *Qusayr Amra*.
94. Earlier studies that attempted to establish the date of the model on the basis of the positions of the constellations were overly optimistic: Dekker, *Illustrating the Phaenomena*, 260–278; the quote at 262.
95. On the anecdotal quality of the painting of the falling rider, see Oleg Grabar, “La place de Qusayr Amra dans l’art profane du Haut Moyen Age,” *Cahiers Archéologiques* 36 (1988): 81–82.
96. On the representation of al-Walid in Abbasid historiography, see Matthias Vogt, *Figures de califes entre histoire et fiction: Al-Walid b. Yazd et al-Amr dans la représentation de l’historiographie arabe de l’époque*

- abside* (Beirut: Orient-Institut, 2006).
97. See the assessment of Hilary Kilpatrick, “Umar ibn Abd al- Azz, al- Wald ibn Yazd and Their Kin: Images of the Umayyads in the *Kitb al- Aghn*,” in *Umayyad Legacies: Medieval Memories from Syria to Spain*, ed. Antoine Borrut and Paul M. Cobb (Leiden: Brill, 2010), 63–87.
 98. Robert Hamilton, *Walid and His Friends: An Umayyad Tragedy* (Oxford: Oxford University Press, 1988), 35–37. On Hamilton’s work and its impact, see Donald Whitcomb and Hamdan Taha, “Khirbat al- Mafjar and Its Place in the Archaeological Heritage of Palestine,” *Journal of Eastern Mediterranean Archaeology and Heritage Studies* 1 (2013): 54–55.
 99. J. M. F. van Reeth, “La représentation du ciel et du zodiaque dans le palais omayyade de Amr,” in *Le ciel dans les civilisations orientales*, ed. C. Cannuyer, F. Mawet, and J. Ries (Brussels: Société belge d’études orientales, 1999), 137–150; J. M. F. van Reeth, “Die Transfiguration Wald b. Yazds,” in *Studies in Arabic and Islam: Proceedings of the 19th Congress, Union Européenne des Arabisants et Islamisants, Halle*, 1998, ed. Stefan Leder (Leuven, Belgium: Peeters, 2002), 501–511.
 100. Bloom, “*Qubbat al- Khadr*,” 136.
 101. For the diplomatic function, see especially Heinz Gaube, “Die syrischen Wüstenschlösser: Einige wirtschaftliche und politische Gesichtspunkte zu ihrer Entstehung,” *Zeitschrift des deutschen Palästina-Vereins* 95 (1979): 182–209. For an even- handed survey of the literature on the function of the “desert castles,” see Borrut, *Entre mémoire et pouvoir*, 412–423; Genequand, *Établissements des élites*, 389–396.
 102. Frédéric Imbert, “Inscriptions et espaces d’écriture au Palais d’al- Kharrna en Jordanie,” *Studies in the History and Archaeology of Jordan* 5 (1995): 403–416, inscriptions 9–11 at 409–411. Considering the prominence of the signatory and the regularity of the inscriptions themselves, which are inscribed across the engaged stucco columns of the main reception hall, I do not understand Imbert’s characterization (at 416) of the inscription of these texts as “un acte ‘sauvage.’” Cf. Frédéric Imbert, “Califes, princes, et poètes dans les graffiti du début de l’Islam,” *Romano- Arabica* 15 (2015): 69–70.
 103. A theme developed extensively by Borrut, *Entre mémoire et pouvoir*; see esp. 396–411 and 434.
 104. A connection to the caldarium of Qusayr Amra is suggested by Fowden, *Qusayr Amra*, 123.
 105. Farazdaq, *Dwn*, I.12; translation after Nadia Jamil, “Caliph and *Qutb*: Poetry as a Source for Interpreting the Transformation of the Byzantine Cross on Steps on Umayyad Coinage,” in *Bayt al- Maqdis: Jerusalem and Early Islam*, ed. Jeremy Johns (Oxford: Oxford University Press, 1992–1999), II.41 (translation modified).
 106. See the remarks of Canepa, *Two Eyes*, 100–106; e.g., at 101: “The Roman and Sasanian empires each conceived of themselves as a universal domain.... Although the Romans and Sasanians knew the literal extent of their empires and were aware of peoples and lands outside the borders, ideologically speaking, there was a discrepancy between the world as it was and the world as it ought to be.” Compare also the essays collected in Peter Fibiger Bang and Dariusz Koodziejczyk, eds., *Universal Empire: A Comparative Approach to Imperial Culture and Representation in Eurasian History* (Cambridge: Cambridge University Press, 2012).
 107. Sahlins, “Stranger- King,” 190.
 108. For the Carolingians, see Matthew Innes, “People, Places and Power in Carolingian Society,” in *Topographies of Power in the Early Middle Ages*, ed. Mayke de Jong and Francis Theuwis (Leiden: Brill, 2001), 397–437, esp. 419–426; and McKitterick, *Charlemagne*, 171–213. For the Ottonians, John W. Bernhardt, *Itinerant Kingship and Royal Monasteries in Early Medieval Germany, c. 936–1075* (Cambridge: Cambridge University Press, 1993), esp. 45–70. For the Umayyads, Borrut, *Entre mémoire et pouvoir*, esp. 396–443.
 109. Alcuin, *Disputatio Pippini cum Albino*, 68–73, in *Alteratio Hadriani Augusti et Epicteti philosophi*, ed. Walter Suchier (Urbana: University of Illinois Press, 1939), 140. On this text, see Martha Bayless, “Alcuin’s *Disputatio Pippini* and the Early Medieval Riddle Tradition,” in *Humour, History and Politics in Late Antiquity and the Early Middle Ages*, ed. Guy Halsall (Cambridge: Cambridge University Press, 2002), 157–178.
 110. Innes, “People,” 421. On the network of royal *villae*, see McKitterick, *Charlemagne*, 184–186.
 111. Recently Paul Magdalino, “Byzantium= Constantinople,” in *A Companion to Byzantium*, ed. Liz James (Malden, Mass.: Wiley- Blackwell, 2010), 43–44.

3. Carolingian Consensus

1. Christoph Winterer, “Ewaldi- Decke,” in *Karolingische und ottonische Kunst*, ed. Bruno Reudenbach (Munich: Prestel, 2009), 306–307, with references to earlier literature.
2. For detailed accounts of the iconography of the two pendants, see Wilhelm Nyssen, “Die Ewaldi- Decke aus Sankt Kunibert in Köln,” *Wallraf- Richartz- Jahrbuch* 18 (1956): 72–82.
3. The order and appearance of the signs exhibit some divergences from standard models, on which see Borst, *Karolingische Reichskalender*, 340–341.
4. For the reading of the inscription, with important considerations of its possible interpretations, see Nyssen,

"Ewaldi- Decke," 82–90.

5. So too Elizabeth Coatsworth, "Text and Textile," in *Text, Image, Interpretation: Studies in Anglo-Saxon Literature and Its Insular Con text in Honour of Éamonn Ó Carragáin*, ed. Alastair Minnis and Jane Roberts (Turnhout, Belgium: Brepols, 2007), 202; and Christoph Winterer, *Das Fuldaer Sakramenter in Göttingen: Benedikti nische Observanz und römische Liturgie* (Petersberg, Germany: Imhof, 2009), 457.
6. Gottfried Semper, *Style in the Technical and Tectonic Arts; or, Practical Aesthetics* [1860–62], trans. Harry Francis Mallgrave and Michael Robinson (Los Angeles: Getty Research Institute, 2004), 82.
7. Marjorie Jean Hall Panadero, "The Labors of the Months and Signs of the Zodiac in Twelfth-Century French Facades" (PhD diss., University of Michigan, 1984); Simona Cohen, *Transformations of Time and Temporality in Medieval and Renaissance Art* (Leiden: Brill, 2014), 87–111.
8. Joachim Gierlichs, *Mittelalterliche Tierreliefs in Anatolien und Nordmesopotamien: Untersuchungen zur figürlichen Baudekoration der Seldschuken, Artuqiden und ihrer Nachfolger bis ins 15. Jahrhundert* (Tübingen: E. Wasmuth, 1996), 125–126 and 211–213; further examples of public display of astral symbols at 126–131.
9. For a useful overview, see Rembrandt Duits, "Celestial Transmissions: An Iconographic Classification of Constellation Cycles in Manuscripts (8th–15th Centuries)," *Scriptorium* 59 (2005): 147–202.
10. See especially Moya Carey, "Al-Sufi and Son: Ibn al-Sufi's Poem on the Stars and Its Prose Parent," *Mugarnas* 26 (2009): 181–204; Moya Carey, "Mapping the Mnemonic: A Late Thirteenth-Century Copy of al-Sufi's *Book of the Constellations*," in *Arab Painting: Text and Image in Illustrated Arabic Manuscripts*, ed. Anna Contadini (Leiden: Brill, 2007), 65–71. On high medieval developments in constellation images in Islamic lands, see Persis Berlekamp, *Wonder, Image, and Cosmos in Medieval Islam* (New Haven: Yale University Press, 2011), esp. 123–130. Note further Anna Caiocco, *Images du ciel d'Orient au Moyen Âge: Une histoire du zodiaque et de ses représentations dans les manuscrits du Proche-Orient musulman* (Paris: Presses de l'Université de Paris-Sorbonne, 2003).
11. Carey, "Al-Sufi," 200 fn. 17.
12. Blume et al., *Sternbilder*, 49: "Auch wenn die intellektuelle Elite des Hofes christliche Weisheit und antikes, weltliches Wissen zu verbinden suchte, schien es dennoch keineswegs selbstverständlich, den Ausgeburten heidnischer Phantasie in den Klosterbibliotheken ein Existenzrecht im Bild einzuräumen." For the earliest manuscripts, see discussion of the monastic handbooks below.
13. See especially Borst, *Schriften*, I.78–95.
14. Basel, Universitätsbibliothek, F III 15a: see Barbara Obrist, "La représentation carolingienne du zodiaque: À propos du manuscrit de Bâle, Universitätsbibliothek, F III 15a," *Cahiers du Civilisation Médiévale* 44 (2001): 3–33. Munich, Bayerische Staatsbibliothek, Clm 14456: see Borst, *Schriften*, I.261–262; Katharina Bierbrauer, *Die vorkarolingischen und karolingischen Handschriften der Bayerischen Staatsbibliothek* (Wiesbaden: Reichert, 1990), 61; Bernhard Bischoff, *Die südostdeutschen Schreibschule und Bibliotheken in der Karolingerzeit* (Wiesbaden: Harrassowitz, 1960–1980), I.195–196.
15. The Basel manuscript is assigned to Fulda on account of its script and its inclusion of the earliest preserved list of books in the monastery's library, for which see Gangolf Schrimpf, ed., *Mittelalterliche Bücherverzeichnisse des Klosters Fulda und andere Beiträge zur Geschichte des Klosters Fulda im Mittelalter* (Frankfurt am Main: J. Knecht, 1992), 3–13. The Munich manuscript was also assigned to Regensburg on paleographic grounds, and further includes the local "Annales sancti Emmerami Ratisponenses maiores" (Borst, *Schriften*, I.261). For the date of the Basel manuscript, see Obrist, "Représentation," 3–5 fn. 1; for the date of the Munich manuscript, see Bischoff, *Südostdeutschen Schreibschule*, I.196.
16. On this folio, Obrist, "Représentation," 8.
17. Obrist, "Représentation," 9.
18. Borst, *Schriften*, I.261 and III.1022; text of the letter at III.1027–1033.
19. So too Dieter Blume, "Wissenschaft und Bilder: Vom Hof Karls des Grossen zur Kloster reform," in *Karolingische und ottonische Kunst*, ed. Bruno Reudenbach (Munich: Prestel, 2009), 523.
20. Edited by Obrist, "Représentation," 12–15.
21. Isidore of Seville, *Etymologiae*, ed. W. M. Lindsay (Oxford: Clarendon, 1911), III.27; trans. Stephen A. Barney et al. (Cambridge: Cambridge University Press, 2006), 99. The apparent heterodoxy also noted by Obrist, "Représentation," 7.
22. For a transcription, see Eric Graff, "The Thirteenth Figure in the Munich Computus Zodiac," *Journal for the History of Astronomy* 36 (2005): 333–334.
23. The Hebrew months, for example, were also listed in Bede, *De temporum ratione*, ch. 11; ed. Jones, 312–314; trans. Wallis, 42.
24. Bischoff (*Südostdeutschen Schreibschule*, I.196) saw here a fantastic invention of the draughts-man, while

- Graff, “Thirteenth Figure,” saw the constellation Serpens. Most recently, Blume et al. (*Sternbilder*, 41) have proposed that this figure “den wiederkehrenden Kreislauf des Jahres in einer zusätzlichen Metapher zu fassen sucht.”
25. Darmstadt, Hessisches Universitäts- und Landesbibliothek, Hs. 684. See Kurt Hans Staub, *Jüngere theologische Texte* (Wiesbaden: Harrassowitz, 2001), 75–76; and Bernhard Bischoff, *Katalog der festländischen Handschriften des neunten Jahrhunderts (mit Ausnahme der wisigotischen)* (Wiesbaden: Harrassowitz, 1998–2014), I.211.
 26. The former explanation offered by Blume, “Wissenschaft,” 522.
 27. Obrist, “Représentation,” 30–33. Compare Blume, “Wissenschaft,” 536: “klösterliche Wissenskultur vor Beginn der karolingischen Reform.”
 28. Cologne, Diözesan- und Dombibliothek, MS 83 II. Basic literature includes Blume et al., *Sternbilder*, 266–273; Anton von Euw, “Kompendium der Zeitrechnung, Naturlehre, und Himmelskunde,” in *Glaube und Wissen im Mittelalter: Die Kölner Dombibliothek* (Munich: Hirmer, 1998), 136–156; Anton von Euw, “Der Aratus Latinus in HS. 83 II der Kölner Dombibliothek,” *Römische Historische Mitteilungen* 41 (1999): 405–422; Anton von Euw, “Zeit rechnung, Naturlehre, und Himmelskunde zur Zeit Hildebalds von Köln (vor 787–818),” *Jahrbuch des Kölnischen Geschichtsvereins* 70 (1998): 1–30. Further, Borst, *Schriften*, I.236–238, II.773–779 and 885–890; Blume, “Wissenschaft,” 541–542.
 29. The subscription, “Codex Sancti Petri, scriptus sub pio patre Hildebaldo Archiepiscopo,” is given on folio 1r, and Hildebald is mentioned again on the manuscript’s final folio, 291v: Euw, “Kompendium,” 141 and 155. Such subscriptions are a hallmark of the Cologne scriptorium: Donald Bullough, “Charlemagne’s ‘Men of God’: Alcuin, Hildebald, and Arn,” in *Charlemagne: Empire and Society*, ed. Joanna Story (Manchester, U.K.: Manchester University Press, 2005), 143. For the basics of Hildebald’s career, see Philippe Depreux, *Prosopographie de l’entourage de Louis le Pieux (781–840)* (Sigmaringen, Germany: Thorbecke, 1997), 246–247.
 30. For the similarity of the first series of diagrams, see Obrist, “Représentation,” 8. On the tradition of Isidorean diagrams, see Michael M. Gorman, “The Diagrams in the Oldest Manuscripts of Isidore’s *De natura rerum*,” *Studi Medievali*, ser. 3, no. 42 (2001): 529–545; and Bruce Eastwood, “The Diagram of the Four Elements in the Oldest Manuscripts of Isidore’s *De natura rerum*,” *Studi Medievali*, ser. 3, no. 42 (2001): 547–564.
 31. Jean Martin, *Histoire du texte des Phénomènes d’Aratos* (Paris: Klincksieck, 1956), esp. 11–72; the quote at 42. For the hypothetical location of the translation and revision at Corbie, see H. Le Bourdelle, *L’Aratus Latinus: Étude sur la culture et la langue latines dans le Nord de la France au VIIIe siècle* (Lille: Université de Lille [1985]).
 32. Euw, “Kompendium,” 151.
 33. Edited by Ernst Maass, *Commentariorum in Aratum reliquiae* (Berlin: Weidmann, 1898), 190–191.
 34. The six miniatures are: Arcturus Maior (155r), Arcturus Minor (155v), the serpent (156r), Hercules (156v), Serpentarius (157r), and Scorpio (157v). The curious painting of a horse-drawn chariot at 154v, perhaps a representation of Luna, was also completed.
 35. Blume et al., *Sternbilder*, 44–45 (“Die fremdartigen Bilder... dürften wohl eher Abscheu und vielleicht auch Furcht erweckt haben”) and 269–270.
 36. Blume et al., *Sternbilder*, 270, suggest a connection to the death of Hildebald in 818.
 37. Euw, “Aratus Latinus,” esp. 422. For an account of Carolingian manuscript production in which volumes were illuminated by traveling specialists who could be commissioned for specific jobs, see Lawrence Nees, “On Carolingian Book Painters: The Ottoboni Gospels and Its Transfiguration Master,” *Art Bulletin* 83 (2001): 209–239.
 38. Stephen C. McCluskey, *Astronomies and Cultures in Early Medieval Europe* (Cambridge: Cambridge University Press, 1998), 135, here writing about Aratean cycles in general.
 39. On Hildebald’s duties at court, see above all Josef Fleckenstein, *Die Hofkapelle der deutschen Könige* (Stuttgart: Hiersemann, 1959–1966), I.49–52; also Euw, “Zeitrechnung,” 1–3; Bullough, “Charlemagne’s ‘Men of God,’” 142–146.
 40. Laon, Bibliothèque Municipale, MS 422. See Blume et al., *Sternbilder*, 274–279; John J. Contreni, *The Cathedral School of Laon from 850 to 930: Its Manuscripts and Masters* (Munich: Arbeo-Gesellschaft, 1978), 47–48; Obrist, “Manuscrits du *De cursu stellarum*” (arguing for a date ca. 800–830); Barbara Obrist, “The Astronomical Sundial in Saint Willibrord’s Calendar and Its Early Medieval Context,” *Archives d’Histoire Doctrinale et Littéraire du Moyen Âge* 67 (2000): 98–99; further, Borst, *Schriften*, I.238–239 (arguing for a date ca. 810–830); Blume, “Wissenschaft,” 543–544 (arguing for a date ca. 830).
 41. Obrist, “Manuscrits,” 343; Obrist, “Représentation,” 8–9.
 42. Obrist, “Manuscrits,” 337 and pls. 32 and 33.
 43. For the *De cursu stellarum*, see Stephen C. McCluskey, “Gregory of Tours”; McCluskey, *Astronomies and*

- Cultures*, 101–110.
44. Antonio dell’Era, “Una rielaborazione dell’Arato latino,” *Studi Medievali*, ser. 3, no. 20 (1979): 269–298, including an edition of the text.
45. On the corporeality of the winds and seasons in this same manuscript, see Dieter Blume, “Körper und Kosmos im Mittelalter,” in *Bild und Körper im Mittelalter*, ed. Kristin Marek et al. (Munich: Wilhelm Fink, 2006), 228–230.
46. It seems unlikely that any of these manuscripts could have been used as “field guides to the night sky.” For skepticism about the practical use of the individual star positions in the Leiden Aratus, whose miniatures are much larger and more virtuosically executed than those in Laon, see Elly Dekker, “The Provenance of the Stars in the Leiden *Aratea* Picture Book,” *Journal of the Warburg and Courtauld Institutes* 73 (2010): 1–37.
47. Two recent discussions have provided a firm basis for the study of this cluster: Borst, *Schriften*, esp. III.1054–1334, on the textual aspects of the Aachen compilation; and Eric Ramírez- Weaver, “Carolingian Innovation and Observation in the Paintings and Star Catalogs of Madrid, Biblioteca Nacional, Ms. 3307” (PhD diss., New York University, 2008), on the decoration of four of the major manuscripts.
48. Madrid, Biblioteca Nacional de España, Ms. 3307, the subject of a substantial scholarly literature. See especially: Eric Ramírez- Weaver, “Classical Constellations in Carolingian Codices: Investigating the Celestial Imagery of Madrid, Biblioteca Nacional, MS 3307,” in *Negotiating Secular and Sacred in Medieval Art: Christian, Islamic, and Buddhist*, ed. Alicia Walker and Amanda Luyster (Farnham, U.K.: Ashgate, 2009), 103–128; Ramírez- Weaver, “Carolingian Innovation”; Blume et al., *Sternbilder*, 354–359; Borst, *Schriften*, I.248–249; Borst, *Karolingische Reichskalender*, 178–180; Blume, “Wissenschaft,” 537–538; Manuel Sánchez Mariana, *Códice de Metz: Tratado de computo y astronomia* (Madrid: Testimonio, 1993); Lothar Boschen, *Die Annales Prumienses: Ihre nähtere und ihre weitere Verwandtschaft* (Düsseldorf: Schwann, 1972), esp. 13–74; Wilhelm Koehler and Florentine Mütherich, *Karolingischen Miniaturen* (Berlin: Deutscher Verein für Kunsthistorische Forschung, 1930–99), III.119–127; Wilhelm Neuss, “Eine karolingische Kopie antiker Sternzeichen- Bilder im Codex 3307 der Biblioteca Nacional zu Madrid,” *Zeitschriften des Deutschen Vereins für Kunsthistorische Forschung* 8 (1941): 113–140.
49. Monza, Biblioteca Capitolare, F IX 176. Ramírez- Weaver, “Carolingian Innovation,” 383–390; Blume et al., *Sternbilder*, 366–371; Borst, *Schriften*, I.256–257; Borst, *Karolingische Reichskalender*, 182–183; Blume, “Wissenschaft,” 543; Boschen, *Annales Prumienses*, 98–103; Annalisa Belloni and Mirella Ferrari, *La Biblioteca Capitolare di Monza* (Padua, Italy: Antenore, 1974), 106–107; Saxl et al., *Verzeichnis*, IV.52–61.
50. Vatican City, Biblioteca Apostolica Vaticana, MS Reg. lat. 309. Ramírez- Weaver, “Carolingian Innovation,” 363–371; Blume et al., *Sternbilder*, 496–501; Borst, *Schriften*, I.303–304; Borst, *Karolingische Reichskalender*, 184–185; Boschen, *Annales Prumienses*, esp. 151–152; Saxl et al., *Verzeichnis*, I.59–66.
51. Vatican, Biblioteca Apostolica Vaticana, MS Vat. lat. 645. Ramírez- Weaver, “Carolingian Innovation,” 372–378; Blume et al., *Sternbilder*, 482–487; Borst, *Schriften*, I.311–312; Borst, *Karolingische Reichskalender*, 183–184; Arno Borst, *Die karolingische Kalenderreform* (Hannover: Hahn, 1998), 405–408; Blume, “Wissenschaft,” 543; Blume, “Körper,” 228; Élisabeth Pellegrin et al., *Les manuscrits classiques Latins de la Bibliothèque Vaticane* (Paris: Éditions du Centre national de la recherche scientifique, 1975–2010), III.1.44–47; Boschen, *Annales Prumienses*, esp. 23 and 59–61; Saxl et al., *Verzeichnis*, I.71–76.
52. The text was edited by Borst as the *Libri computi* (“Aachener Enzyklopädie von 809”): *Schriften*, III.1040–1334.
53. The texts relating to the council have been edited by Harald Willjung, *Das Konzil von Aachen 809* (Hannover: Hahn, 1998). For a brief account see A. Edward Siecienski, *The Filioque: History of a Doctrinal Controversy* (Oxford: Oxford University Press, 2010).
54. Edited by Borst as the *Capitula, de quibus convocati compotiste interrogati fuerint*, *Schriften*, III.1040–1053. For a translation based on older editions, see Ramírez- Weaver, “Carolingian Innovation,” 76–82.
55. Borst, *Schriften*, I.90–91, III.1034–1039 and 1055.
56. Together with Paris, Bibliothèque nationale de France, Nouv. acq. lat. 456 (later and not illuminated, and therefore not discussed here), these four manuscripts form Borst’s “Fassung alpha.” His apparatus also includes a “Fassung beta” (forty- two manuscripts containing significant portions of at least three of the work’s seven books), and a “Fassung gamma” (forty manuscripts containing fragments of three books or fewer). Borst, *Schriften*, III.1067–1086.
57. Missing in Madrid; edited by Borst, *Schriften*, III.1087–1091.
58. Or the corresponding *annus mundi* 4761. Borst, *Schriften*, III.1109; Boschen, *Annales Prumienses*, 19–21.
59. Not edited by Borst; see instead Boschen, *Annales Prumienses*, 90–91. Saint- Quentin omits this brief chronicle, inserting a local chronicle instead: Boschen, *Annales Prumienses*, 87 with fn. 21.
60. E.g., Borst, *Schriften*, III.1056–1057.
61. Borst, *Schriften*, III.1069.

62. Borst, *Schriften*, III.1064: “eine Synthese von antikem Naturverständnis und christlichem Zeitbewußtsein.”
63. Sometimes called the *De ordine ac positione stellarum in signis*; for the text, see Borst, *Schriften*, III .1251–1260.
64. Borst, *Schriften*, III.1252.
65. Borst, *Schriften*, III.1260–1274; Bruce Eastwood and Gerd Grasshoff, *Planetary Diagrams for Roman Astronomy in Medieval Europe, ca. 800–1500* (Philadelphia: American Philosophical Society, 2004), 23–48.
66. Borst, *Schriften*, I.248–249; Boschen, *Annales Prumienses*, 85–86.
67. Ramírez- Weaver, “Carolingian Innovation,” 137–217.
68. The comparison to the Drogo Sacramentary was already made by Wilhelm Koehler, in Koehler and Mütherich, *Karolingischen Miniaturen*, III.122 with fn. 90; but compare III.53 fn. 66 for similarities to the “Group of the Coronation Gospels”; and Florentine Mütherich, “Die Buchmalerei am Hofe Karls des Großen,” in *Karolingische Kunst*, ed. Wolfgang Braunfels and Hermann Schnitzler (Düsseldorf: Schwann, 1965), 50. The case for Metz is pressed by Ramírez- Weaver (“Carolingian Innovation,” 53–55), whose attempt to tie the first team to Metz via a comparison to a snake in Paris, Bibliothèque nationale de France, Lat. 9388, does not convince. The case for Aachen is pressed by Blume et al. (*Sternbilder*, 357), making no distinction between the two teams of painters; cf. Blume, “Wissenschaft,” 538.
69. Boschen, *Annales Prumienses*, 78–84.
70. Borst, *Schriften*, III.1257.
71. Ramírez- Weaver, “Classical Constellations,” sees instead an attempt to remove “pagan” content.
72. Boschen, *Annales Prumienses*, 23; Borst, *Schriften*, I.303–304; cf. Blume et al., *Sternbilder*, 497.
73. Ramírez- Weaver, “Carolingian Innovation,” 114–118.
74. Borst, *Schriften*, I.311; Ramírez- Weaver, “Carolingian Innovation,” 108; Blume et al., *Sternbilder*, 483.
75. Ramírez- Weaver, “Carolingian Innovation,” 109. Borst’s argument in *Karolingische Kalender-reform*, 405–408, carried over into Borst, *Schriften*, I.311–312, does not convince; nor does the argument relating to the calculation of the *annus mundi*, summarized by Boschen, *Annales Prumienses*, 23 with fn. 63.
76. The arguments of Boschen (*Annales Prumienses*, 23 and 100 fn. 24) are conclusive.
77. Fundamentally, Fleckenstein, *Hofkapelle*; for the chancellery I.74–79; and cf. I.109–110 for a concise statement of the dual purpose of the *capella*: “die Institutionalisierung bestimmter, für die Herrschaft unentbehrlicher Funktionen, vor allem eben des herrscher-lichen Gottesdienstes und der schriftlichen Verwaltungstätigkeit.”
78. Depreux, *Prosopographie*, 246–247.
79. Einhard, *Vita*, ch. 33; ed. Holder- Egger, 40; trans. Noble, *Charlemagne*, 49.
80. Depreux, *Prosopographie*, 194–196 and 250–256.
81. Depreux, *Prosopographie*, 163–167.
82. Fleckenstein, *Hofkapelle*, 52–56.
83. Fleckenstein, *Hofkapelle*, 81–84; Depreux, *Prosopographie*, 264–268.
84. Louis, Abbot of Saint- Denis, served as Charles’s arch- chancellor until his death in 867, after which Charles himself became abbot and Gauzlin became arch- chancellor. After Charles died, Gauzlin became abbot. Fleckenstein, *Hofkapelle*, 145; Otto Gerhard Oexle, “Bischof Ebroin von Poitiers und seine Verwandten,” *Friühmittelalterliche Studien* 3 (1969): 167–168 and 199–201; Sumner McKnight Crosby, *The Royal Abbey of Saint- Denis: From Its Beginnings to the Death of Suger, 475–1151* (New Haven: Yale University Press, 1987), 94–96.
85. Lothar II (864–869), Charles the Bald (870–877), Louis the Stammerer (877–879), and Louis the Younger (879–880). See Alain Dierkens, *Abbayes et chapitres entre Sambre et Meuse (VIIe–XIe siècles): Contribution à l’histoire religieuse des campagnes du haut Moyen Âge* (Sigmaringen, Germany: Thorbecke, 1985), 109–111 and 129–130.
86. For the standard structure of a charter and the distribution of palace notaries during the reign of Charlemagne, see McKitterick, *Charlemagne*, 199–212.
87. Fols. 67v and 68r; see Ramírez- Weaver, “Carolingian Innovation,” 213–214.
88. Munich, Bayerische Staatsbibliothek, Clm 210. See especially Blume et al., *Sternbilder*, 372–378; Blume, “Wissenschaft,” 541; Borst, *Schriften*, I.257–258; Borst, *Karolingische Reichskalender*, I.197–198, 202–204, and 337–338; Carl I. Hammer, *Charlemagne’s Months and Their Bavarian Labours: The Politics of the Seasons in the Carolingian Empire* (Oxford: Archeopress, 1997); Bierbrauer, *Vorkarolingischen und karolingischen Handschriften*, 73–75; Bischoff, *Südostdeutschen Schreibschule*, II.34 (for Mondsee); Georg Swarzenski, *Die Salzburger Malerei: Von den ersten Anfängen bis zur Blutezeit des romanischen Stils* (Leipzig: Hiersemann, 1913), 13–21.
89. Vienna, Österreichische Nationalbibliothek, Cod. 387. See especially Blume et al., *Sternbilder*, 541–547;

Blume, “Wissenschaft,” 297; Borst, *Schriften*, I.313; Borst, *Karolingische Reichskalender*, I.198–200, 204, and 337–338; Bischoff, *Südostdeutschen Schreibschule*, II.96–97; Saxl et al., *Verzeichnis*, II.8–9 and 79–81; Hermann Julius Hermann, *Die frühmittelalterlichen Handschriften des Abendlandes* (Leipzig: Hiersemann, 1923), 145–152; Swarzenski, *Salzburger Malerei*, 13–21. I follow Hermann’s arguments for dating the manuscript to 818.

90. Borst, *Schriften*, III.1373.
91. The compilation is edited by Borst, *Schriften*, III.1383–1451. For a summary of its contents, see III.1369; “final victory” at III.1371.
92. See fundamentally Dekker, *Illustrating the Phaenomena*, 242–245 (on this map) and 142–180 (on the genre).
93. Borst, *Schriften*, III.1440. The loss of the corresponding miniature from Vienna may be recent; Swarzenski, *Salzburger Malerei*, 14, records a pendant to the Munich miniature at fol. 115r.
94. For the entries, see Hermann, *Frühmittel alter-lichen Handschriften*, 145.
95. On Arn, see Meta Niederkorn- Bruck and Anton Scharer, eds., *Erzbischof Arn von Salzburg* (Vienna: R. Oldenbourg, 2004); Warren Brown, *Unjust Seizure: conflict, Interest, and Authority in an Early Medieval Society* (Ithaca, N.Y.: Cornell University Press, 2001), 102–123; Bullough, “Charlemagne’s ‘Men of God,’” 146–148. For his involvement with the computus, see Borst, *Schriften*, II.820–832.
96. For the attribution to Mondsee, see Bischoff, *Südostdeutschen Schreibschule*, II.34. Mondsee was an important center of scientific activity and manuscript production in the early ninth century. An origin at that scriptorium would also provide an easy explanation for the manuscript’s eventual arrival in Regensburg, whose see assumed possession of Mondsee in 831: Felix Wintermayr, “Die Benediktiner- Abtei Mondsee,” *Oberösterreichische Heimatblätter* 2 (1948): 195–196.
97. Hammer, *Charlemagne’s Months*, considers the compendia in the context of Bavarian- imperial relations.
98. Brown, *Unjust Seizure*, 102–103.
99. For the promise of autonomy, see Kurt Reindel, “Bayern im Karolingerreich,” in *Persönlichkeit und Geschichte*, ed. Helmut Beumann (Düsseldorf: Schwann, 1965), 235–237; for the capella of Louis the German, see Fleckenstein, *Hofkapelle*, I.115–116.
100. So too Borst, *Schriften*, III.1372: “Das Kleinste mit dem Größten zu verklammern, gelang ihren [sc. the compendia’s] trockenen Texten nicht so gut wie ihren phantasievollen Bildern, die sich an antiken Dichtungen orientierten. Sie machten alle abstrakten Darlegungen nicht nur einsichtig, sondern obendrein anschaulich.”
101. Boschen, *Annales Prumienses*, 81.
102. Borst, *Schriften*, I.86: “Welcher Heilige wirklich in der heimischen Dorfkirche verehrt, welches Sternbild tatsächlich über dem Nachbarhügel sichtbar wurde, wußten Ortskundige ohnedies; lernen mußten sie jetzt, daß hinter den fernsten Bergen und unter den fremdesten Sternen Lebewesen ihresgleichen hausten und ihr Tagewerk nach ähnlichen Zeitskalen richteten.”

4. Byzantine Dissensus

1. Oxford, Bodleian Library, Auct. F. 3. 25. See Irmgard Hutter, *Corpus der byzantinischen Miniaturenhandschriften*, I: *Oxford, Bodleian Library I* (Stuttgart: Anton Hiersemann, 1977), 115; Daniele Bianconi, *Tessalonica nell’età dei Paleologi: Le pratiche intellettuali nel riflesso della cultura scritta* (Paris: Centre d’études byzantines, néo- helléniques et sud- est européennes, 2005), 194; Daniel Wakelin, “England: Humanism Beyond Weiss,” in *Humanism in Fifteenth-Century Europe*, ed. David Rundle (Oxford: Society for the Study of Medieval Languages and Literature, 2012), 281–282.
2. For discussion of the sources see Dekker, *Illustrating the Phaenomena*, 61.
3. Vatican City, Biblioteca Apostolica Vaticana, MS Vat. gr. 1087. See in general Fabio Guidetti and Anna Santoni, eds., *Antiche stelle a Bisanzio: Il codice Vaticano greco 1087* (Pisa: Edizioni della Normale, 2013). For its connections to Gregoras and his circle, see Inmaculada Pérez Martín, “La ‘Escuela de Planudes’: Notas paleográficas a una publicación reciente sobre los escolios Eurípideos,” *Byzantinische Zeitschrift* 90 (1997): 83 and fn. 53; Mariella Menchelli, “Struttura e mani del Vat. gr. 1087 (con osservazioni paleografiche sul copista C e il Marc. gr. 330),” in Guidetti and Santoni, *Antiche stelle*, 34–40.
4. For descriptions of the contents, see Albert Rehm, *Eratosthenis Catasterismorum fragmenta Vaticana* (Ansbach, Germany: Brügel, 1899), i–iii; Menchelli, “Struttura,” 18–22.
5. The cycle is illustrated in full by Guidetti and Santoni, *Antiche stelle*, 182–183. On the hemispheres, see Dekker, *Illustrating the Phaenomena*, 223–225; and 247–249 on the planisphere.
6. On this figure see Anna Santoni, “I Fenomeni di Arato e i Catasterismi di Eratostene nelle illustrazioni del manoscritto Vat. gr. 1087,” in Guidetti and Santoni, *Antiche stelle*, 101–102.
7. Fabio Guidetti, “L’apparato iconografico del codice Vat. gr. 1087: per la ricostruzione dell’edizione tardoantica del *corpus arateo*,” in Guidetti and Santoni, *Antiche stelle*, 113–152, esp. 146–152; Martin,

Histoire du texte, 42–51.

8. Milan, Biblioteca Ambrosiana, H 57 Sup. (=437). See David Pingree, “An Illustrated Greek Astro nomical Manuscript: Commentary of Theon of Alexandria on the *Handy Tables* and Scholia and Other Writings of Ptolemy Concerning Them,” *Journal of the Warburg and Courtauld Institutes* 45 (1982): 185–192; the quote at 191.
9. Tblisi, National Center of Manuscripts, A- 65. See W. Ponomarew, “Georgien,” in *Reallexikon zur byzantinischen Kunst*, ed. Klaus Wessel and Marcell Restle (Stuttgart: Hiersemann, 1966–), II.721–722; [G.] Alibegachvili, “L’art de la miniature géorgienne des XIe–début XIIIe siècles,” in *Atti de Primo Simposio Internazionale sull’Arte Georgiana*, ed. G. Ieni (Milan, 1977), 25–26.
10. Most recently on the institution, see Sofia Kotzabassi, ed., *The Pantokrator Monastery in Constantinople* (Boston: de Gruyter, 2013).
11. Arthur H. S. Megaw, “Notes on Recent Work of the Byzantine Institute in Istanbul,” *Dumbarton Oaks Papers* 17 (1963): 335–340.
12. Robert Ousterhout, “Architecture, Art, and Komnenian Ideology at the Pantokrator Monastery,” in *Byzantine Constantinople: Monuments, Topography, and Everyday Life*, ed. Nevra Necipolu (Leiden: Brill, 2001), 133–150, quote at 145. For the late antique mosaics, see Henry Maguire, *Earth and Ocean: The Terrestrial World in Early Byzantine Art* (University Park: Pennsylvania State University Press, 1987). For a twelfth-century Italian comparison, see the mosaic in the crypt of S. Savino in Piacenza: Charles E. Nicklies, “Cosmology and the Labors of the Months at Piacenza: The Crypt Mosaic at San Savino,” *Gesta* 34 (1995): 108–125, with discussion of related monuments.
13. The frieze has recently been dated to the second century A.D.: Olga Palagia, “The Date and Iconography of the Calendar Frieze on the Little Metropolis, Athens,” *Jahrbuch des Deutschen Archäologischen Instituts* 123 (2008): 215–237.
14. For a recent discussion, see Cohen, *Transformations of Time*, 87–111.
15. For the earlier date, see Eunice Dauterman Maguire and Henry Maguire, *Other Icons: Art and Power in Byzantine Secular Culture* (Princeton: Princeton University Press, 2007), 125–131; for the fifteenth- century date, see Bente Kiilerich, “Making Sense of the Spolia in the Little Metropolis at Athens,” *Arte Medievale N.S.* 4 (2005): 95–114.
16. Mt. Sinai, Monastery of St. Catherine, Sin. gr. 1186; and Florence, Biblioteca Medicea Laurenziana, Laur. Plut. IX.28. In general on the illumination of Kosmas’s text, see Maja Kominko, *The World of Kosmas: Illustrated Byzantine Codices of the Christian Topography* (Cambridge: Cambridge University Press, 2013). On the Florence copy, see Jeffrey C. Anderson, ed., *The Christian Topography of Kosmas Indikopleustes: Firenze, Biblioteca Medicea Laurenziana, Plut. 9.28.* (Rome: Edizioni di Storia e Letteratura, 2013).
17. Venice, Biblioteca Marciana, Marc. gr. 516, fol. 141v. Italo Furlan, *Codici greci illustrati della Biblioteca Marciana IV* (Milan: Edizioni Stendhal, 1981), pl. 7.
18. For the text, see Christopher of Mitylene, *Poems*, ed. Eduard Kurtz (Leipzig: Neumann, 1903), 23–26; for a translation and commentary, see Paul Magdalino, “Cosmological Confectionery and Equal Opportunity in the Eleventh Century: An Ekphrasis by Christopher of Mitylene (Poem 42),” in *Byzantine Authors: Literary Activities and Pre occupations*, ed. John W. Nesbitt (Leiden: Brill, 2003), 1–6.
19. For the subsequent development of this tradition, see Blume et al., *Sternbilder*; Duits, “Celestial transmissions”; Mechtild Haffner, *Ein antiker Sternbilderzyklus und seine Tradierung in Handschriften vom frühen Mittelalter bis zum Humanismus: Untersuchungen zu den Illustrationen der “Aratea” des Germanicus* (Hildesheim: Georg Olms Verlag, 1997).
20. Carey, “Al- Sufi”; Carey, “Mapping the mnemonic.” For a survey of high medieval Islamic astronomical iconography, see Caizzi, *Images du ciel*. On the formation of the “Sufi Latinus” corpus, see Paul Kunitzsch, “The Astronomer Abu ‘l- Husayn al- Sufi and his Book on the Constellations,” *Zeitschrift für Geschichte der arabisch- islamischen Wissenschaften* 3 (1986): 56–81.
21. Paul Magdalino, *L’orthodoxie des astrologues: La science entre le dogme et la divination à Byzance (VIIe–XIVe siècle)* (Paris: Lethielleux, 2006).
22. Vatican City, Biblioteca Apostolica Vaticana, MS Vat. gr. 1291. The most complete published descriptions are Timothy Janz, “The Scribes and Date of the Vat. Gr. 1291,” *Miscellanea Bibliothecae Apostolicae Vaticanae* 10 (2003): 159–180; Leslie Brubaker and John Haldon, *Byzantium in the Iconoclast Era (c. 650–850): The Sources* (Aldershot, U.K.: Ashgate, 2001), 36–40; Anne Tihon, “Les tables faciles de Ptolémée dans les manuscrits en onciale (IXe–Xe siècles),” *Revue d’Histoire des Textes* 22 (1992): 61–64; Franz Boll, “Beiträge zur Ueberlieferungsgeschichte der griechischen Astrologie und Astronomie,” *Sitzungsberichte der philos.-phil. und der histor. Classe der k. bayer. Akad. d. Wiss.*, part 1 (1899): 112–115. Cf. Blume, *Sternbilder*, 469–476. On the term “Handy Tables,” understood not as a discrete work but as the genre of collections of information useful for astronomers and astrologers, see William Duane Stahlman, “The Astronomical Tables

- of Codex Vaticanus Graecus 1291" (PhD diss., Brown University, 1960), 2–17; Tihon, "Tables faciles," 70–79.
23. The sixty-six tables were edited by Stahlman, *Astronomical tables*, 30–173. They occupy the bulk of the manuscript, fols. 22r–94v.
 24. Fols. 17v–21v: see Ernst Honigmann, *Die sieben Klimata und die : Eine Untersuchung zur Geschichte der Geographie und Astrologie im Altertum und Mittelalter* (Heidelberg: C. Winter, 1929), 193–208, with edition of the table from the Vatican Ptolemy and concordance with the text of Ptolemy.
 25. Fols. 5r–8r: see Tihon, "Tables faciles," 54, 62, and 78. Recently on the Stephanos problem, see Mossman Roueché, "Stephanus the Alexandrian Philosopher, the *Kanon*, and a Seventh-Century Millennium," *Journal of the Warburg and Courtauld Institutes* 74 (2011): 1–30.
 26. Fols. 16v–17r. On the royal canon, see Alden A. Mosshammer, *The Easter Computus and the Origins of the Christian Era* (Oxford: Oxford University Press, 2008), 17–18.
 27. David H. Wright, "The Date of the Vatican Illuminated Handy Tables of Ptolemy and of Its Early Additions," *Byzantinische Zeitschrift* 78 (1985): 355–362; and Ihor Ševenko, "The Search for the Past in Byzantium Around the Year 800," *Dumbarton Oaks Papers* 46 (1992): 279–293; followed by Brubaker and Haldon, *Sources*, 38; Magdalino, *Orthodoxie*, 23; Leslie Brubaker and John Haldon, *Byzantium in the Iconoclast Era (c. 650–850): A History* (Cambridge: Cambridge University Press, 2011), 220; Anderson, "World Image," 80.
 28. Janz, "Scribes," 166–169. This argument requires an exemplar from the reign of Constantine V, copied by scribe "alpha" and then brought up to date by his colleague "beta." Thus Janz, "Scribes," 167: "While it is fairly clear that scribe found no names after that of Constantine V (740–775) in his exemplar of the Canon, there is no particular reason to suppose that his exemplar was up to date."
 29. For this account, see Boll, "Beiträge," 126–128.
 30. Anne Tihon, "L'astronomie à Byzance à l'époque iconoclaste (VIIIe–IXe siècles)," in *Science in Eastern and Western Civilization in Carolingian Times*, ed. Paul Leo Butzer and Dietrich Lohrmann (Basel: Birkhäuser Verlag, 1993), 196–200. Earlier analyses generated more precise dates: see Boll, "Beiträge," 128–132; Paul Schnabel, "Die Entstehungsgeschichte des kartographischen Erdbildes des Klaudios Ptolemaios," *Sitzungsberichte der preußischen Akademie der Wissenschaften, Philos. Hist. Kl.* 14 (1930): 223; Bartel L. van der Waerden, "Eine byzantinische Sonnentafel," *Sitzungsberichte der mathematisch-naturwissenschaftlichen Klasse der Bayerischen Akademie der Wissenschaften zu München*, Jahrgang 1954 (1955): 159–168.
 31. Janz, "Scribes," 172–173; Anderson, "World Image," 84. For an analysis of these paintings, see Dekker, *Illustrating the Phaenomena*, 225–227.
 32. The fifteenth-century date is provided by the ex libris of Domenico Domenici, bishop of Brescia, on fol. 4v, and his coat of arms on fol. 5r. For the text see Joseph Mogenet, "Les scolies astronomiques du Vat. gr. 1291," *Bulletin de l'Institut Historique Belge de Rome* 40 (1969): 69–91; text edited at 73, translation and commentary at 84–85.
 33. Ševenko, "Search for the Past," quote at 287.
 34. Theophanes, *Chronographia*, ed. de Boor, 468; trans. Mango and Scott, 643.
 35. Pingree, "Classical and Byzantine Astrology," 239.
 36. Leo VI, *Taktika*, ed. and trans. George T. Denis (Washington, D.C.: Dumbarton Oaks, 2010), 640–641.
 37. Leo VI, *Taktika*, 562–565.
 38. The other three are: Leiden, Universiteitsbibliotheek, BPG 78; Florence, Biblioteca Medicea Laurenziana, Laurenzianus 28–26; and Venice, Biblioteca Marciana, Marc. gr. 331. See in general Tihon, "Tables faciles."
 39. The tables are those of the right and oblique ascensions (fols. 22r–37v), a table for computing lunar latitudes (45v–46r), and a table of the moon's hourly course in anomaly (46r). They are edited by Stahlman, "Astronomical Tables," tables 1–8 and 23–24.
 40. Brubaker and Haldon, *Sources*, 39–40; cf. Brubaker and Haldon, *History*, 224.
 41. The first hand was responsible for fols. 22r–23v and the second for fols. 24r–37v. The last folio of the third gathering is 27, in the middle of the group executed by the second hand.
 42. The shared diagrams are the "description of the horizons" at 45r (compare Leiden BPG 78, fol. 100v), the epact table at 47r (compare Leiden BPG 78, fol. 2v), and the painting of the latitudes of Mercury at 47v (compare Leiden BPG 78, fol. 97v). The diagrams unique to the Vatican Ptolemy are the solar diagram at 9r and the diagram at 46r, described by Tihon as "incomprehensible" ("Tables faciles," 81).
 43. Useful explanation by Mosshammer, *Easter Computus*, 75–80.
 44. Boll, "Beiträge," 124, perceived "in jeder Hand eine Fackel"; the stub of a torch may be visible in her right, but none can be seen in the left.
 45. Anderson, "World Image," 494.
 46. So too Janz, "Scribes," 161.

47. The table in the Vatican Ptolemy begins the cycle with epact 20 and expresses the “saltus” (or leap) between epacts 29 and 11, that is, years 10 and 11 of the cycle. This does not correspond with any of the known early Byzantine systems, which invariably begin the cycle two years later, with epact 11/12, and may express the saltus at various places, but never in the same manner as the Vatican table. For a summary of the early Byzantine systems, see Venance Grumel, *La chronologie* (Paris: Presses Universitaires de France, 1958), 54–55.
48. For the text, see Anderson, “World Image,” 96. Translated, it reads: “Having the years since Diocletian in your hand, subtract from them one. Divide the result by nineteen. And multiply the remainder by 19 [sic]. And divide by thirty. And call the remainder the epact. By way of example, let the year be 239. Subtracting 1 = 238. [Dividing by] 19 [there are] ten times nineteen and twice nineteen; [the remainder] = 10. This [multiplied] by eleven becomes ten times nineteen [sic], 110. I divide three times [sic] [by] thirty, [and] the remainder of this I call the epact.” The correct procedure is given by Maximus the Confessor in his treatise on calculating the date of Easter (*Patrologia Graeca* 19: 1245, with 1272). The scribe of the Vatican manuscript has entered a false multiplicand in the third step, which has been carried over to the calculation as related in the text (“ten times nineteen”) although not in the digits, where the correct result (110) is given.
49. Similar considerations apply to the four medallions positioned at the corners of the rectangular frame. Each is occupied by two female figures in various habits: in the medallion at upper left, the left figure wears red and the right figure blue; while in the medallion at upper right one figure wears green over red, the other gold. The figures engage their partners with a variety of gestures; thus at lower right the figures face each other, with the right hand of one curved inward toward her chin. These have been understood as personifications of day and night, on the argument that each pair contains one figure in light garb, the other in dark (see Boll, “Beiträge,” 124, followed by Brubaker and Haldon, *Sources*, 38), but no such distinction was maintained by the painter, nor would the logic of the diagram require a single depiction of night and day, much less four. Like the text at the top of the folio, these figures may be defective copies of a poorly understood exemplar.
50. Pace Janz, “Scribes,” 161: “everything else in the (original) manuscript was clearly copied from an exemplar: why not this?”
51. Brubaker and Haldon, *Sources*, 39, with comparison of the figures of Virgo at 9r and 23r.
52. Brubaker and Haldon, *Sources*, 40, invoke the possibility of a third painter to explain the differences.
53. Compare the charioteer silks in Aachen and Brussels, conventionally dated to the eighth or ninth century: Brubaker and Haldon, *Sources*, 93–94; Anna Muthesius, *Byzantine Silk Weaving: AD 400 to AD 1200* (Vienna: Fass baender, 1997), 72–73, cat. nos. M29 and M30, with pls. 22A and 23A. For reliefs, compare the Porphyrius bases in Istanbul (Nezih Fratl, *La sculpture byzantine figurée au Musée Archéologique d’Istanbul* [Paris: Jean Maisonneuve, 1990], 30–34 and pls. 23–24) and the middle Byzantine reliefs of the ascension of Alexander on the north facade of San Marco and in Istanbul (André Grabar, *Sculptures byzantines du Moyen Âge (XIe–XIVe siècle)* [Paris: A. Maisonneuve, 1976], 75 with pl. 52a, and 37 with pl. 3c, respectively).
54. So too Anthony Cutler and Jean-Michel Spieser, *Byzance médiévale: 700–1240* (Paris: Gallimard, 1996), 46.
55. For the girdle in which this solidus is preserved, see Philip Grierson, “The Kyrenia Girdle of Byzantine Medallions and Solidi,” *Numismatic Chronicle*, ser. 6, 15 (1955): 55–70; for the Louvre medallion, with further comparanda, see Cécile Morrisson, “Araba yarçs olarak muzaffer imparator / The Emperor in Triumph as Charioteer,” in *Hippodrom / Atmeydan: stanbul'un tarih sahnesi*, ed. Brigitte Pitarakis (İstanbul: Pera Müzesi, 2010), I.44–48.
56. Compare the Codex- Calendar of 354: Michele Salzman, *On Roman Time: The Codex- Calendar of 354 and the Rhythms of Urban Life in Late Antiquity* (Berkeley: University of California Press, 1990), 30–32 and fig. 11.
57. Ann Hyland, *Equus: The Horse in the Roman World* (New Haven: Yale University Press, 1990), 238–239.
58. Theophanes, *Chronographia*, ed. de Boor, 474; trans. Mango and Scott, 651.
59. Constantine VII, *De ceremoniis aulae byzantinae*, ed. Johann Jacob Reiske (Bonn: Weber, 1829), I.105.
60. Katherine M. D. Dunbabbin, “The Victorious Charioteer on Mosaics and Related Monuments,” *American Journal of Archaeology* 86 (1982): 85–86.
61. Wright, “Date,” 361: “The Vatican Ptolemy was used actively, and with good understanding, for about five generations.”
62. A text preserved in the early medieval *Parastaseis Syntomoi Chronikai* attributes the office of “imperial astronomer” to one Ligurios in the service of Leo I (457–474): ch. 64; trans. Cameron and Herrin, 147. Paul Magdalino also proposes that the early medieval manuscripts of the *Handy Tables* “were copied expressly for the use of highly placed astrologers in court circles”: “The Byzantine Reception of Classical Astrology,” in *Literacy, Education and Manuscript Transmission in Byzantium and Beyond*, ed. Catherine Holmes and Judith Waring (Leiden: Brill, 2002), 35.
63. Vatican City, Biblioteca Apostolica Vaticana, Vat. gr. 699. See the description in Kominko, *World of Kosmas*,

- 227–230, with references to earlier bibliography. Note especially Leslie Brubaker, “The *Christian Topography* (Vat. gr. 699) Revisited: Image, Text, and Conflict in Ninth-Century Byzantium,” in *Byzantine Style, Religion and Civilization: In Honour of Sir Steven Runciman*, ed. Elizabeth Jeffreys (Cambridge: Cambridge University Press, 2006), 3–24. For a facsimile, see Cosimo Stornajolo, *Le miniature della Topografia Cristiana di Cosma Indicopleuste, Codice Vaticano Greco 699* (Milan: U. Hoepli, 1908).
64. Brubaker, “*Christian Topography*,” 6–7.
65. Brubaker, “*Christian Topography*,” 5–8; and Kominko, *World of Kosmas*, 230 with fn. 11. A case for an Italian provenance, with assistance from Constantinopolitan miniaturists, was made by Julien Leroy, “Notes codicologiques sur le Vat. Gr. 699,” *Cahiers Archéologiques* 23 (1974): 73–79.
66. Kominko, *World of Kosmas*, 10–23; Wanda Wolska, *La Topographie Chrétienne de Cosmas Indicopleustès: Théologie et science au VIe siècle* (Paris: Presses Universitaires de France, 1962), 1–11; Milton V. Anastos, “The Alexandrian Origin of the ‘Christian Topography’ of Cosmas Indicopleustes,” *Dumbarton Oaks Papers* 3 (1946): 73–80.
67. Benjamin Anderson, review of *The World of Kosmas: Illustrated Byzantine Codices of the “Christian Topography”* by Maja Kominko, *Studies in Iconography* 36 (2015): 202 and 208 fn. 7.
68. Kominko, *World of Kosmas*; the basics of the stemma at 7–9. For the two eleventh-century manuscripts see fn. 16 above.
69. Kominko, *World of Kosmas*, 42–48.
70. Kosmas Indikopleustes, *Christian Topography*, VIII.25; ed. and trans. Wanda Wolska-Conus (Paris: Éditions du Cerf, 1968–1973), III.195.
71. For their relationship, see Anderson, review of Kominko, 204–205, with references to earlier literature.
72. Invoked at Kosmas, *Christian Topography* IV.25; ed. Wolska-Conus, I.569. The Vatican Kosmas is missing an entire quire covering the text from IV.23 to V.19: Kominko, *World of Kosmas*, 229.
73. Kominko, *World of Kosmas*, 77–83.
74. Photios, *Bibliothk*, Cod. 36; ed. René Henry (Paris: Les Belles Lettres, 1959–1977), I.21–22.
75. Fundamentally Kathleen Corrigan, *Visual Polemics in the Ninth-Century Byzantine Psalters* (Cambridge: Cambridge University Press, 1992); on the historical images 27–42. More recent studies of the marginal psalters include Jeffrey C. Anderson, “The Creation of the Marginal Psalter,” in *Ritual and Art: Byzantine Essays for Christopher Walter*, ed. Pamela Armstrong (London: Pindar, 2006), 44–65; Maria Evangelatou, “Liturgy and the Illustration of the Ninth-Century Marginal Psalters,” *Dumbarton Oaks Papers* 63 (2009): 59–116; Georgi Parpulov, *Toward a History of Byzantine Psalters, ca. 850–1350 AD* (Plovdiv, Bulgaria: 2014), 86–93.
76. Moscow, State Historical Museum, Cod. 129, fol. 133r. M. V. Šepkina, *Miniatjuri Khludovskoi Psalmiri* (Moscow: Iskusstvo, 1977). In addition to the borrowings discussed below, see Brubaker, “*Christian Topography*,” 13; Corrigan, *Visual Polemics*, 25, 42, and 68; and Suzy Dufrenne, “Une illustration ‘historique,’ inconnue, du Psautier du Mont-Athos, Pantocrator No. 61,” *Cahiers Archéologiques* 15 (1965): 90–91.
77. For discussion of this image, see Maja Kominko, “New Perspectives on Paradise: The Levels of Reality in Byzantine and Latin Medieval Maps,” in *Cartography in Antiquity and the Middle Ages: Fresh Perspectives, New Methods*, ed. Richard J. A. Talbert and Richard W. Unger (Leiden: Brill, 2008), 142–145.
78. Moscow, State Historical Museum, Cod. 129, fols. 101v and 103r; Paris, Bibliothèque nationale de France, Par. gr. 20, fol. 9r.
79. See the index to Kosmas, *Christian Topography*, ed. Wolska-Conus, III.444–445.
80. Brubaker, “*Christian Topography*.”
81. For accounts of the scholarly discussion on the origins and function of the ninth-century marginal psalters, see Evangelatou, “Liturgy,” 60–61 with fn. 11; and Corrigan, *Visual Polemics*, 124–134. On the rubrics, see Corrigan, *Visual Polemics*, 127–129; and Parpulov, *Toward a History*, 88–93, who concludes that the original owner of Khludov must have lived in a monastery.
82. Anderson, “Creation of the Marginal Psalter,” understands the Paris fragment as a product of Methodios’s Italian exile (815–821) and the Khludov and Pantokrator psalters as later ninth-century continuations of the tradition that it established. To the arguments adduced to date for Methodios, we might add that Photios’s disdain for Kosmas’s cosmology renders its adoption in a manuscript produced under his supervision unlikely. Nevertheless, that Photios had access to a copy of Kosmas is suggestive: perhaps the illuminators of the marginal psalters employed the same copy of the *Christian Topography* during the patriarchate of Methodios that Photios later consulted.
83. Magdalino, *Orthodoxie*, 50–51 and 55–68; C Mavroudi, “Translations,” 46–47.
84. Sebastian Brock, “Iconoclasm and the Monophysites,” in *Iconoclasm*, ed. Anthony Bryer and Judith Herrin

- (Birmingham, U.K.: Centre for Byzantine Studies, 1977), 57. A similar argument is made by Peter Brown in “A Dark-Age Crisis: Elements of the Iconoclastic Controversy,” *English Historical Review* 88 (1973): 1–34.
85. Gilbert Dagron, “L’ombre d’un doute: L’hagiographie en question, VIe–XIIe siècle,” *Dumbarton Oaks Papers* 46 (1992): 59–68.
86. Basil of Caesarea, *Homilies on the Hexaemeron*, IX.1; ed. Stanislas Giet (Paris: Éditions du Cerf, 1950), 480–482; trans. Agnes Clare Way (Washington, D.C.: Catholic University Press, 1963), 135–136. Further John F. Callahan, “Greek Philosophy and the Cappadocian Cosmology,” *Dumbarton Oaks Papers* 12 (1958): 43.
87. Paul van den Ven, “La vie grecque de S. Jean le Psichaïte, confesseur sous le règne de Léon l’Arménien (813–820),” *Muséon N.S.* 3 (1902): 109–110. For the date see Brubaker and Haldon, *Sources*, 216; and Ann Moffatt, “Schooling in the Iconoclast Centuries,” in *Iconoclasm*, ed. Anthony Bryer and Judith Herrin (Birmingham, U.K.: Centre for Byzantine Studies, 1977), 86; cf. Stephanos Efthymiadis, “Hagiography from the ‘Dark Age’ to the Age of Symeon Metaphrastes (Eighth–Tenth Centuries),” in *The Ashgate Research Companion to Byzantine Hagiography, I: Periods and Places*, ed. Stephanos Efthymiadis (Farnham, U.K.: Ashgate, 2011), 111–112. For traces of a similar attitude in the works of the eighth-century iconophile theologian John of Damascus, see Veronica della Dora, *Landscape, Nature, and the Sacred in Byzantium* (Cambridge: Cambridge University Press, 2016), 65–67.
88. For a synthetic account of the Octateuchs, including extensive engagement with earlier secondary literature, see John Lowden, “Illustrated Octateuch Manuscripts: A Byzantine Phenomenon,” in *The Old Testament in Byzantium*, ed. Paul Magdalino and Robert Nelson (Washington, D.C.: Dumbarton Oaks Research Library and Collection, 2010), 107–152.
89. For commentary on all preserved miniatures from the Octateuchs representing this scene, see Kurt Weitzmann and Massimo Bernabò, *The Byzantine Octateuchs* (Princeton: Princeton University Department of Art and Archaeology, 1999), 20–21.
90. For a similar reading of two further miniatures from the Vatican Octateuch, see Cynthia Hahn, “The Creation of the Cosmos: Genesis Illustration in the Octateuchs,” *Cahiers Archéologiques* 28 (1979): 39.
91. Lowden, “Illustrated Octateuch Manuscripts,” 111–115.
92. Hahn, “Creation of the Cosmos,” 29–31.
93. Anne-Laurence Caudano, “Un univers sphérique ou voûté? Survivance de la cosmologie antiochienne à Byzance (XIe et XIIe s.),” *Byzantion* 78 (2008): 66–86.
94. Anne-Laurence Caudano, “Le ciel a la forme d’un cube ou a été dressé comme une peau”: Pierre le Philosophe et l’orthodoxie du savoir astronomique sous Manuel Ier Comnène,” *Byzantion* 81 (2011): 19–73.
95. Emmanuel Amand de Mendieta and Stig Y. Rudberg, eds., *Eustathius: Ancienne version latine des neuf homélies sur l’Hexaéméron de Basile de Césarée* (Berlin: Akademie-Verlag, 1958); Georg Graf, *Geschichte der christlichen arabischen Literatur* (Vatican City: Biblioteca Apostolica Vaticana, 1944–1953), II.56.
96. Ahmet T. Karamustafa, “Cosmographical Diagrams,” in *Cartography in the Traditional Islamic and South Asian Societies*, ed. J. B. Harley and David Woodward (Chicago: University of Chicago Press, 1992), 71–89, here at 72. There is evidence for limited awareness of Antiochene cosmological ideas in early medieval Europe, including two exceedingly brief passages from Kosmas’s works translated into Latin: see Michael W. Herren in his edition of *The Cosmography of Aethicus Ister* (Turnhout, Belgium: Brepols, 2011), 1–li.
97. Leiden, Universiteitsbibliotheek, Voss. lat. Q 79. See Blume et al., *Sternbilder*, I.292–298, with references to the extensive literature.
98. See, e.g., Martin, *Histoire du texte*, 40.
99. Germanicus, *Arati Phaenomena*, lines 1–16; ed. André Le Boeuffle (Paris: Belles Lettres, 1975), 1–2. For the early imperial context see, e.g., R. Elaine Fantham, “Ovid, Germanicus, and the Composition of the *Fasti*,” *Papers of the Liverpool Latin Seminar* 5 (1985): 243–281.
100. For this account of the diagram, see Bruce Eastwood, “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): 1–40; the quote at 2.
101. Elly Dekker, “Carolingian Planetary Observations: The Case of the Leiden Planetary Configuration,” *Journal of the History of Astronomy* 39 (2008): 77–90. This is adopted by Blume et al., *Sternbilder*, I.295, as the date of the manuscript itself. Stylistic arguments for a date later in Louis’s reign are presented in Koehler and Mütherich, *Die karolingischen Miniaturen*, IV.82; further developed in Florentine Mütherich, “Die Bilder des Leidener Aratus,” in *Aratea: Kommentar zum Aratus des Germanicus Ms. Voss. lat. Q. 79, Bibliotheek der Rijksuniversiteit Leiden* (Lucerne, Switzerland: Faksimile Verlag Luzern, 1989), 31–68; Florentine Mütherich, “Book Illumination at the Court of Louis the Pious,” in *Charlemagne’s Heir: New Perspectives on the Reign of Louis the Pious*, ed. Peter Godman and Roger Collins (Oxford: Clarendon, 1990), 593–604.
102. Panofsky, *Renaissance*, 39. Panofsky was hardly the only author to think of Pompeii in connection with the

Leiden miniatures; an impressive list is compiled by C. L. Verkerk, “*Aratea*: A Review of the Literature Concerning MS. Vossianus lat. q. 79 in Leiden University Library,” *Journal of Medieval History* 6 (1980): 262–264.

103. For the legends, see Cyril Mango, “The Legend of Leo the Wise,” *Zbornik Radova Vizantoloshkog Instituta* 6 (1960): 59–93. For the reign, see Shaun Tougher, *The Reign of Leo VI (886–912): Politics and People* (Leiden: Brill, 1997); 118–122 for his early reputation for sagacity.
104. Text edited by Georges Koliás, *Léon Choerosphactès: Magistre, proconsul, et prince* (Athens: Verlag der “Byzantinisch- neugriechischen Jahrbücher,” 1939), 77.
105. For the date, see Paul Magdalino, “The Bath of Leo the Wise,” in *Maistor: Classical, Byzantine, and Renaissance Studies for Robert Browning*, ed. Ann Moffatt (Canberra: Australian Association for Byzantine Studies, 1984), 226.
106. Summarized and evaluated by Paul Magdalino in “The Bath of Leo the Wise and the ‘Macedonian Renaissance’ Revisited: Topography, Ceremonial, Ideology,” *Dumbarton Oaks Papers* 42 (1988): 100–103.
107. Edited and translated in Magdalino, “Bath Revisited,” 117–118.
108. Magdalino (“Bath Revisited,” 99–100) identifies the bath of Leo with the “Bath of the Oikonomēion” described in the tenth- century *Patria*, to which that text attributes seven niches or halls (“ethnai”) in imitation of the seven planets and twelve porticoes (“stoai”) in imitation of the twelve months of the year (*Patria*, I.60; ed. and trans. Albrecht Berger [Cambridge: Harvard University Press, 2013], 36–37).

Conclusion

1. George of Pisidia, *Poems*, 7.100–103; ed. and trans. Luigi Tartaglia (Turin: Unione Tipografico- Editrice Torinese, 1998), 256–257. On this poem, see Howard- Johnston, *Witnesses*, 18–19.
2. Fredegar, *Chronicle*, IV.65; ed. and trans. J. M. Wallace- Hadrill (London: Thomas Nelson and Sons, 1960), 53–56. For a similar tradition in al- Bukhari, see Robert G. Morrisson, “Discussions of Astrology in Early Tafsīr,” *Journal of Quranic Studies* 11 (2009): 55.
3. Magdalino, *Orthodoxie*, 35 for the introduction to Theon; 38 for the text on brontoscopy and “la figure de l’empereur astrologue et alchimiste.”
4. Einhard, *Vita*, ch. 25; ed. Holder- Egger, 30; translation after Noble, *Charlemagne*, 42.
5. Al- Masd, *Murj al- dhahab*, ed. Meynard and Courteille, VI.11–12. Discussed, e.g., by Robert Hillenbrand, “*La dolce vita* in Early Islamic Syria: The Evidence of Later Umayyad Palaces,” *Art History* 5 (1982): 32 fn. 216.
6. Fowden, *Qusayr Amra*, 82–83.
7. George Saliba, “The Role of the Astrologer in Medieval Islamic Society,” *Bulletin d’Études Orientales* 44 (1992): 54. This essay is a mine of sources on the role of astrologers in medieval Islamic courts. See further Antoine Borruat, “Court Astrologers and Historical Writing in Early Abbsid Baghdd: An Appraisal,” in *The Place to Go: Contexts of Learning in Baghdd, 750–1000 C.E.*, ed. Jens Scheiner and Damien Janos (Princeton, N.J.: Darwin, 2014), 455–501, esp. 461–464.
8. For power and authority as conceived in recent studies of early medieval Europe, see Ildar H. Garipzanov, *The Symbolic Language of Authority in the Carolingian World (c. 751–877)* (Leiden: Brill, 2008).
9. See Anthony Kaldellis, *The Byzantine Republic: People and Power in New Rome* (Cambridge: Harvard University Press, 2015).
10. “Die kosmische, bildhafte Orientierung”: Warburg, “Einwirkung,” 125.
11. Aratus, *Phaenomena*, ed. and trans. G. R. Mair (London: Heinemann, 1921), 206–207.
12. McCluskey, “Gregory of Tours,” for an effort in the west; and for an effort in the east, Gilbert Dagron, “Das Firmament soll christlich werden: Zu zwei Seefahrtskalendern des 10. Jahrhunderts,” in *Fest und Alltag in Byzanz*, ed. Günter Prinzing and Dieter Simon (Munich: C. H. Beck, 1990), 145–156.
13. See Caiozzo, *Images du ciel*, 62–64; Carey, “Mapping the Mnemonic,” 65–66.
14. Kominko, *World of Kosmas*, 212, and 74–76 on the version of the zodiac depicted in the manuscripts.
15. Mavroudi, “Translations,” 28–36.
16. Lawrence Nees, “Introduction,” *Speculum* 72 (1997): 960–961.

BIBLIOGRAPHY

PRIMARY SOURCES

- Ado. *Le Martyrologe d'Adon*. Ed. Jacques Dubois and Geneviève Renaud. Paris: Éditions du Centre national de la recherche scientifique, 1984.
- Agnellus. *Liber pontificalis ecclesiae Ravennatis*. Ed. Deborah Mauskopf Deliyannis. Turnhout, Belgium: Brepols, 2006.
- Alcuin. *Disputatio Pippini cum Albino*. In *Altercatio Hadriani Augusti et Epicteti philosophi*, ed. Walter Suchier, 134–146. Urbana: University of Illinois Press, 1939.
- Annales Bertiniani*. Ed. Félix Grat, Jeanne Vielliard, and Suzanne Clémencet. Paris: Klincksieck, 1964. Trans. Janet L. Nelson. Manchester, U.K.: Manchester University Press, 1991.
- Annales Nordhumbranis*. Ed. Reinhold Pauli. Hannover: Hahn, 1881.
- Annales regni francorum*. Ed. Friedrich Kurze. Hannover: Hahn, 1895.
- Aratus. *Phaenomena*. Ed. and trans. G. R. Mair. London: Heinemann, 1921.
- Balam. *Trkh. Chronique de Tabari, traduite sur la version persane d'Abou- Ali Mohammed Belami*. Trans. Hermann Zotenberg. Paris: Imprimerie Impériale, 1869.
- Basil of Caesarea. *Homilies on the Hexaemeron*. Ed. Stanislas Giet. Paris: Éditions du Cerf, 1950. Trans. Agnes Clare Way. Washington, D.C.: Catholic University Press, 1963.
- al- Basraw. *Tuhfat al- anm ffadil al- Shm*. Ed. Abd al- Azz Fayyd Harfsh. Damascus: Dr al- Bashir, 1998.
- Bede. *De temporum ratione*. Ed. Charles Williams Jones. Turnhout, Belgium: Brepols, 1977. Trans. Faith Wallis. Liverpool: Liverpool University Press, 1999.
- Cassius Dio. *Roman History*. *Dio's Roman History IX*. Trans. Ernest Cary. London: William Heinemann, 1927.
- Christopher of Mitylene. *Poems*. Ed. Eduard Kurtz. Leipzig: Neumann, 1903.
- Chronica Monasterii Casinensis. Die Chronik von Montecassino*. Ed. Hartmut Hoffmann. Hannover: Hahn, 1980.
- Chronicon Paschale*. Ed. Ludwig August Dindorf. Bonn: Weber, 1832. Trans. Michael Whitby and Mary Whitby. Liverpool: Liverpool University Press, 1989.
- Constantine VII. *De ceremoniis aulae byzantinae*. Ed. Johann Jacob Reiske. Bonn: Weber, 1829. Dümmler, Ernst, ed. *Epistolae Karolini aevi II*. Berlin: Weidmann, 1895.
- Dümmler, Ernst, ed. *Poetae latini aevi Carolini*. Berlin: Weidmann, 1880–84.
- Einhard. *Vita Karoli Magni*. Ed. O. Holder- Egger. Hannover: Hahn, 1911.
- Farazdaq. *Dwn*. Ed. and trans. R. Boucher. Paris: Adolphe Labitte, 1870.
- Ferdows. *Shh- nma. The Sháhnáma of Firdausí*. Trans. Arthur George Warner and Edmond Warner. London: Kegan Paul, Trench, Trübner, 1905–25.
- Fredegar. *Chronicle*. Ed. and trans. J. M. Wallace- Hadrill. London: Thomas Nelson and Sons, 1960.
- George of Pisidia. *Poems*. Ed. and trans. Luigi Tartaglia. Turin: Unione Tipografico-Editrice Torinese, 1998.
- Georgios Kedrenos. *Chronicon*. Ed. Immanuel Bekker. Bonn: Weber, 1838–39.
- Georgios Monachos. *Chronicon*. Ed. Carl de Boor. Leipzig: Teubner, 1904.
- Germanicus. *Arati Phaenomena*. Ed. André Le Boeuffle. Paris: Belles Lettres, 1975. Herodian. *History of Antioch's History of the Roman Empire*. Trans. Edward C. Echols. Berkeley: University of California Press, 1961. Ibn al- Faqh. *Kitb al- Buldn*. Ed. Michael de Goeje. Leiden: Brill, 1885. Trans. Henri Massé. Damascus: Institut français de Damas, 1973.
- Ibn Askir. *Trkh madnat Dimashq. La Description de Damas d'Ibn Askir*. Trans. Nikita Elisséeff. Damascus: Institut français du Proche- Orient, 2008.
- Ibn Battta. *Rihla*. Ed. C. Defrémy and B. R. Sanguineti. Paris: Imprimerie Nationale, 1874–79. Trans. H. A. R. Gibb. Cambridge: Cambridge University Press, 1958–94.

- Ibn Jubayr. *Rihla*. Ed. Michael de Goeje. Leiden: Brill, 1907. Trans. R. J. C. Broadhurst. London: J. Cape, 1952.
- Ibn Rusta. *Kitb al- Alq al- nafsa*. Ed. Michael de Goeje. Leiden: Brill, 1892. Trans. Gaston Wiet. Cairo: Publications de la Société de géographie d'Égypte, 1955.
- Ibn Susr. *A Chronicle of Damascus*. Ed. and trans. William M. Brinner. Berkeley: University of California Press, 1963. al- Idrs. *Idrs's Palaestina und Syrien*. Ed. Johann Gildemeister. Bonn: Georg, 1885.
- Isidore of Seville. *Etymologiae*. Ed. W. M. Lindsay. Oxford: Clarendon, 1911. Trans. Stephen A. Barney, W. J. Lewis, J. A. Beach, and Oliver Berghof. Cambridge: Cambridge University Press, 2006. al- Istakhr. *Kitb al- Maslik*. Ed. Michael de Goeje. Leiden: Brill, 1889.
- John Scottus. *Carmina*. Ed. and trans. Michael W. Herren. Dublin: Dublin Institute for Advanced Studies, 1993.
- Josephus. *Bellum Judaicum*. Trans. H. St. J. Thackeray. London: William Heinemann, 1961. Kosmas Indikopleustes. *Christian Topography*. Ed. and trans. Wanda Wolska- Conus. Paris: Éditions du Cerf, 1968–73.
- Leo VI. *Taktika*. Ed. and trans. George T. Denis. Washington, D.C.: Dumbarton Oaks, 2010.
- Liber pontificalis*. Ed. D. Duchesne. Paris: E. de Boccard, 1955–57. Trans. Raymond Davis. Liverpool: Liverpool University Press, 1992. Liudprand of Cremona. *Embassy. The Complete Works of Liudprand of Cremona*. Trans. Paolo Squatriti. Washington, D.C.: Catholic University of America Press, 2007.
- Maass, Ernst, ed. *Commentariorum in Aratum reliquiae*. Berlin: Weidmann, 1898.
- al- Masd. *Murj al- dhahab. Les Prairies d'Or*. Ed. and trans. C. Barbier de Meynard and Pavet de Courteille. Paris: Imprimerie Impériale [/ Nationale], 1861–77.
- al- Muqaddas. *Ahsan al- taqsm*. Ed. Michael de Goeje. Brill: Leiden, 1906. Trans. Basil Collins. Reading, U.K.: Garnet, 2001.
- al- Nbigha al- Shaibn. *Dwn*. Ed. Qadr My. Beirut: Dr al- Kitb al- Arab, 1995.
- Nelson, Janet L. *The Annals of St- Bertin*. Manchester, U.K.: Manchester University Press, 1991.
- Nikephoros, Patriarch of Constantinople. *Short History*. Ed. and trans. Cyril Mango. Washington, D.C.: Dumbarton Oaks, 1990.
- Panegyrici Latini. In Praise of Later Roman Emperors*. Trans. C. E. V. Nixon and Barbara Saylor Rodgers. Berkeley: University of California Press, 1995. *Parastaseis Syntomoi Chronikai. Constantinople in the Early Eighth Century: The Parastaseis Syntomoi Chronikai*. Ed. and trans. Averil Cameron and Judith Herrin. Leiden: E. J. Brill, 1984.
- Patria*. Ed. and trans. Albrecht Berger. Cambridge, Mass.: Harvard University Press, 2013.
- Photios. *Bibliothk*. Ed. René Henry. Paris: Les Belles Lettres, 1959–77.
- Plato. *Republic. The Republic of Plato*. Trans. Allan Bloom. New York: Basic, 1991.
- Sebeos. *The Armenian History Attributed to Sebeos*. Trans. R. W. Thomson. Liverpool: Liverpool University Press, 1999.
- Suetonius II. Ed. and trans. J. C. Rolfe. London: Heinemann, 1959.
- Symeon Magister. *Chronicon*. Ed. Staffan Wahlgren. Berlin: Walter de Gruyter, 2006.
- Tertullian, *Adversus Marcionem*. Ed. Claudio Moreschini. Paris: Cerf, 1990–2004.
- al- Tabar. *Tarkh*. Ed. M. J. de Goeje et al. Leiden: Brill, 1879–1901. Translation edited by Ehsan Yarshater, numerous translators. Albany: SUNY Press, 1985–2007.
- al- Thalab. *Qisas al- Anbiy*. Cairo: Maktabat alJumhrya al- Arabya, n.d. Trans. William M. Brinner. Leiden: Brill, 2002. al- Thalib. *Tarkh Ghurar al- siyar. Histoire des rois des Perses*. Ed. and trans. H. Zotenberg. Paris: Imprimerie Nationale, 1900.
- Thegan. *Gesta Hludowici imperatoris*. Ed. Ernst Tremp. Hannover: Hahn, 1995.
- Theophanes. *Chronographia*. Ed. Carl de Boor. Leipzig: Teubner, 1883–85. Trans. Cyril Mango and Roger Scott. Oxford: Clarendon, 1987.
- Theophylaktos Simokattes. *The History of Theophylact Simocatta*. Trans. Michael Whitby and Mary Whitby. Oxford: Clarendon, 1986.

- al- Yaqb. *Kitb al- Buldn*. Ed. Michael de Goeje. Leiden: Brill, 1892. Trans. Gaston Wiet. Cairo: Institut français d'archéologie orientale, 1937.
- Yqt. *Mujam al- Buldn*. Ed. Ferdinand Wüstenfeld. Leipzig: Brockhaus, 1866–73.

SECONDARY SOURCES

- Ackerman, Phyllis. “Preliminary Report on Takht- i Sulayman. IV. The Throne of Khusraw (The *Takht-i Taqdis*).” *Bulletin of the American Institute for Iranian Art and Archaeology* 5 (1937): 106–109.
- Alibegachvili, [G.] “L’art de la miniature géorgienne des XIe–début XIIIe siècles.” In *Atti de Primo Simposio Internazionale sull’Arte Georgiana*, ed. G. Ieni, 19–31. Milan: [s.n.], 1977.
- Allott, Stephen. *Alcuin of York, c. A.D. 732 to 804: His Life and Letters*. York: William Sessions, 1974.
- Althoff, Gerd. *Spielregeln der Politik im Mittelalter*. Darmstadt: Primus, 1997.
- Amand de Mendieta, Emmanuel, and Stig Y. Rudberg, eds. *Eustathius: Ancienne version latine des neuf homélies sur l’Hexaéméron de Basile de Césarée*. Berlin: Akademie- Verlag, 1958.
- Anastos, Milton V. “The Alexandrian Origin of the ‘Christian Topography’ of Cosmas Indicopleustes.” *Dumbarton Oaks Papers* 3 (1946): 73–80.
- Anderson, Benjamin. Review of *The World of Kosmas: Illustrated Byzantine Codices of the “Christian Topography,”* by Maja Kominko. *Studies in Iconography* 36 (2015): 201–209.
- Anderson, Benjamin. “World Image After World Empire: The Ptolemaic Cosmos in the Early Middle Ages, ca. 700–900.” PhD diss., Bryn Mawr College, 2012.
- Anderson, Jeffrey C., ed. *The Christian Topography of Kosmas Indikopleustes: Firenze, Biblioteca Medicea Laurenziana, Plut. 9.28*. Rome: Edizioni di Storia e Letteratura, 2013.
- Anderson, Jeffrey C. “The Creation of the Marginal Psalter.” In *Ritual and Art: Byzantine Essays for Christopher Walter*, ed. Pamela Armstrong, 44–65. London: Pindar, 2006.
- Andersson, Theodore M. *Theodulf of Orléans: The Verse*. Tempe: Arizona Center for Medieval and Renaissance Studies, 2014.
- Antrim, Zayde. “Ibn Asakir’s Representations of Syria and Damascus in the Introduction to the *Tarikh Madinat Dimashq*.” *International Journal of Middle East Studies* 38 (2006): 109–129.
- Ashpitel, Arthur, and Alexander Nesbitt. *Two Memoirs on Saint Peters Chair Preserved at Rome*. London: Nichols and Sons, 1870.
- Bachrach, Jere L. “Marwanid Umayyad Building Activities: Speculations on Patronage.” *Muqarnas* 13 (1996): 27–44.
- Baert, Barbara. *A Heritage of Holy Wood: The Legend of the True Cross in Text and Image*. Trans. Lee Preedy. Leiden: Brill, 2004.
- Bang, Peter Fibiger, and Dariusz Koodziejczyk, eds. *Universal Empire: A Comparative Approach to Imperial Culture and Representation in Eurasian History*. Cambridge: Cambridge University Press, 2012.
- Barber, Charles. *Figure and Likeness: On the Limits of Representation in Byzantine Iconoclasm*. Princeton: Princeton University Press, 2002.
- Barber, Charles. “The Truth in Painting: Iconoclasm and Identity in Early- Medieval Art.” *Speculum* 72 (1997): 1019–1036.
- Barton, Tamsyn. *Ancient Astrology*. London: Routledge, 1994.
- Bashear, Suliman. *Arabs and Others in Early Islam*. Princeton, N.J.: Darwin, 1997.
- Bauer, Franz Alto. *Das Bild der Stadt Rom im Frühmittelalter: Papststiftungen im Spiegel des Liber Pontificalis von Gregor dem Dritten bis zum Leo dem Dritten*. Wiesbaden: Reichert, 2004.
- Bauer, Franz Alto. “Statuen hoher Würdenträger im Stadtbild Konstantinopels.” *Byzantinische Zeitschrift* 96 (2008): 493–513.
- Baumgärtel- Fleischmann, Renate. “Die Kaiserwälder im Bamberger Domschatz.” *Bericht des Historischen Vereins Bamberg* 133 (1997): 93–126. Baumgärtel- Fleischmann, Renate. “Der Sternenmantel Kaiser Heinrichs II. und seine Inschriften.” In *Epigraphik 1988: Fachtagung für mittelalterliche und neuzeitliche Epigraphik*, ed. Walter Koch, 105–125. Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 1990.

- Bayless, Martha. "Alcuin's *Disputatio Pippini* and the Early Medieval Riddle Tradition." In *Humour, History and Politics in Late Antiquity and the Early Middle Ages*, ed. Guy Halsall, 157–178. Cambridge: Cambridge University Press, 2002.
- Becker, C. H. "Die Kanzel im Kultus des alten Islam." In *Orientalische Studien Theodor Nöldeke zum siebzigsten Geburtstag (2. März 1906) gewidmet*, ed. Carl Bezold, I.331–351. Gieszen, Germany: Töpelmann, 1906.
- Belloni, Annalisa, and Mirella Ferrari. *La Biblioteca Capitolare di Monza*. Padua, Italy: Antenore, 1974.
- Benjamin, Walter. *The Arcades Project*. Trans. Howard Eiland and Kevin McLaughlin. Cambridge, Mass.: Belknap Press, 1999.
- Benjamin, Walter. "Zum Planetarium." In *Gesammelte Schriften* IV.1, ed. Tillman Rexroth, 146–147. Frankfurt am Main: Suhrkamp, 1972.
- Bergmann, Marianne. *Der Koloß Neros, die Domus Aurea und der Mentalitätswandel im Rom der frühen Kaiserzeit*. Mainz: Philipp von Zabern, 1993.
- Berlekamp, Persis. *Wonder, Image, and Cosmos in Medieval Islam*. New Haven: Yale University Press, 2011.
- Bernhardt, John W. *Itinerant Kingship and Royal Monasteries in Early Medieval Germany, c. 936–1075*. Cambridge: Cambridge University Press, 1993.
- Betts, Alison V. G. "Graffiti from Qusayr Amra: A Note on the Dating of Arabian Rock Carvings." *Arabian Archaeology and Epigraphy* 12 (2001): 96–102.
- Bianconi, Daniele. *Tessalonica nell'età dei Paleologi: Le pratiche intellettuali nel riflesso della cultura scritta*. Paris: Centre d'études byzantines, néohelléniques et sud-est européennes, 2005.
- Bierbrauer, Katharina. *Die vorkarolingischen und karolingischen Handschriften der Bayerischen Staatsbibliothek*. Wiesbaden: Reichert, 1990.
- Bischoff, Bernhard. *Katalog der festländischen Handschriften des neunten Jahrhunderts (mit Ausnahme der wisigotischen)*. Wiesbaden: Harrassowitz, 1998–2014.
- Bischoff, Bernhard. *Die südostdeutschen Schreibschule und Bibliotheken in der Karolingerzeit*. Wiesbaden: Harrassowitz, 1960–80.
- Bisheh, Ghazi. "The Mosque of the Prophet at Madnah Throughout the First Century A.H. with Special Emphasis on the Umayyad Mosque." PhD diss., University of Michigan, 1979.
- Bisheh, Ghazi. "The Umayyad Monuments Between Muwaqqar and Azraq: Palatial Residences or Caravanserais?" In *The Near East in Antiquity: German Contributions to the Archaeology of Jordan, Palestine, Syria, Lebanon and Egypt*, ed. Susanne Kerner, III.35–41. Amman: Al- Kutba, 1992.
- Bisheh, Ghazi, Thierry Morin, and Claude VibertGuigue. "Rapport d'activités à Qusayr Amra." *Annual of the Department of Antiquities of Jordan* 41 (1997): 375–393.
- Bloch, Herbert. "Der Autor der 'Graphia aureae urbis Romae,'" *Deutsches Archiv für Erforschung des Mittelalters* 40 (1984): 55–175.
- Bloch, Herbert. *Monte Cassino in the Middle Ages*. Cambridge, Mass.: Harvard University Press, 1986.
- Bloom, Jonathan. "The *Qubbat al- Khadr* and the Iconography of Height in Early Islamic Architecture." *Ars Orientalis* 23 (1993): 135–141.
- Blume, Dieter. "Körper und Kosmos im Mittelalter." In *Bild und Körper im Mittelalter*, ed. Kristin Marek, Raphaële Preisinger, Marius Rimmele, and Katrin Kärcher, 225–241. Munich: Wilhelm Fink, 2006.
- Blume, Dieter. *Regenten des Himmels: Astrologische Bilder in Mittelalter und Renaissance*. Berlin: Akademie Verlag, 2000.
- Blume, Dieter. "Sternbilder des Mittelalters: Imaginationen des Wissens und des Begehrrens." In *Quel corps? Eine Frage der Repräsentation*, ed. Hans Belting, Dietmar Kamper, and Martin Schulz, 247–268. Munich: Wilhelm Fink, 2002.
- Blume, Dieter. "Wissenschaft und Bilder: Vom Hof Karls des Grossen zur Klosterreform." In *Karolingische und ottonische Kunst*, ed. Bruno Reudenbach, 520–551. Munich: Prestel, 2009.
- Blume, Dieter, Mechtild Haffner, and Wolfgang Metzger. *Sternbilder des Mittelalters: Der gemalte Himmel zwischen Wissenschaft und Phantasie*. Berlin: Akademie Verlag, 2012.
- Boll, Franz. "Beiträge zur Ueberlieferungsgeschichte der griechischen Astrologie und Astronomie." *Sitzungsberichte der philos.- phil. und der histor. Classe der k. bayer. Akad. d. Wiss.*, part 1 (1899): 77–140.

- Borgehammar, Stephan. "Heraclius Learns Humility: Two Early Latin Accounts Composed for the Celebration of *Exaltatio Crucis*." *Millennium* 6 (2009): 145–201.
- Borrut, Antoine. "Court Astrologers and Historical Writing in Early Abbsid Baghdd: An Appraisal." In *The Place to Go: Contexts of Learning in Baghdd, 750–1000 C.E.*, ed. Jens Scheiner and Damien Janos, 455–501. Princeton, N.J.: Darwin, 2014.
- Borlut, Antoine. *Entre mémoire et pouvoir: L'espace syrien sous les dernier Omeyyades et les premiers Abbasides (v.72–193/692–809)*. Leiden: Brill, 2011.
- Borst, Arno. *Die karolingische Kalenderreform*. Hannover: Hahn, 1998.
- Borst, Arno. *Die karolingische Reichskalender und seine Überlieferung bis ins 12. Jahrhundert*. Hannover: Hahn, 2001.
- Borst, Arno. *Schriften zur Komputistik im Franken-reich von 721 bis 818*. Hannover: Hahn, 2006.
- Boschen, Lothar. *Die Annales Prumienses: Ihre nähere und ihre weitere Verwandtschaft*. Düsseldorf: Schwann, 1972.
- Bosworth, C. E. "al- Thalib, Ab Mansr." In *Encyclopedia of Islam, Second Edition*. Accessed February 1, 2015. http://referenceworks.brillonline.com/entries/encyclopaedia-of-islam-2/al-t-h-a-a-libi-SIM_7503
- Breuer, Hendrik. "Das Weltgerichtsastrolabium des Bamberger Sternenmantels Kaiser Heinrichs II. und die Metamorphosen des Ovid." *Analecta Coloniensis: Jahrbuch der Diözesan- und Dom bibliothek Köln* 6 (2006): 89–146.
- Brock, Sebastian. "Iconoclasm and the Monophysites." In *Iconoclasm*, ed. Anthony Bryer and Judith Herrin, 53–57. Birmingham, U.K.: Centre for Byzantine Studies, 1977.
- Brown, Peter R. L. "Art and Society in Late Antiquity." In *Age of Spirituality: A Symposium*, ed. Kurt Weitzmann, 17–27. New York: Metropolitan Museum of Art, 1980.
- Brown, Peter R. L. "A Dark-Age Crisis: Elements of the Iconoclastic Controversy." *English Historical Review* 88 (1973): 1–34.
- Brown, Warren. *Unjust Seizure: conflict, Interest, and Authority in an Early Medieval Society*. Ithaca, N.Y.: Cornell University Press, 2001.
- Brubaker, Leslie. "The *Christian Topography* (Vat. gr. 699) Revisited: Image, Text, and Conflict in Ninth-Century Byzantium." In *Byzantine Style, Religion and Civilization: In Honour of Sir Steven Runciman*, ed. Elizabeth Jeffreys, 3–24. Cambridge: Cambridge University Press, 2006. Brubaker, Leslie. "The Elephant and the Ark: Cultural and Material Exchange Across the Mediterranean in the Eighth and Ninth Centuries." *Dumbarton Oaks Papers* 58 (2004): 175–195. Brubaker, Leslie, and John Haldon. *Byzantium in the Iconoclast Era (c. 650–850): A History*. Cambridge: Cambridge University Press, 2011.
- Brubaker, Leslie, and John Haldon. *Byzantium in the Iconoclast Era (c. 650–850): The Sources*. Aldershot, U.K.: Ashgate, 2001.
- Bühl, Gudrun, ed. *Dumbarton Oaks: The Collections*. Washington, D.C.: Dumbarton Oaks Library and Collection, 2008.
- Bullough, Donald. "Charlemagne's 'Men of God': Alcuin, Hildebald, and Arn." In *Charlemagne: Empire and Society*, ed. Joanna Story, 136–150. Manchester, U.K.: Manchester University Press, 2005.
- Burckhardt, John Lewis. *Travels in Syria and the Holy Land*. London: J. Murray, 1822.
- Busse, Heribert. "Die Kanzel des Propheten im Paradiesgarten." *Die Welt des Islams* 28 (1988): 99–111.
- Caiozzo, Anna. *Images du ciel d'Orient au Moyen Âge: Une histoire du zodiaque et de ses représentations dans les manuscrits du Proche- Orient musulman*. Paris: Presses de l'Université de Paris- Sorbonne, 2003.
- Callahan, John F. "Greek Philosophy and the Cappadocian Cosmology." *Dumbarton Oaks Papers* 12 (1958): 29–57.
- Canepa, Matthew. "Building a New Vision of the Past in the Sasanian Empire: The Sanctuaries of Kaynsh and the Great Fires of Iran." *Journal of Persianate Studies* 6 (2013): 64–90.

- Canepa, Matthew. "Theorizing Cross- Cultural Interaction Among Ancient and Early Medieval Visual Cultures." *Ars Orientalis* 38 (2010): 7–29. Canepa, Matthew. *The Two Eyes of the Earth: Art and Ritual of Kingship Between Rome and Sasanian Iran*. Berkeley: University of California Press, 2009. Carey, Moya. "Al- Sufi and Son: Ibn al- Sufi's Poem on the Stars and Its Prose Parent." *Muqarnas* 26 (2009): 181–204.
- Carey, Moya. "Mapping the Mnemonic: A Late Thirteenth- Century Copy of al- Sf's *Book of the Constellations*." In *Arab Painting: Text and Image in Illustrated Arabic Manuscripts*, ed. Anna Contadini, 65–71. Leiden: Brill, 2007.
- Caudano, Anne- Laurence. "Le ciel a la forme d'un cube ou a été dressé comme une peau': Pierre le Philosophe et l'orthodoxie du savoir astronomique sous Manuel Ier Comnène." *Byzantion* 81 (2011): 19–73.
- Caudano, Anne- Laurence. "Un univers sphérique ou voûté? Survivance de la cosmologie antiochienne à Byzance (XIe et XIIe s.)." *Byzantion* 78 (2008): 66–86.
- Citarella, Armand O., and Henry M. Willard. *The Role of the Treasure in the History of Monte Cassino, 883–1058*. Montecassino, Italy: Pubblicazioni Cassinesi, 1996.
- Coatsworth, Elizabeth. "Text and Textile." In *Text, Image, Interpretation: Studies in Anglo- Saxon Literature and Its Insular Context in Honour of Éamonn Ó Carragáin*, ed. Alastair Minnis and Jane Roberts, 187–207. Turnhout, Belgium: Brepols, 2007.
- Cohen, Simona. *Transformations of Time and Temporality in Medieval and Renaissance Art*. Leiden: Brill, 2014.
- Contessa, Andreina. "A Geography of Learning: The World of the Presumed Map of Theodulphe of Orleans and Its Mid- Eleventh- Century Catalan Author." *Miscellanea Bibliothecae Apostolicae Vaticanae* 28 (2011): 55–110.
- Contreni, John J. *The Cathedral School of Laon from 850 to 930: Its Manuscripts and Masters*. Munich: Arbeo- Gesellschaft, 1978.
- Cook, David. "The Beginnings of Islam in Syria during the Umayyad Period." PhD diss., University of Chicago, 2002.
- Cook, David. *Studies in Muslim Apocalyptic*. Princeton, N.J.: Darwin, 2002.
- Corrigan, Kathleen. *Visual Polemics in the Ninth- Century Byzantine Psalters*. Cambridge: Cambridge University Press, 1992.
- Creswell, K. A. C. *Early Muslim Architecture*. Oxford: Clarendon, 1969.
- Crone, Patricia. *God's Rule: Government and Islam*. New York: Columbia University Press, 2005.
- Crone, Patricia. *Slaves on Horses: The Evolution of the Islamic Polity*. Cambridge: Cambridge University Press, 1980.
- Crone, Patricia, and Martin Hinds. *God's Caliph: Religious Authority in the First Centuries of Islam*. Cambridge: Cambridge University Press, 1986.
- Crosby, Sumner McKnight. *The Royal Abbey of Saint- Denis: From Its Beginnings to the Death of Suger, 475–1151*. New Haven: Yale University Press, 1987.
- Cutler, Anthony, and Jean- Michel Spieser. *Byzance médiévale: 700–1240*. Paris: Gallimard, 1996.
- Dagron, Gilbert. "Das Firmament soll christlich werden: Zu zwei Seefahrtskalendern des 10. Jahr hunderts." In *Fest und Alltag in Byzanz*, ed. Günter Prinzing and Dieter Simon, 145–156. Munich: C. H. Beck, 1990.
- Dagron, Gilbert. "L'ombre d'un doute: L'hagiographie en question, VIe–XIIe siècle." *Dumbarton Oaks Papers* 46 (1992): 59–68.
- Davis- Weyer, Caecilia. *Early Medieval Art, 300–1150*. Englewood Cliffs, N.J.: Prentice- Hall, 1971.
- Dekker, Elly. "Carolingian Planetary Observations: The Case of the Leiden Planetary Configuration." *Journal for the History of Astronomy* 39 (2008): 77–90.
- Dekker, Elly. *Illustrating the Phænomena: Celestial Cartography in Antiquity and the Middle Ages*. Oxford: Oxford University Press, 2013.
- Dekker, Elly. "The Provenance of the Stars in the Leiden *Aratea* Picture Book." *Journal of the Warburg and Courtauld Institutes* 73 (2010): 1–37.

- Deliyannis, Deborah Mauskopf. "Charlemagne's Silver Tables: The Ideology of an Imperial Capital." *Early Medieval Europe* 12 (2003): 159–178.
- della Dora, Veronica. *Landscape, Nature, and the Sacred in Byzantium*. Cambridge: Cambridge University Press, 2016.
- dell'Era, Antonio. "Una rielaborazione dell'Arato latino." *Studi Medievali*, ser. 3, no. 20 (1979): 269–298.
- Depreux, Philippe. *Prosopographie de l'entourage de Louis le Pieux (781–840)*. Sigmaringen, Germany: Thorbecke, 1997.
- Dierkens, Alain. *Abbayes et chapitres entre Sambre et Meuse (VIIe–XIe siècles): Contribution à l'histoire religieuse des campagnes du haut Moyen Âge*. Sigmaringen, Germany: Thorbecke, 1985.
- Donner, Fred M. "Umayyad Efforts at Legitimation: The Umayyads' Silent Heritage." In *Umayyad Legacies: Medieval Memories from Syria to Spain*, ed. Antoine Borruat and Paul M. Cobb, 187–211. Leiden: Brill, 2010.
- Dufrenne, Suzy. "Une illustration 'historique,' inconnue, du Psautier du Mont- Athos, Pantocrator No. 61." *Cahiers Archéologiques* 15 (1965): 83–95.
- Duits, Rembrandt. "Celestial Transmissions: An Iconographic Classification of Constellation Cycles in Manuscripts (8th–15th Centuries)." *Scriptorium* 59 (2005): 147–202.
- Duits, Rembrandt. "Reading the Stars of the Renaissance: Fritz Saxl and Astrology." *Journal of Art Historiography* 5 (2011): 1–18.
- Dunbabin, Katherine M. D. "The Victorious Charioteer on Mosaics and Related Monuments." *American Journal of Archaeology* 86 (1982): 65–89. Dutton, Paul Edward. *Charlemagne's Mustache and Other Cultural Clusters of a Dark Age*. New York: Palgrave Macmillan, 2004.
- Dutton, Paul Edward, and Édouard Jeauneau. "The Verses of the *Codex Aureus* of Saint- Emmeram." *Studi Medievali*, ser. 3, no. 24 (1983): 75–120.
- Eastwood, Bruce. "The Diagram of the Four Elements in the Oldest Manuscripts of Isidore's *De natura rerum*." *Studi Medievali*, ser. 3, no. 42 (2001): 547–564.
- Eastwood, Bruce. "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): 1–40.
- Eastwood, Bruce, and Gerd Grasshoff. *Planetary Diagrams for Roman Astronomy in Medieval Europe, ca. 800–1500*. Philadelphia: American Philological Society, 2004.
- Efthymiadis, Stephanos. "Hagiography from the 'Dark Age' to the Age of Symeon Metaphrastes (Eighth–Tenth Centuries)." In *The Ashgate Research Companion to Byzantine Hagiography. I: Periods and Places*, ed. Stephanos Efthymiadis, 95–142. Farnham, U.K.: Ashgate, 2011.
- Eisener, Reinhard. *Zwischen Faktum und Fiktion: Eine Studie zum Umayyadenkalifen Sulaiman b. Abdalmalik und seinem Bild in den Quellen*. Wiesbaden: Harrassowitz, 1987.
- Eisler, Robert. *Weltenmantel und Himmelszelt: Religions geschichtliche Untersuchungen zur Urge-schichte des antiken Weltbildes*. Munich: C. H. Beck, 1910.
- El Cheikh, Nadia Maria. *Byzantium Viewed by the Arabs*. Cambridge, Mass.: Center for Middle Eastern Studies of Harvard University, 2004.
- El Cheikh, Nadia Maria. "Srat al- Rm: A Study of the Exegetical Literature." *Journal of the American Oriental Society* 118 (1998): 356–364.
- Elsner, Ja. *Art and the Roman Viewer*. Cambridge: Cambridge University Press, 1997.
- Estey, F. N. "Charlemagne's Silver Celestial Table." *Speculum* 18 (1943): 112–117.
- Euw, Anton von. "Der Aratus Latinus in HS. 83 II der Kölner Dombibliothek." *Römische Historische Mitteilungen* 41 (1999): 405–422.
- Euw, Anton von. "Kompendium der Zeitrechnung, Naturlehre, und Himmelskunde." In *Glaube und Wissen im Mittelalter: Die Kölner Dombibliothek*, 136–156. Munich: Hirmer, 1998.
- Euw, Anton von. "Zeitrechnung, Naturlehre, und Himmelskunde zur Zeit Hildebalds von Köln (vor 787–818)." *Jahrbuch des Kölnischen Geschichtsvereins* 70 (1998): 1–30.

- Evangelatou, Maria. "Liturgy and the Illustration of the Ninth-Century Marginal Psalters." *Dumbarton Oaks Papers* 63 (2009): 59–116.
- Evans, Helen C., and William D. Wixom, eds. *The Glory of Byzantium: Art and Culture of the Middle Byzantine Era, A.D. 843–1261*. New York: Metropolitan Museum of Art, 1997.
- Fantham, R. Elaine. "Ovid, Germanicus, and the Composition of the *Fasti*." *Papers of the Liverpool Latin Seminar* 5 (1985): 243–281.
- Ferrua, Antonio. "Esame strutturale e archeologico." In *La cattedra lignea di S. Pietro in Vaticano*, 93–154. Vatican City: Tipografia Poliglotta Vaticana, 1971.
- Finster, Barbara. "Die Mosaiken der Umayyadenmoschee von Damaskus." *Kunst des Orients* 7 (1970–71): 83–141.
- Fratl, Nezih. *La sculpture byzantine figurée au Musée Archéologique d'Istanbul*. Paris: Jean Maisonneuve, 1990.
- Fischer, A., A. J. Wensinck, A. Schaade, and R. Paret. "Kaysar." In *Encyclopaedia of Islam, Second Edition*. Accessed February 2, 2015. http://referenceworks.brillonline.com/entries/encyclopaedia-of-islam-2/k-ays-ar-COM_0475
- Fleckenstein, Josef. *Die Hofkapelle der deutschen Könige*. Stuttgart: Hiersemann, 1959–66.
- Flood, Finbarr Barry. "From the Golden House to Aisha's House: Cosmic Kingship and the Rotating Dome as Fact, Fiction, and Metaphor." In *Bamberger Symposium: Rezeption in der islamischen Kunst*, ed. Barbara Finster, Christa Fragner, and Herta Hafenrichter, 97–128. Stuttgart: Steiner, 1999.
- Flood, Finbarr Barry. *The Great Mosque of Damascus: Studies on the Makings of an Umayyad Visual Culture*. Leiden: Brill, 2001.
- Fowden, Garth. *Before and After Muhammad: The First Millennium Refocused*. Princeton: Princeton University Press, 2014.
- Fowden, Garth. *Empire to Commonwealth: Consequences of Monotheism in Late Antiquity*. Princeton: Princeton University Press, 1993.
- Fowden, Garth. *Qusayr Amra: Art and the Umayyad Elite in Late Antique Syria*. Berkeley: University of California Press, 2004.
- Fowden, Garth. "The Umayyad Horizon." *Journal of Roman Archaeology* 25 (2012): 974–982.
- Fried, Johannes. "In den Netzen der Wissensgesellschaft: Das Beispiel des mittelalterlichen Königs- und Fürstenhofes." In *Wissenskulturen: Beiträge zu einem forschungsstrategischen Konzept*, ed. Johannes Fried and Thomas Kailer, 141–193. Berlin: Akademie Verlag, 2003.
- Frugoni, Chiara. "L'ideologia del potere imperiale nella 'Cathedra di S. Pietro'." *Bullettino dell'Istituto Storico Italiano per il Medio Evo* 86 (1976–77): 67–181.
- Furlan, Italo. *Codici greci illustrati della Biblioteca Marciana IV*. Milan: Edizioni Stendhal, 1981.
- Gaborit-Chopin, Danielle. *Ivoires du Moyen Age*. Fribourg, Switzerland: Office du livre, 1978.
- Ganz, David. "Einhard's Charlemagne: The Characterisation of Greatness." In *Charlemagne: Empire and Society*, ed. Joanna Story, 38–51. Manchester, U.K.: Manchester University Press, 2005.
- Garipzanov, Ildar H. *The Symbolic Language of Authority in the Carolingian World (c. 751–877)*. Leiden: Brill, 2008.
- Garrison, Eliza. "A Curious Commission: The Reliquary of St. Servatius in Quedlinburg." *Gesta* 49 (2010): 17–29.
- Garrison, Eliza. *Ottonian Imperial Art and Portraiture: The Artistic Patronage of Otto III and Henry II*. Farnham, U.K.: Ashgate, 2012.
- Gatti, Evan. "Reviving the Relic: An Investigation of the Form and Function of the Reliquary of St. Servatius, Quedlinburg." *Athanor* 18 (2000): 7–15.
- Gaube, Heinz. "Die syrischen Wüstenschlösser: Einige wirtschaftliche und politische Gesichtspunkte zu ihrer Entstehung." *Zeitschrift des deutschen Palästina-Vereins* 95 (1979): 182–209.
- Genequand, Denis. *Les établissements des élites omeyyades en Palmyrène et au Proche-Orient*. Beirut: Institut français du Proche-Orient, 2012.
- George, Alain. *The Rise of Islamic Calligraphy*. London: Saqi, 2010.

- Gierlichs, Joachim. *Mittelalterliche Tierreliefs in Anatolien und Nordmesopotamien: Untersuchungen zur figürlichen Baudekoration der Seldschuken, Artuqiden und ihrer Nachfolger bis ins 15. Jahrhundert*. Tübingen: E. Wasmuth, 1996.
- Ginnasi, Andrea Torno. *L'incoronazione celeste nel mondo bizantino: Politica, ceremoniale, numismatica e arti figurative*. Oxford: Archaeopress Archaeology, 2014.
- Goitein, S. D. *A Mediterranean Society: The Jewish Communities of the Arab World as Portrayed in the Documents of the Cairo Geniza*. IV: *Daily Life*. Berkeley: University of California Press, 1983.
- Goitein, S. D., and Mordechai A. Friedman. *India Traders of the Middle Ages: Documents from the Cairo Geniza*. Leiden: Brill, 2007.
- Goldschmidt, Adolph. *Die Elfenbeinskulpturen aus der Zeit der karolingischen und sächsischen Kaiser, VIII.–XI. Jahrhundert*. Berlin: Cassirer, 1914.
- Goldziher, Ignaz. *Muhammedanische Studien*. Halle, Germany: Niemeyer, 1889–90.
- Gombrich, E. H. *Aby Warburg: An Intellectual Biography*. Chicago: University of Chicago Press, 1986.
- Göller, Luitgar, ed. *1000 Jahre Bistum Bamberg, 1007–2007: Unterm Sternenmantel*. Petersberg, Germany: Imhof, 2007.
- Gorman, Michael M. “The Diagrams in the Oldest Manuscripts of Isidore’s *De natura rerum*.” *Studi Medievali*, ser. 3, no. 42 (2001): 529–545.
- Grabar, André. *L’empereur dans l’art byzantin: Recherches sur l’art officiel de l’empire d’Orient*. Paris: Les Belles Lettres, 1936.
- Grabar, André. *L’iconoclasme byzantin: Le dossier archéologique*. Paris: Collège de France, 1957.
- Grabar, André. *Sculptures byzantines du Moyen Âge (XIe–XIVe siècle)*. Paris: A. Maisonneuve, 1976.
- Grabar, Oleg. “From Dome of Heaven to Pleasure Dome.” *Journal of the Society of Architectural Historians* 49 (1990): 15–21.
- Grabar, Oleg. “La place de Qusayr Amrah dans l’art profane du Haut Moyen Âge.” *Cahiers Archéologiques* 36 (1988): 75–83.
- Graf, Georg. *Geschichte der christlichen arabischen Literatur*. Vatican City: Biblioteca Apostolica Vaticana, 1944–1953.
- Graff, Eric. “The Thirteenth Figure in the Munich Computus Zodiac.” *Journal for the History of Astronomy* 36 (2005): 321–334.
- Grierson, Philip. “The Kyrenia Girdle of Byzantine Medallions and Solidi.” *Numismatic Chronicle*, ser. 6, no. 15 (1955): 55–70.
- Grumel, Venance. *La chronologie*. Paris: Presses Universitaires de France, 1958.
- Gubser, Michael. *Time’s Visible Surface: Alois Riegl and the Discourse on History and Temporality in Fin-de-Siècle Vienna*. Detroit: Wayne State University Press, 2006.
- Guidetti, Fabio. “L’apparato iconografico del codice Vat. gr. 1087: Per la ricostruzione dell’edizione tardoantica del corpus arateo.” In *Antiche stelle a Bisanzio: Il codice Vaticano greco 1087*, ed. Fabio Guidetti and Anna Santoni, 113–152. Pisa: Edizioni della Normale, 2013.
- Guidetti, Fabio, and Anna Santoni, eds. *Antiche stelle a Bisanzio: Il codice Vaticano greco 1087*. Pisa: Edizioni della Normale, 2013.
- Guidetti, Mattia. “The Contiguity Between Churches and Mosques in Early Islamic Bild al-Shm.” *Bulletin of the School of Oriental and African Studies* 76 (2013): 229–258.
- Gundel, Hans Georg. *Zodiakos: Tierkreisbilder im Altertum*. Mainz: Philipp von Zabern, 1992.
- Gunter, Ann C., and Stefan R. Hauser, eds. *Ernst Herzfeld and the Development of Near Eastern Studies, 1900–1950*. Leiden: Brill, 2004.
- Habermas, Jürgen. *The Postnational Constellation: Political Essays*. Trans. Max Pensky. Cambridge, Mass.: MIT Press, 2001.
- Haffner, Mechtilde. *Ein antiker Sternbilderzyklus und seine Tradierung in Handschriften vom frühen Mittelalter bis zum Humanismus: Untersuchungen zu den Illustrationen der “Aratea” des Germanicus*. Hildesheim: Georg Olms Verlag, 1997.
- Hahn, Cynthia. “The Creation of the Cosmos: Genesis Illustration in the Octateuchs.” *Cahiers*

- Archéologiques 28 (1979): 29–40.
- Haldon, John. *Byzantium in the Seventh Century: The Transformation of a Culture*. Cambridge: Cambridge University Press, 1990.
- Haldon, John, and Brian Ward-Perkins. “Evidence from Rome for the Image of Christ on the Chalke Gate in Constantinople.” *Byzantine and Modern Greek Studies* 23 (1999): 286–296.
- Hamilton, Robert. *Walid and His Friends: An Umayyad Tragedy*. Oxford: Oxford University Press, 1988.
- Hammer, Carl I. *Charlemagne's Months and Their Bavarian Labours: The Politics of the Seasons in the Carolingian Empire*. Oxford: Archeopress, 1997. Hermann, Hermann Julius. *Die frühmittelalterlichen Handschriften des Abendlandes*. Leipzig: Hiersemann, 1923.
- Herren, Michael W., ed. and trans. *The Cosmography of Aethicus Ister*. Turnhout, Belgium: Brepols, 2011.
- Herren, Michael W. “The ‘De imagine Tetrici’ of Walahfrid Strabo: Edition and Translation.” *Journal of Medieval Latin* 1 (1991): 118–139. Herren, Michael W. “Eriugena’s *Aulae Siderae*, the *Codex Aureus*, and the Palatine Church of St. Mary at Compiègne.” *Studi Medievali*, ser. 3, no. 28 (1987): 593–608.
- Herzfeld, Ernst. “Der Thron des Khosrō: Quellenkritische und ikonographische Studien über Grenzgebiete der Kunstgeschichte des Morgenund Abendlandes.” *Jahrbuch der Preußischen Kunstsammlungen* 41 (1920): 1–24 and 103–147.
- Hillenbrand, Robert. “*La dolce vita* in Early Islamic Syria: The Evidence of Later Umayyad Palaces.” *Art History* 5 (1982): 1–35.
- Hinz, W. “*dhir*.” In *Encyclopedia of Islam, Second Edition*. Accessed February 1, 2015. http://referenceworks.brillonline.com/entries/encyclopaedia-of-islam-2/d-h-ira-SIM_1825
- Hoffman, Eva R. “Pathways of Portability: Islamic and Christian Interchange from the Tenth to the Twelfth Century.” *Art History* 24 (2001): 17–50.
- Hollstein, Ernst. “Die *cathedra lignea* von St. Peter im Vatikan: Jahrringchronologie.” In *Nuove ricerche sulla cattedra lignea di S. Pietro in Vaticano*, 79–103. Vatican City: Tipografia Poliglotta Vaticana, 1975.
- Holly, Michael Ann. *Panofsky and the Foundations of Art History*. Ithaca, N.Y.: Cornell University Press, 1984.
- Honigmann, Ernst. *Die sieben Klimata und die : Eine Untersuchung zur Geschichte der Geographie und Astrologie im Altertum und Mittelalter*. Heidelberg: C. Winter, 1929.
- Howard-Johnston, James. “Kosrow II.” In *Encyclopedia Iranica*. Accessed February 1, 2015. <http://www.iranicaonline.org/articles/khosrow-ii>
- Howard-Johnston, James. “Pride and Fall: Khusro II and His Regime, 626–628.” In *La Persia e Bisanzio*, 93–113. Rome: Accademia nazionale dei Lincei, 2004.
- Howard-Johnston, James. *Witnesses to a World Crisis: Historians and Histories of the Middle East in the Seventh Century*. Oxford: Oxford University Press, 2010.
- Howlett, David. “Two Latin Epitaphs.” *Archivum Latinitatis Medii Aevi* 67 (2009): 235–247.
- Hübner, Wolfgang. *Zodiacus Christianus: Jüdischchristliche Adaptionen des Tierkreises von der Antike bis zur Gegenwart*. Königstein: Hain, 1983.
- Humphreys, R. Stephen. *Muawiya ibn Abi Sufyan: From Arabia to Empire*. Oxford: Oneworld, 2006.
- Hutter, Irmgard. *Corpus der byzantinischen Miniaturen handschriften*. I: *Oxford, Bodleian Library I*. Stuttgart: Anton Hiersemann, 1977.
- Hyder, Syed Akbar. *Reliving Karbala: Martyrdom in South Asian Memory*. Oxford: Oxford University Press, 2006.
- Hyland, Ann. *Equus: The Horse in the Roman World*. New Haven: Yale University Press, 1990.
- Imbert, Frédéric. “Califes, princes, et poètes dans les graffiti du début de l’Islam.” *Romano-Arabica* 15 (2015): 59–78.
- Imbert, Frédéric. “Inscriptions et espaces d’écriture au Palais d’al-Kharrna en Jordanie.” *Studies in the History and Archaeology of Jordan* 5 (1995): 403–416.

- Innes, Matthew. "Charlemagne's Will: Piety, Politics and the Imperial Succession." *English Historical Review* 112 (1997): 833–855.
- Innes, Matthew. "People, Places and Power in Carolingian Society." In *Topographies of Power in the Early Middle Ages*, ed. Mayke de Jong and Francis Theuws, 397–437. Leiden: Brill, 2001.
- Jamil, Nadia. "Caliph and *Qutb*: Poetry as a Source for Interpreting the Transformation of the Byzantine Cross on Steps on Umayyad Coinage." In *Bayt al- Maqdis: Jerusalem and Early Islam*, ed. Jeremy Johns, II.11–57. Oxford: Oxford University Press, 1992–99.
- Janz, Timothy. "The Scribes and Date of the Vat. Gr. 1291." *Miscellanea Bibliothecae Apostolicae Vaticanae* 10 (2003): 159–180.
- Jarnut, Jörg. "Kaiser Ludwig der Fromme und König Bernhard von Italien." *Studi Medievali*, ser. 3, no. 30 (1989): 637–648.
- Jong, Mayke de. *The Penitential State: Authority and Atonement in the Age of Louis the Pious*, 814–840. Cambridge: Cambridge University Press, 2009. Kaldellis, Anthony. *The Byzantine Republic: People and Power in New Rome*. Cambridge, Mass.: Harvard University Press, 2015.
- Kaldellis, Anthony. "From Rome to New Rome, from Empire to Nation- State: Reopening the Question of Byzantium's Roman Identity." In *Two Romes: Rome and Constantinople in Late Antiquity*, ed. Lucy Grig and Gavin Kelly, 387–404. Oxford: Oxford University Press, 2012.
- Karamustafa, Ahmet T. "Cosmographical Diagrams." In *Cartography in the Traditional Islamic and South Asian Societies*, ed. J. B. Harley and David Woodward, 71–89. Chicago: University of Chicago Press, 1992.
- Khalegi- Motlagh, Djalal. "Ferdows, Abu'l- Qsem. i. Life." In *Encyclopedia Iranica*. Accessed February 1, 2015. <http://www.iranicaonline.org/articles/ferdowsi-iKhalek,Nancy>. *Damascus After the Muslim Conquest: Text and Image in Early Islam*. Oxford: Oxford University Press, 2011.
- Kiilerich, Bente. "Making Sense of the Spolia in the Little Metropolis at Athens." *Arte Medievale* N.S. 4 (2005): 95–114.
- Kilpatrick, Hilary. "Umar ibn Abd al- Azz, alWald ibn Yazd and Their Kin: Images of the Umayyads in the 'Kitb al- Aghn'." In *Umayyad Legacies: Medieval Memories from Syria to Spain*, ed. Antoine Borrut and Paul M. Cobb, 63–87. Leiden: Brill, 2010.
- King, G. R. D. "Islam, Iconoclasm, and the Declaration of Doctrine." *Bulletin of the School of Oriental and African Studies* 48 (1985): 267–277. King, G. R. D. "The Paintings of the Pre- Islamic Kaba." *Muqarnas* 21 (2004): 219–229.
- Kinney, Dale. "Hans Peter L'Orange on Portraits and the Arch of Constantine: A Lasting Legacy." *Acta ad Archaeologiam et Artium Historiam Pertinentia* 25 , N.S. 11 (2012): 107–126.
- Kinney, Dale. "The Horse, the King and the Cuckoo: Medieval Narrations of the Statue of Marcus Aurelius." *Word & Image* 18 (2002): 372–398.
- Kinney, Dale. "Interpretatio Christiana." In *Maxima Debetur Magistro Reverentia: Essays on Rome and the Roman Tradition in Honor of Russell T. Scott*, ed. Paul B. Harvey and Catherine Conybeare, 117–125. Como, Italy: New Press, 2009. Kirmeier, Josef, ed. *Kaiser Heinrich II., 1002–1024*. Stuttgart: Theiss, 2002.
- Kister, M. J. "'A Booth Like the Booth of Moses...': A Study of an Early Hadith." *Bulletin of the School of Oriental and African Studies* 25 (1962): 50–55. Klein, Holger. *Byzanz, der Westen, und das 'wahre' Kreuz: Die Geschichte einer Relique und ihrer künstlerischen Fassung in Byzanz und im Abend-land*. Wiesbaden: Reichert, 2004.
- Koehler, Wilhelm, and Florentine Mütherich. *Die karolingischen Miniaturen*. Berlin: Deutscher Verein für Kunsthissenschaft, 1930–99.
- Kolias, Georges. *Léon Choerosphactès: Magistre, pro-consul, et prince*. Athens: Verlag der "Byzantinischneugriechischen Jahrbücher," 1939.
- Kominko, Maja. "New Perspectives on Paradise: The Levels of Reality in Byzantine and Latin Medieval Maps." In *Cartography in Antiquity and the Middle Ages: Fresh Perspectives, New Methods*, ed. Richard J. A. Talbert and Richard W. Unger, 139–153. Leiden: Brill, 2008.
- Kominko, Maja. *The World of Kosmas: Illustrated Byzantine Codices of the Christian Topography*.

- Cambridge: Cambridge University Press, 2013.
- Kotzabassi, Sofia, ed. *The Pantokrator Monastery in Constantinople*. Boston: de Gruyter, 2013. Kühnel, Bianca. *The End of Time and the Order of Things*. Regensburg: Schnell & Steiner, 2003.
- Kunitzsch, Paul. "The Astronomer Abu 'l- Husayn al- Sf and His Book on the Constellations." *Zeitschrift für Geschichte der arabisch- islamischen Wissenschaften* 3 (1986): 56–81.
- Kupfer, Marcia. "Medieval World Maps: Embedded Images, Interpretive Frames." *Word & Image* 10 (1994): 262–288.
- Lammens, Henri. "Le Calife Wald et le prétendu partage de la Mosquée des Omayyades à Damas." *Bulletin de l'Institut Français d'Archéologie Orientale* 26 (1926): 21–48.
- Latowsky, Anne A. *Emperor of the World: Charlemagne and the Construction of Imperial Authority, 800–1229*. Ithaca, N.Y.: Cornell University Press, 2013.
- Le Bourdèlles, H. *L'Aratus Latinus: Étude sur la culture et la langue latines dans le Nord de la France au VIIIe siècle*. Lille: Université de Lille [1985].
- Legner, Anton, ed. *Monumenta Annonis: Köln und Siegburg, Weltbild und Kunst im hohen Mittelalter*. Cologne: Greven & Bechtold, 1975.
- Lehmann, Karl. "The Dome of Heaven." *Art Bulletin* 27 (1945): 1–27.
- Leroy, Julien. "Notes codicologiques sur le Vat. Gr. 699." *Cahiers Archéologiques* 23 (1974): 73–79.
- LeStrange, Guy. *Palestine Under the Moslems*. London: Alexander P. Watt, 1890.
- Levine, Lee. *Visual Judaism in Late Antiquity: Historical Contexts of Jewish Art*. New Haven: Yale University Press, 2012.
- Lindsay, James E., ed. *Ibn Askir and Early Islamic History*. Princeton, N.J.: Darwin, 2001.
- Liverani, Paolo. "Chi parla a chi? Epigrafia monumentale e immagine pubblica in epoca tardoantica." In *Using Images in Late Antiquity*, ed. Stine Birk, Troels Myrup Kristensen, and Birte Poulsen, 3–32. Oxford: Oxbow, 2014.
- Liverani, Paolo. "Costantino offre il modello della basilica sull'arco trionfale." In *L'orizzonte tardoantico e le nuove immagini, 312–468*, ed. Maria Andaloro, 90–91. Rome: Jaca Book, 2006.
- Lohrmann, Dietrich. "Alcuins Korrespondenz mit Karl dem Grossen über Kalender und Astronomie." In *Science in Western and Eastern Civilization in Carolingian Times*, ed. Paul Leo Butzer and Dietrich Lohrmann, 79–114. Basel: Birkhäuser, 1993.
- Lohrmann, Dietrich. "Das 'Himmelszelt' des Sultans al- Kamil von 1232 für Kaiser Friedrich II." *Historische Zeitschrift* 294 (2012): 297–327.
- L'Orange, Hans Peter. *Studies on the Iconography of Cosmic Kingship in the Ancient World*. Oslo: H. Aschehoug, 1953.
- Lowden, John. "Illustrated Octateuch Manuscripts: A Byzantine Phenomenon." In *The Old Testament in Byzantium*, ed. Paul Magdalino and Robert Nelson, 107–152. Washington, D.C.: Dumbarton Oaks Research Library and Collection, 2010.
- Maccarrone, Michele. "La storia della cattedra." In *La cattedra lignea di S. Pietro in Vaticano*, 3–70. Vatican City: Tipografia Poliglotta Vaticana, 1971. Magdalino, Paul. "The Bath of Leo the Wise." In *Maistor: Classical, Byzantine, and Renaissance Studies for Robert Browning*, ed. Ann Moffatt, 225–240. Canberra: Australian Association for Byzantine Studies, 1984.
- Magdalino, Paul. "The Bath of Leo the Wise and the 'Macedonian Renaissance' Revisited: Topography, Ceremonial, Ideology." *Dumbarton Oaks Papers* 42 (1988): 97–118.
- Magdalino, Paul. "The Byzantine Reception of Classical Astrology." In *Literacy, Education and Manuscript Transmission in Byzantium and Beyond*, ed. Catherine Holmes and Judith Waring, 33–57. Leiden: Brill, 2002.
- Magdalino, Paul. "Byzantium=Constantinople." In *A Companion to Byzantium*, ed. Liz James, 43–54. Malden, Mass.: Wiley- Blackwell, 2010. Magdalino, Paul. "Cosmological Confectionery and Equal Opportunity in the Eleventh Century: An Ekphrasis by Christopher of Mitylene (Poem 42)." In *Byzantine Authors: Literary Activities and Preoccupations*, ed. John W. Nesbitt, 1–6. Leiden: Brill, 2003.

- Magdalino, Paul. *L'orthodoxie des astrologues: La science entre le dogme et la divination à Byzance (VIIe–XIVe siècle)*. Paris: Lethielleux, 2006.
- Maguire, Eunice Dauterman, and Henry Maguire. *Other Icons: Art and Power in Byzantine Secular Culture*. Princeton: Princeton University Press, 2007.
- Maguire, Henry. *Earth and Ocean: The Terrestrial World in Early Byzantine Art*. University Park: Pennsylvania State University Press, 1987.
- Maguire, Henry. "Images of the Court." In *The Glory of Byzantium: Art and Culture of the Middle Byzantine Era, A.D. 843–1261*, ed. Helen C. Evans and William D. Wixom, 183–191. New York: Metropolitan Museum of Art, 1997.
- Maguire, Henry. *Nectar and Illusion: Nature in Byzantine Art and Literature*. Oxford: Oxford University Press, 2012.
- Mango, Cyril. "The Legend of Leo the Wise." *Zbornik Radova Vizantoloshkog Instituta* 6 (1960): 59–93.
- Mariana, Manuel Sánchez. *Códice de Metz: Tratado de computo y astronomia*. Madrid: Testimonio, 1993.
- Marsham, Andrew. *Rituals of Islamic Monarchy: Accession and Succession in the First Muslim Empire*. Edinburgh: Edinburgh University Press, 2009.
- Martín, Inmaculada Pérez. "La 'Escuela de Planudes': Notas paleográficas a una publicación reciente sobre los escolios Eurípideos." *Byzantinische Zeitschrift* 90 (1997): 73–96.
- Martin, Jean. *Histoire du texte des Phénomènes d'Aratos*. Paris: Klincksieck, 1956.
- Mathews, Thomas F. *The Clash of Gods: A Reinterpretation of Early Christian Art*. Princeton: Princeton University Press, 2003.
- Mathews, Thomas F. "Cracks in Lehmann's 'Dome of Heaven.'" *Source* 1 (1982): 12–16.
- Mavroudi, Maria. "Translations from Greek into Latin and Arabic during the Middle Ages: Searching for the Classical Tradition." *Speculum* 90 (2015): 28–59.
- McCluskey, Stephen C. *Astronomies and Cultures in Early Medieval Europe*. Cambridge: Cambridge University Press, 1998.
- McCluskey, Stephen C. "Gregory of Tours, Monastic Timekeeping, and Early Christian Attitudes to Astronomy." *Isis* 81 (1990): 8–22.
- McEwan, Dorothea. *Fritz Saxl: Eine Biografie*. Vienna: Böhlau, 2012.
- McKitterick, Rosamond. *Charlemagne: The Formation of a European Identity*. Cambridge: Cambridge University Press, 2008.
- McKitterick, Rosamond. *History and Memory in the Carolingian World*. Cambridge: Cambridge University Press, 2004.
- McKitterick, Rosamond. *Perceptions of the Past in the Early Middle Ages*. Notre Dame, Ind.: University of Notre Dame Press, 2006.
- Megaw, Arthur H. S. "Notes on Recent Work of the Byzantine Institute in Istanbul." *Dumbarton Oaks Papers* 17 (1963): 333–371.
- Meier, Fritz. "Der Prediger auf der Kanzel (Minbar)." In *Studien zur Geschichte und Kultur des vorderen Orients: Festschrift für Bertold Spuler zum siebzigsten Geburtstag*, ed. Hans R. Roemer and Albrecht Noth, 225–248. Leiden: Brill, 1981.
- Menchelli, Mariella. "Struttura e mani del Vat. gr. 1087 (con osservazioni paleografiche sul copista C e il Marc. gr. 330)." In *Antiche stelle a Bisanzio: Il codice Vaticano greco 1087*, ed. Fabio Guidetti and Anna Santoni, 17–56. Pisa: Edizioni della Normale, 2013.
- Meri, Josef W. *The Cult of Saints Among Muslims and Jews in Medieval Syria*. Oxford: Oxford University Press, 2002.
- Moffatt, Ann. "Schooling in the Iconoclast Centuries." In *Iconoclasm*, ed. Anthony Bryer and Judith Herrin, 85–92. Birmingham, U.K.: Centre for Byzantine Studies, 1977.
- Mogenet, Joseph. "Les scolies astronomiques du Vat. gr. 1291." *Bulletin de l'Institut Historique Belge de Rome* 40 (1969): 69–91.
- Morrisson, Cécile. "Araba yarıç olarak muzaffer imparator / The Emperor in Triumph as Charioteer." In *Hippodrom / Atmeydan: İstanbul'un tarih sahnesi*, ed. Brigitte Pitarakis, I.44–48. İstanbul: Pera

- Müzesi, 2010.
- Morrison, Robert G. "Discussions of Astrology in Early Tafsir." *Journal of Quranic Studies* 11 (2009): 49–71.
- Mosshammer, Alden A. *The Easter Computus and the Origins of the Christian Era*. Oxford: Oxford University Press, 2008.
- Mulder, Stephennie. *The Shrines of the Alids in Medie val Syria: Sunnis, Shiis and the Architecture of Coexistence*. Edinburgh: Edinburgh University Press, 2014.
- Musil, Alois. *Kusejr Amra*. Vienna: Verlag der Kaiserlichen- Königlichen Hof- und Staatsdruckerei, 1907.
- Mütherich, Florentine. "Die Bilder des Leidener Aratus." In *Aratea: Kommentar zum Aratus des Germanicus Ms. Voss. lat. Q. 79, Bibliotheek der Rijksuniversiteit Leiden*, 31–68. Lucerne, Switzerland: Faksimile Verlag Luzern, 1989.
- Mütherich, Florentine. "Book Illumination at the Court of Louis the Pious." In *Charlemagne's Heir: New Perspectives on the Reign of Louis the Pious*, ed. Peter Godman and Roger Collins, 593–604. Oxford: Clarendon, 1990.
- Mütherich, Florentine. "Die Buchmalerei am Hofe Karls des Großen." In *Karolingische Kunst*, ed. Wolfgang Braunfels and Hermann Schnitzler, 9–53. Düsseldorf: Schwann, 1965.
- Mütherich, Florentine. "Der Elfenbeinschmuck des Thrones." In *La cattedra lignea di S. Pietro in Vaticano*, 253–273. Vatican City: Tipografia Poliglotta Vaticana, 1971.
- Muthesius, Anna. *Byzantine Silk Weaving: AD 400 to AD 1200*. Vienna: Fassbaender, 1997.
- Nagel, Alexander, and Christopher S. Wood. "Toward a New Model of Renaissance Anachronism." *Art Bulletin* 88 (2005): 403–415.
- Naumann, Rudolf. *Die Ruinen von Tacht-e Suleiman und Zendan-e Suleiman*. Berlin: Reimer, 1977.
- Nees, Lawrence. "Charles the Bald and the *Cathedra Petri*." In *Charles the Bald: Court and Kingdom*, ed. Margaret T. Gibson and Janet L. Nelson, 340–347. Aldershot, U.K.: Variorum, 1990.
- Nees, Lawrence. "On Carolingian Book Painters: The Ottoboni Gospels and Its Transfiguration Master." *Art Bulletin* 83 (2001): 209–239.
- Nees, Lawrence. "Introduction." *Speculum* 72 (1997): 959–969.
- Nees, Lawrence. *A Tainted Mantle: Hercules and the Classical Tradition at the Carolingian Court*. Philadelphia: University of Pennsylvania Press, 1991.
- Nelson, Janet L. *Charles the Bald*. London: Longman, 1992.
- Nelson, Janet L. "Inauguration Rituals." In *Early Medieval Kingship*, ed. P. H. Sawyer and A. N. Wood, 50–71. Leeds: University of Leeds, 1977.
- Nelson, Robert S. *Hagia Sophia, 1850–1950: Holy Wisdom Modern Monument*. Chicago: University of Chicago Press, 2004.
- Neuss, Wilhelm. "Eine karolingische Kopie antiker Sternzeichen- Bilder im Codex 3307 der Biblioteca Nacional zu Madrid." *Zeitschriften des Deutschen Vereins für Kunstwissenschaft* 8 (1941): 113–140.
- Nicklies, Charles E. "Cosmology and the Labors of the Months at Piacenza: The Crypt Mosaic at San Savino." *Gesta* 34 (1995): 108–125. Niederkorn- Bruck, Meta, and Anton Scharer, eds. *Erzbischof Arn von Salzburg*. Vienna: R. Oldenbourg, 2004.
- Noble, Thomas F. X. *Charlemagne and Louis the Pious: Lives by Einhard, Notker, Ermoldus, Thegan, and the Astronomer*. University Park: Pennsylvania State University Press, 2009.
- Noble, Thomas F. X. *Images, Iconoclasm, and the Carolingians*. Philadelphia: University of Pennsylvania Press, 2009.
- Nöldeke, Theodor. *Das iranische Nationalepos*. Berlin: de Gruyter, 1920.
- Nyssen, Wilhelm. "Die Ewaldi- Decke aus Sankt Kunibert in Köln." *Wallraf-Richartz-Jahrbuch* 18 (1956): 70–90.
- Obrist, Barbara. "The Astronomical Sundial in Saint Willibrord's Calendar and Its Early Medieval Context." *Archives d'Histoire Doctrinale et Littéraire du Moyen Âge* 67 (2000): 71–118. Obrist,

- Barbara. *La cosmologie médiévale: Textes et images. I: Les fondements antiques*. Florence: Sismel–Edizioni del Galluzzo, 2004.
- Obrist, Barbara. “Les manuscrits du *De cursu stella-rum* de Grégoire de Tours et le manuscrit, Laon, Bibliothèque municipale 422.” *Scriptorium* 56 (2002): 335–345.
- Obrist, Barbara. “La représentation carolingienne du zodiaque: À propos du manuscrit de Bâle, Universitätsbibliothek, F III 15a.” *Cahiers du Civilisation Médiévale* 44 (2001): 3–33.
- O’Connor, Elizabeth Carroll Waldron. “The Star Mantle of Henry II.” PhD diss., Columbia University, 1980.
- Oexle, Otto Gerhard. “Bischof Ebroin von Poitiers und seine Verwandten.” *Friühmittelalterliche Studien* 3 (1969): 138–210.
- Olin, Margaret. *Forms of Representation in Alois Riegl’s Theory of Art*. University Park: Pennsylvania State University Press, 1992.
- O’Meara, John J. *Eriugena*. Oxford: Clarendon, 1988. Omidsalar, Mahmoud. *Poetics and Politics of Iran’s National Epic, the Shhnmeh*. New York: Palgrave Macmillan, 2011.
- Orthmann, Eva. “Circular Motions: Private Pleasure and Public Prognostication in the Nativities of the Mughal Emperor Akbar.” In *Horoscopes and Public Spheres: Essays on the History of Astrology*, ed. Günther Oestmann, H. Darrel Rutkin, and Kocku von Stuckrad, 101–114. Berlin: Walter de Gruyter, 2005.
- Osborne, John. “Papal Court Culture During the Pontificate of Zacharias (AD 741–52).” In *Court Culture in the Early Middle Ages: The Proceedings of the First Alcuin Conference*, ed. Catherine Cubitt, 223–234. Turnhout, Belgium: Brepols, 2003. Ousterhout, Robert. “Architecture, Art, and Komnenian Ideology at the Pantokrator Monastery.” In *Byzantine Constantinople: Monuments, Topography, and Everyday Life*, ed. Nevra Necipolu, 133–150. Leiden: Brill, 2001.
- Palagia, Olga. “The Date and Iconography of the Calendar Frieze on the Little Metropolis, Athens.” *Jahrbuch des Deutschen Archäologischen Instituts* 123 (2008): 215–237.
- Palumbo, Gaetano, and Angela Atzori, eds. *Qusayr Amra: Site Management Plan*. Amman: World Monuments Fund, 2014.
- Panadero, Marjorie Jean Hall. “The Labors of the Months and Signs of the Zodiac in Twelfth-Century French Facades.” PhD diss., University of Michigan, 1984.
- Panofsky, Erwin. *Renaissance and Renascences in Western Art*. Stockholm: Almqvist & Wiksell, 1960.
- Panofsky, Erwin, and Fritz Saxl. “Classical Mythology in Medieval Art.” *Metropolitan Museum Studies* 4 (1933): 228–280.
- Parpulov, Georgi. *Toward a History of Byzantine Psalters, ca. 850–1350 AD*. Plovdiv, Bulgaria: 2014.
- Payne, Richard. “Cosmology and the Expansion of the Iranian Empire, 502–628 CE.” *Past and Present* 220 (2013): 3–33.
- Peacock, A. C. S. *Mediaeval Islamic Historiography and Political Legitimacy: Balam’s Trkhnma*. London: Routledge, 2007.
- Pedersen, J. “Minbar.” In *Encyclopedia of Islam, Second Edition*. Accessed February 2, 2015. http://referenceworks.brillonline.com/entries/encyclopaedia-of-islam-2/minbar-COM_0744Pellegrin.
- Élisabeth, et al. *Les manuscrits classiques Latins de la Bibliothèque Vaticane*. Paris: Éditions du Centre national de la recherche scientifique, 1975–2010.
- Peter, Michael, et al. “Servatiusreliquiar, sog. Reliquienkasten Ottos I.” In *Der Quedlinburger Schatz wieder vereint*, ed. Dietrich Kötzsche, 52–58. Berlin: Kulturstiftung der Länder, 1992. Pingree, David. “Classical and Byzantine Astrology in Sassanian Persia.” *Dumbarton Oaks Papers* 43 (1989): 227–239.
- Pingree, David. “An Illustrated Greek Astronomical Manuscript: Commentary of Theon of Alexandria on the *Handy Tables* and Scholia and Other Writings of Ptolemy Concerning Them.” *Journal of the Warburg and Courtauld Institutes* 45 (1982): 185–192.
- Ponomarew, W. “Georgien.” In *Reallexikon zur byzantinischen Kunst*, ed. Klaus Wessel and Marcell Restle, 2:662–734. Stuttgart: Hiersemann, 1966–.
- Pourshariati, Parvaneh. *Decline and Fall of the Sasanian Empire*. London: I. B. Tauris, 2008.

- Pourshariati, Parvaneh. "The Parthians and the Production of the Canonical Shhnmas: Of Pahlav, Pahlavn, and the Pahlav." In *Commutatio et Contentio: Studies in the Late Roman, Sasanian, and Early Islamic Near East in Memory of Zeev Rubin*, ed. Henning Börm and Josef Wiesehöfer, 348–392. Düsseldorf: Wellern, 2010.
- Rabbat, Nasser. "The Dialogic Dimension of Umayyad Art." *Res* 43 (2003): 78–94.
- Rabbat, Nasser. "The Dome of the Rock Revisited: Some Remarks on al-Wasiti's Accounts." *Muqarnas* 10 (1993): 67–75.
- Ramírez-Weaver, Eric. "Carolingian Innovation and Observation in the Paintings and Star Catalogs of Madrid, Biblioteca Nacional, Ms. 3307." PhD diss., New York University, 2008.
- Ramírez-Weaver, Eric. "Classical Constellations in Carolingian Codices: Investigating the Celestial Imagery of Madrid, Biblioteca Nacional, MS 3007." In *Negotiating Secular and Sacred in Medieval Art: Christian, Islamic, and Buddhist*, ed. Alicia Walker and Amanda Luyster, 103–128. Farnham, U.K.: Ashgate, 2009.
- Reeth, J. M. F. van. "La représentation du ciel et du zodiaque dans le palais omayyade de 'Amr." In *Le ciel dans les civilisations orientales*, ed. C. Cannuyer, F. Mawet and J. Ries, 137–150. Brussels: Société belge d'études orientales, 1999.
- Reeth, J. M. F. van. "Die Transfiguration Wald b. Yazds." In *Studies in Arabic and Islam: Proceedings of the 19th Congress, Union Européenne des Arabisants et Islamisants, Halle*, 1998, ed. Stefan Leder, 501–511. Leuven, Belgium: Peeters, 2002.
- Rehm, Albert. *Eratosthenis Catasterismorum fragmenta Vaticana*. Ansbach, Germany: Brügel, 1899.
- Reindel, Kurt. "Bayern im Karolingerreich." In *Persönlichkeit und Geschichte*, ed. Helmut Beumann, 220–246. Düsseldorf: Schwann, 1965.
- Riegl, Alois. "Die mittelalterliche Kalender-illustration." *Mittheilungen des Instituts für Österreichische Geschichtsforschung* 10 (1889): 1–74.
- Ringbom, Lars-Ivar. *Graltempel und Paradies: Beziehungen zwischen Iran und Europa im Mittel-alter*. Stockholm: Wahlström & Widstrand, 1951.
- Robinson, Chase F. "Crone and the End of Orientalism." In *Islamic Cultures, Islamic Contexts: Essays in Honor of Professor Patricia Crone*, ed. Behnam Sadeghi, Asad Q. Ahmed, Adam Silverstein, and Robert Hoyland, 597–620. Leiden: Brill, 2015.
- Rothkirch, Malve. *Prinz Carl von Preußen: Kenner und Beschützer des Schönen, 1801–1883*. Osnabrück: Biblio Verlag, 1981.
- Rotter, Gernot. *Die Umayyaden und der zweite Bürgerkrieg*. Wiesbaden: Kommisionsverlag F. Steiner, 1982.
- Roueché, Mossman. "Stephanus the Alexandrian Philosopher, the *Kanon*, and a Seventh-Century Millennium." *Journal of the Warburg and Courtauld Institutes* 74 (2011): 1–30.
- Rubin, Zeev. "Hamza al-Isfahn's Sources for Sasanian History." *Jerusalem Studies in Arabic and Islam* 35 (2008): 27–58.
- Rubin, Zeev. "Ibn al-Muqaffa and the Account of Sasanian History in the Arabic Codex Sprenger 30." *Jerusalem Studies in Arabic and Islam* 30 (2005): 52–93.
- Sack, Dorothée. *Resafa IV: Die Große Moschee von Resafa-Rusâfat Hišam*. Mainz: Philipp von Zabern, 1996.
- Sahlins, Marshall. "The Stranger-King, or, Elementary Forms of the Politics of Life." *Indonesia and the Malay World* 36 (2008): 177–199.
- Saladin, Henri. *Manuel d'art musulman*. I: *L'architecture*. Paris: A. Picard, 1907.
- Saliba, George. "The Role of the Astrologer in Medieval Islamic Society." *Bulletin d'Études Orientales* 44 (1992): 45–67.
- Saltzman, Lisa. *Anselm Kiefer and Art After Auschwitz*. Cambridge: Cambridge University Press, 1999.
- Salzman, Michele. *On Roman Time: The Codex-Calendar of 354 and the Rhythms of Urban Life in Late Antiquity*. Berkeley: University of California Press, 1990.
- Santoni, Anna. "I Fenomeni di Arato e i Catasterismi di Eratostene nelle illustrazioni del manoscritto Vat. gr. 1087." In *Antiche stelle a Bisanzio: Il codice Vaticano greco 1087*, ed. Fabio Guidetti and

- Anna Santoni, 91–111. Pisa: Edizioni della Normale, 2013.
- Sauvaget, Jean. *La Mosquée omeyyade de Médine*. Paris: Vanoest, 1947.
- Savant, Sarah Bowen. “Forgetting Ctesiphon: Iran’s Pre- Islamic Past, c. 800–1100.” In *History and Identity in the Late Antique Near East*, ed. Philip Wood, 169–186. Oxford: Oxford University Press, 2013.
- Savant, Sarah Bowen. *The New Muslims of Post- Conquest Iran: Tradition, Memory, and Conversion*. Cambridge: Cambridge University Press, 2013.
- Saxl, Fritz. “Frühes Christentum und spätes Heidentum in ihren künstlerischen Ausdrucksformen.” *Wiener Jahrbuch für Kunstgeschichte* 2 (1923): 63–121.
- Saxl, Fritz, Hans Meier, and Patrick MacGurk. *Verzeichnis astrologischer und mythologischer illustrierter Handschriften des lateinischen Mittelalters*. Heidelberg: C. Winter, 1915–66.
- Šepkina, M. V. *Miniatjuri Khludovskoi Psalmiri*. Moscow: Iskusstvo, 1977.
- Schaller, Dieter. “Philologische Untersuchungen zu den Gedichten Theodulfs von Orléans.” *Deutsches Archiv für Erforschung des Mittelalters* 18 (1962): 13–91.
- Schiøler, Thorkild. *Roman and Islamic Water- Lifting Wheels*. Odense: Odense Universitetsforlag, 1973.
- Schnabel, Paul. “Die Entstehungsgeschichte des kartographischen Erdbildes des Klaudios Ptolemaios.” *Sitzungsberichte der preußischen Akademie der Wissenschaften, Philos. Hist. Kl.* 14 (1930): 214–250.
- Schramm, Percy Ernst. *Herrschaftszeichen und Staatssymbolik: Beiträge zu ihrer Geschichte vom dritten bis zum sechzehnten Jahrhundert*. Stuttgart: Hiersemann, 1954–55.
- Schramm, Percy Ernst. “Kaiser Karl der Kahle: Der Stifter des Thrones in St. Peter.” In *La cattedra lignea di S. Pietro in Vaticano*, 277–293. Vatican City: Tipografia Poliglotta Vaticana, 1971.
- Schramm, Percy Ernst. *Kaiser, Könige und Päpste: Gesammelte Aufsätze zur Geschichte des Mittelalters*. Stuttgart: Hiersemann, 1968–71.
- Schramm, Percy Ernst. *Kaiser, Rom und Renovatio: Studien und Texte zur Geschichte des römischen Erneuerungsgedankens vom Ende des karolingischen Reiches bis zum Investiturstreit*. Leipzig: Teubner, 1929.
- Schramm, Percy Ernst. “Neuentdeckte Bildnisse Karls des Kahlen, seiner Gemahlin und seines Sohnes (876/7): Ein Beleg für die den Byzantinern nachgeahmte Krone.” In *Festschrift Hermann Aubin zum 80. Geburtstag*, ed. Otto Brunner, 614–624. Wiesbaden: Steiner, 1965. Schramm, Percy Ernst, and Florentine Mütherich. *Denkmale der deutschen Könige und Kaiser*. Munich: Prestel, 1962–78.
- Schrumpf, Gangolf, ed. *Mittelalterliche Bücherverzeichnisse des Klosters Fulda und andere Beiträge zur Geschichte des Klosters Fulda im Mittelalter*. Frankfurt am Main: J. Knecht, 1992.
- Schultze, Alfred. “Das Testament Karls des Großen.” In *Aus Sozial- und Wirtschaftsgeschichte: Gedächtnisschrift für Georg von Below*, 48–81. Stuttgart: Kohlhammer, 1928.
- Seetzen, U. J. “Beyträge zur Geographie Arabiens, geschrieben in Jerusalem im May 1806.” *Monatliche Correspondenz zur Beförderung der Erd- und Himmels- kunde* 18 (1808): 373–393.
- Semper, Gottfried. *Style in the Technical and Tectonic Arts; or, Practical Aesthetics*. Trans. Harry Francis Mallgrave and Michael Robinson. Los Angeles: Getty Research Institute, 2004 [first German publication 1860–62].
- Ševenko, Ihor. “The Search for the Past in Byzantium Around the Year 800.” *Dumbarton Oaks Papers* 46 (1992): 279–293.
- Seyrig, Henri, Robert Amy, and Ernest Will. *Le temple de Bêl à Palmyre*. Paris: Paul Geuthner, 1975.
- Sezgin, Ursula. *Ab Mihnaf: Ein Beitrag zur Historiographie der umaiyadischen Zeit*. Leiden: E. J. Brill, 1971.
- Shahin, Aram A. “In Defense of Muwiya ibn Ab Sufyn: Treatises and Monographs on Muwiya from the Eighth to the Nineteenth Centuries.” In *The Lineaments of Islam: Studies in Honor of Fred McGraw Donner*, ed. Paul M. Cobb, 177–208. Leiden: Brill, 2012.
- Shalem, Avinoam. “The Fall of al- Madin: Some Literary References Concerning Sasanian Spoils of War in Mediaeval Islamic Treasuries.” *Iran* 32 (1994): 77–81.

- Siecienski, A. Edward. *The Filioque: History of a Doctrinal Controversy*. Oxford: Oxford University Press, 2010.
- Stahlman, William Duane. "The Astronomical Tables of Codex Vaticanus Graecus 1291." PhD diss., Brown University, 1960.
- Staub, Kurt Hans. *Jüngere theologische Texte*. Wiesbaden: Harrassowitz, 2001.
- Staubach, Nikolaus. "Herkules an der 'Cathedra Petri'." In *Iconologia sacra: Mythos, Bildkunst und Dichtung in der Religions- und Sozialgeschichte Alteuropas*, ed. Hagen Keller and Nikolaus Staubach, 383–404. Berlin: Walter de Gruyter, 1994. Staubach, Nikolaus. *Rex Christianus: Hofkultur und Herrschaftspropaganda im Reich Karls des Kahlen. Teil II: Die Grundlegung der "religion royale."* Cologne: Böhlau, 1993.
- Stetkevych, Suzanne Pinckney. "Umayyad Pane-gyric and the Poetics of Islamic Hegemony: Al-Akhtal's *Khaffa al-Qatnu* ('Those that dwelt with you have left in haste')." *Journal of Arabic Literature* 28 (1997): 89–122.
- Stevens, Wesley M. "Compotistica et astronomica in the Fulda School." In *Saints, Scholars, and Heroes: Studies in Medieval Culture in Honor of Charles W. Jones*, ed. Margot H. King and Wesley M. Stevens, II.27–63. Collegeville, Minn.: Hill Monastic Manuscript Library, 1979.
- Stornajolo, Cosimo. *Le miniature della Topografia Cristiana di Cosma Indicopleuste, Codice Vaticano Greco 699*. Milan: U. Hoepli, 1908.
- Story, Joanna. "The Carolingians and the Oratory of Saint Peter the Shepherd." In *Old Saint Peter's, Rome*, ed. Rosamond McKitterick, John Osborne, Carol M. Richardson, and Joanna Story, 257–273. Cambridge: Cambridge University Press, 2013. Story, Joanna, et al. "Charlemagne's Black Marble: The Origin of the Epitaph of Pope Hadrian I." *Papers of the British School of Rome* 73 (2005): 157–190.
- Stouraitis, Ioannis. "Roman Identity in Byzantium: A Critical Approach." *Byzantinische Zeitschrift* 107 (2014): 175–220.
- Stoyanov, Yuri. *Defenders and Enemies of the True Cross: The Sasanian Conquest of Jerusalem in 614 and Byzantine Ideology of Anti-Persian Warfare*. Vienna: Verlag der Österreichischen Akademie der Wissenschaften, 2011.
- Swarzenski, Georg. *Die Salzburger Malerei: Von den ersten Anfängen bis zur Blutezeit des romanischen Stils*. Leipzig: Hiersemann, 1913.
- Taragan, Hana. "Constructing a Visual Rhetoric: Images of Craftsmen and Builders in the Umayyad Palace at Qusayr Amra." *Al-Masaq* 20 (2008): 41–60.
- Tihon, Anne. "L'astronomie à Byzance à l'époque iconoclaste (VIIIe–IXe siècles)." In *Science in Eastern and Western Civilization in Carolingian Times*, ed. Paul Leo Butzer and Dietrich Lohrmann, 181–203. Basel: Birkhäuser Verlag, 1993.
- Tihon, Anne. "Les tables faciles de Ptolémée dans les manuscrits en onciale (IXe–Xe siècles)." *Revue d'Histoire des Textes* 22 (1992): 47–87.
- Torp, Hjalmar. "Hans Peter L'Orange." *Acta ad Archaeologiam et Artium Historiam Pertinentia* 5 (1985): vii–xv.
- Tougher, Shaun. *The Reign of Leo VI (886–912): Politics and People*. Leiden: Brill, 1997.
- Traina, Giusto. "Mapping the World Under Theodosius II." In *Theodosius II: Rethinking the Roman Empire in Late Antiquity*, ed. Christopher Kelly, 155–171. Cambridge: Cambridge University Press, 2013.
- Treadgold, Warren. *The Middle Byzantine Historians*. Hounds mills: Palgrave Macmillan, 2013.
- Treml, Martin, Sabine Flach, and Pablo Schneider, eds. *Warburgs Denkraum: Formen, Motive, Materialien*. Paderborn, Germany: Wilhelm Fink, 2014.
- Ven, Paul van den. "La vie grecque de S. Jean le Psichaïte, confesseur sous le règne de Léon l'Arménien (813–820)." *Muséon N.S.* 3 (1902): 97–125.
- Verkerk, C. L. "Aratea: A Review of the Literature Concerning MS. Vossianus lat. q. 79 in Leiden University Library." *Journal of Medieval History* 6 (1980): 245–287.
- Vibert-Guigue, Claude. "Bilderreichum im

- Wüsten schloß: Die Bauhandwerker zur Zeit der Umayyaden begegnen uns in Kusair Amra (Jordanien).” *Antike Welt* 35, no. 6 (2004): 59–65. Vibert- Guigue, Claude. “Les *sqiya* de Qasr at- Tba: Culture de l’eau et reflet iconographique.” *Syria* 85 (2008): 145–174.
- Vibert- Guigue, Claude, and Ghazi Bisheh. *Les peintures de Qusayr Amra: Un bain omeyyade dans la bdiya jordanienne*. Beirut: Institut français du Proche- Orient, 2007.
- Vidier, M. A. “La mappemonde de Théodulfe et la mappemonde de Ripoll (IXe–XIIe siècle).” *Bulletin de géographie historique et descriptive* (1911): 285–313.
- Viellard- Troïekouroff, May. “La chapelle de Charles le Chauve à Compiègne.” *Cahiers Archéologiques* 21 (1971): 89–108.
- Villedieu, Françoise. “La *cenatio rotunda* de la Maison Dorée de Néron.” *Comptes Rendus des Séances de l’Académie des Inscriptions et Belles-Lettres* 154, no. 3 (2010): 1089–1114.
- Vogt, Matthias. *Figures de califes entre histoire et fiction: Al- Wald b. Yazd et al- Ann dans la représentation de l’historiographie arabe de l’époque abside*. Beirut: Orient- Institut, 2006.
- Vollbach, Fritz. “Das Ellwanger Reliquienkästchen.” In *Ellwangen, 764–1964: Beiträge und Untersuchungen zur Zwölfhundertjahrfeier*, ed. Viktor Burr, 767–774. Ellwangen: Schwabenverlag, 1964.
- Waerden, Bartel L. van der. “Eine byzantinische Sonnentafel.” *Sitzungsberichte der mathematisch-naturwissenschaftlichen Klasse der Bayerischen Akademie der Wissenschaften zu München*, Jahr-gang 1954 (1955): 159–168.
- Wakelin, Daniel. “England: Humanism Beyond Weiss.” In *Humanism in Fifteenth-Century Europe*, ed. David Rundle, 265–306. Oxford: Society for the Study of Medieval Languages and Literature, 2012.
- Wallach, Luitpold. *Alcuin and Charlemagne: Studies in Carolingian History and Literature*. Ithaca, N.Y.: Cornell University Press, 1959.
- Warburg, Aby. *Gesammelte Schriften: Die Erneuerung der heidnischen Antike*, ed. Gertrud Bing. Leipzig: B. G. Teubner, 1932.
- Warburg, Aby. “Die Einwirkung der Sphaera Barbarica auf die kosmischen Orientierungsversuche des Abendlandes,” in “*Per Monstram ad Sphaeram*”: *Sternglaube und Bilddeutung*, ed. Davide Stimilli, 63–127. Munich: Döllig und Galitz Verlag, 2008.
- Warburg, Aby. *Schlangenritual: Ein Reisebericht*. Berlin: Verlag Klaus Wagenbach, 2011.
- Weinfurter, Stefan. *Heinrich II. (1002–1024): Herrscher am Ende der Zeiten*. Regensburg: Pustet, 1999.
- Weitzmann, Kurt. “The Iconography of the Carolingian Ivories of the Throne.” In *La cattedra lignea di S. Pietro in Vaticano*, 217–245. Vatican City: Tipografia Poliglotta Vaticana, 1971.
- Weitzmann, Kurt. Review of *Three Byzantine Works of Art* by Hayford Pierce and Royall Tyler. *Art Bulletin* 25 (1943): 163–164.
- Weitzmann, Kurt, and Massimo Bernabò. *The Byzantine Octateuchs*. Princeton: Princeton University Department of Art and Archaeology, 1999.
- Whitby, Mary. “A New Image for a New Age: George of Pisidia on the Emperor Heraclius.” In *The Roman and Byzantine Army in the East*, ed. Edward Dbrowa, 197–225. Krakow: Drukarnia Uniwersytetu Jagiellónskiego, 1994.
- Whitcomb, Donald, and Hamdan Taha. “Khirbat al- Mafjar and Its Place in the Archaeological Heritage of Palestine.” *Journal of Eastern Mediterranean Archaeology and Heritage Studies* 1 (2013): 54–65.
- Willjung, Harald. *Das Konzil von Aachen 809*. Hannover: Hahn, 1998.
- Winterer, Christoph. “Ewaldi- Decke.” In *Karolingische und ottonische Kunst*, ed. Bruno Reudenbach, 306–307. Munich: Prestel, 2009. Winterer, Christoph. *Das Fuldaer Sakramentar in Göttingen: Benediktinische Observanz und römische Liturgie*. Petersberg, Germany: Imhof, 2009.
- Wintermayr, Felix. “Die Benediktiner- Abtei Mondsee.” *Oberösterreichische Heimatblätter* 2 (1948): 193–214.

- Wolska, Wanda. *La Topographie Chrétienne de Cosmas Indicopleustès: Théologie et science au VIe siècle*. Paris: Presses Universitaires de France, 1962.
- Wormhoudt, Arthur. *Adab al Minbar: Sermons from Umayyad Times*. Oskaloosa: William Penn College, 1988.
- Wright, David H. "The Date of the Vatican Illuminated Handy Tables of Ptolemy and of Its Early Additions." *Byzantinische Zeitschrift* 78 (1985): 355–362.
- Wulzinger, Karl, and Carl Watzinger. *Damaskus: Die islamische Stadt*. Berlin: de Gruyter, 1924.
- Wüstenfeld, Ferdinand. "Der Tod des Husein ben Alí und die Rache: Ein historischer Roman aus dem Arabischen." *Abhandlungen der königlichen Gesellschaft der Wissenschaften in Göttingen* 30 (1883): 1–213.
- Yalman, Suzan. "Ala al- Din Kayqubad Illuminated: A Rum Seljuq Sultan as Cosmic Ruler." *Muqarnas* 29 (2012): 151–186.
- Zuchold, Gerd- H. "Der 'Klosterhof' im Park von Schloß Glienicke: Privates Refugium oder Ausdrucksträger eines konservativen Staatsmodells?" In *Schloss Glienicke: Bewohner, Künstler, Parklandschaft*, ed. Jürgen Julier, Susanne Leiste, and Margret Schütte, 237- 242. Berlin: Verwaltung der Staatlichen Schlösser und Gärten, 1987.