

# Raphael's global philosophy

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Raphael's fresco of *Philosophy* was painted in about 1510 in what was then Pope Julius II's library (fig. 1).<sup>1</sup> Since an authoritative description was offered in 1695 it has erroneously been called *The School of Athens*, but in fact it shows philosophers from different lands and schools (and times) conversing in clusters of philosophical inquiry.<sup>2</sup> Of the figures that are more or less identifiable, Socrates, Pythagoras, Plato, and Aristotle were Greek, though not all from Athens; Diogenes was from Asia Minor; Archimedes was from Sicily; and Ptolemy was Egyptian. The turbaned figure behind Pythagoras is often identified as Averroes, a Muslim from Córdoba. And though we may not agree that the figure holding the celestial globe is Zoroaster, as Vasari says, it is telling that he believed a Persian philosopher belonged in the assembly.<sup>3</sup> From a European point of view, the fresco attempted a global sweep of philosophical wisdom.

Although this article focuses on the *Philosophy* fresco, it proceeds from the premise that it is impossible to understand any element in isolation from the decorations throughout the room as a whole. I propose that the new world explorations were essential to the conceptualization and design of Raphael's *Philosophy* fresco and its relation to the room it decorates. A basic feature of the fresco's conception was a spherical understanding of the nature of philosophical inquiry,

global in all senses, in the context of which the expansion of the known world, the emerging knowledge of the world in its rotundity, was a major philosophical event. Raphael, it turns out, was keenly aware of the latest cartographic developments, in particular the famous 1507 world map designed and engraved by Johannes Ruysch. In presenting an Amerasian new world, this map doubled the size of the inhabited world known to Ptolemy and other ancient cosmographers.

Toward the right side of the fresco we see the figure of Archimedes of Syracuse bent over his chalkboard delineating a diagram on a slate tablet. Not far from this geometrical demonstration are two philosophers holding globes, a cosmographically oriented philosophical assembly (fig. 2). A bearded man holds a celestial orb with the fixed stars; the other, who wears a crown on his head and is seen from behind, holds a terrestrial globe. Most figures in the fresco have proven difficult to identify with certainty, but there is no doubt that this is the ancient geographer Ptolemy, who was mistaken in late medieval texts and images as a member of the royal lineage of the Ptolemies of Egypt and thus is shown here, as elsewhere, wearing a crown. The philosopher across from him holding a celestial globe, identified as Zoroaster by Vasari, is more likely the cosmographer Strabo from Amasya in Asia Minor.<sup>4</sup>

The two ancient philosophers holding globes are turning toward two counterparts at the extreme right edge of the fresco, one of them a self-portrait of Raphael, then twenty-six or twenty-seven years old, who looks out of the picture toward us. These contemporary portraits were late additions to the fresco, perhaps the last elements to be painted on this wall. The full-scale cartoon for the composition, now in the Ambrosiana in Milan, reaches its limit at the two philosophers with globes at its right edge; Raphael and his companion are not shown. Yet the cartoon does show the two globe-carrying philosophers turning toward the right, as they do in the final fresco, implying that figures beyond the cartoon's right edge were

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1. I offer the date "about 1510" in view of the still unresolved debate regarding the sequence of the frescoes in the room. The evidence is helpfully reviewed by Arnold Nesselrath, "Raphael and Pope Julius II," in Hugo Chapman, Tom Henry, and Carol Plazzotta, *Raphael: From Urbino to Rome* (London, 2004), 280–93.

2. Giovanni Pietro Bellori, *Descrizione delle Imaginidipinte da Raffaello d'Urbino nelle Camere del Palazzo Apostolico Vaticano* (Rome, 1695), 15: "Imagine dell'antico Ginnasio di Atene, o vero la Filosofia."

3. For a helpful review of the identifications, some of which remain speculative, see Ingrid D. Rowland, "The Intellectual Background of the School of Athens: Tracking Divine Wisdom in the Rome of Julius II," in *Raphael's "School of Athens"*, ed. Marcia Hall (Cambridge, 1997), 131–70.

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4. As proposed with reasonable arguments by Christiane Joost-Gaugier, *Raphael's Stanza della Segnatura: Meaning and Invention* (Cambridge, 2002), 104–10.



Figure 1. Raphael, *Philosophy*, ca. 1510. Vatican Palace, Stanza della Segnatura. Photo: [https://commons.wikimedia.org/wiki/File:Raffael\\_058FXD.jpg](https://commons.wikimedia.org/wiki/File:Raffael_058FXD.jpg) (CC0).

intended at this stage. The man in white next to Raphael, who is also shown in contemporary clothing, has not yet been securely identified. It has been proposed that he is the painter Sodoma, who worked in this room, or the painter Timoteo Viti, an associate of Raphael's, but there is simply no evidence to support these claims. This article offers evidence to identify this personage as Raphael's colleague, the Flemish painter and cosmographer Johannes Ruysch, who is also known to have worked in this room.<sup>5</sup> This corner of the painting is where this vision

of ancient philosophers meets the world of the artist, and also opens onto the world of its many viewers.

The visible half of the terrestrial globe shows what Ptolemy and cosmographers after him called the *oikoumene*, the inhabited world as known to the ancient philosophers of the Greek-speaking world. At the left edge we see the Iberian Peninsula and Africa, then the Mediterranean extending to the east, with a prominent Red Sea and an expansive Asia spreading across the right edge of the globe. The fact that we see none of

5. Joost-Gaugier, *Raphael's Stanza della Segnatura*, 111, proposes instead that the figures represent Apelles and Protogenes in the guise of portraits of Raphael and a colleague. It is more likely that these

portraits are presented as Raphael and Johannes Ruysch themselves, in just the way that Ariosto and possibly other contemporary poets are introduced as themselves at the right margin of the *Poetry* (or *Parnassus*) scene on the adjoining wall of the same room.



Figure 2. Ancient cosmographers consult their modern heirs. Raphael, *Philosophy*, detail of fig. 1.

what we term the new world might seem a bit surprising, even disappointing. After all, Rome and in particular the papacy and the court of cardinals were well informed and in the flush of enthusiasm over news of the expeditions of Columbus, Vasco da Gama, Cabral, Vespucci, and others. Papal preachers and prominent cardinals celebrated these exploits as a turning point in history, heralding the triumph of Christianity around the globe. Raphael's globe does register recent information about the shape of Africa, obtained through Dias's and then Vasco da Gama's voyages around the Cape of Good Hope, thus correcting the prevailing Ptolemaic view of an Africa that extended eastward and closed off the Indian Ocean.<sup>6</sup> The earlier shape of Africa can be seen in a painting of *Heraclitus and Democritus* by Raphael's compatriot Bramante (fig. 3).<sup>7</sup>

6. James Sykes, "The Terrestrial Globe in Raphael's 'The School of Athens,'" *Globe Studies* 55/56 (2009): 68, notes these corrections and calls the globe "a synthesis of ancient knowledge and of recent discovery."

7. Dawson Kiang, "The 'Mappamondo' in Bramante's *Heraclitus and Democritus*," *Achademia Leonardi Vinci* 5 (1992): 128–35. Thanks to Chet Van Duzer for sharing his observations on the shape of Africa and other aspects of the globe represented by Raphael.

Beyond correcting the shape of Africa, Raphael's globe suggests an open Indian Ocean, both land and sea extending without any clear limit around the right edge of the globe—a new idea, though Raphael's handling of the eastern part of his globe leaves the question unresolved. It may or may not be a response to the latest discoveries, since, after all, the eastern limits are also left unresolved in the globe in Bramante's painting, which was most likely painted before 1492. Raphael's globe makes adjustments within the traditional range of the Ptolemaic *oikoumene*, keeping the globe centered on the Near East and recalling medieval Jerusalem-centered *mappaemundi*.<sup>8</sup> Whatever hints it gives of recent discoveries, nowhere does Raphael's globe show the territories and islands to the west of Europe discovered by Columbus, Cabral, Vespucci, and others. Was Raphael uninterested, or simply uninformed?

Various pieces of evidence show that Raphael was both interested and informed. Let us begin by examining the globe in Ptolemy's hand not as an isolated bit of cartographic information, but in relation to the thematic and formal workings of the fresco and the room as a whole. Above the group with Ptolemy, Raphael depicted an architectural relief showing a figure of Astrology/Astronomy enthroned on clouds, with a segment of the band of the zodiac circling beside her head (see fig. 2). Working under the aegis of the statue of Athena, goddess of wisdom, Astrology/Astronomy presides over the assembly of cosmographically oriented philosophers below her. The zodiac, figuring astral constellations that run along the ecliptic, the path of the sun, diagrams a swathe of the complete starry sphere held by Strabo directly below.

Also on this side of the painting, filling a circular niche in the pendentive zone under what we understand to be the building's crowning central cupola, is a robed woman holding a globe, as yet unidentified, who seems to look straight down at us (fig. 4). In the corresponding pendentive to the left, a bearded man plays a harp while looking upward, suggesting that we have here Music and Astronomy, each positioned over the part of the assembly below that corresponds to them—Music above the statue of Apollo and the philosopher Pythagoras, who is shown writing as the table of harmonic proportions is propped before him, and Astronomy above Minerva and the cosmographers. Extrapolating from these two roundels, we can imagine the two unseen facing pendentives across the drum carrying

8. As noted by Sykes, "The Terrestrial Globe," 68.

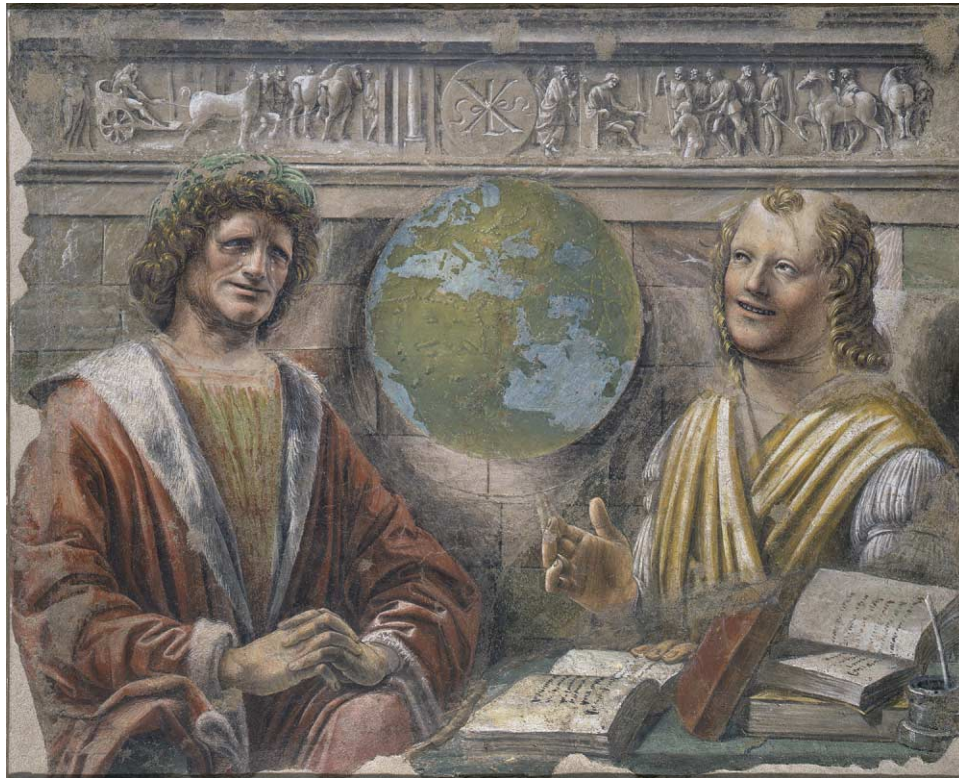


Figure 3. Donato Bramante, *Heraclitus and Democritus*, Milan: Pinacoteca di Brera, ca. 1480. Photo: © Pinacoteca di Brera, Milano.

corresponding roundels with Arithmetic and Geometry, the other subjects of the quadrivium, the four mathematical disciplines within the seven liberal arts. Here as elsewhere, the fresco invites us to think all the way around a round form, only part of which can be seen from a given position.

Then, outside of the scene altogether, a fictive keystone crowning the lunette carries a putto grappling with a large sphere. This is not a generic keystone decoration throughout the room. The putti in the keystones on the other walls hold not spheres but items relevant to the faculties of those walls: the putto above *Jurisprudence* carries a cornucopia, like the one in the scene below; the putto above *Disputa (Theology)* holds a dove, again like the one within the scene; and the putto above *Parnassus (Poetry)* holds branches of laurel, like the ones on the laurel tree in the scene below. The putto above *Philosophy* handles a large globe that appears especially mobile and hard to handle in the small child's hands. The turning orb, a challenge to human comprehension, was evidently Raphael's emblem for the faculty of Philosophy.

We find still more globes directly below the scene, in the monochrome frescoes painted by Raphael's pupil Perino del Vaga in the lower zone of the room (fig. 5). Under the left side of Raphael's fresco, one of Perino's panels shows a hooded philosopher in a pose of contemplation, an echo of the mantled, downward-looking allegory (of Astronomy?) in the pendentive roundel of the fresco above. Following this lone philosopher is another scene of a group of wise men in debate around a globe, pointing at it from different directions, an echo of the discussion around globes in the fresco above. Throughout the room, Perino del Vaga's *basamento* scenes are carefully keyed to Raphael's frescoes above. For example, the other two scenes farther to the right on this wall, directly below the Archimedes-Ptolemy group, depict the accomplishments and death of Archimedes in Syracuse. On the *Jurisprudence* wall, under Justinian and Pope Gregory the Great, Perino portrayed the lawgivers Solon and Moses, and under *Disputa (Theology)*, Perino's panels show a pagan sacrifice, a legendary scene from the life of St. Augustine, the Tiburtine sybil revealing the Virgin

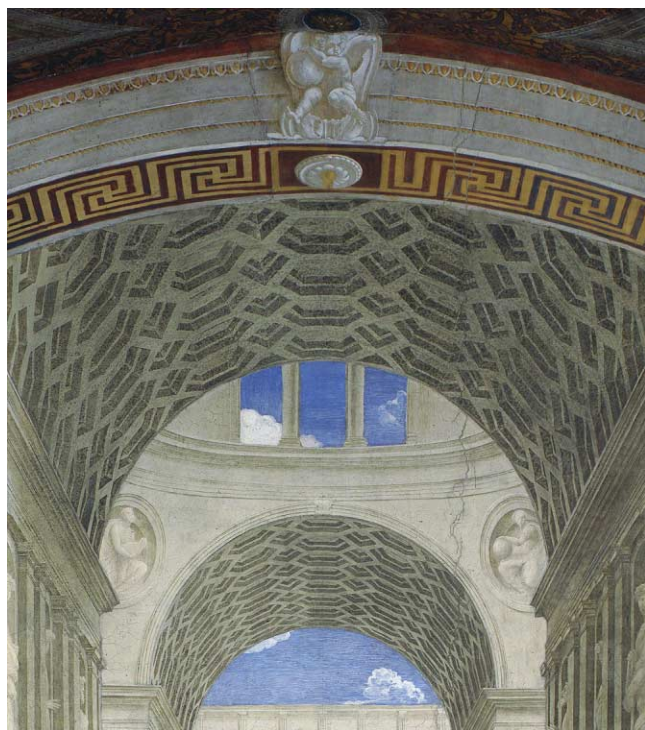


Figure 4. Spheres abounding. Raphael, *Philosophy*, detail of fig. 1.

and Child to Augustus, and a figure identified as Theology.<sup>9</sup> Only the two panels under the *Philosophy* fresco depict globes. By the time the lower zone of monochrome frescoes was painted, in the early 1540s, the room no longer functioned as a library, yet Perino remembered and respected the program put into place by his teacher Raphael, casting the sphere as an attribute and occasion for philosophical inquiry.<sup>10</sup>

Beyond the evidence of the pictorial staging, the most relevant philosophical context confirms that at the Vatican in about 1510, philosophy was global philosophy. The conception of global philosophy affirmed both in and around Raphael's philosophical assembly is fundamentally Platonic in inspiration. Plato is shown in the center of the scene holding his *Timaeus*,

9. Elena Parma, *Perin del Vaga: L'anello mancante; Studi sul manierismo* (Genoa, 1997), 191.

10. The bookshelves around the bottom of the room were removed by Julius II's successor, Leo X, upon his accession in 1513, when they were replaced by wood inlay decoration, which we can still see under the *Parnassus* fresco (see fig. 8). The inlays on the other walls were replaced by Perino's frescoes in the early 1540s. See John Shearman, "The Vatican Stanze: Functions and Decoration," in *Art and Politics in Renaissance Italy: British Academy Lectures*, ed. George Holmes (Oxford, 1993), 230–31.

a dialogue celebrating cosmic order and beauty, which begins with an account of creation (fig. 6). Plato says that in imitation of the spherical form of the cosmos, humans were given a spherical body "which form we now call the 'head,'" and then that sphere was placed on a vehicle composed of torso and arms and legs, whose job it is to hold up and convey the orb of the head, the part of us that is connected to divinity. The addition of the body with its limbs gave a front and back to the human form, and so the sphere of the head was given a face with eyes set into one side of it, imposing one-sided vision on what had been a head with fully spherical potentiality. Among humans, philosophers are distinguished by their understanding that these are merely physical limitations that can be overcome by using the mind, the part of the human that remembers its divine origin, to contemplate the revolutions of cosmic order and to relate them to the "revolvings of the reasoning that is within us."<sup>11</sup>

Philosophers never forget that their heads are spheres, modeled on the spheres of the cosmos, and through this anamnesis they learn to govern their own unstable natures. Look at Socrates to Plato's right, our left, with his impressively round head, rounder even than Plato's, engaging the circle of disciples around him. Look at the beautiful round head of Pythagoras below, hearing the music of the spheres, with two philosophers behind him, one with a remarkably globular bald pate and the other with an impressive round turban circling his head. It is probably not a coincidence that the figure of Archimedes just next to the Ptolemy group has a particularly spherical head, positioned right next to the globes of the earth and heavens held by the cosmographers (see fig. 2).<sup>12</sup> Unlike the rest of humanity, philosophers do not just look and think straight ahead; they think "spherically" and are helped in doing so by entering into dialogue with other minds, as the dialogues of Plato demonstrate. The diagram of intersecting triangles Archimedes is making—a demonstration that

11. For this discussion, see Plato, *Timaeus* 43e–47c (quotations at 44d and 47b). See esp. 47b–c: "God devised and bestowed upon us vision to the end that we might behold the revolutions of Reason in the Heaven and use them for the revolvings of the reasoning that is within us, these being akin to those, the perturbable to the imperturbable; and that, through learning and sharing in calculations which are correct by their nature, by imitation of the absolutely unvarying revolutions of the God we might stabilize the variable revolutions within ourselves."

12. As noted by Matthias Winner, "The Mathematical Sciences in Raphael's *School of Athens*," in *The Power of Images in Early Modern Science*, ed. Wolfgang Lefèvre, Jürgen Renn, and Urs Schoepflin (Basel, 2003), 303.



Figure 5. Philosophers and their spheres. Perino del Vaga, part of the *basamento* under Raphael's *Philosophy* fresco, early 1540s. Photo: Scott Gilchrist / archivision.com.



Figure 6. The new model: great men in dialogue. Raphael, *Philosophy*, detail of fig. 1.

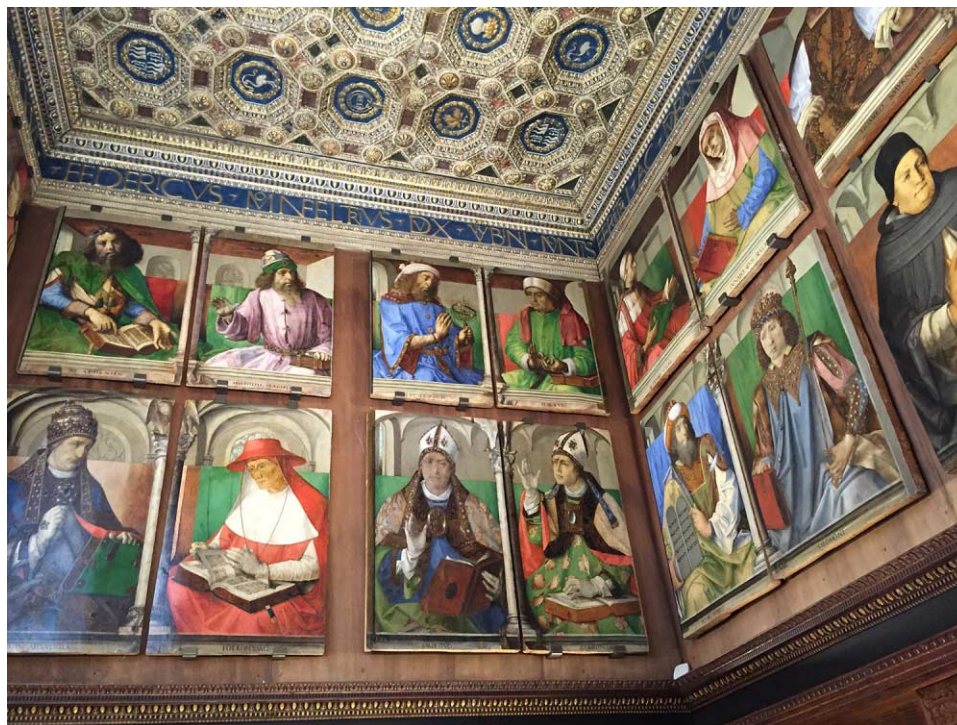


Figure 7. The old model: great men in compartments. Studiolo of Federico da Montefeltro, Ducal Palace of Urbino, 1470s. Ptolemy, with blue cloak, turban, crown, and armillary sphere, is in the upper row. Photo: <https://www.effettoLUCE.it/effetto-luce-per-studiolo-federico-montefeltro>.

has never been properly identified or understood—is patently made to be observed from multiple points of view, as evinced by the pupils who move into varying positions to gain views of it from different vantages.<sup>13</sup>

Raphael, included in the assembly of philosophers among geometers and astronomers, those who give visual form to cosmic truth, extracted from Plato's sphere-based philosophy a principle of spatial dynamism and bodily engagement. He produced a choreography of actors, bringing together philosophers from different times and places into multi-sided and present-tense conversation, a participatory conception that extends to the way the figures inhabit shared conditions of light and color that articulate complex groupings.<sup>14</sup> As Heinrich

Wölfflin described the fresco, "Raphael's rendering of movement in individual figures is a lesser achievement than the skill with which he builds up his groups and there is nothing in earlier art which can in any way be compared with this polyphony."<sup>15</sup>

Raphael's commitment to the choreographic idea led to a dramatic departure from earlier conventions for decorating studies or libraries, which displayed the heroes of knowledge statically in rows and in isolation from each other. In Raphael's hometown of Urbino, for example, Federico da Montefeltro's library was decorated with portraits of illustrious thinkers, each in its own compartment and identified by an inscription (fig. 7). This is a rational solution, respecting the differences among the various thinkers and their separation in space and time. By contrast, in Raphael's frescoes for the pope's private library, the figures representing each faculty are made to interact, and the identifying inscriptions are jettisoned (thus giving later scholars much work to do).

13. Marcia Hall, "Introduction," in *Raphael's "School of Athens"*, 13, interprets these different reactions and points of view as stages in a process of initiation, from beginner to "apprentice pedagogue."

14. An approach grounded in the use of chiaroscuro in the cartoon preserved at the Ambrosiana in Milan; see Konrad Oberhuber, *Polarität und Synthese in Raphaels "Schule von Athen"* (Stuttgart, 1983), 36. On both value and color distributions and group dynamics, see Hall, "Introduction," in *Raphael's "School of Athens"*, 41, and Janis Bell, "Color and Chiaroscuro," in Hall, *Raphael's "School of Athens"*, 85–113.

15. Heinrich Wölfflin, *Classic Art: An Introduction to the Italian Renaissance*, trans. Linda and Peter Murray (London, 1961), 95.

Raphael does include a memory of the earlier form of organization by adorning the great vaulted hall behind the philosophers with statues of the gods, each in a niche—the statues of Apollo and Athena on the front of the building and then twelve more within. By contrast, the philosophers in vibrant color who inhabit this forecourt embody the truth that knowledge happens through dialogue and dispute. In book 7 of Plato's *Republic*, Socrates describes how reason is cultivated through rational discussion and dialectic, "the discipline that will enable [students] to ask and answer questions in the most scientific manner"; therefore, "no other higher kind of study could rightly be placed above [dialectics]."<sup>16</sup>

The diachronic, mediated form of this activity is textual commentary—a protracted, scholarly form of dialectic.<sup>17</sup> Plato, a writer, translated Socrates's live dialectic into textual form in his own dialogues, part of an epochal shift from orality to literacy that soon produced the cultural institution of libraries, such as the one formerly in this room. Using the visual resources of painting, Raphael reverses this cultural shift by staging live dialectic among philosophers, theologians, jurists, and poets from different eras, a "virtual arena of orality" one level up from the room's lowest zone filled by the library's bookshelves.<sup>18</sup> The frescoes translate into the terms of live conversation what are in fact a series of imaginary conversations, the kind that happen when scholars sit in a library, consult various books, and compare them with one another, sparking a conversation in their minds among the various opinions that they are reading, a dynamic that ultimately includes the readers themselves, whether or not they are actually writing a commentary on one or another text.

Unlike the *Disputa* fresco across the room, which shows God the Father, Christ, and the dove of the Holy Spirit arrayed along a vertical axis, emphasizing a single descent of divine presence invested in the host on the altar,<sup>19</sup> the assembly of *Philosophy* is a horizontal spread bifurcated at its very center into two philosophers who embody an implicit dialogue: Plato on one side pointing upward to the heavenly spheres, and Aristotle with his arm extended over the surface of the earth. The relation between the earth and the heavens is the implicit theme

of the whole fresco, one embodied in the architecture itself, which rises from straight forms to a domed vault echoing the vault of heaven, a form invisible to the viewer of the fresco but that can be imagined soaring above the pendentive zone.<sup>20</sup>

Among dwellers on earth, philosophers are the best able to articulate earth's own relation to the cosmos, and the sphere, engaging multi-sided dialogue, is the implicit or explicit motor of such inquiry—explicit in Perino's dispute of the philosophers around a globe in the *basamento*, implicit in the entire scene of *Philosophy* above. Nowhere is the "global" nature of philosophical conversation more clearly in evidence than in the cosmographical assembly at the right. Ptolemy, a columnar and fluent form turning on the axis of his right foot, activates conversation in an especially eloquent way (see fig. 2). His face is hidden, but we can easily imagine it, animated as he turns toward his interlocutors to make a point or possibly ask them a question. His left hand holds up the globe for demonstration, while his right hand, seen only in part but eloquent enough in its gesture, is pointing to the globe—more precisely, to the *other* side of the globe, the side we cannot see, and that Ptolemy himself had not seen. Like his own head, turned so that we lose sight of his face, the globe, too, has a face we cannot see. Ptolemy is appealing to another point of view, a view from another side and also from another time. Seeing the globe as held and presented by the turning body that supports it, we realize that this earth is not a static body but is in this very moment rotating as it is being shown and discussed. Ptolemy and other ancient cosmographers knew very well that the inhabited parts known to them, the *oikoumene*, constituted only a fraction of the surface of the globe. Ptolemy admitted that the inhabited world was "bounded on the east by the unknown land which borders on the eastern races of Greater Asia"—in other words, that its boundaries were as yet unknown.<sup>21</sup> The

16. Plato, *Republic* 7.534d–e.

17. A notion recently developed by Tracy Cosgriff, "The Library of Julius II and Raphael's Art of Commentary," *I Tatti Studies in the Italian Renaissance* 22 (2019): 59–91.

18. Alexander Nagel and Christopher Wood, *Anachronic Renaissance* (New York, 2010), 361.

19. Well described by Hall, "Introduction," in *Raphael's "School of Athens"*, 15.

20. Ralph E. Lieberman, "The Architectural Background," in Hall, *Raphael's "School of Athens"*, 72, could not decide whether the building implies a domed vault: "Nor is it clear if we are to assume a dome over the crossing or just an open drum pierced with columned windows. Judging from the light-drenched crossing we see in the fresco, a dome seems unlikely, and if there were to be no dome, windows in the drum would be unnecessary." Although my argument does not depend on the resolution of this question (both dome and drum open to sky suggest a relation to the heavenly spheres), the repetition of spherical forms throughout the fresco and below and above it would have made a hemispherical dome over the crossing the most natural form for viewers to imagine.

21. Ptolemy, *Geographia* 7.5.





Figure 8. A compass, not a capsule. Stanza della Segnatura, Vatican City, Vatican Palace. Photo: [https://commons.wikimedia.org/wiki/File:1\\_Estancia\\_del\\_Sello\\_\(Vista\\_general\\_I\).jpg](https://commons.wikimedia.org/wiki/File:1_Estancia_del_Sello_(Vista_general_I).jpg) (CC BY-SA 3.0).

laws of geometry dictate that when we look at a sphere from a given point of view we see exactly one half of it—180 of its full 360 degrees—and what we see on this side of Ptolemy's globe is the 180-degree span that he had projected and described in his *Geography*.

The question about what lay beyond and what beings if any lived there was left notoriously open for later natural philosophers to resolve. Plato himself, also in the *Timaeus*, tells the story of a great island named Atlantis, beyond the Strait of Gibraltar and bigger than Africa and Asia combined, a great and ancient civilization that was submerged into the sea.<sup>22</sup> What was there now? In the period after 1492, the inhabitants of Europe were starting to get some answers about the rest of the world, calling it a “new world” (*mundus novus* or *novus orbis*). This new world was not necessarily far from India, or even separate from it, but possibly a hitherto unknown extension of Ptolemy's India beyond the Ganges. As Peter Martyr d'Anghiera, the humanist chronicler of the recent voyages, wrote to Cardinal Luis of Aragon in

22. Plato, *Timaeus* 24e–25d.

Rome in 1501, “the cosmographers have left the boundaries of the Gangean India undefined, and many are of the opinion that the shores of India are not far from the coasts of Spain.”<sup>23</sup> Here, in Raphael's Vatican fresco of about 1510, Ptolemy wants to talk with his colleagues from the future about what they see on the far side of the earth. Raphael, who can see, and in fact has seen, is looking out of the painting toward us. This corner of the picture is a conversation that emphatically mobilizes multiple points of view, including our own.

The *Philosophy* fresco depicts a world, but it is also very much designed to interact with the world of the viewer and reorient the viewer in the world and the cosmos (fig. 8). Rather than a capsule floating in isolation from the world, this room is a compass, responsive to the cardinal directions established by the earth's polarity and relation to the sun. The *Philosophy* scene, which appears on the east wall, is lit from the right,

23. “Neque enim absonum penitus est, cum gangetidis indiae terminos indiscretos cosmographi reliquerint, nec desint qui ab hispanis oris non longe indica littora discedere sentiant.” *Selections from Peter Martyr*, ed. and trans. Geoffrey Eatough (Turnhout, 1998), 149.

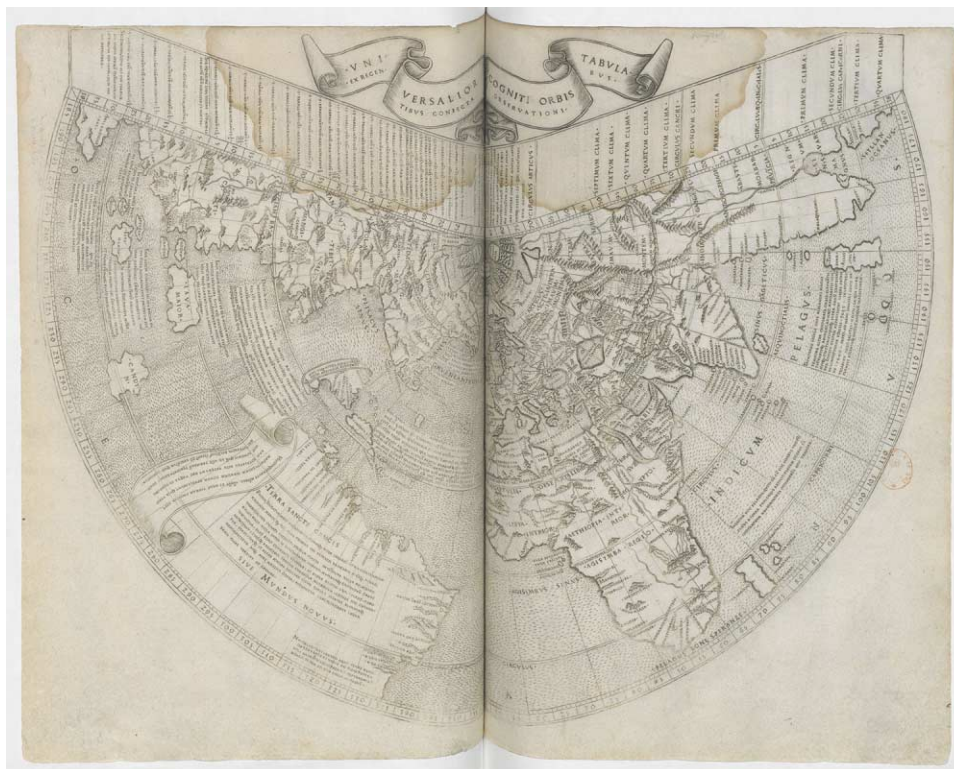


Figure 9. The world in 360 degrees, half new and half old. Ptolemy, *Geographia* (Rome, 1508), plate 2. Photo: Bibliothèque nationale de France.

a fact that requires explanation, since the conventional lighting for paintings is from the left. The room contains two windows, one to the left of the painting (shown boarded up in the photo) and one to the right, and either one could have been taken as the source of light for the scene Raphael painted. The northern window, to the left, offers a view of the Vatican hill, and above this window, in the fresco representing *Poetry*, we see Apollo presiding over Mount Parnassus. The Vatican hill was believed by the humanists in Raphael's milieu to be sacred to Apollo, and Raphael appropriately places the god above the relevant hill seen through that window.<sup>24</sup> The lighting of the *Philosophy* fresco is, however, aligned with the most powerful source of light, the south-facing window to the right. Across the room, the *Disputa* (*Theology*) fresco on the west wall depicts Western theologians, in counterpoint to the Greek and Eastern philosophers assembled in the *Philosophy* fresco.

24. Shearman, "Vatican Stanze," 198. Joost-Gaugier, *Stanza della Segnatura*, 61, points out that Mount Parnassus is always placed in the north, corresponding to its position on the north wall in Raphael's room (for example, by Strabo, *Geography* 8.6.21, 9.3.1, 9.3.3).

Like the papal Roman churches of Saint Peter's and the Lateran, as well as the Sistine Chapel, the altar and cloudy apse of the *Disputa* is disposed toward the west, whereas we look down the great temple-like structure of the *Philosophy* fresco in an easterly direction.<sup>25</sup> Ptolemy strides into the picture at its southernmost point, perhaps an allusion to his Egyptian origins. His shadow is cast by light from the south, or rather the southwest, an afternoon light. The other side of the globe, the side Ptolemy is pointing out to his interlocutors, is the eastern side, while we in the room see the known western face of the globe.

What did Raphael know of the other side of the world? Our best evidence is a map designed by Johannes Ruysch, made in 1507 or 1508 to be included in a new edition of Ptolemy's *Geographia* (fig. 9).<sup>26</sup> The

25. Joost-Gaugier, *Stanza della Segnatura*, 61.

26. *In hoc opere haec continentur Geographia Cl. Ptholemaei a plurimis viris utriusque linguae doctiss. emendata et cum archetypo graeco ab ipsis collata . . .* (Rome, 1507). A second edition was produced by the same publisher in 1508, with added pages describing the discoveries of the new world. Further citations will be to this

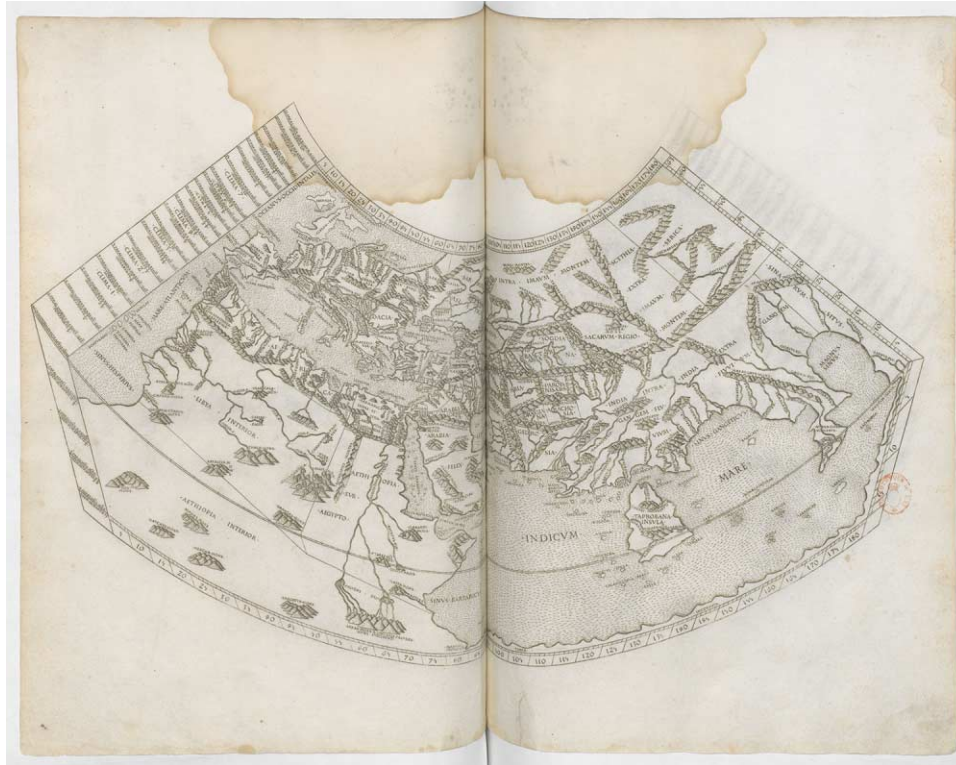


Figure 10. The 180 degrees of the old world. Ptolemy, *Geographia* (Rome, 1508), plate 1.  
Photo: Bibliothèque nationale de France.

1508 edition, dedicated to Pope Julius II, presented the traditional tables of Ptolemy as handed down in the manuscript copies of Ptolemy's treatise, but added new information about the recent discoveries and a new map of the world, which was deemed necessary in light of the previous fifteen years of explorations. Julius, who saw the new discoveries as an opportunity to expand the global reach of the Roman Church, was interested in Ptolemy and in any expansion beyond the world known to the great Alexandrian geographer. A profile portrait of the pope, dated 1507, appears in a manuscript of Ptolemy's *Cosmographia* (an alternative title for the *Geographia*) that was part of the papal library housed in the Stanza della Segnatura, presumably in the shelves

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edition, hereafter referred to as Ptolemy, *Geographia* (Rome, 1508). Ruysch's map is occasionally found in a 1507 edition, but it is not listed in the table of contents of the 1507 edition, only in the 1508, leading some scholars to believe the map dates to 1508 and was retroactively inserted in the earlier edition. See R. H. J. Peerlings, F. Laurentius, and J. van den Bovenkamp, "New Findings and Discoveries in the 1507/8 Rome Edition of Ptolemy's *Cosmography*," *Quaerendo* 48, no. 2 (2018): 140.

directly under Raphael's *Philosophy* fresco.<sup>27</sup> Ruysch's map updating Ptolemy's world picture is a conical projection of the world north of the Tropic of Capricorn; the top left edge is meant to meet the top right edge to produce a continuous and complete flat projection of the earthly globe. It is printed on a full folio sheet folded into the volume's gutter, its two sides starkly emphasizing the proportion of old knowledge to new knowledge by placing left of the gutter everything new or newly understood, and leaving the right side for the known Ptolemaic world. Our knowledge of the world's extent, the map proclaims, has doubled in the last fifteen years.

In order to bring the contrast home as clearly as possible, Ruysch's new map is immediately preceded in this edition by a corresponding two-page map of the old Ptolemaic world, with its closed Indian ocean (fig. 10). Confirming the point about the doubling of the known world, Ptolemy's map is shown with its 180 degrees longitude, half of Ruysch's 360. The contrast between

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27. Vatican Library, Vat. Lat. 2053, fol. 3r; [https://digi.vatlib.it/view/MSS\\_Vat.lat.2053](https://digi.vatlib.it/view/MSS_Vat.lat.2053). See Cosgriff, "The Library of Julius II," 71 and fig. 4.

plate 1 and plate 2 is a figurative caveat, announcing the limitations of all the illustrations that follow, which present Ptolemy's now outdated tables.

On its new-world half, Ruysch's map identifies the large landmass to the west of Africa as *Terra sancte crucis* (land of the holy cross), following the name given by the Portuguese navigator Pedro Álvares Cabral (fig. 11). In a nod to Vespucci, the inscription continues, *sive Mundus novus* (or the new world). The western edge of this landmass, a banderole helpfully explains, is as yet unexplored and uncharted. Above this large land are two sizable islands as well as many smaller ones. One of the big ones is named *Spagnola*, Columbus's Hispaniola, the first island to receive a Spanish colony. Close to *Spagnola* is Cuba, which Columbus considered to be attached to the Asian mainland, and there a banderole wrapped around its western edge explains that the Spanish king's ships got as far as here, implying that the shape of this landmass was also as yet unclear.<sup>28</sup> North of Cuba, in a notably accurate rendering, is the coast of *Terra Nova*, Newfoundland. To the west of Cuba we have an Asian landmass, marked with the well-known place names of *Mangi*, the term used for southern China during the Mongol period, north of which is the western Chinese province of *Tangut*, and, to the east, *Bangala* and *Tebet*. Near the coast is *Quinsai*, the great city now called Hangzhou, described in effusive terms by Marco Polo. An inscription in the waters off the coast of Asia explains that Marco Polo had said that Japan, *Sipangus*, was 1,500 miles off the coast of Asia, and that therefore the fabled Asian island is to be identified with the island of *Spagnola* discovered and colonized by Columbus. The map shows not only that east had been extended eastward and west westward, but that one crossed over into the other: *Spagnola* is in fact *Sipangus*. Ruysch's map is the strongest cartographic expression from these years of a new world conceived as an Asiatic extension occupying a recently discovered hemisphere.<sup>29</sup>

28. Ruysch was evidently somewhat uncertain about this island. The current inscriptions do not include mention of Cuba, although on the east coast it lists a *C. de Fundabril*, a name given to an eastern cape of Cuba by Columbus on his second voyage. In fact, there is evidence of plate erasure in this part of the map, and still legible is an erased inscription reading *DE CUBA*, as well as a more horizontal shape for the island. See Donald L. McGuirk, "The Mystery of Cuba on the Ruysch Map," *The Map Collector* 36 (1986): 40–41; and Jim Siebold's entry on the map at <https://www.myoldmaps.com/renaissance-maps-1490-1800/313-johannes-ruysch-world/313-ruysch.pdf>.

29. On Ruysch's map, see Bradford Swan, "The Ruysch Map of the World (1507–1508)," *Papers of the Bibliographical Society of America* 45 (1951): 219–36; Donald L. McGuirk, "Ruysch World Map: Census and Commentary," *Imago Mundi* 41 (2008): 133–41; and Gregory C. McIntosh, *The Johannes Ruysch and Martin Waldseemüller World*

The 1508 edition of Ptolemy's *Geography* includes a text by the Celestine monk Marcus Beneventanus entitled "New Description of the World" (*Nova orbis descriptio*). The text was introduced just before the sequence of plates in order to explain what was new on Ruysch's map. Beneventanus informs us that the "most learned Ruysch, who was also most expert in depicting the world, to whose aid in this little work I am indebted," was not only a cosmographer but also an experienced sailor. He reports Ruysch's own account that "he sailed from the south of England, and got as far as the fifty-third degree of north latitude, and on that parallel sailed west through the angle of night [*per angulum noctis*] toward the shores of the east [*ad ortus littora*], and observed many islands."<sup>30</sup> The cosmographic term *angulus noctis* refers to the place on the horizon where the sun sets: Ruysch thus claimed to have reached the east by sailing west.<sup>31</sup> On Ruysch's

*Maps: The Interplay and Merging of Early Sixteenth Century New World Cartographies* (San Juan, 2012). As Jim Siebold writes in his entry on the map: "It is thought that he accompanied John Cabot on his expedition to North America in 1497 and 1498, or, considering the prevalence of Portuguese names on his 1507 map, a Portuguese ship leaving from Bristol." See <https://www.myoldmaps.com/renaissance-maps-1490-1800/313-johannes-ruysch-world/313-ruysch.pdf>.

30. Ptolemy, *Geographia* (Rome, 1508), fol. 110r (my translation). "Joannes vo. Ruschi Germanus Geographorum meo iudicio peritissimus: ac in pingendo orbe diligentissimus cuius adminiculo in hac lucubratiuncula usi sumus, dixit: se navigasse ab albionis australi parte: & tam diu quo ad subparallellum ab subaequatore ad boream subgradum 53 pervenit: & in eo parallelo navigasse ad ortus littora per angulum noctis atque plures insulas lustrasse, quarum inferius descriptionem assignabimus."

31. Mistranslations of Beneventanus's phrase "per angulum noctis" have caused confusion in the literature. Henry Stevens, "Historical and Geographical Notes on the Earliest Discoveries in America," *American Journal of Science and Arts*, 2nd ser., 48, no. 144 (1869): 316n, translated it as "bearing a little northward," a reading that persists in recent literature. Henry Percival Biggar, *The Voyages of the Cabots and the Corte-Reals to North America and Greenland 1497–1503* (Paris, 1903), 64n8, asserts with no supporting evidence that it "clearly means the arctic circle." Raleigh Ashlin Skelton proposed that it was an astrological term, suggesting that Ruysch got beyond 90°W and reached Asia; see James A. Williamson and R. A. Skelton, *The Cabot Voyages and Bristol Discovery under Henry VII, with the Cartography of the Voyages* (Cambridge, 1962), 305n4. A simple digital search, however, reveals that it was consistently used to mean the point on the horizon where the sun sets. Albertus Magnus, for instance, uses it to describe the point opposite to that at which the sun rises in the east, equating "in angulo noctis" with "ad punctum horizontis." Albertus Magnus, *Opera Omnia*, ed. Auguste Borgnet, vol. 30, *Commentarii in IV Sententiarum (Dist. XXIII–L)* (Paris, 1894), 312: "quando sol est in angulo noctis, scilicet in parte opposita principio sui motus: deinde alia quarta deserviet digestioni completae quousque veniat sol ad punctum horizontis." John Major notes in his commentary on the Gospels that Cádiz at the Strait of Gibraltar (the so-called Pillars of



Figure 11. The new-world half of Ruysch's map in a hand-colored impression, 1507 or 1508. Washington, DC, Library of Congress. Photo: [https://commons.wikimedia.org/wiki/File:Ruysch\\_map.jpg](https://commons.wikimedia.org/wiki/File:Ruysch_map.jpg) (CC0).

map, the fifty-third parallel indeed leads straight from England to an accurately described *Terra Nova* or Newfoundland, suggesting to several scholars that Ruysch had made one of the voyages in the later 1490s from England, traveling beyond the setting sun.

Ruysch was not only a navigator, cosmographer, and printmaker, but also a miniaturist and painter, having

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Hercules, the westernmost point of the Ptolemaic world) is at midday when on the other side of the earth the east is plunged into night, because in that place (Cádiz) is the "angulus noctis." John Major, *Theologi in quatuor Evangelia expositiones luculentae* (Paris, 1529), fol. 94v: "Cadibus ad columnas Herculis est meridies antipodibus diametraliter in oriente oppositis est nox profunda, quia illic est angulus noctis."

illuminated manuscripts in his native Utrecht.<sup>32</sup> He was brought to Rome for his cartographic knowledge, no doubt, but also for his talents as a painter. As it happens, Ruysch painted under Raphael in the Vatican and likely in the very same Stanza della Segnatura, as we know from not insubstantial payments to him for painting work there alongside the painters Sodoma and Lorenzo Lotto.<sup>33</sup> There is no question that Raphael knew about Ruysch's map of the world that accompanied the 1508 edition of Ptolemy, showing lands that Ptolemy had not known but that Ruysch himself had seen firsthand. Raphael was as well informed about the new discoveries as anyone in Rome could be.

Most scholars agree that among the tasks given to Ruysch in this room was the design if not the painting of the vault panel with a figure sometimes identified as the astronomical muse Urania, or as an allegory of Astronomy herself, just above and to the left of the *Philosophy* fresco (fig. 12, top; see also fig. 8).<sup>34</sup> She is shown setting in motion the crystalline sphere of the

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32. Illustrations of a gradual illuminated by Ruysch can be found in Klara Broekhuysen and Anne Korteweg, "Twee boekverluchters uit de Noordelijke Nederlanden in Duitsland," in *Annus Quadriga Mundi: Opstellen over middeleeuwse kunst opgedragen aan Prof. Dr. Anna C. Esmeijer*, ed. Jan Baptist Bedaux (Utrecht, 1989), 49–76. On Ruysch's career and on the documentary sources for his life, see Peter H. Meurer, "Der Maler und Kartograph Johann Ruysch († 1533): Zur abenteuerlichen Biographie eines Kölner Benediktiners an der Schwelle der Neuzeit," *Geschichte in Köln* 49 (2002): 85–104; and Birgit Onzia, "Johannes Ruysch: Un viaggiatore tra arte e scienza" (MA thesis, University of Pisa, 2014).

33. One, in October 1508, is to a "Magister Johannes Ruisch clericus Traiectensis diocesis . . . ad bonum computum picturarum fiendarum in cameris superioribus," and involves work by Sodoma. The second, in March 1509, is to "Johanni pictori in camera bibliothecae" and involves work also by Lotto. See John Shearman, *Raphael in Early Modern Sources, 1483–1602* (New Haven, CT, 2003), 125–26. Bram Kempers, "Een pauselijke opdracht: Het proto-museum van Julius II op de derde verdieping van het Vaticaan paleis," in *Kunstenaren en opdrachtgevers*, ed. Harald Hendrix and Jeroen Stumpel (Amsterdam, 1996), 7–48, proposed that the first payment is to Ruysch for a room painted in the level above Raphael's Stanza, but most scholars agree it is for rooms including the Stanza della Segnatura, "superioribus" referring to the fact that these rooms are one level up from the apartments of Julius II's precursor Alexander VI, painted in the previous decade by Pinturicchio.

34. Directly above Urania is a panel showing Amphitrite escaping Neptune by sailing to the island of Atlas, a scene of navigation that would have had some relevance to Ruysch. On these interstitial vault scenes, see Edgar Wind, "The Four Elements in Raphael's 'Stanza della Segnatura,'" *Journal of the Warburg Institute* 2 (1937–38): 75–79. On Ruysch as "the second hand [apart from Sodoma] identifiable in the vault's ornaments and monochromes," see Nesselrath, "Raphael and Pope Julius II," 284. My thanks to Raymond Carlson for pointing to the thematic relevance of Amphitrite's proximity to Urania.



Figure 12. *Top*: The cosmos in motion. Raphael (and Johannes Ruysch?), *Astronomy or Urania*, ca. 1510. Vatican City, Vatican Palace, Stanza della Segnatura. Photo: Wikimedia Commons (CC0), [https://commons.wikimedia.org/wiki/File:Stanza\\_della\\_Segnatura\\_ceiling\\_Urania.jpg](https://commons.wikimedia.org/wiki/File:Stanza_della_Segnatura_ceiling_Urania.jpg). *Bottom*: Detail of the earth at the center of the cosmos. Photo: Musei Vaticani.

stars, the outermost encircling orb of the Ptolemaic cosmos, beyond which is the Prime Mover of all creation. Thus, we have yet another sphere, or rather a set of spheres, associated with *Philosophy*. The cosmos is represented as a partly transparent sphere through which we can discern Urania/Astronomy's left leg and foot on the other side; as in the *Philosophy* fresco below, we are prompted to think about spheres seen from more than one side. The crystalline sphere is marked by the celestial equator, an evenly balanced arc around the globe, as well as the ecliptic, crossing the equator at an angle. The starry constellations are arrayed in relation to the ecliptic more or less in their correct positions, though slightly pushed out of the way to make visible the small gem at the center of the spherical cosmos, the earth (fig. 12, *bottom*).<sup>35</sup> This really is an earthly globe, with formations of green land and blue sea visible on its surface, a companion to the one in Ptolemy's hand. Yet no sustained attention has been given to it. The formations visible on this second earthly globe are not immediately familiar from contemporary maps, yet it is unlikely that Raphael, or especially Ruysch, would have decorated it with arbitrary oceans and landmasses.

Perhaps what is unfamiliar here is the viewpoint. The celestial equator is shown as an arc rising toward the middle, a clear indication that we are seeing the entire cosmic machinery from below. This was a deliberate decision, as the only preparatory study we have for this fresco shows the concentric universe seen almost on the level: the rings of the tropics and the equator are just visible in their full circumference, seen slightly from above (fig. 13).<sup>36</sup> It is possible that Raphael (and Ruysch, if he was responsible for this part of the painting) altered the viewpoint when considering that the painting was for the vault, and that it would in fact be seen from below. All of this means that the earth, too, is being presented to us *dal di sotto in sù* (from below looking up), an unusual view but

35. For the identification and positioning of the signs of the zodiac on this sphere, see Kristen Lippincott, "Raphael's 'Astronomia': Between Art and Science," in *Making Instruments Count: Essays on Historical Scientific Instruments Presented to Gerard L'Estrange Turner*, ed. R. G. W. Anderson, J. A. Bennet, and W. F. Ryan (Aldershot, 1993), 75–87. As Joost-Gaugier notes, "Strabo's struggle centers on the necessity to view the earth as a sphere. No longer is this a theoretical idea, based on the ideal shape of Aristotle's celestial sphere; instead, it is based on observation." Joost-Gaugier, *Raphael's Stanza della Segnatura*, 108 (referring to Strabo, *Geography* 1.1.8, 1.1.20–21, 2.5.10).

36. On this drawing, see Achim Gnann and Michiel Plomp, *Raphael and His School* (Zwolle, 2012), cat. no. 12, with further bibliography.



Figure 13. Raphael, study for *Urania/Astronomy*, ca. 1510. Pen and ink over metalpoint on paper, 23.5 x 40.9 cm. Vienna, Albertina Museum, inv. 188v. Photo: The Albertina Museum, Vienna.

one that was newly entering European consciousness as a result of the rounding of Africa and the exploration of Brazil and Patagonia. We look at it from below just as we do the spheres in the hands of the pendentive figure of Astronomy and the putto-keystone of the *Philosophy* fresco just below. To concretize this view onto the earthly globe in the context of contemporary global projections, we can compare it to the nearly contemporary Hunt-Lenox globe in the New York Public Library, a copper ball made of two hemispheres whose join represents the equator (fig. 14).<sup>37</sup> Tilting the Hunt-Lenox globe upward so as to see it at an angle corresponding to that indicated by the arcing equator in the *Urania/Astronomy* globe, and rotating it so that the Atlantic region is visible, we find some similarities to what we see in Raphael's fresco: a landmass to the left (labeled *Mundus Novus* on the Hunt-Lenox globe) with islands floating above it, and another large curving landmass across the ocean to the right, corresponding to Africa. There is no reason for these two

configurations to be identical, since the Hunt-Lenox globe was made in a different cultural and cartographic context (more informed by Portuguese sources), and the shapes of both Africa and especially the new southern landmass called *mundus novus* by Vespucci were open to differing interpretations in maps of the period.

The best point of reference for what we see on the earthly globe shown at the center of *Urania/Astronomy*'s cosmos is Ruysch's own map for the Ptolemy edition (see fig. 9). Ruysch's conical projection offers almost the opposite view, looking down from the North Pole, and showing the world only as far south as a little below the Tropic of Capricorn. Nonetheless, if we were to place this information onto a globe and then visualize it from below, we might find something close to what we see in the vault fresco. The equator as drawn by Ruysch passes across the newly discovered land to the south, whose shape is quite similar to that of the continent on the left in the *Urania/Astronomy* fresco. Above that landmass, we see two islands, possibly Cuba and Hispaniola, and to the east would be Africa, with the equator running under its widest part, as it does in the Ruysch map. From this angle, significantly, Europe is not visible over the globe's edge to the northeast. A view from below gives us a new view of the world as well as a view of the new world, with the viewer's own position lost to view. It is a post-Ptolemaic globe.

37. For recent discussion of this globe, see "The Ostrich Egg and the Hunt-Lenox Globes: Commentaries and Responses," with interventions by Gregory McIntosh, Peter W. Dickson, Kurt Guckelsberger, and Stefaan Missinne, *The Portolan: Journal of the Washington Map Society* 94 (2015): 47–70, and the anonymous entry of 2019 at <http://www.myoldmaps.com/renaissance-maps-1490-1800/314-the-lenox-globe/314-lenox.pdf>.

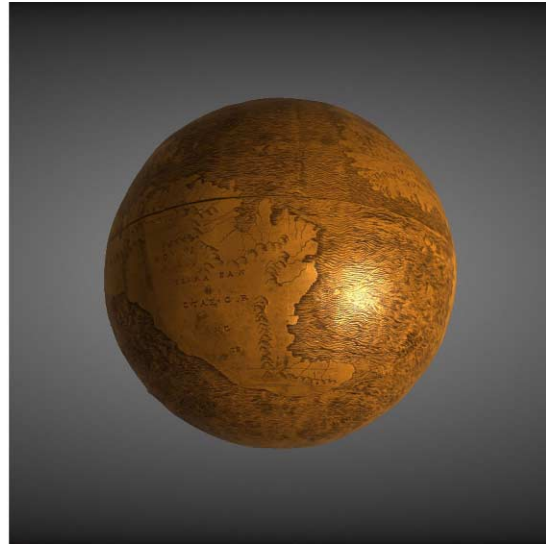


Figure 14. *Left:* The globe in the Urania/Astronomy fresco. Photo: Musei Vaticani. *Right:* The Hunt-Lenox globe, ca. 1510. Cast copper, 11.2 cm. New York Public Library. Photo: Lazarus Project / MegaVision, courtesy of the New York Public Library.

To return to the contemporary personage in a white mantle standing next to Raphael in the *Philosophy* fresco: Is this Ruysch? Ruysch worked in this room and even lived with the younger artist. He was about two decades older than Raphael, and so this figure seems to be. Most importantly, he was a cosmographer, a legitimate inhabitant of this part of the scene.<sup>38</sup> Both Strabo and Ptolemy would thus be turning toward their successor, “the most learned Ruysch, who was also most expert in depicting the world,” as Beneventanus described him in the 1508 Rome edition of Ptolemy, the one containing Ruysch’s world map. Ptolemy would thus be pointing out the other side of the earth to Ruysch, who had in fact traveled there. Strabo, too, holding his celestial globe, seems to be specifically looking toward the figure in white. Significantly, however, Ruysch does not meet their gazes. He looks

with far away eyes over the heads of the ancient worthies addressing him, an undeniable fact that has never been explained. If we simply follow the direction of his gaze, we find that it leads to Urania/Astronomy on the vault, possibly painted by Ruysch himself and embodying Ruysch’s view of the universe and of the earth at its center (see figs. 1 and 8).

In Ptolemy’s hand is a globe where we, standing in front of the fresco, see the known world. Raphael is shown the new world, but he looks at us. Ruysch looks up toward the crystalline cosmos, at the center of which is the earth seen from a new point of view. The earth in motion, now coming into view in its full rotundity, cannot be seen except through images, a multiplicity of them captured at different times and from different viewpoints, and then relayed to viewers who combine them and recombine them in their imaginations.

38. Bram Kempers, *Ruysch en Erasmus in Rome: Een kleine bespiegeling over multidisciplinariteit, internationalisering en kinderen* (Amsterdam, 1996), 9–10, also sees a portrait of Ruysch in this part of the fresco—not, however, in Raphael’s companion but in the bearded figure holding the celestial globe who is sometimes identified as Zoroaster (but is more likely to be Strabo, as Joost-Gaugier proposed).