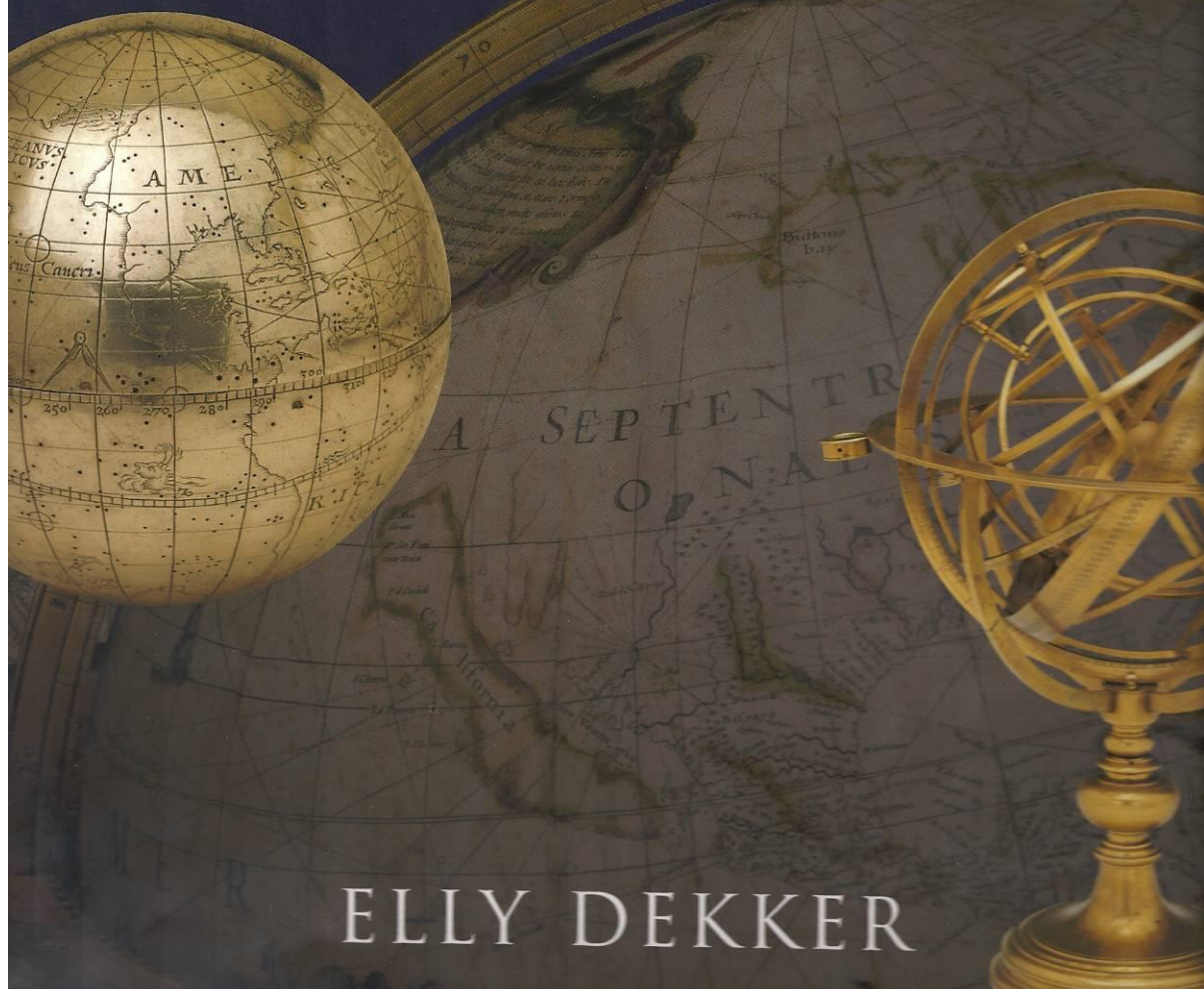


# GLOBES

## AT GREENWICH

A Catalogue of the  
Globes and Armillary Spheres  
in the  
National Maritime Museum



ELLY DEKKER

CHAPTER EIGHT  
GLOBES IN ART:  
PROBLEMS OF  
INTERPRETATION AND  
REPRESENTATION

KRISTEN LIPPINCOTT



Elsewhere in this volume, the term 'globe' has been used specifically to refer to the scientific instrument upon whose surface either the images of the constellations or the distribution of land and sea is represented. In literary and philosophical sources, however, and by extension, in the arena of the visual arts, the term is used to encompass a much wider body of objects and concepts, all of which are related by the common purpose of serving as models for the physical structure of the universe.

Some pictures of 'globes' show little more than spheres whose bodies are either transparent or translucent, or whose surfaces are differing combinations of blue, green, white, and brown. Nevertheless, despite their reduced form, all these non-descriptive spheres partake of a shared understanding of how the universe and its constituent parts are composed. The artist's confidence that any intelligent viewer should be able to understand the essence of the meaning behind this shorthand notation is implicit. At the other end of the spectrum, however, there are works of art showing meticulously detailed renderings of specific terrestrial or celestial globes whose basic iconographic significance is exactly the same as that of the rudimentary spheres. Despite the difference in appearance, even the most faithfully portrayed globe is included in a work of art because of its primary function as a model of the universe. Between the two extremes, there is a whole range of intermediate images used to represent 'the globe'. In numerous antique visual sources, 'globes' are depicted as flat circles with

two curving, crossed lines drawn on their surfaces. Those conversant in the iconographic code recognize these lines as the intersecting circles of the ecliptic and the celestial equator. The armillary sphere also represents a version of an abstracted globe, in which the body and surface of the sphere have disappeared altogether. Instead, the 'sphere' is composed of a series of bands indicating the positions of the great circles and the physical presence of the globe has been replaced by the marking of a series of theoretical co-ordinates. Nonetheless, the armillary sphere is a form of globe and has a presence and purpose in works of art that is not too dissimilar from any other form of globe.

There are also a number of 'globes' whose decorative components have been rearranged to serve a particular didactic purpose. For example, there is a long tradition of pictures of a globe whose surface is divided into three sections by a large 'T'. These so-called 'T-O maps' can be traced, ultimately, to Classical writings on how the Earth's surface was divided into the three known continents of Europe, Asia, and Africa (Fig. 8.1).<sup>1</sup> Similarly, the late-Roman author Macrobius was particularly interested in the notion of climes. His *De somnio Scipionis* is the most popular iconographic source for the image of a globe whose surface is marked by a series of parallel, horizontal bands, each of which indicates the boundaries of the Earth's different climatic zones.<sup>2</sup> Despite their specific context, images of this type regularly reappear in works of art as 'globes' and although the modern viewer may be slow to recognize

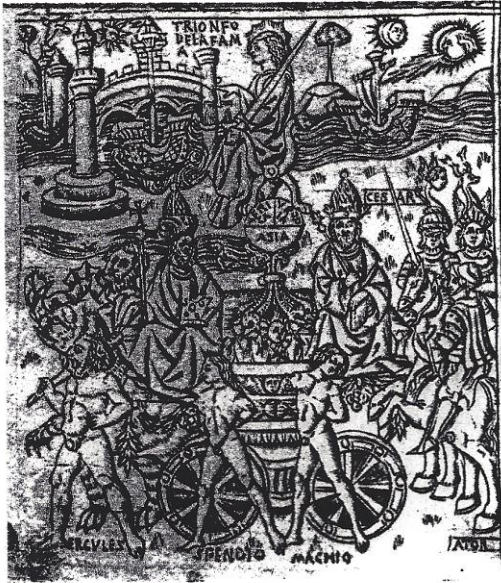


FIGURE 8.1 The 'T-O' map. Detail from the six Petrarchan 'Triumphs' woodcut; Florentine, c. 1450–70.

them as such, these diagrams — as their labels inform us — were meant by the scholars and artists who created them to represent accurate renderings of the *mundus*, the *globus terrae*, or the *globus terrarum*.<sup>3</sup>

Not surprisingly then, with so many guises, the globe is one of the most frequently represented objects in the history of art.<sup>4</sup> It regularly features in religious and secular settings and can be found as the attribute for countless historical, allegorical, and mythological figures. It appears in the frontispieces of atlases, navigational treatises, philosophical tracts, and astronomical handbooks. It is the symbol of the emperor, as well as of the fool; of the scholar and the idiot; of the salvation of mankind and of its undoing.

### THE GLOBE AS AN ATTRIBUTE

The iconographic popularity of the globe seems to rely on two factors. On the one hand, its significance as a symbol of the 'cosmos' — literally, the 'all-embracing, all-pervading order' of the universe<sup>5</sup> — has been a cultural constant in Europe, the Middle East, and in parts of India since the Graeco-Roman era. As such, and regardless of the details depicted on its surface, the image of the globe is widely and regularly used as a symbol for that which is stable, established, and 'known'. It carries this meaning in numerous differing contexts: in philosophical sources it appears as an armature upon which arguments are

hung; in early Christian iconography it is the perfect universe created by God the Father; in political imagery it is the domain of the king or state. On the other hand, in portraiture, the globe is often included as a specific attribute. As one of the identifiable tools of a sitter's trade, it frequently indicates his profession — as an astronomer, geographer, navigator, philosopher, or theologian.

There are numerous depictions of well-known astronomers with globes, such as Hans Springinklee's portrait of Johannes Schöner in the Hannover Niedersächisches Landesgalerie, and David Martin's of John Russell with his son, James, in the Scottish National Portrait Gallery, Edinburgh (Fig. 8.2).<sup>6</sup> There are also a large number of more generic paintings of astronomers, such as the 'Young man with a celestial globe' by Olivier van Dueren, dated 1685, in the National Gallery, London<sup>7</sup> and, perhaps the best-known of all, Jan Vermeer's 'Astronomer', in the Louvre, who is shown examining what could be a copy of the 34 cm celestial globe first published by Jodocus Hondius in 1600 (Fig. 8.3).<sup>8</sup> Similarly, geographers are often represented with a terrestrial globe as their attribute: witness the portrait of Gerard Mercator, engraved as the frontispiece to his edition of Ptolemy's *Geographia*, published in Amsterdam in 1605 (Fig. 8.4);<sup>9</sup> Hendrik Goltzius' engraved portrait of Nicolaus Pervian Deventer;<sup>10</sup> or Rubens' splendid portrait of Abraham Ortelius in the Musée Platin Moretus, Antwerp.<sup>11</sup> Again, Vermeer's 'Geographer', now in Frankfurt, provides another fine example, featuring an identifiable Hondius terrestrial globe of 1618.<sup>12</sup>

Navigators, explorers, and sea captains regularly use the globe — both celestial and terrestrial — as their attribute. Sir Francis Drake was probably the first seaman to do so. His portrait in the National Maritime Museum, dated 1591 and attributed to Marcus Gheeraerts the Younger (Fig. 8.5), shows a terrestrial globe with a clear view of the Atlantic Ocean, highlighting the passage between the western coast of Africa and the territory of 'Brasilis'. Another notable feature of this globe are the bright vermilion great circles of latitude. Knowing that seamen during this period crossed the oceans by means of 'latitude sailing', it is tempting to see this detail as indicative of the navigator's art.<sup>13</sup> The anonymous English portrait of Drake in the National Portrait Gallery, London, shows him standing with his hand resting on an inverted terrestrial globe. It is an unusual device, no doubt referring to the fact that much of Drake's fame rested on his passage across the Asian oceans and the knowledge he brought back to England of the then unknown southern hemisphere. He rests a proprietary hand over those parts of the globe which, by right of 'discovery', could be claimed as his.<sup>14</sup> The NMM's portrait of Admiral Edward Russell, First Earl of Orford, painted by Sir Godfrey Kneller sometime around 1720 (Fig. 8.6), has a globe placed so that the Admiral can easily point to a specific location on the Channel coast of France. In May 1692, Russell had led the victorious Anglo-Dutch fleet at the Battle of Barfleure and the ensuing destruction of the French in the bay of La Hogue. In pointing to the bay, the sitter marks a high point in his career. Finally, the terrestrial globe in

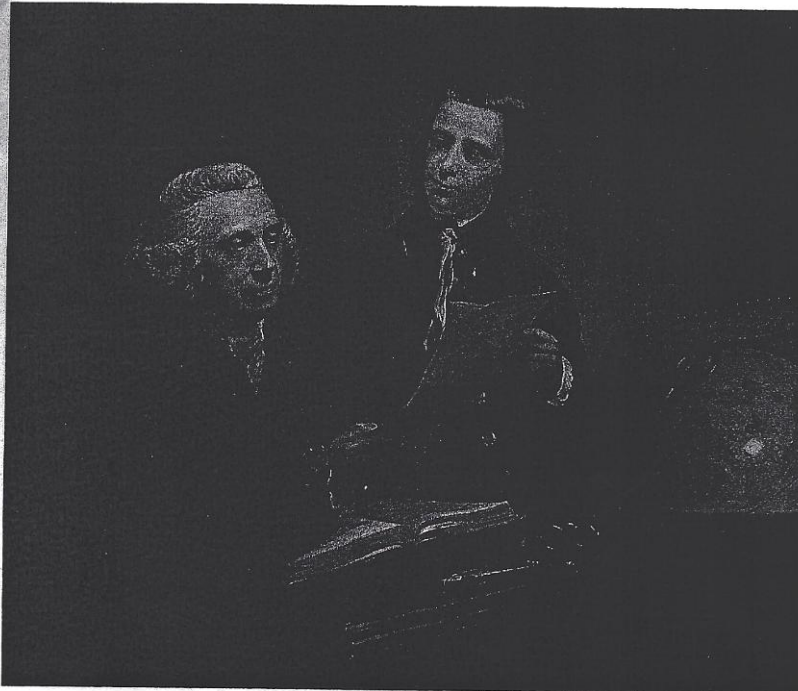


FIGURE 8.2 David Martin's portrait of John Russell and his son, James. (The Scottish National Portrait Gallery, Edinburgh.)

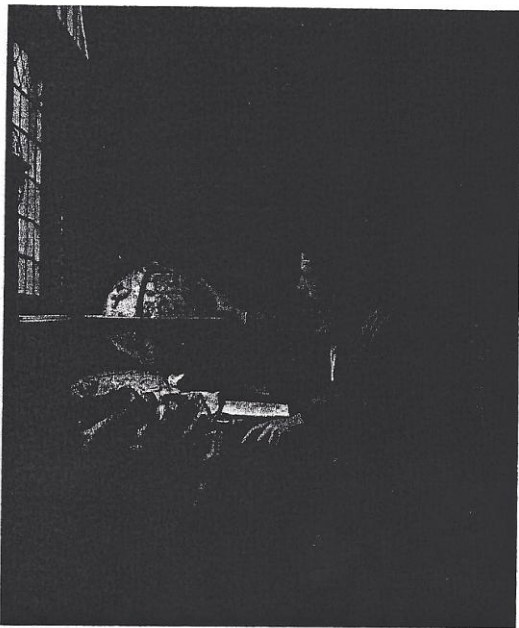


FIGURE 8.3 Jan Vermeer, 'The astronomer'. (Musée du Louvre, Paris.)

Hogarth's portrait of Captain Thomas Coram (Fig. 8.7), painted for the London Foundling Hospital which he endowed, highlights a large expanse of sea clearly labelled 'The Western or Atlantick Ocean', thus drawing attention to the means by which the captain amassed his great wealth as a shipbuilder, first in England and then in America. The presence of the globe indicates both the source and extent of his success.<sup>15</sup>

In contrast to English portraits of seafarers, who are most often shown with terrestrial globes as their attributes, Dutch admirals and sea captains tend to be accompanied by celestial globes.<sup>16</sup> One only need cite the multiple versions of Ferdinand Bol's portrait of Admiral de Ruyter (see frontispiece) in which he is shown resting his elbow on an easily identifiable Blaeu 34 cm celestial globe;<sup>17</sup> Bartolomeus van der Helst's portrait of Admiral Aert van Ness;<sup>18</sup> van der Helst and Ludolf Bakhuysen's joint portrait of Johan de Liefde;<sup>19</sup> or the group portrait of the Directors of the Hoorn Branch of the United East India Company, painted by Jan de Baen in 1682 (Fig. 4.5, p. 39).<sup>20</sup>

The globe also features as the attribute of the philosopher or learned man. Admittedly, there is a Classical tradition for depicting philosophers or philosophical schools with globes but it is the convention developed during the Italian Renaissance and popularized in Dutch and Flemish painting of the seventeenth century which tends to focus on quite specific groups. In particular, of all the ancient philosophers, two most regularly



FIGURE 8.4 After Frans Hogenberg, 'Gerard Mercator', frontispiece of *Ptolomaei geographiae libri octo Graeco-Latini* (Amsterdam 1605). [NMM PAJ2111]

appear with globes: Democritus and Heraclitus. From stories based on the writings of Cicero, Horace, and Sotion (the master of Seneca), the paradigm of the weeping and laughing philosophers was related by several Latin authors, including Lucian and Juvenal.<sup>21</sup> When confronted by the stupidity of the world, Heraclitus finds that he can do nothing but weep; Democritus, on the other hand, can only laugh. In his 1967 study of the topic, Blankert uncovered more than 115 Dutch and Netherlandish painters who depicted this pair during the seventeenth century. Prior to this, however, the theme was not uncommon, apparently first emerging in Italian engravings of the fifteenth century. We also know, for example, that the Florentine Platonist, Marsilio Ficino (1433–99), had a painting in his study of the two philosophers, reportedly 'after the antique'.<sup>22</sup> In most of these images, the philosophers are depicted flanking or leaning on either a single terrestrial globe or with one addressing a terrestrial and the other a celestial globe (see Figs 8.15 and 8.16).

### THE WORLD UPSIDE DOWN

Given the globe's universal iconographic legibility, it becomes relatively easy to subvert its primary message by placing the

image within a qualifying or compromising context. An upright globe is regularly used as a symbol of order and stability. By extension, the globe fallen out of its stand or held upside down indicates the world in a state of decay or chaos.<sup>23</sup> The well-known image of God the Father holding the globe in his hands is a symbol of benevolent power; conversely, the picture of Satan seated on a globe employs the same vocabulary to convey the embodiment of malevolence.<sup>24</sup>

The introduction of ambiguity into the iconography of the globe may be a development directly tied to the doctrine of the medieval Christian church. In antiquity, the image of the globe nearly always carried a positive connotation. The Pythagorean philosophers (fifth century BC) saw the sphere as the most perfect geometrical shape, largely because the movement of a point within it is uniform and, potentially, eternal.<sup>25</sup> Consequently, they believed that the universe and its constituent parts were spherical in shape, with its motions being both uniform and eternal. This concept set the premise for the wholly positive Classical iconography of the globe.<sup>26</sup> It evoked power, control, certainty, and the rational ordering of the universe. In Classical art, the image of the globe is used to confer or confirm the authority of an individual or a regime. It was what one might call a very 'worldly' symbol, with the implication that all those things that were good and strong were summed up by its presence.

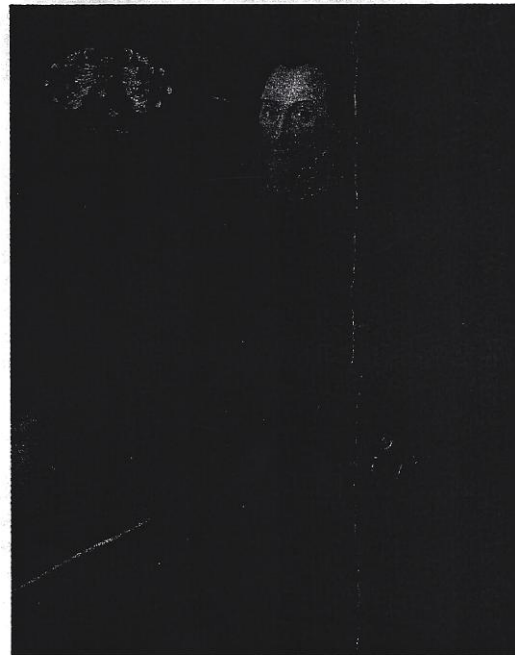


FIGURE 8.5 Attributed to Marcus Gheeraerts, 'Sir Francis Drake'. [NMM BHC2662]

globes in works of art become fairly telling indicators of how an age or particular artists feel about their own existence.

### DEPICTING THE GLOBE: FROM THREE TO TWO DIMENSIONS

Perhaps the greatest challenge facing the painter or draughtsman who wishes to portray a globe is how to capture its essential feature of 'roundness' in two dimensions. Intriguingly, the earliest known depictions of globes are remarkably consistent in their means of doing so through linear rather than colouristic methods. That is to say, the subtle play of light and shade by which artists render the illusion of three dimensions is rarely used. The idea of sphericity is created by the artificial linear construct of the lines of the meridians, parallels, and the great circles. Even though it is clear that the ancient Greeks and Romans relied on the use of shading to create the illusions of depth and protrusion in their paintings and mosaics, this simple method seems not to have been thought sufficient when it came to the rendering of globes.<sup>29</sup>

One of the most convincing Classical representations of a globe appears in the Augustan frescoes taken from Boscoreale and now in the Metropolitan Museum, New York (Fig. 8.8).<sup>30</sup> It relies on the pictorial device of showing the curvature of the meridians and parallels in order to create a perspectively convincing grid. A similar grid appears on the surface of the globe in the well-known 'Philosopher mosaic' from Torre Annunziata, now in the Capodimonte Museum, Naples.<sup>31</sup> In the foreground, there is a circular object, placed in a square box, which seems to be covered by a wide-meshed net (Fig. 8.9). Upon closer inspection and after comparison with related depictions of the attributes of philosophical academies, it becomes clear that the round object represents a globe; the box is its stand and the 'net' is a somewhat clumsy rendering of the meridians and parallels. In a number of other Classical images, the sphericity of the globe is codified by an even more reduced iconographic convention. In the globe held by the figure of Helios-Apollo in the frescoes in the so-called 'House of the Silversmiths' at Pompeii, for example, the intersection of the curving lines of the ecliptic and the celestial equator alone serves as shorthand for the purpose.<sup>32</sup> Like the net of parallels and meridians, this curving 'X' becomes an accepted formula for depictions of both celestial and terrestrial globes and is used repeatedly on Classical and early Christian coinage. A related example, also from Pompeii, appears in the painting of Urania, the Muse of Astronomy, in the 'House of the Vetii', where the globe is shown with clearly defined lines of the colures, the equator, and the ecliptic (Fig. 8.10).<sup>33</sup> The lines themselves are drawn in white, recalling the tradition described by the anonymous Greek commentator on the *Phaenomena* of Aratus, the most influential Classical text on the disposition of the constellations, in which the meridians are described as being drawn on the surface of the globe in whitish wax.<sup>34</sup>

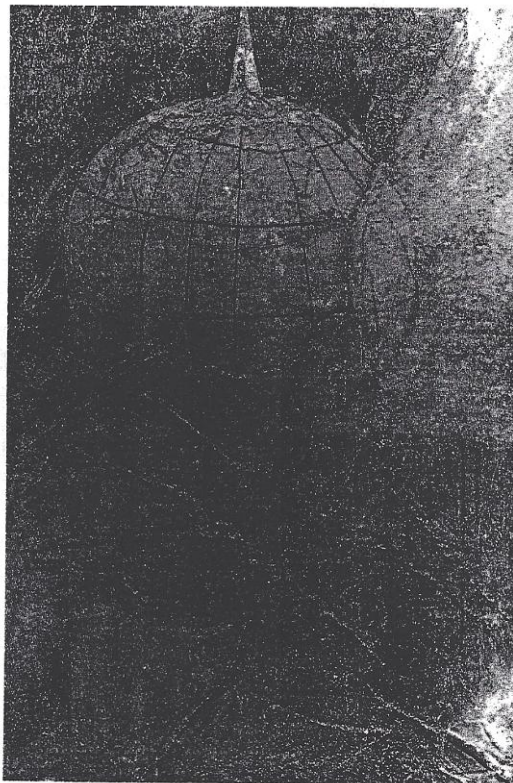


FIGURE 8.8 Fresco fragment from Boscoreale, showing a globe. (Metropolitan Museum of Art, New York.)

Depictions of globes are relatively rare in Western medieval art. Except for those few illustrations whose style and content derive directly from Classical models, such as the portraits of Aratus and his muse found as the title page to Latin translations of the *Phaenomena* (Fig. 8.11),<sup>35</sup> astronomers and scholars are most often shown with astronomical quadrants or astrolabes as their principal instruments. This may be due to the fact that these flatter instruments were easier to draw; but most artists tend to draw what they find around them and the lack of globes in Western medieval art tends to support a thesis that, during this period, globes and armillary spheres themselves were less commonly used as mathematical tools in the Latin West. One interesting detail to support this view is the seemingly odd title of an early Renaissance treatise on the sphere, variously called the *Sphaera solida* or the *Astrolabium sphericum*. The title to suggest that the audience being addressed was more conversant with the workings of an astrolabe and that the author's task was to help his readers transfer this experience to a new form, the 'spherical globe'.<sup>36</sup>

This is not to say that there are no medieval pictures of armillary spheres or globes, only that they are relatively rare.

Despite the fact that many of the iconographic elements used by Christian artists during the Middle Ages and the Renaissance were drawn directly from Classical models and sources, the continuity of imagery quite often belied a change in ethos.<sup>27</sup> The changes in the iconographic premise of the globe provide a case in point. The Church accepted and relied upon an essentially Aristotelian view of the shape of the universe, with a central spherical Earth, cocooned layer-upon-layer by the spherical orbs of the planets and the fixed stars.<sup>28</sup> It also utilized the Aristotelian proposition that everything beyond the sphere of the Moon was perfect and incorruptible, while everything below the Moon, including every aspect of terrestrial life, was the victim of decay and change. But whereas Aristotle's original formula had been largely devoid of moral overtones, the Christian adaptation of his model soon became highly moralized as physical properties were transformed into ethical ones. In the writings of the early Church Fathers, Aristotle's 'supra-lunar' universe was seen as being closer to God and, therefore, partaking more of His goodness. That which was 'sub-lunar' embodied a world tinged with evil, touched with the death and decay wrought by the transgression of Original Sin.

As a result of the shift of emphasis from a physical description to an ethical model, the iconography of the globe itself became somewhat more complex. Depending on what the globe was supposed to represent — universe, cosmos, world, Earth — it

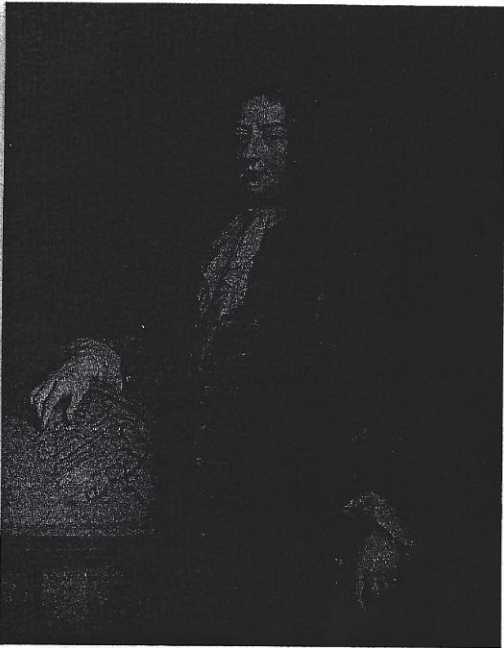


FIGURE 8.6 Sir Godfrey Kneller, 'Admiral Edward Russell, First Earl of Orford'. [NMM BHC2992]



FIGURE 8.7 William Hogarth, 'Captain Thomas Coram'. (The Thomas Coram Foundation, London/Bridgeman Art Library.)

carried a different message with it. On the one hand, a globe could be used to signify the perfection of God's creation. On the other, the image of the terrestrial globe necessarily always carried with it an implicit reference to the corruptibility of man. In the Christian scheme of things, the Earth itself — or the terrestrial globe — was no longer a place in which a man's individual power, glory, or happiness could be celebrated. By definition, its sub-lunarity made it somewhere from which all righteous souls would wish to escape. The Earth becomes only a temporary home, full of evil traps and pitfalls, tests and perils.

Due to this combined inheritance from both the Classical and Judeo-Christian traditions, Western man tends to preserve a high degree of ambivalence towards the image of the terrestrial globe. It is both his home and the place in which he will die: it can be used as the proud symbol of all that he has achieved or to indicate the futility of those achievements. The image of the celestial globe has little more comfort to offer; for even though it still conjures up visions of the eternal, it also represents a celestial machine that relentlessly churns the past into the future. From the dawn of the Christian era, then, depictions of



FIGURE 8.9 The 'Philosopher mosaic' from the Torre Annunziata. (Museo Nazionale di Capodimonte, Naples.)

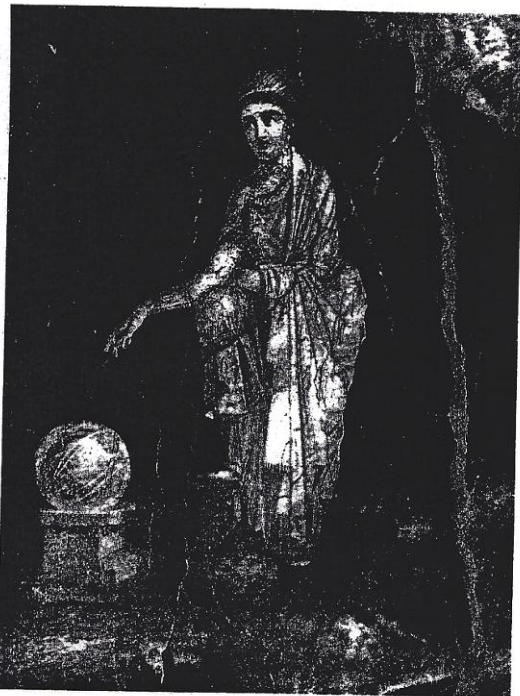


FIGURE 8.10 Fresco of Urania from the Casa dei Vetii, Pompeii.



FIGURE 8.11 Aratus and his Muse. (National Library of Wales, Aberystwyth, MS 735 C, fol. 12r.)

One of the few examples from the thirteenth century is found on the first folio of a manuscript of the *Experimentarius* by Bernardus Silvestris, in which Euclid and a figure identified as 'Hermannus' are shown as astronomers (Fig. 8.12). Hermannus (de Carinthia?) holds an astrolabe (so labelled) and Euclid looks up at the stars with the aid of a sighting stick, holding what appears to be an armillary sphere in his right hand.<sup>37</sup> To my knowledge, one of the earliest depictions of a recognizable post-Classical globe is that found in the panel dedicated to the practice of astronomy by Andrea Pisano, originally placed on the outside of the Campanile del Duomo in Florence (Fig. 8.13).<sup>38</sup> The panel, which seems to date from the early years of the fourteenth century, shows an astronomer measuring the skies with a quadrant, which is mounted on a single-pedestal stand. Behind him there is a representation of the band of the ecliptic, with the signs of Capricorn, Aquarius, and Pisces clearly visible. Placed in front of him, on his desk, there is a large celestial globe with the band of the ecliptic marked with the signs of Taurus, Gemini, and Cancer. Interestingly, the globe is supported by a single pillar which appears to be set at an inclined angle to the horizontal surface of the desk. The meridian circle is also included, though there is



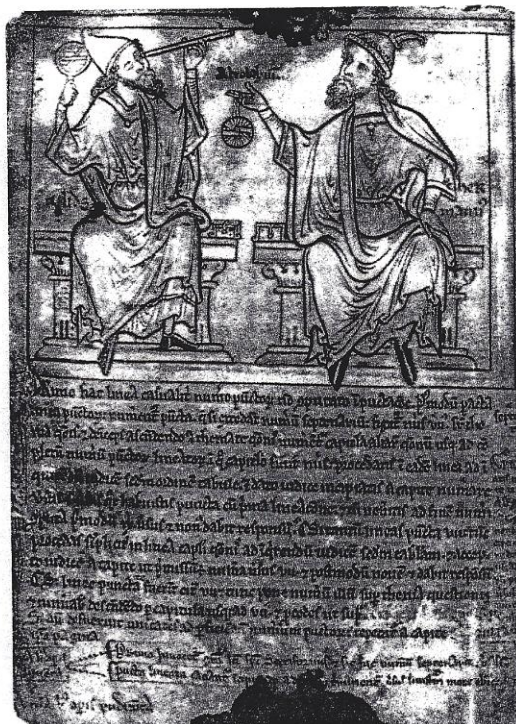


FIGURE 8.12 Euclid and Hermannus. (Bodleian Library, Oxford. MS Ashburnham 304, fol. 2v.)

no horizon ring. This depiction of a globe is extraordinary for the period and the care with which its parts have been delineated seems to offer much-wanted proof that celestial globes were actually used by late-medieval astronomers — or, at least, that they were recognized as part of the scientific apparatus of a fourteenth-century Florentine practitioner.

### NETHERLANDISH GLOBES IN ART AND THE PROBLEM OF IDENTIFICATION

Whereas it is quite difficult to sustain an argument based on a corollary between the appearances of globes in art and the role that the globe itself may have played in contemporary scientific enquiry, it is true that the explosion of globe making in the Netherlands during the sixteenth and seventeenth centuries is mirrored by a similar profusion of globes and armillary spheres appearing in works of art in all media.<sup>39</sup> Numerous examples are found in the so-called 'cabinet' paintings of Hieronymous Francken II and his younger brother, Frans Francken II, Adriaen



FIGURE 8.13 Andrea Pisano, 'The astronomer' or 'The art of astronomy'. (Museo dell'Opera del Duomo, Florence.)

van Stalbeem, Hendrik Staben, Cornelius de Baillieur, Willem van Haecht, Jan Jordens III, Gonzales Coques, Balthasar van den Boschchen, and Gerard Thomas. They also feature widely in the allegorical paintings of Jan Breughel the Elder and Younger, Jan van Kessel II and also in the numerous *vanitas* still-life paintings by such artists as Jacques de Claeuw, Edwaert Colyer (Edward Collier), Jan Davidsz de Heem, Jan van der Heyden, Pieter de Ring, and Jan Vermeulen. Such proliferation attests not only to the common currency of these instruments during this period but also underlines the extent to which the symbolism of the globe played a significant role in its pictorial iconography.<sup>40</sup> These representations do not, however, tell us much more than we already know about the production and distribution of globes in the Low Countries at this time: that is, it was prodigious. For amongst the hundreds of examples of obviously Netherlandish globes and armillary spheres found in Dutch and Netherlandish art of the sixteenth and seventeenth centuries, only a small percentage can be identified as the product of particular makers.

There are three main reasons why globes that appear in paintings are so difficult to identify. First, as a number of recent studies on globe production have shown, the continuity of iconography and the handing-on of plates often means that the attribution of a globe to a particular maker is difficult, depending on the minutiae of inscriptions or on physical evidence (such as replacement or pasting over of cartouches) of the object having been tampered with. Obviously, none of these

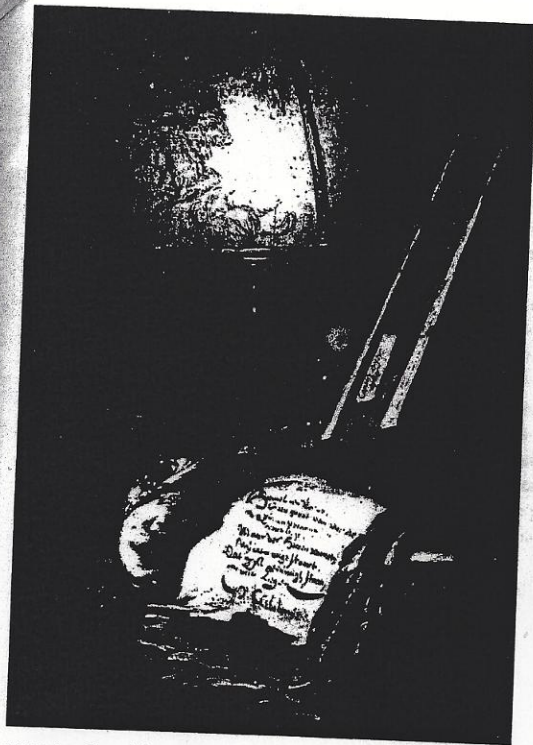


FIGURE 8.14 Peter Schotanus, 'Vanitas with a celestial globe'. (Fries Museum, Leeuwarden: Rijksdienst, Beeldende Kunst.)

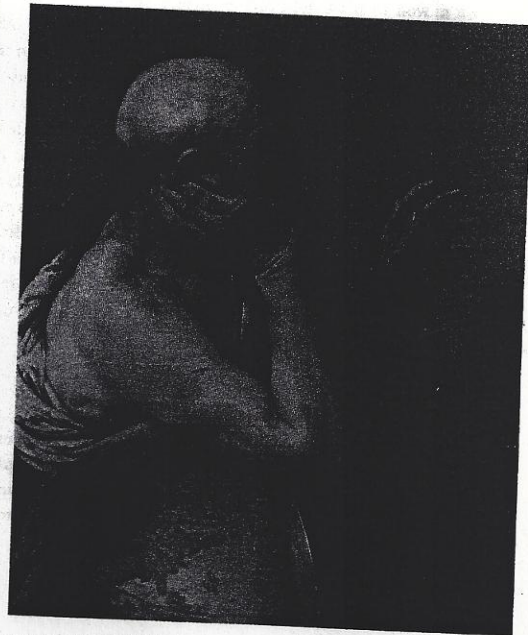


FIGURE 8.15 Hendrik Ter Bruggen, 'Heraclitus with a terrestrial globe'. (Rijksmuseum, Amsterdam.)

features are the sort that an artist could or would bother to reproduce in a painting. Second, and with surprising regularity, artists tend to position a globe in their compositions so that the northern hemisphere faces the viewer. Most often, terrestrial globes are oriented on a view of northern Europe and the North Atlantic, while celestial ones centre on a view of the Great Bear, Ursa Major. From an iconographic perspective, both these areas were remarkably stable throughout the period, when most additions and emendations on globes were being made to the terrestrial or celestial cartography of the southern hemisphere or, for northern geography, to the boundaries of the continent of North America or the unknown regions of the Far East. In generally choosing to portray the familiar features of the northern hemisphere, artists further erode the historian's chances of uncovering the true provenance of the globes depicted. A third great impediment to specific identification stems from the fact that many of the artists whom one might trust instinctively to be careful in the depiction of objects — based on Svetlana Alpers' model of seventeenth-century Dutch art as 'the art of describing'<sup>41</sup> — are often cavalier, careless, and disarmingly inventive when it comes to the treatment of globes.

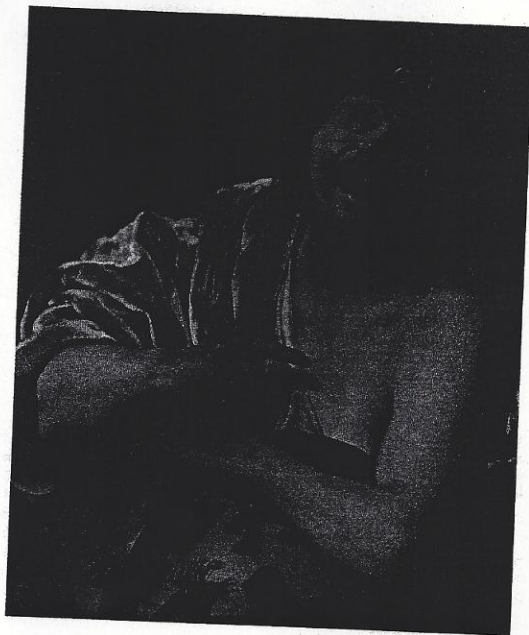


FIGURE 8.16 Hendrik Ter Bruggen, 'Democritus with a celestial globe'. (Rijksmuseum, Amsterdam.)

Two examples will suffice to demonstrate this attitude. The Frisian painter Petrus Schotanus, active during the middle years of the seventeenth century, produced a number of *vanitas* paintings. Four of these are quite close in composition and show a table upon which rest a dead bird, a walnut, a leather-bound Bible, strips of paper bearing inscriptions like '*verganckelijckheit van alles*' ('the transience of all things'), various bound moral treatises, an oil lamp, some instruments of war, and a celestial globe (Fig. 8.14).<sup>42</sup> Whereas most of these objects appear to be rendered with the utmost precision and conviction, the celestial globe is a fantasy. The constellations it shows — Taurus, Scorpio, Aries, Leo, and Libra — are placed in a haphazard manner and in postures not found on any known globe. The predominance of zodiacal signs on Schotanus' globe may indicate an astrological intention behind its iconography. More likely, however, is that the figures were appropriated from some other source, such as an almanac which only contained zodiacal images, with decorative convenience outweighing accuracy in their reuse. A second, potentially more intriguing example is the celestial and terrestrial globes found supporting the philosophers Heraclitus and Democritus in the pendant paintings,

dated 1628, by Hendrik Ter Bruggen, now in the Rijksmuseum, Amsterdam (Figs 8.15 and 8.16).<sup>43</sup> Both globes are highly detailed and rendered with great delicacy. Without too much effort one can also identify their maker as Willem Jansz Blaeu and show that the models Ter Bruggen used were Blaeu's 23 cm celestial and terrestrial globes, both first printed in 1614.<sup>44</sup> In the paintings, however, Ter Bruggen has transformed these palm-sized globes into magnificent, metre-diameter creations. This discrepancy between model and final painting raises interesting questions about 'rendering' in seventeenth-century Dutch art. Art historians have often tried to set Dutch painters apart from their more southerly brethren as having a different set of values when it came to the process of making a painting. The idea, most simply put, is that a Northerner's respect for 'depicting reality' precludes the sort of invention that we see explicitly demonstrated in the Ter Bruggen pendants. What this example shows particularly well, though others can also be found, is that every artist, regardless of birth or training, is fundamentally interested in the best manner in which an illusion can be created. Once the intent or significance of the work has been set, then 'artfulness' is called into play.

## NOTES

1. The best study of the medieval world maps can be found in D. Woodward, 'Medieval mappamundi', *The history of cartography. I: cartography in prehistoric, ancient and medieval Europe and the Mediterranean*, ed. J.B. Harley and D. Woodward (Chicago, 1987), pp. 286–370. For a discussion of the 'T-O' map, see pp. 296–7, 301–4, and 343–4. E. Edson, *Mapping time and space. How medieval mapmakers viewed their world*, (London, 1977).
2. For a discussion of how the world climes were determined, see pp. 4–5 in Chapter 1. See also Woodward (note 1), pp. 300 and 353; J.E. Murdoch, *Album of science. Antiquity and Middle Ages* (New York, 1984), pp. 340–1; Macrobius, *Commentary on the dream of Scipio*, ed. and English transl. W.H. Stahl (New York, 1952), pp. 208–13; and W.H. Stahl, 'Astronomy and geography in Macrobius', *Transactions and Proceedings of the American Philological Society*, vol. XXXV (1942), pp. 232–8.
3. For one example of the label '*globus terrae*', see the renderings of the universe by Lambert of St Omer in his *Liber floridus* (Ghent, Universiteitsbibl., Ms 92, ff. 92<sup>v</sup>–93<sup>r</sup>; and Paris, Bibliothèque Nationale, ms. lat. 8865, fol. 56<sup>r</sup>). For other illustrations of diagrammatic globes, see the examples in I.B. Cohen, *Album of science. From Leonardo to Lavoisier, 1450–1800* (New York, 1980), pp. 36–63; M. Apa, *Visio mundi. Arte e scienza dal medioevo al rinascimento. Saggi e interventi critici* (Urbino, 1980); B.J. Ford, *Images of science. A history of scientific illustration* (London, 1992), pp. 129–64.
4. For such popularity, there is a surprisingly meagre bibliography on the use of globes in art. The standard starting point is P.C. Schramm, *Sphaira, Globus, Reichsapfel. Wanderung und Wandlung eines Herrschaftszeichens von Caesar bis Elizabeth II. Ein Beitrag zum 'Nachleben' der Antike* (Stuttgart, 1958) and A. Schlachter, 'Der Globus, seine Entstehung und Verwendung in der Antike nach den literarischen Quellen und den Darstellungen in der Kunst', *Stoicheia. Studien zur Geschichte des antiken Weltbildes und der griechischen Wissenschaft. Heft VIII*, ed. F. Gisinger (Leipzig and Berlin, 1927). But see also the more recent studies of S.J. François de Dainville, 'Die Anschauungen der Globusliebhaber', *Der Globusfreund*, vol. 15/16 (1967), pp. 193–223; A. Fauser, *Die Welt in Händeln. Kurze Kulturgeschichte der Globus* (Stuttgart, 1967); J. Babicz, 'Die Erdglobus von J.M. Hoene-Wronke als Anschauungs-Gegenstand des Systems der "Absoluten Philosophie"', *Der Globusfreund*, vol. 25/26 (1978), pp. 265–71; H. Harms, 'Vom Sinngehalt alter Globen', *Der Globusfreund*, vol. 38/39 (1990), pp. 9–22; P. van der Krogt, *Globi Neerlandici. The production of globes in the Low Countries*, English transl. E. Daverman (Utrecht, 1993), pp. 247–50; and C. Hofmann, D. Lecoq, E. Netchine, and M. Peletier, *Le globe et son image* (Paris, 1995).
5. The quote is taken from N. Cohn, *Cosmos, chaos and the world to come. The ancient roots of apocalyptic faith* (New Haven and London, 1993), p. 3.
6. For a reproduction of the portrait attributed to Springinklee, see Schramm (note 4), plate 55b. As mentioned elsewhere in this catalogue, Schöner was among the first to manufacture globes by utilizing the format of the engraved globe gore. It is one of his celestial globes that appears in Holbein's 'Ambassadors' in the National Gallery, London. The inscription in the Hanover painting reads: '*Corporis hanc faciem, hunc vultum, Schoneris hebebat/Cum iam desineret condere lustra decem/Artis et ingenii decora haec divina tenebat/Unde sui primus temporis ille fuit/MDXXVIII*'.
7. For a reproduction, see van der Krogt (note 4), p. 242, fig. 6.31. See also *The National Gallery catalogues. The Dutch School, 1600–1900*, ed. N. MacLaren (revised and expanded by C. Brown) (London, 1991), vol. I, pp. 102–3, and plate 87. There is a similar signed painting of 'A young astronomer' by van Dueren in a private collection in New York (*ibid.*, fig. 28).
8. For a discussion of the globe in this painting, see J.A. Welu, 'Vermeer: his cartographic sources', *The Art Bulletin*, vol. LVII (1975), pp. 529–47, especially pp. 544–5. Even though Welu's comparison between the Astronomer's globe and the celestial globe in the Scheepvaart Museum in Amsterdam (*ibid.*, fig. 21) is convincing, it should be noted that it is extremely difficult to make such fine judgements concerning which state of a globe might have been used as a model without a whole range of cartouches being available for study. It is possible, for example, that the globe could represent the first state of Blaeu's celestial globe (1597/98). See van der Krogt (note 4), pp. 468–70 (Hondius IIA, 1597/98), and pp. 470–2 (Hondius IIB, 1600) and pp. 492–4 (Blaeu, state I, 1598). See also D.J. Warner, 'The first celestial globe of Willem Janszoon Blaeu', *Imago mundi*, vol. XXV (1971), pp. 29–38 and fig. 3.
9. *Claudii Ptolemaei Alexandrini geographiae libri octo Graeco-Latini*, edited by Petrus Montanus and printed by Cornelis Claes and the globe maker Jodocus Hondius in Amsterdam in 1605. Mercator sticks one point of his dividers into the '*polus magneticus*', indicating his claim over the discovery of the northern magnetic pole. See Fig. 8.4; also *Gérard Mercator cosmographe. Le temps et l'espace*, ed. M. Watelet (Antwerp, 1994), p. 208. The engraving is taken from the origi-

- nal portrait of Mercator executed by Frans Hogenberg in 1574, when Mercator was 62 years old (*ibid.*, p. 16). In the original, the pole is not labelled. I thank Gerard Turner for pointing out the significance of this gesture to me. For additional information, see G.L.E. Turner and E. Dekker, 'An astrolabe attributed to Gerard Mercator, c. 1570', *Annals of Science*, vol. 50 (1993), pp. 403-33, especially pp. 415 and 421.
10. See F.W.H. Hollstein, *Dutch and Flemish etchings, engravings and woodcuts VIII*, pp. 62-3. Deventer's motto reads: 'L'homme propose. Et Dieu dispose'.
  11. Half a generation older than the young artist, the well-known cartographer Ortelius had long been a close friend of Rubens' teacher, Otto Venius. For a reproduction, see *Gerardi Mercatoris Atlas Europae. Fac-similé des cartes de Gérard Mercator contenues dans l'Atlas de l'Europe vers 1570-1572*, ed. M. Watelet (Antwerp, 1994), p. 71.
  12. Stadselches Kunststutit; see Welu (note 8). Unusually, but appropriately, the globe here, set high on a cupboard, is oriented to show the southern Indian Ocean.
  13. See M.J. Rodriguez-Salgado et al., *Armada, 1588-1988* (exhibition catalogue, National Maritime Museum; London, 20 Apr.-4 Sept. 1988) (London, 1988), pp. 226-7. For a convenient summary of latitude sailing, see J.A. Bennett, *The divided circle. A history of instruments for astronomy, navigation and surveying* (Oxford, 1987), pp. 32-7.
  14. For a reproduction, see *National Portrait Gallery Tudor and Jacobean portraits*, ed. R. Strong (London, 1969), plate 126 (inv. no. NPG 4031). I thank Catharine MacLeod for bringing the globe in this portrait to my attention. It is also worth pointing out that Drake used the image of a terrestrial globe in his own personal coat of arms. See the frontispiece to Philip Nichols, *Sir Francis Drake renewed. Calling upon this dull or effeminate age, to folowe his noble steps for golde & silver ...* (London: Nicholas Bourne, 1626). Reproduced in *Sir Francis Drake. An exhibition to commemorate Sir Francis Drake's voyage around the world, 1577-1580* (London: British Library, 1977), pp. 38-9, no. 30.
  15. See also A. Wilton, *The swaggar portrait, Grand manner in Britain from van Dyck to Augustus John, 1630-1930* (exhibition catalogue, The Tate Gallery; London, 14 Oct. 1992-10 Jan. 1993) (London, 1992), pp. 110-11 (no. 24).
  16. For the probable reason — the particular navigational importance the Dutch attached to celestial globes — see Elly Dekker 'The navigator's globe', Chapter 4 in this volume.
  17. There are six known versions of the portrait, of which the National Maritime Museum's version (inv. no. BHC2997) is one of the finest. For a discussion of the different versions, see A. Blankert, *Ferdinand Bol (1616-1690). Rembrandt's pupil* (The Hague, 1982), pp. 124-8.
  18. Amsterdam, Rijksmuseum, inv. no. A 140. For a reproduction, see *All the paintings of the Rijksmuseum in Amsterdam. A completely illustrated catalogue*, ed. P.J.J. van Thiel et al. (Amsterdam and Maarssen, 1976), p. 269. For a discussion of the unusual iconography of the portrait, which forms a pair with one of van Ness' wife, Geertruida den Dubbelde, see D.R. Smith, *Masks of wedlock. Seventeenth-century Dutch marriage portraits* (Ann Arbor MI, 1978), figs 22-3.
  19. Amsterdam, Rijksmuseum, inv. no. A 832. For a reproduction, see the *Rijksmuseum catalogue ...* (note 19), p. 269.
  20. Hoorn, Westfries Museum. For this, see also B. Haak, *The golden age. Dutch painters in the seventeenth century* (New York, 1984; repr. 1996), p. 456, no. 1001. I thank Elly Dekker for bringing this painting to my attention. For a discussion of the significance of celestial globes in Dutch portraits of maritime officers, see Dekker (note 17).
  21. See Juvenal, *Satires*, X, 28-53; Diogenes Laertius, *Vitae philosophorum*, IX, 72; Cicero, *De oratore*, II, 235; Horace, *Epistles*, II, i, 194; Lucian, *Vitarum auctio*, 13-14. The sources have been collected by A. Blankert in 'Heraclitus en Democritus, in het bijzonder in de Nederlandse kunst van de 17de eeuw', *Nederlands Kunsthistorisch Jaarboek*, vol. XVIII (1967), pp. 31-123.
  22. See A. Blankert, 'Heraclitus en Democritus bij Marsilio Ficino', *Simiolus*, vol. i (1966-67), no. 3, pp. 128-35, in which he traces the first Renaissance appearance of the *topos* to Ficino's reading of Sidonius Apollinaris' *Epistulae* (book IX, epistle 9) and its discussion of the appropriate decoration for a scholar's study.
  23. See, for example, the painting by Matthias Withoos of a romanticized setting of decayed antique monuments by moonlight in which a globe and armillary sphere are shown jumbled together in a pile of skulls, books, and scientific instruments (reproduced in I. Bergström, *Dutch still-life painting in the seventeenth century*, English transl. by C. Hedström and G. Taylor (London, 1956), p. 186, fig. 159). The painting appears to have been sold from the Eric Vasseur collection in Stockholm at the Sotheby's (Monte Carlo) sale in December 1984. See E. Gemar-Koeltzsch, *Holländische Stillebenmaler im 17. Jahrhundert* (Lingen, 1995), vol. III, p. 1138, no. 447/5. Its current whereabouts are unknown.
  24. The 'world upside down' is a relatively common iconographic motif, especially during the sixteenth and seventeenth centuries. See, for example, copies of Pieter Breughel the Elder's 'Netherlandish proverbs' in the Dresden Gemäldegalerie and in the Berlin Staatliche Museen, in which a tavern sign is represented by an upside-down globe; or the similar device used in David Teniers the Younger's 'Proverbs' in Belvoir Castle at Grantham (reproduced in Hofmann et al. (see note 4), p. 50). See also the highly detailed print by Crispin de Pas of 'Le monde à l'envers', dating from 1635, in which an upside-down globe is the setting for numerous scenes of disaster and villainy. On top of the globe is perched a grouping of a finely dressed young couple — a fool and a courtesan — being wed by Satan. The globe is flanked by a laughing Democritus and a weeping Heraclitus. For a reproduction and additional bibliography, see Hofmann et al. (note 4), p. 68.
  25. On the perfection of the sphere, see G. Sarton, *A history of science. Ancient science through the golden age of Greece* (London and Oxford, 1953), pp. 212-13; L. Rougier, *La religion astrale des Pythagoriciens* (Paris, 1959); D.R. Dicks, *Early Greek astronomy to Aristotle* (Ithaca NY, 1970), especially pp. 52-4, 72, 98, 197, and 205.
  26. See, for example, G. Tabaroni, *Clobi celesti e terrestri sulle monete romane* (Casteldario (MT), 1961) and Hofmann et al. (see note 4), pp. 14-19.
  27. Although not specifically concerned with the image of the globe, *save in passim*, see J. Seznec, *La survivance des dieux antiques (Studies of the Warburg Institute, vol. XI)* (London, 1940), English transl. by B.F. Sessions, *The survival of the pagan gods. The mythological tradition and its place in Renaissance humanism and art* (New York, 1953).
  28. The Aristotelian universe is quite close to what we would more often call the Ptolemaic system of the universe. See F. Solmsen, *Aristotle's system of the physical world: a comparison with his predecessors* (Ithaca NY, 1960); L. Elders, *Aristotle's cosmology: a commentary on the de caelo* (Assen, 1966); Dicks (see note 26), pp. 195-205; and G.E.R. Lloyd, *Aristotle: the growth and structure of his thought* (Cambridge, 1978), pp. 147-53. For a convenient summary, see J.D. North, *The Fontana history of astronomy and cosmology* (London, 1994), pp. 77-84.
  29. For a discussion of the rendering of light and shade in Classical art, see E.H. Gombrich, 'The heritage of Apelles', *The heritage of Apelles. Studies in the art of the Renaissance* (London, 1976), pp. 3-18. The fact that most antique depictions of globes focus on the lines of demarcation raises the interesting question of to what degree the great circles were thought an essential part of the globe. If one considers the two greatest representations of a globe from antiquity — the Farnese 'Atlas' and the celestial globe described in the *Phaenomena* of Aratus (see p. 80) — both of these highlight the lines of the great circles as crucial elements in the construction of the globe.
  30. For an illustration and discussion, see P.W. Lehmann, *Roman wall paintings from Boscoreale in the Metropolitan Museum of Art (Monographs on archaeology and fine arts, vol. V)* (Cambridge MA, 1953), pp. 11-12, 209, and plate XXXVIII. Unfortunately, Lehmann describes the globe as 'a sundial in the form of a buff globe tipped by a gnomon, marked with a network of meridians and parallels and standing on a circular maroon base'. Her erroneous identification of this object as a sundial is based on what she sees as a similarity between

- it and the circular sundial discovered during the 1930s in Prosymna (see C.W. Blegen, 'Prosymna: remains of a post-Mycenaean date', *The Journal of the Archaeological Institute of America*, vol. XLIII (1939), pp. 410-44, especially pp. 443-4 and fig. 31). Modern scholars conversant with the structure of scientific instruments have long recognized the Boscoreale object as a proper globe. See, for example, E.L. Stevenson, *Terrestrial and celestial globes: their history and construction, including a consideration of their value as aids in the study of geography and astronomy*, (publications of the Hispanic Society of America, no. 86) (New Haven and London, 1921), part I, p. 21 and fig. 10. More recently, see E. Dekker and P. van der Krogt, *Globes from the western world* (London, 1993), pp. 10-11, fig. 1.
31. For a detailed discussion and reproduction, see O.J. Brendel, 'Symbolik der Kugel. Archäologischer Beitrag zur Geschichte der älteren griechischen Philosophie', *Mitteilungen des Deutschen Archäologischen Instituts. Römische Abteilung*, vol. LI (1936), pp. 1-95. The article was translated into English and reprinted by E.J. Brill as *Symbolism of the sphere. A contribution to the history of earlier Greek philosophy* (Leiden, 1977).
  32. For a reproduction, see Schramm (note 4), plate I and Brendel (see note 32), plate XVII.
  33. See also Brendel (note 32), plate IX. The sphericity of the globe is also conveyed through gradations of light and shade.
  34. See *Commentarium in aratum reliquiae*, ed. E. Maass (Berlin, 1898), p. 95, line 21.
  35. See also the picture of Aratus and his Muse in the twelfth-century manuscript of the Germanic *Aratus latinus* with its *scholia* (Madrid, Biblioteca Nacional, MS 19 (A. 16), fol. 55<sup>r</sup>). For a discussion of the manuscript and its illustrations, see J. Martin, *Histoire du texte des phénomènes d'Aratos* (Paris, 1956), pp. 38-9. The image accompanies the text: 'Haec ego dum Latius conor praedicere Musis, / pax tua tuque adsis nato nomenque secundes'. See *Germanici Caesaris Aratea cum scholiis*, ed. A. Breysig (Berlin, 1867), p. 2. I thank Betty O'Connor for this reference. It makes an unexpected reappearance in the eleventh-century Germanic *Aratea cum scholiis basilienis* in National Library of Wales, Aberystwyth, MS 735 C, fol. 12<sup>r</sup>, (see Fig. 8.11 here) with a second rendering of the Muse and the poet on fol. 4<sup>r</sup>. For a discussion of the iconography of these illustrations, see P. McGurk, 'Germanici Caesaris Aratea cum scholiis: a newly illustrated witness from Wales', *The National Library of Wales Journal*, vol. XVIII, no. 2 (1973), pp. 197-216.
  36. Vienna, Österreichisches Nationalbibliothek, cod. 5415. For a description of the manuscript, see F. Saxl, *Verzeichnis astrologischer und mythologischer illustrierter Handschriften des lateinischen Mittelalters. II. Die Handschriften der National-Bibliothek in Wien* (Heidelberg, 1926), pp. 148-53. Saxl notes that parts of the text appear in Vatican, Biblioteca Apostolica, MSS Vat. lat. 3099 and Pal. lat. 1369. For additional bibliography and appearances of the text, see L. Thorndike and P. Kibre, *A catalogue of incipits of Medieval scientific writings in Latin* (London, 1963), col. 1576 and L. Thorndike, 'Notes on some Medieval Latin astronomical, astrological and mathematical manuscripts in the Vatican', *Isis*, vol. XLVII (1956), pp. 391-404, especially p. 393. (It might be added that the text does not describe the scientific instrument commonly known as a 'spherical astrolabe', but is, in fact, a treatise on the use of celestial globes.)
  37. A fifteenth-century English copy of the treatise repeats the image. See Oxford, Bodleian Library, MS Digby 46, fol. 8<sup>r</sup>.
  38. For a clear reproduction of the panel and resumé of the work's critical history, see *Il Museo dell'Opera del Duomo a Firenze*, eds. L. Becherucci and G. Brunetta (Milan, 1969), vol. I, pp. 233-7 and plates 57-8. The iconographic source of the programme was discovered by Schlosser to be Brunetto Latini's 'Il tesoretto'. See J. von Schlosser, 'Giustos Fresken in Padua und die Vorläufer der Stanza della Segnatura', *Jahrbuch der Kunsthistorischen Sammlungen des allerhöchsten Kaiserhauses*, vol. XVII (1896), pp. 13-100, especially pp. 37-76.
  39. See van der Krogt (note 4), *passim*, but especially the chapter 'Amsterdam, 1605-ca. 1650: consolidation of monopoly', pp. 169-214. See also his statement in *Old globes in the Netherlands. A catalogue of terrestrial and celestial globes made prior to 1850 and preserved in Dutch collections*, English transl. by W. ten Haken (Utrecht, 1984), p. 27: 'Until far into the seventeenth century, there was always one single centre of globe production, spreading its products all over the world. Amsterdam had held this position from the end of the sixteenth century until the second half of the seventeenth century'.
  40. Rather than cite a complete bibliography on northern European painting of the period, the following works each illustrate a number of Dutch or Netherlandish paintings in which globes appear: W. Bernt, *Die niederländischen Maler des 17. Jahrhunderts*, (Munich, 1948); S. Speth-Holterhoff, *Les peintres flamands de cabinets d'amateurs au XVII<sup>e</sup> siècle* (Brussels, 1957); Z. Z. Filipczak, *Picturing art in Antwerp: 1550-1700* (Princeton, 1987); B. Haak, *The golden age — Dutch painters of the seventeenth century*, English transl. by E. Willems-Treeman (London, 1984; repr. 1996); O. ter Kuile, *Seventeenth-century north Netherlandish still lifes* (The Hague, 1985); *Les vanités dans la peinture au XVII<sup>e</sup> siècle. Méditations sur la richesse, le dénuement et la rédemption* (exhibition catalogue, Musée des Beaux Arts, Caen, 27 July-15 Oct. 1990, and Musée du Petit Palais, Paris, 15 Nov. 1990-20 Jan. 1991), ed. A. Tapié (Brussels, 1990); N. Schneider, *Les natures mortes. Réalité et symbolique des choses* (Cologne, 1991); M. Díaz Padrón and M. Royo-Villanova, *David Teniers, Jan Bruegel y los gabinetes de pinturas* (Madrid, 1992); and A. Scarpa Sonino, *Cabinet d'Amateurs. Le grandi collezioni d'arte nei dipinti dal XVII al XIX secolo* (Milan, 1992). See also Bergström (note 24) and Gemar-Koeltzsch (note 24).
  41. S. Alpers, *The art of describing. Dutch art in the seventeenth century* (Chicago, 1983).
  42. Apart from the Fries Museum version there is one in a private collection in The Netherlands. A third variant was sold at Christie's in Amsterdam on 20 May 1987 and a fourth was sold at Sotheby's, London (6 July 1983, lot 103). All four are signed. For reproductions and descriptions, see ter Kuile (note 41), pp. 170-1 and fig. 16; and Gemar-Koeltzsch (see note 24), vol. III, pp. 918-21; Haak (see note 41), p. 127, no. 246 (private collection).
  43. See also B. Nicholson, *Hendrik Terbrugghen* (London, 1958), pp. 45-6 and plates 94-5, with additional literature on variants and copies of the paintings. For a detailed study of the iconography of Heraclitus and Democritus and for other illustrations of the pair with globes, see Blankert (note 22).
  44. I wish to thank Elly Dekker for her help in tracing the models for these paintings.



Portrait by Ferdinand Bol of Michiel Adriaensz de Ruyter, Lieutenant-Admiral-General of the United Provinces. He is shown with his flagship, the *Zeven Provinciën*, and attributes of command and navigation, including a Blaeu 37 cm celestial globe. Painted in 1666-7. [NMM 284C2997]