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'Falling to a diuelish exercise': The Copernican Universe in Christopher Marlowe's *Doctor Faustus*

In the opening scene of Christopher Marlowe's *Doctor Faustus*, Faustus is given a choice: he can either do as the Good Angel advises and choose God's Scriptures, or he can risk 'Gods heauy wrath' (1.104) and choose the 'damned booke[s]' of necromancy (1.102).¹ There is a catch, however: only through these books of black magic, as the Evil Angel tells him, can one gain access to 'all natures treasury' (1.107). Frustrated with the limits to his knowledge imposed by his religion, Faustus makes the wrong choice. He turns against God in his attempt to become a god himself, summoning the devil Mephistophilis who he believes will provide the means to exceed human boundaries.

Faustus engages in this black magic to access the secrets of the world and, in particular, to discover the true nature of the universe. While Ptolemy's notion of an earth-centred universe, based on Aristotelian cosmology, still prevailed in Elizabethan England, Copernicus's sun-centred universe was slowly beginning to affect the conception of the cosmos. This new universe defies the ancient authority of Aristotle, who had placed the earth in the terrestrial, or sublunary, region, separate from the other planets located in the celestial, or superlunary, region. Within Copernican theory, the earth loses its uniqueness as it joins the other planets in their revolution around the sun, thus collapsing the Aristotelian division of the cosmos. Copernicus's heliocentrism, furthermore, generates a new concept of space where humankind is no longer at the centre — causing both spatial and theological transformation as the new universe disrupts humankind's privileged relationship to God. Marlowe acknowledges the heresy implied by this new vision of the world by connecting this emerging Copernican consciousness with the devil, since this particular knowledge can only be gained (so Faustus believes) through Mephistophilis. Yet although Mephistophilis declares he will provide Faustus with all the answers that he desires, Faustus quickly discovers that even the devil is

unwilling to divulge information about the new universe that opposes traditional views. Scholars have often commented on the absence of Copernican theory in Marlowe's play. Paul H. Kocher finds that Marlowe 'adheres to the old Aristotelian-Ptolemaic cosmology and never shows the slightest acquaintance with the Copernican theory' and Francis R. Johnson notes that Marlowe 'never mentions or makes poetic use of the Copernican system'.² By comparing the two extant versions of *Doctor Faustus* — the 1604 'A-text' and the 1616 'B-text' — and drawing on Leah S. Marcus's pivotal work comparing the 'ideological difference' of the two texts,³ however, I trace an ideological shift in the astronomy of early modern England and find evidence of Copernican theory in the play.⁴ As Faustus becomes an intellectual explorer, searching for proof of this newly conceived world, his connection to Copernicanism makes him more transgressive than the devil himself.

The play's prologue sets up the duality of Faustus as both explorer and quintessential overreacher. Comparing Faustus to Icarus, the Chorus declares that his 'waxen wings did mount aboue his reach' (prologue 22). Both desire the forbidden, and both face the ultimate penalty: Icarus drowns and Faustus is dragged to hell. Through the Icarus imagery, Marlowe also links Faustus with the deadly sin of gluttony.⁵ The overreacher is a glutton, a figure of excess. Faustus overindulges in knowledge: he is 'swolne with cunning of a selfe conceit' caused by being 'glutted ... with learnings golden gifts' (prologue 21, 25). And what causes this surfeit of knowledge? His place of learning.

As Marcus explains, the university Faustus attends is not the same in the play's two versions. In the A-text Faustus studies in 'Wertenberg' (prologue 14), while in the B-text he studies at 'Wittenberg' (prologue 14). Most editors have accepted the A-text spelling as a corruption of the 'correct' location, Wittenberg. However, as Marcus explains, these are in fact two different, real places associated with two different kinds of religious reform. Wittenberg is 'the intellectual center of Lutheranism', whereas Wertenberg refers to the independent Rhineland Duchy of Württemberg, notable for uprisings by radical Zwinglian Protestants during the early sixteenth century.⁶ Marcus thus connects Wertenberg to radical Protestantism and Wittenberg to a more theologically conservative Anglo-Catholicism. She then discusses how this shift reflects and responds to ideological changes in England, so that each version of the play can continue to place Faustus 'at the extreme edge of transgression in terms of its own implied system of values'.⁷

Neither Marcus herself, nor any other Marlowe scholar, has recognized how the implications of this analysis extend to astronomy. Both locations, Werten-

berg and Wittenberg, have links to the emergence of the new astronomical ideas. If Faustus is a student of Wittenberg, as most editors assume, then he is directly associated with Copernicus. One of the earliest advocates of Copernicus’s heliocentric system was Joachim Rheticus, a mathematics professor at the University of Wittenberg. He wrote the first published discussion of Copernican theory, and was instrumental in the publication of Copernicus’s pivotal *De revolutionibus orbium coelestium* (*On the Revolutions of the Heavenly Spheres*).⁸ Wittenberg thus became a critical site for the acceptance of Copernicus’s text by academic astronomers.⁹ If, however, Faustus studies in Wertenberg (or Württemberg), he attended the University of Tübingen, the school of Johannes Kepler, German mathematician, astronomer, and key proponent of the new astronomical ideas. Kepler became a Copernican at the University of Tübingen. At this very university, in 1593, Kepler wrote a dissertation supporting Copernicus’s vision of the universe, a thesis so unconventional he was not permitted to defend it.¹⁰ Kepler later developed Copernicus’s theory and transformed the Copernican universe by hypothesizing that planets move in elliptical orbits rather than circular ones.

The particular application of Copernican theory at Wittenberg further reinforces this notion that Wittenberg is more conservative than Wertenberg in terms of astronomy. The astronomers at the University of Wittenberg maintained the disciplinary division separating mathematical astronomy and physical cosmology, or natural philosophy. Thus while they accepted *De revolutionibus* for use in their teaching and practice of astronomy, they disregarded the more radical components of Copernicus’s theory: its cosmological implications that Copernicus’s sun-centred universe directly represented the physical reality of our universe.¹¹ In contrast, Kepler believed that Copernicus’s system did indeed represent the real universe, and he ‘insisted on the unity of physical cosmology and mathematical astronomy’.¹² Marcus draws a connection between the A-text and a more radical religious reform, that of militant Protestantism, but the association between Faustus and Kepler made evident through their shared connection with Wertenberg also links Marlowe’s play with a more radical astronomical reform.¹³

Each text reveals particular ideological implications depending on the university associated with it. Both universities, however, are sites of unconventional astronomical thought. Thus, the knowledge Faustus gains from either institution causes a radical and dangerous re-thinking of society and the world. Both introduce Faustus to a possible new vision of the universe and both lead Faustus to search for proof of this new world. In order to access

this knowledge, Faustus asks Mephistophilis a series of questions about the cosmos. ‘Tel me,’ he begins, ‘are there many heauens about the Moone? / Are all celestiall bodies but one globe, / As is the substance of this centricke earth?’ (6.664–6). Faustus describes a Ptolemaic universe composed of a hierarchy of concentric spheres with earth at the centre, likely expecting Mephistophilis to dispute him. However, Mephistophilis instead affirms Faustus’s traditional description of the cosmos and further reinforces it. Rather than present Copernicus’s earth that rotates daily, he depicts Ptolemy’s motionless one around which the entire universe rotates: he explains that the planets ‘All ioyntly moue from East to West in 24. / houres’ (6.675–6). Mephistophilis gives Faustus answers that he already knows, describing what Michael Keefer calls an ‘utterly commonplace’ conception of the universe.¹⁴ Frustrated with Mephistophilis’s hollow answers, Faustus compares Mephistophilis’s knowledge to that of his own student:

Tush, these slender trifles *Wagner* can decide,
 Hath *Mephistophilus* no greater skill?
 Who knowes not the double motion of the plannets?
 The first is finisht in a naturall day,
 The second thus, as *Saturne* in 30. yeares,
Jupiter in 12. *Mars* in 4. the Sunne, *Venus*, and
 Mercury in a yeare: the Moon in 28. dayes.
 Tush these are fresh mens suppositions[.] (6.678–85)

Faustus’s dissatisfaction with Mephistophilis culminates at the end of their conversation, when Faustus asks ‘why haue / wee not coniunctions, oppositions, aspects, eclipsis, all at / one time, but in some yeares we haue more, in some lesse?’ (6.690–2). Faustus here indicates one of the most difficult issues for astronomers of the late sixteenth century: the problem of retrograde motion.¹⁵ Retrograde motion is the astronomical phenomenon in which a planet appears to change direction in its orbit and travel backwards. This phenomenon was difficult to explain in the Ptolemaic universe, which incorporated Aristotle’s belief that all celestial bodies must have an orbit of the perfect shape, the circle. In a geocentric universe the planets often do not behave in ways that Aristotle’s theory can account for. Mars, for example, appears to follow an unusual looping orbit. In the second century AD, Ptolemy attempted to reconcile the planetary movements with Aristotle’s uniform circular motion. He devised a complicated mathematical solution which re-

imagined the orbits of the looping planets as a combination of circles.¹⁶ It was not until Copernicus, with his theory of a sun-centred universe, that retrograde motion could be explained and dismissed: the backward motion of the planets is just an illusion, resulting from our position as observers on a moving earth.

Mephistophilis highlights this problem with his completely empty response. Responding to Faustus’s question he explains that the planets exhibit such odd and inconsistent behaviour ‘*Per inaequalem motum respectu totius*’ (6.693): ‘because of their unequal motion with respect to the whole’.¹⁷ Mephistophilis equivocates: he is unable to give a satisfactory answer within traditional cosmology and unwilling to reveal the other possible explanation. Faustus recognizes the equivocation. Implicit within his response is the certainty that there is more to know beyond Ptolemaic theory and that Mephistophilis possesses this knowledge. Faustus replies with what Hilary Gatti describes as dry irony when he says, ‘Well, I am answered’ (6.694).¹⁸ The probability that Mephistophilis does indeed know these desired secrets but will not divulge them becomes even more apparent when Faustus asks him who made the world. Mephistophilis responds ‘Moue me not, for I will not tell thee’ (6.697), explaining that he cannot tell Faustus anything that is against the devil’s kingdom (6.699). Since Mephistophilis also refuses to disclose any new truths about the universe, he implies that the Copernican universe is against not only God but the devil as well. Faustus, then, overreaches even beyond Lucifer.

The heresy implicit in this search for a new universe becomes even more pronounced when we consider the ideological shift from the A-text to the B-text. In both versions of the play the Chorus describes a cosmic voyage which Faustus undertakes in order to learn more about the universe:

Learned Faustus,
To know the secrets of *Astronomy*,
Grauen in the booke of *Ioues* hie firmament,
Did mount himselfe to scale *Olympus* top,
Being seated in a chariot burning bright
Drawne by the strength of yoky dragons neckes[.] (Chorus 1.810–15)

This description of Faustus’s journey relies entirely on mythological imagery. Faustus rides a fantastical chariot pulled by dragons to a mythological heaven, rather than the heaven just discussed in Faustus’s conversation with Mephas-

tophilis. The Chorus presents a universe that is neither Ptolemaic nor Copernican, and this ambiguity allows for the possibility that either vision of the universe may be true.

The Chorus's speech in the B-text, however, continues where the A-text stops.¹⁹ Travelling past Olympos's top, Faustus

views the cloudes, the Planets, and the Starres,
 The Tropick, Zones, and quarters of the skye,
 From the bright circle of the horned Moone,
 Euen to the height of *Primum Mobile*:
 And whirling round with this circumferance,
 Within the concaue compasse of the Pole,
 From East to West his Dragons swiftly glide,
 And in eight daies did bring him home againe. (Chorus 2.783–90)

The Chorus now reveals a detailed description of the real cosmos. On Faustus's voyage, he observes planets and stars, real astronomical bodies in our universe. Most importantly, the universe that he discovers is the Ptolemaic universe. Faustus sees the 'bright circle' of the moon, referring to Aristotle's first concentric sphere that causes the moon to move; and he sees the '*Primum Mobile*', or the First Mover, the outermost sphere that sets all the other spheres in motion. The B-text uses observational evidence from Faustus himself as proof of the 'truth' of the cosmos: Faustus travels to the edges of the universe and actually sees that Aristotle was right.

The A-text, through its ambiguity, advances the possibility of another vision of the universe while the lack of ambiguity in the B-text completely discounts the Copernican hypothesis. The B-text thus demonstrates its conservatism: the Chorus covers up the implicit heretical views present in the A-text and at the same time reinforces conventional beliefs for the audience. Why would the editor(s) make these changes? In 1604 a new star, or supernova, appeared in the sky — an impossibility in Aristotle's cosmos; and in 1610 Galileo published his telescopic observations of the skies, which included his discovery of the similarities between the moon and the earth as well as his discovery of four moons circling Jupiter. Although we cannot know exactly when the changes and additions to the B-text were made, this extended passage suggests that as the new ideas supported by astronomical evidence began to enter the public consciousness, a deliberate attempt was made to resist them and their accompanying ontological and theological uncertainties.

The transgressive nature of Faustus’s search increases with the movement toward conservatism in the later text, and this ideological shift becomes most apparent in the two distinct endings. In both texts Faustus fails to repent and devils appear on stage to escort him to hell. The B-text, however, contains an additional scene in which two scholars find the remains of Faustus’s body, his limbs ‘All torne asunder’ (5.2.2100). The A-text offers the possibility, however slim, that Faustus escapes his horrendous punishment and is therefore judged less harshly for his actions, for his quest for knowledge. The B-text, however, unquestionably passes judgment on Faustus with a violent death. In this text, notably, where the new astronomical knowledge is less acceptable, Faustus suffers the consequence of his curiosity absolutely, in the dismemberment of his body.²⁰

Faustus begins his ‘fall’ before the play even begins, when the Chorus of the prologue describes a quest for illicit knowledge that requires Faustus to choose the devil over God. This fall becomes literal through the Icarus metaphor: one can imagine Faustus mid-air on the way down to his death while he desperately tries to go upward and outward to see the universe. Although Marlowe does not explicitly describe the Copernican universe, his play nonetheless directly reacts to it. Evidence for the Copernican hypothesis increased between the publication of the A-text and the B-text, and the later play suppresses these new ideas while at the same time sentencing Faustus to a certain and vicious death for his heresy. Faustus’s desire for Copernicanism reveals that he does not fall to a ‘diuelish exercise’ after all (prologue 24). In his pursuit of a new vision of the world, Faustus searches for that which the devil does not dare.

Notes

- 1 *Marlowe’s Doctor Faustus, 1604–1616: Parallel Texts*, W.W. Greg (ed.) (Oxford, 1950). All quotations from the play are taken from Greg’s edition, a facsimile of the 1604 and 1616 quartos. I quote from the A-text unless otherwise cited. Note that the A-text does not include act divisions, and that line numbers are continuous throughout both plays and thus do not re-start at the beginning of each scene.
- 2 Kocher, *Christopher Marlowe: A Study of his Thought, Learning, and Character* (Chapel Hill, 1946), 214, and Johnson, ‘Marlowe’s Astronomy and Renaissance Skepticism’, *ELH* 13.4 (1946), 242, n 1. More recently, both Lisa Hopkins and Hilary Gatti concur with the assessment that Copernicanism is absent from the play. See Hopkins,

- Christopher Marlowe, Renaissance Dramatist* (Edinburgh, 2008), 104, and Gatti, 'Bruno's Heroic Searcher and Marlowe's *Dr. Faustus*', *Rinascimento: Rivista dell'Istituto Nazionale di Studi sul Rinascimento* 26 (1986), 124.
- 3 Marcus, *Unediting the Renaissance: Shakespeare, Marlowe, Milton* (London, 1996), 41.
- 4 Marlowe died in 1593; thus both versions of the play were published posthumously. This article is not concerned with speculating on Marlowe's intentions, as I consider each quarto to be the result not only of Marlowe but of the editors, printers, etc. as well.
- 5 Both Hilary Gatti and Michael Keefer discuss this point. See Gatti, 'Bruno's Heroic Searcher', 107, and Keefer (ed.), *The Tragical History of Doctor Faustus: A Critical Edition of the 1604 Version* (Peterborough, ON, 2008), 173, n 23.
- 6 Marcus, *Unediting the Renaissance*, 44–5. Marcus provides further evidence supporting an 'alternate tradition' (45) of associating Faustus with Wertenberg. For example, Philipp Melanchthon claimed that Faustus died in Wertenberg, not Wittenberg, in his attempt to dissociate Faustus from the centre of Lutheranism (45). As well, Marlowe's primary source, *The English Faustusbook*, includes at least one reference to Faustus's place of residence as 'Wirtenberg' (45).
- 7 *Ibid.*, 42.
- 8 Peter Dear, *Revolutionizing the Sciences: European Knowledge and its Ambitions, 1500–1700* (Princeton, 2001), 35.
- 9 *Ibid.*, 41.
- 10 Edward Rosen (ed. and trans.), *Kepler's Somnium: The Dream, or Posthumous Work on Lunar Astronomy* (Mineola, NY, 1967), xvii.
- 11 Dear, *Revolutionizing the Sciences*, 42–3.
- 12 Jim Bennett, 'Johannes Kepler: The New Astronomy', *Man Masters Nature: 25 Centuries of Science*, Roy Porter (ed.) (London, 1987), 60.
- 13 Marlowe, too, has links to radical astronomy due to his association with the group known as the 'School of Night', an esoteric group 'of thinkers, writers and scientists centred first of all around Sir Walter Raleigh and later ... the Ninth Earl of Northumberland'. See Gatti, 'Bruno's Heroic Searcher', 102, as well as M.C. Bradbrook, *The School of Night: A Study in the Literary Relationships of Sir Walter Raleigh* (Cambridge, 1936).
- 14 Keefer, *The Tragical History of Doctor Faustus*, 217, note to lines 35–62.
- 15 See David Bevington and Eric Rasmussen's Introduction to *Doctor Faustus and Other Plays* (Oxford, 1998), xv–xvi. See also 439, n 64.
- 16 Simon Singh, *Big Bang: The Origin of the Universe* (New York, 2004), 28–30.
- 17 Translation by Bevington and Rasmussen (eds) in *Doctor Faustus and Other Plays*, 439, n 64.

- 18 Gatti, 'Bruno's Heroic Searcher', 127.
- 19 Keefer, in his quest for an 'authentic' original of *Doctor Faustus* (11–12), has recently argued in his edition of *The Tragical History of Doctor Faustus* that this passage in the A-text has been truncated, and the extended passage in the B-text is that which appeared in the play's 'original form' (117–20, esp. 120). However, even if Keefer's speculations are correct, the potentially purposeful excision of this section from the 1604 printing has ideological resonances, as I discuss above.
- 20 The B-text also includes an additional character that does not appear in the A-text: 'Saxon Bruno', a rival pope chosen by Emperor Charles who is freed from imprisonment by Faustus. Bruno's name likely recalls the Italian Philosopher Giordano Bruno, executed by the Roman Inquisition in 1600 in part for his controversial belief in an infinite universe comprised of an infinite number of worlds. Faustus's association with a man who held extremely radical views of the universe — views that were not even accepted by Kepler — further emphasizes the transgressive nature of his desire to know the universe. For a discussion on the connections between Bruno and *Doctor Faustus* see Roy T. Eriksen, 'Giordano Bruno and Marlowe's *Doctor Faustus* (B)', *Notes and Queries* 32. 4 (1985), 463–5; Hilary Gatti, 'Bruno's Heroic Searcher' and *The Renaissance Drama of Knowledge: Giordano Bruno in England* (London, 1989); and Yuzo Yamada, 'The New Actaeon's Fortune, A and B: Giordano Bruno in the Two Texts of *Doctor Faustus*', *Shakespeare Studies* 29 (1991), 1–19.