SHORTER NOTES

WATCHING FOR ORION: A NOTE ON *OD.* 5.274 = *IL.* 18.488

Given the paucity of Homeric references to stars and constellations, it is difficult to attain a clear picture of the nature and accuracy of astronomical knowledge in Homer's time. This goes also for Hesiod. Nevertheless, the Homeric and Hesiodic texts show us that the Greeks' knowledge of the night sky allowed them to navigate and to perform agricultural work.[1]

The only reference to stellar navigation occurs in the *Odyssey*, when Odysseus sails away from Ogygia after having received instructions from Calypso (*Od.* 5.271–7):

> οὐδέ οἱ ὕπνος ἐπὶ βλεφάροισιν ἔπιπτε
> Πληϊάδας τ' ἐσορῶντι καὶ ὀψὲ δύοντα Βοώτην
> Ἄρκτον θ', ἣν καὶ ἅμαξαν ἐπίκλησιν καλέουσιν
> ἥ τ' αὐτοῦ στρέφεται καί τ' Ὠρίωνα δοκεύει.
> οἴη δ' ἄμμορός ἐστι λοετρῶν Ὠκεανοῖο.
> τὴν γὰρ δή μιν ἄνωγε Καλυψώ, δῖα θεάων,
> ποντοπορευέμεναι ἐπ' ἀριστερὰ χειρὸς ἔχοντα.
>
> … nor did sleep ever descend on his eyelids
> as he kept his eye on the Pleiades and late-setting Boötes,
> and the Bear, to whom men give also the name of the Wagon,
> who turns about in a fixed place and looks at Orion,
> and she alone is never plunged in the wash of the ocean.
> For so Kalypso, bright among goddesses, has told him
> to make his way over the sea, keeping the Bear on his left hand.[2]

This passage mentions some of the most conspicuous constellations in the Northern hemisphere: the Pleiades, Boötes, Orion and the Great Bear. The reason for their being mentioned is obvious from a navigational point of view: Odysseus should sail keeping the Bear, that is, the north, on his left, which means that he should go a direction close to due east. The presence of the Pleiades and the setting of Boötes in the evening suggest that the whole action was most likely taking place sometime during the autumn season.[3]

[1] For the astronomy of Homer and Hesiod, see D.R. Dicks, *Early Greek Astronomy to Aristotle* (London 1970), 27–38; also cf. J.B. Hainsworth, in A. Heubeck et al., *A Commentary on Homer's Odyssey* (Oxford, 1990), 276–8.

[2] The translation belongs to R. Lattimore, *The Odyssey of Homer* (New York, 1965). Verses 273–5 are identical with *Il.* 18. 487–9, which are part of the description of the sky on the Shield of Achilles (483–9); the audience must surely have felt the allusions from one passage to another.

[3] Cf. J.A. Scott, *The Unity of Homer* (Berkeley, 1921), 107–9 and N. Austin, *Archery at the Dark of the Moon: Poetic Problems in Homer's* Odyssey, (Berkeley–Los Angeles, 1975), 240–4. For a different opinion, see Hainsworth (n. 1), 277.

All this seems simple and unproblematic. Nevertheless, line 274 of this passage (= *Il.* 18.488), which mentions the fact that the Bear 'turns about in the same spot', recently stirred a vivid reaction from Finkelberg about whether the constellation described in this line is the Great Bear or the Little Bear.[4] Her conclusion is that this line is not original to the Homeric text, since it refers to the Little Bear, which was introduced to the Greek world by Thales of Miletus (*c.* 600 B.C.), and, therefore, could not be known to Homer.[5] In addition, this line also seems to suggest the anachronistic idea of a spherical universe, which does not seem to be attested before the Milesians.[6]

Finkelberg's arguments for this theory are essentially based on two passages from the scholia to Aratus, where it is said that the Little Bear (Gk. *Κυνόσουρα*) 'turns about in the same spot'.[7] The similarity in language between the Homeric line and these scholia, which talk indeed about the Little Bear, led Finkelberg to the conclusion that the line in question was added to the text later by someone who wanted to credit Homer not only with the knowledge of the Little Bear, but also with that of the spherical universe, which seems to be implied by the idea of the Bear rotating about the pole.

This last conclusion, namely that Homer knew about the spherical universe, was a matter that was keenly debated even in ancient times.[8] One of the lines in the Iliadic passage of the Shield of Achilles, *Il.* 18.485, offered such an occasion. There Homer talks about the stars that 'the heaven has around it as a crown', in Greek *τά τ' οὐρανὸς ἐστεφάνωται*. The scholiast even explicitly stated that both lines, that is, *Il.* 18.485 and 488 (= *Od.* 5.274), must be associated with the idea of a spherical universe: 'That the heaven has the shape of a circle (*κυκλοτερής*) is shown by "turns about" (*στρέφεται*) as well as by "is crowned" (*ἐστεφάνωται*)'.[9] To avoid this conclusion, Zenodotus read the above phrase as *τά τ' οὐρανὸν*

[4] M. Finkelberg, 'She turns about in the same spot and watches for Orion: ancient criticism and exegesis of *Od.* 5.274 = *Il.* 18.488', *GRBS* 44 (2004), 231–44. The scholia do not address this issue, assuming that the line is about the Great Bear; cf. D on *Il.* 18.488: *βλέπει γ' ἡ μεγάλη ἄρκτος πρὸς τὸ τοῦ Ὡρίωνος ἄστρον*; see also M. Edwards, *The Iliad: A Commentary* V (Cambridge, 1991), 212.

[5] The Phoenicians used the Little Bear for navigation before the Greeks got knowledge of it from Thales; see Callim. fr. 191.53–5; cf. D. Kidd, *Aratus. Phaenomena* (Cambridge, 2004), 189–90; D on *Il.* 18.487; Eust. 1155, 30–2 (on *Il.* 18.489); J. Martin, *Scholia in Aratum vetera* (Stuttgart, 1974), 72 (MQDΔVA on 26); 88–9 (MQDΔVUA on 39); Finkelberg (n. 4), 232 n. 2, 233 n. 5.

[6] Anaximander (first half of the sixth century B.C.) is said to have built a *σφαῖρα*, a celestial globe (DK 12A1.2; Plin. *HN* 7.203); cf. C.H. Hahn, 'On early Greek astronomy', *JHS* 90 (1970), 106–7.

[7] *ἐν τῷ αὐτῷ στρεφομένη* (*στρέφεσθαι*); cf. Martin (n. 5), 88 (MQDΔVUA on 39) and 89 (MQDΔVUA on 42); *Κυνόσουρα* (cf. Aratus, *Phaen*. 36) was the Greek name for the Little Bear before it became the *Μικρὰ Ἄρκτος* of Eudoxus (fr. 15); cf. Kidd (n. 5), 188 (on 36); with Aratus (*Phaen*. 27) comes the first attestation of the name *Ἅμαξα* applied to the Little Bear; cf. Kidd (n. 5), 182. For the Great Bear, cf. M.L. West, *Indo-European Poetry and Myth* (Oxford, 2007), 351–2.

[8] e.g. Crates of Mallus, Aristarchus' rival, assumed Homer had this knowledge; cf. H.J. Mette, *Sphairopoiia*: *Untersuchungen zur Kosmologie des Krates von Pergamon* (Munich, 1936), 30–6, 51; J.I. Porter, 'Hermeneutic lines and circles: Aristarchus and Crates on the exegesis of Homer', in R. Lamberton and J.J. Keaney, *Homer's Ancient Readers: The Hermeneutics of Greek Epic's Earliest Exegetes* (Princeton, 1992), 91–3.

[9] T on 18.488 (Crates' hand?); also cf. Crates fr. 24 v Mette; Heraclitus, *Quaest. Hom.* 48.8; Eust. 1155, 6–7 (on *Il.* 18.484–5); Finkelberg (n. 4), 236 n. 14.

[οὐρανῷ?] ἐστήρικται, and Aristarchus as τά τ' οὐρανὸν ἐστεφάνωκε 'which garland the heaven'.[10]

If, therefore, one assumes that both the spherical model of the universe and the knowledge of the Little Bear appeared in the Greek world later than Homer, this could lead to the conclusion that the lines in question are not original to the Homeric text and must have been added later. Also, since it can be assumed that Zenodotus knew at least one of these lines (*Il*. 18.485), Finkelberg's conclusion that the tampering with the text must have been done at least before Zenodotus' time (the beginning of the third century B.C.) seems to be a reasonable one.[11]

All these assumptions have as their starting point the idea that the constellation meant by the line *Od*. 5.274 = *Il*. 18.488 is the Little Bear. This is the constellation which in these passages is supposed to fully account for 'the turning about in the same spot'.

This assumption, however, can be objected to. For one thing, the Great Bear can also be said to be 'turning about in the same spot'. In fact, the reason why this constellation was used by Greek navigators was precisely the fact that it was close to the North Pole.[12] To say that the 'turning about' could apply only to the Little Bear would mean that the Homeric Greek world did not have any idea about the motion of the Great Bear in the sky. Being one of the most spectacular and visible constellations in the sky, it is hard to believe that anyone guiding himself by it could not notice the fact that the Great Bear changes its position in such a way that one could identify the motion with a rotation.[13] Certainly, one could easily object to these observations by saying that one cannot prove them in an irrefutable manner, which is true. There is, however, another reason why *Od*. 5.274 = *Il*. 18.488 might refer precisely to the Great Bear, and not to the Little Bear.

Thus far, the analysis has limited itself to the first part of the line, disregarding its second part, where it is said that the Bear Ὠρίωνα δοκεύει 'watches for Orion'. This might provide us with the answer we have been looking for.

The identification of a constellation in ancient times as therio- or anthropomorphic was neither an abstract nor a random process. For the ancients, the stars of the constellations truly represented these beings or parts of them.[14] This is also true in the case of both Bears, which are stellar groups of very similar shape. The positions of the Great Bear and Little Bear in the sky let us see that their bodies lie in opposite directions.[15] This means that their upper bodies, which are represented by the two leading stars in each Bear, point in opposite directions as well.[16] Which Bear then 'watches for Orion'? The answer can easily be found not only by literally looking in the sky, but also by deduction from the literary descriptions. Since Eudoxus (fr. 24) writes that Boötes lies behind the Great Bear

[10] Similar phrases can be found in *Hymn. Hom. Merc.* 11, *Il*. 4.443 and 11.28.

[11] Finkelberg (n. 4), 240 n.23 thinks this may have been done by Aratus (the beginning of the third century B.C.), who, besides his main work, *The Phaenomena*, also edited the *Odyssey* (*Vit. Arat*. 1); obviously, this is supposed to match the chronology from above (n. 7).

[12] Navigation by the stars seems to be an exception in the Homeric world; usually, the Greeks relied on landfalls; cf. Hainsworth (n. 1), 276.

[13] The very name Ἑλίκη was thought to suggest this constellation's conspicuous rotation; cf. Kidd (n. 5), 188 (on *Phaen*. 37); Finkelberg (n. 4), 233 n. 4.

[14] One can see this clearly, e.g. in a work like Aratus' *Phaenomena*, *passim*.

[15] Cf. Aratus 30: ἔμπαλιν … τετραμμέναι 'in opposite directions'; for discussion, cf. Kidd (n. 5), 184.

[16] These are α and β for the Great Bear, β and γ for the Little Bear; cf. Kidd (n. 5), 184.

(cf. Aratus, *Phaen*. 91: ἐξόπισθεν δ' Ἑλίκης),[17] being thus in front of the Little Bear, this means that Orion, which is opposed to Boötes in the sky, must lie in front of the Great Bear, when it rises in the east. Likewise, the Little Bear, which watches towards the Great Bear's tail, looks towards the same direction pointed by the Great Bear's tail, that is, towards Boötes, and not towards Orion. Thus, the Homeric passage does not randomly mention these constellations, but captures a precise moment in the night sky – the moment when Orion and Boötes can be seen together: the Pleiades rise in the east following Orion, while Boötes sets, and the Great Bear watches for Orion.[18]

Under these circumstances, it is obvious that *Od*. 5.274 = *Il*. 14.488 points to the Great Bear, which is the only Bear constellation 'watching for Orion' when Boötes is ready to set. It is then the Great Bear which is described here as 'turning about in the same spot'.[19]

This last point brings us to the issue whether this verse shows that Homer conceived of the universe as spherical. Certainly, such a conclusion can be avoided if one assumes that the line was introduced in these passages after the presupposed discovery of the spherical universe by the Milesians. We have, however, no proof of such an assumption. In any case, the poet who invented this line must have had in mind the Great Bear, not the Little Bear. If, on the other hand, the verse belongs to Homer, then the question whether the Homeric world viewed the universe as spherical is legitimate.

The spherical model of the universe presupposes a centre, poles and an axis about which the rotation of the sky vault takes place.[20] Unfortunately, none of these is explicitly mentioned in Homer. Consequently, though it is not impossible, the fact that even before the Milesians the form of the universe (sky vault) could be conceived of as spherical from an abstract, that is, strictly geometrical, point of view cannot be irrefutably proven.[21]

The Ohio State University
The University of Bucharest
CATALIN ANGHELINA
anghelina10@yahoo.com
doi:10.1017/S0009838809990589

[17] Cf. Kidd (n. 5), 214.

[18] Arcturus, the most prominent star in Boötes, and the Pleiades are approximately on opposed longitudes in the sky: today Arcturus' right ascension is 14h 15min, whereas the Pleiades' is 3h 47min. Orion is situated at approximately 5h longitude, whereas Boötes at about 15h. This means that Orion is at about 30º (the equivalent of 2h) in the eastern sky when Boötes sets. Regarding the relative position of the Great Bear and Orion, cf. W. Leaf, *The Iliad* (London, 1902) 304 (on 488): 'when Orion is rising in the east, the Bear is on the horizon'.

[19] Ap.Rhod. 3.744–6 alludes to *Od*. 5.274, rightly noticing that Orion and the Great Bear are linked together: οἱ δ' ἐνὶ πόντῳ | ναῦται εἰς Ἑλίκην τε καὶ ἀστέρας Ὡρίωνος | ἔδρακον ἐκ νηῶν; cf. Kidd (n. 5), 188. Orion's belt, being on the celestial equator, indicates due east.

[20] Cf. Hahn (n. 6), 107.

[21] For opinions about the shape of the Homeric sky vault, see e.g. H. Berger, *Mythische Kosmographie der Griechen* (Leipzig, 1904), 13 and F. Buffière, *Les mythes d'Homère et la pensée grecque* (Paris, 1956), 212–21 (sphere); Hainsworth (n. 1), 278 (dome), G.S. Kirk and J.E. Raven, *The Presocratic Philosophers* (Cambridge, 1957), 10 (bowl); the Vedic world also knew this latter shape of the celestial vault: in phrases like *dhiṣáṇe samīcīné* (*RV* 10.44.8, *AV* 2.34.3) or *camvā̀ samīcī́* (*RV* 3.55.20), the vault is seen as a 'bowl'; cf. W. Kirfel, *Die Kosmographie der Inder* (Hildesheim, 1967 = 1920), 6. For a synopsis of the issue, see M. Schmidt, 'Die Erklärungen zum Weltbild Homers und zur Kultur der Heroenzeit in den bT-Scholien zur Ilias', *Zetemata* 62 (1976), 125–6, 215–18. See also n. 8 above.