
Aratus: Phaenomena, Translated with an Introduction and Notes by
Aaron Poochigian

Baltimore: The Johns Hopkins University Press, 2010. Pp. xxxi + 72.
ISBN 978-0-8018-9465-7. Cloth \$50.00

Reviewed by
D. Mark Possanza
University of Pittsburgh
possanza@pitt.edu

The Hellenistic poet Aratus of Soli (*ca* 315 to before 240 BC)¹ is known primarily as the author of *Phaenomena*, a poem which describes the constellations and circles of the celestial sphere, and catalogues terrestrial, atmospheric, and celestial signs for forecasting the weather. The Greek word «φαινόμενα» in its most literal sense means ‘things that appear’ and by extension is applied, with the definite article, specifically to celestial phenomena. The word in the title of Aratus’ poem applies to both celestial and meteorological phenomena ranging from the constellation Orion to the behavior of wasps and flies; and suggests that, as objects of sense perception, they are also objects of inquiry whose behavior can be studied by human reason. Ultimately, celestial and meteorological phenomena are revealed as more than ‘things that appear’: the regularity and prognostic function of their appearances make them signs (σήματα), signifiers of a natural order that is itself the product of divine reason. To observe the constellations and comprehend the geometry of the celestial sphere is to perceive in phenomena a manifestation of the divine in the universe.

The astronomical and meteorological content of the poem is based on prose sources: a treatise also called *Phaenomena* by the fourth century mathematician and astronomer Eudoxus of Cnidus (*ca* 390–*ca* 340 BC), the fragments of which are collected in [Lasserre 1966](#); and a treatise called *On Weather-Signs* attributed to the Peripatetic philosopher Theophrastus of Eresus (372/1–287/6 BC), which

¹ See Hornblower and Spawforth 1996, *s.v.* Aratus. Soli is in Cilicia, the south-eastern coastal region of modern-day Turkey.

is now available in English translation with commentary in [Sider and Brunschön 2007](#).

Although Aratus wrote poetry in addition to the *Phaenomena*, through the accidents of manuscript transmission only this work survives. From the time of its first appearance, the *Phaenomena* was admired as an exemplar of a particular literary aesthetic whose values included refinement, sophistication, the learned deployment of allusion to the poetic tradition, and the avoidance of trite and hackneyed themes and subjects. Because it also offered ancient readers a non-technical exposition of the constellations and celestial sphere in relatively short compass, it was adopted as a kind of guidebook to the heavens and became part of the reading list in the Greco-Roman system of education. The authority of the poem in matters celestial and its use for educational purposes generated a tremendous amount of exegetical commentary. As a result of his poetic and, presumably unintended, astronomical success, Aratus enjoys the distinction of having a secure place not only in histories of ancient Greek literature but also in histories of ancient science. Whatever the shortcomings of Aratus' chosen subject from a literary perspective, (and they are a very dull cliché in the long history of the *Phaenomena's* reception), his artistry in the treatment of the celestial sphere and the weather-signs has captured the imagination of readers down through the ages. The honey of the Muses sweetened the findings of science and the accounts of the experts to produce a didactic poem that recreates the act of observing and discovering a well-ordered cosmos. Signs of the *Phaenomena's* enduring success are plentiful.

On a recent trip to the British Library, I saw on display in the Ritblat Gallery the first printed European star map of the northern hemisphere (produced at Nuremberg in 1515). Three individuals collaborated on the map: the artist Albrecht Dürer, who drew the constellation figures; the cartographer Johannes Stabius; and the astronomer Konrad Heinfogel.² Their combined expertise created a memorable portrait of the night sky that is a continuation of the Greek intellectual habit of combining myth and science in the description and explanation of natural phenomena, with stars embodied in the human and animal forms of their eponymous mythological

² For more details, see [Levenson 1991](#), 220–221 and [Kanas 2009](#), 138–140.

originals, as in the ill-starred family of Cepheus, Cassiopeia, and Andromeda, who is menaced by the sea monster Cetus. Although the beautifully rendered constellation figures immediately captured my attention, I also found myself studying the portraits of four men holding celestial globes, each identified by name and occupying a corner of the printed sheet: clockwise from the upper left corner, they are Aratus the Cilician; Ptolemy the Egyptian, who wrote in Alexandria between AD 146 and *ca.* 170; Azophi the Arab, i.e., ‘Abd al-Rahman al-Sufi (AD 903–986), who revised Ptolemy’s *Almagest*,³ and M. Manilius the Roman, author of an astrological poem, *Astronomica* in five books written *ca.* AD 10–20. Two bona fide astronomers, Ptolemy and Azophi, and two poets, one astronomical (Aratus) and the other astrological (Manilius), make up this pantheon of celestial authorities enstarred, so to speak, in the margins of the sky to commemorate their contributions to understanding the heavens.

The inclusion of Aratus in this group is particularly noteworthy in connection with the history of the transmission and diffusion of astronomical knowledge: his image, presiding with celestial globe in hand over a sky of anthropomorphic, zoomorphic, and inanimate figures, is an evocative reminder of the long lasting influence of his poem *Phaenomena* as a functional guide to the activities of observing and recognizing celestial phenomena. In the history of ancient Greek astronomy, Aratus’ *Phaenomena* is the earliest extant complete description of the constellations of the northern and southern hemispheres and of the geometrical model of the celestial sphere. Even though Aratus was himself not an astronomer, his description of the constellations and celestial sphere is embedded in our discourse of the heavens and in their visual representation. And translation has been a powerful agent in establishing and enhancing Aratus’ influence as an astronomical poet from the Greco-Roman period down through the Middle Ages and into the Renaissance and modern period.

Since the invention of printing in the 15th century, the field of Aratus-translation has not been a populous one, especially in English. The subject matter clearly presents a greater challenge to a writer’s talents than combats on the windy plains of Troy or stratagems to defeat the appetites of the Cyclops or Circe. Even in the tame activity of linguistic transfer, the attractions of warriors and adventurers win

³ See [Rashed 1996](#), 1.50.

out over seekers after truth. Apart from neo-Latin versions, only a handful of *Phaenomena* translations in French, Italian, German and English were published from the 16th to the end of the 19th century; the first English translation did not appear until 1848.

A landmark among these works is the German version by the renowned translator Johann Heinrich Voss, *Des Aratos Sternerscheinungen und Wetterzeichen*, published in 1824. This work, with Greek text and facing page translation (which corresponds to the Greek line-by-line) with extensive explanatory notes and an *index verborum*, remains an important contribution to scholarship on the *Phaenomena* and is still a valuable guide for students of the poem. Interestingly, Voss originally intended to translate the *Phaenomena* into Latin but felt that the result was no better than a dry report of the original. In the end, he decided on German and was confirmed in the choice when he experienced a dramatic epiphany: Aratus himself, speaking in German, called out to him and encouraged him to complete the task [1824, v–vii].

More recently, important translations of the poem have appeared. Two scholars, who have made the *Phaenomena* their life's study, published major commentaries on the poem with translations: D. Kidd [1997] (in English) and J. Martin [1998] (in French). These translations are an essential reference for the interpretation of Aratus' Greek. Before the publication of Kidd's edition, readers looking for an English version of the *Phaenomena* turned to that trusty standby, G. R. Mair's translation 1921 in the Loeb Classical Library, which has given many years of good service and contains two fold-out star charts. I will have more to say on English translations of Aratus later in my review.

Now Aaron Pochigian continues this tradition of translation, a tradition that goes back to Marcus Tullius Cicero (106–43 BC), into the 21st century with a rendering of the *Phaenomena* into rhyming iambic pentameter couplets. The translation comes equipped with an introduction of 23 pages [ix–xxxii]; an appendix on 'Constellation Risings and Settings' [39–41]; a second appendix on the Bayer designations of the individual stars in the constellations, e.g., α Virginis, [42–43]; explanatory notes [45–70] on the poem's astronomy, meteorology, and mythology; and a bibliography of works cited [71–72]. The description of the constellations in lines 25–337 is accompanied

by nine illustrations: Draco with Ursa Major and Ursa Minor, Serpentarius (Ophiuchus), Virgo, Cassiopeia, Equus, Pisces, Cygnus, Orion (who stands out for uniqueness of composition), and Cetus. These illustrations of the constellations are taken from a 15th-century edition of Hyginus' handbook on astronomy and star myths⁴ entitled *Poeticon Astronomicon*, which was printed by Erhard Ratdolt (Venice 1482).⁵

An inquiring student who looks at the illustration of Draco and the Bears, and assumes that it has more than a purely decorative function, may well ask why the illustration does not agree at all with the details of the text and may even venture a more difficult question: 'What text, if any, inspired the picture?' No information is given about these illustrations and their relation to the text; there is only a brief acknowledgement of source on the copyright page. The cover illustration, an impressive celestial globe, receives the same treatment: only a photo credit is given on the back cover. Similarities in the illustration of Cepheus and in the letterforms for the names of the constellations indicate that it is a 19th century globe produced by Gilman Joslin (1804–ca 1860).⁶ Since it is a safe assumption that pictorial representation preceded written verbal description in the formation of the constellation figures, the delineation of the figures in various media and the history of their transmission deserve as much as attention as the texts which describe them and record their movements.

The introduction provides helpful information on a variety of topics: Aratus' life; the literary background of the *Phaenomena* and its relation to Hesiod's *Works and Days*, its primary poetic model; Greek astronomy and Eudoxus' *Phaenomena*, Aratus' prose source; Stoic elements in the poem; the chief characteristics of Aratus' poetry in the context of the literary values of the Hellenistic poets; Latin and medieval translators of the *Phaenomena*; and translation methodology. The material presented here will prepare readers for what to

⁴ Probably second century AD.

⁵ The complete Ratdolt edition can be viewed at <http://www.lindahall.org/services/digital/ebooks/hyginus/> (the constellation illustrations begin on d1 *recto*).

⁶ Those who are interested may find more information and pictures at http://libweb5.princeton.edu/visual_materials/maps/globes-objects/globe14.html.

expect in a didactic poem on astronomy and meteorology, and will give them a sense of the poem's high reputation in the Greco-Roman world. Since Poochigian does a fine job of showing that Aratus is a highly skilled and sophisticated poet, it is surprising to read the following comment made in discussing the poem's systematic structural organization: '...Aratus strives to create the impression that he is rambling on' [xii].

In the introduction, the section 'Ancient Astronomy' [xiv–xvi] focuses on Eudoxus' *Phaenomena*, which is generally agreed to be the source for the astronomical portion of Aratus' poem [*Phaen.* 19–732], although the authenticity of the treatise has been challenged.⁷ A footnote [xxix n10] seems to suggest that our source for Aratus' dependence on Eudoxus' *Phaenomena* is a statement in one of the ancient biographies of the poet, though these are late compilations and often unreliable. In fact, Aratus' adaptation of the prose treatise is demonstrated in detail by the Hellenistic astronomer Hipparchus of Nicaea (*floruit* in the second half of the second century BC) in his *Commentary on the Phaenomena of Aratus and Eudoxus*.⁸ Hipparchus compares corresponding passages of both texts in order to demonstrate Aratus' dependence on Eudoxus and establishes the general principle that in those places where Eudoxus is wrong Aratus will also be wrong. On page xv, another astronomical work by Eudoxus, the *Enoptron* (*Mirror*), which was probably a revised version of his *Phaenomena*, is mistakenly called *Entropon*, whose meaning is then glossed with the phrase 'on "cyclic" astronomy'. This mistake will leave the reader baffled by the reference [xxix n10] to a statement made in an ancient life that Aratus followed a treatise by Eudoxus called *Katoptron*. 'Katoptron', which also means 'Mirror', is most likely a slip by the author of the ancient life for 'Enoptron'. As Hipparchus' *Commentary* makes clear, Aratus adapted Eudoxus' *Phaenomena*, although in certain places he also consulted the *Enoptron*. The treatment of Eudoxus would have benefited from a consideration of Dicks 1970, 151–189; and a reference to Rihll's introductory account of Greek astronomy [1999, 62–81] might have led some readers to look further into the intellectual world of these explorers who mapped and modeled the celestial sphere.

⁷ See [Martin 1998](#), 1.lxxxvi–cii.

⁸ See [Manitius 1894](#).

In introductions to Aratus' poem, it is customary to identify Eudoxus' *Phaenomena* as the source of the astronomical material in order to inform readers that Aratus himself was not an astronomer. Seldom, however, are readers given a specimen of what Eudoxus wrote (as reported by Hipparchus). To give an example, here is the astronomer's description of the position of Draco relative to Ursa Major and Ursa Minor:

Between the two Bears lies the tail of Draco. The tail holds the star at its tip above the head of the Great Bear. It makes a bend by the head of the Little Bear and extends under its feet; after making there a second bend back in the opposite direction, it tilts back and holds its head forward. [Lasserre 1966, fr. 15]

What does Aratus make of this description in the corresponding passage of his poem quoted by Hipparchus? In Douglas Kidd's translation [1997],

It [Draco] reaches over one of them [the Bears] with the tip of its tail, and intercepts the other with its coil. The tip of its tail ends level with the head of the Bear Helice [Ursa Major], and Cynosura [Ursa Minor] keeps her head within its coil. The coil winds past her very head, goes as far as her foot, then turns back again and runs upwards. [*Phaen.* 49–54]

Eudoxus efficiently follows the figure of the snake from its tail to its head in relation to Ursa Major and Ursa Minor. Aratus creates a word pattern through repetition and association; he repeats the words tail and coil and through the repetition he associates the tail with Ursa Major and the coil with Ursa Minor. Through the artful description of these constellation figures, the poem itself is revealed as a sign (and signs, astronomical and meteorological are the poet's great theme) of that cosmic order ordained by a providential and benevolent Zeus.

After comparing these two passages, the reader may be surprised at Poochigian's observation that Aratus 'shifts the point of view from Eudoxus' mathematical and objective perspective to that of the observer' [xvi]. The key difference here is not between an objective, mathematical perspective and an observer's perspective—Eudoxus

and Aratus are both observers looking at the same anatomical components of three constellations—but between a straightforward prose description that gives the shape and orientation of the constellations and the poet’s studied elaboration through repetition and pattern that creates a sense of order and design. Eudoxus connects the dots; Aratus paints the picture.

Given that the target audience for this book will be readers with no Latin or Greek, the purpose of the section on Aratus’ Latin translators [xxiii–xxvii] is unclear, especially since readers are given no information about where they might find English versions of these Latin versions of the *Phaenomena*, which survive complete or in fragments. The discussion of a substantial quotation (in English) from Cicero or Germanicus Caesar (15 BC–AD 19) would help to illustrate for the reader some aspects of translation practice at this foundational stage of bringing the *Phaenomena* into a different linguistic and cultural environment and would reveal how reception, interpretation, and the translator’s own aesthetic values have influenced strategies of translation. Germanicus, for example, transforms Aratus’ unadorned, five-line list of the zodiacal constellations [*Phaen.* 545–549] into an excursus of 33 lines on the myths that explain the origins of those constellations [532–564], a considerable departure from the wording of the source text that was made in response to contemporary literary tastes and expectations. The thumbnail sketches of the Latin translators do provide interesting information about Aratus’ secure place on the reading list in ancient education but will not provide readers with enough information to understand, in the case of Cicero for example, the valid but unsupported claim that he crafted ‘an independent work of art’ in his version of the *Phaenomena* [xxiv]. In this same section, what will readers gain from knowing that the Emperor Gordian (AD 159–238) produced in his youth a translation of the *Phaenomena* that is no longer extant [xxvi]?

I postpone discussion of the section ‘Translation Methodology’ until after the review of the translation. In what follows I use for comparison D. Kidd’s prose translation [1997], which is an accurate and, for the most part, literal rendering of the Greek. All line numbers preceded by the abbreviation ‘Phaen.’ refer to the line numbers of Kidd’s Greek text and the corresponding lines of his translation; the line numbers of Poochigian’s translation are given separately, prefixed with the letter ‘P’.

The translation gets off to a worrisome start. In the famous hymnic proem [*Phaen.* 1–18], in which the poet praises the providential and beneficent deity of Zeus, Aratus announces his theme of Zeus-given signs which make manifest the god’s immanence in the world by showing humans the right times of year for the performance of agricultural labors:

ὁ [Ζεὺς] δ’ ἥπιος ἀνθρώποισι
 δεξιὰ σημαίνει, λαοὺς δ’ ἐπὶ ἔργον ἐγείρει
 μιμνήσκων βιότοις, λέγει δ’ ὅτε βῶλος ἀρίστη
 βουσί τε καὶ μακέλησι, λέγει δ’ ὅτε δεξιάι ὥραι
 καὶ φυτὰ γυρῶσαι καὶ σπέρματα πάντα βαλέσθαι. [*Phaen.* 5–9]

He [Zeus] benignly gives helpful signs to men, and rouses people to work, reminding them of their livelihood, tells when the soil is best for oxen and mattocks, and tells when the seasons are right both for planting trees and for sowing every kind of seed.

Zeus-given signs coordinate agricultural activities with their appropriate seasons. In Poochigian’s version, however, we read:

He deigns to give
 Signs out of kindness to remind us rest
 Must yield to work. He shows which soil is best
 For cows and which for hoes, and oversees
 Seasons for sowing seeds and planting trees. [P4–8].

By substituting relative clauses (‘which’) for the temporal adverbial clauses (‘when’) of the Greek, the translator represents Zeus as an agronomist rather than as the cosmic deity who helps humans by means of signs. The mistranslation diverts attention from the calendric significance of the constellations for farmers, which is a major theme of the poem and is given a prominent place here at the beginning. The proem also emphasizes that humans are the beneficiaries of Zeus’ providential care. In *Phaen.* 1–18 the words for ‘men’ (ἄνδρες) or ‘human beings’ (ἄνθρωποι) are repeated five times; e.g., Zeus gives helpful signs to humans [*Phaen.* 5]; he is a great boon to humans [*Phaen.* 15].⁹ The collective effect of these repetitions is to make clear

⁹ See also *Phaen.* 1, 3, and 13.

to readers the dependence of humankind on Zeus and to stress the universality of his power. Poochigian's use of 'we'/'us' does not achieve this same effect.

Poochigian's treatment of the proem raises concerns about the accurate representation of Aratus' meaning. These concerns are not allayed by the rest of the translation, in which one finds mistakes, imprecise expressions, and unwarranted additions to the text of the *Phaenomena*. Here follow some instances where the translator fails to convey the meaning of the Greek and, as a result, may leave readers with the impression that Aratus was not seriously interested in giving a reliable account of the celestial sphere. I will cite Kidd's translation [1997] first, then follow with Poochigian's.

In the description of Draco's position relative to Ursa Minor (Cynosura), Aratus [*Phaen.* 52] says 'Cynosura keeps her head within its coil' (σπειρήν δ' ἐν Κυνόσουρα ἔχει). Poochigian writes: 'his coils grip the neck of Cynosure' [P50]. But the coil does not grip the neck; it bends around the head.

At *Phaen.* 93, Aratus refers to Ursa Major as the 'Wagon-Bear' (ἀμαξίτης Ἄρκτου), combining its two representations. This is translated 'plow-like bear' [P89], though Ursa Major is not referred to as a plow here.

At *Phaen.* 162, Aratus locates the Goat on the left shoulder of the Charioteer (σκαίῳ ὤμῳ). In the translation, the detail of the 'left shoulder' is omitted and we find 'collar' instead [P163]. This may seem a small detail; yet it is part of the poet's attempt to give clear directions for locating constellations.

There is similar imprecision of expression at:

- *Phaen.* 232 [P235]: Orion's 'belt' (ζώνη) is rendered as 'waist';
- *Phaen.* 461 [P483]: 'the circles of the fixed stars and their guide constellations in the sky' (ἀπλανέων τὰ τε κύκλα τὰ τ' αἰθέρι σήματα) becomes 'fixed signs and consistent things';
- *Phaen.* 595 [P623]: 'forefeet of the blazing Dog' (πρότεροί τε πόδες Κυνός αἰθομένοιο) is translated by 'the Dog's bright feet', with the omission of the precise detail 'forefeet'.

Aratus uses the names of the winds to give compass directions. When he is giving the location of the Southern Fish, he says that it is 'exposed to the winds of the south' (ὕπο πνοιῆσι νότοι) [*Phaen.*

386]. This expression is amplified into ‘as if blown over the billows by a southern squall’ [P398–399], an image incompatible with a fish.

Aratus introduces the long section [*Phaen.* 559–732] on the importance of observing the constellations that rise and set simultaneously with the risings of the zodiacal constellations by indicating the purpose of such observation: ‘if you are watching for daybreak’ (δεδοκημένῳ ἡματός) [*Phaen.* 559] and want to measure the passage of time during the night. The observer’s ‘watching for daybreak’ is omitted in Poochigian’s translation [P581–583].

The treatment of the tale of Orion’s combat with the giant scorpion deviates considerably from Aratus’ account. Aratus begins the story with a plea to the goddess not to be offended by the tale of violence he is going to tell—‘[m]ay Artemis be gracious’ (Ἄρτεμις ἰλήκοι) [*Phaen.* 637]—and explains that it is a tale not of his own telling but one handed down by the ancients. Poochigian translates ‘[m]ay you at last forgive him [Orion], Artemis!’ [P672], a sentiment which fits neither the wrath of the goddess nor Orion’s death from the scorpion’s sting and his perpetual flight in the sky from Scorpio’s pursuit. Aratus [*Phaen.* 637–638] gives as the reason for Artemis’ anger that Orion attempted to lay violent hands on her (οἷ μιν ἔφραντο / ἐλκῆσαι πέπλοιο). In the translation, however, we find a very different explanation: Orion attempted to steal the goddess’ cloak in order to give it to his host, king Oenopion [P673–678].¹⁰

At *Phaen.* 748–749, Aratus explains that in the course of the stars’ seasonal risings the Sun overtakes all of them (ἦτοι γὰρ τοὺς πάντας ἀμείβεται εἰς ἐνιαυτὸν / ἡέλιος μέγαν ὄγμον ἐλαύνων). Poochigian mistakenly restricts the poet’s reference to just the constellations of the zodiac [P801].

At *Phaen.* 771–772, in an important passage that echoes the poem’s assertion of Zeus’ immanence in nature and the pervasiveness of his signs, Aratus writes:

He [Zeus] certainly does benefit the human race openly, showing himself on every side, and everywhere displaying his signs

ὁ [Ζεύς] γὰρ οὖν γενεὴν ἀνδρῶν ἀναφανδὸν ὀφέλλει
πάντοθεν εἰδόμενος, πάντη δ’ ὅ γε σήματα φαίνων.

¹⁰ See Poochigian’s note on p. 63.

The impressiveness and thematic significance of these lines are undercut by the translation:

Everywhere immanent
In entrails, birds, storms, stars, he helps our race
To help itself. [P824–826]

The list ‘entrails, birds, storms, stars’ includes two types of signs, birds and stars, and two items that do not belong in the context of the *Phaenomena*’s signs: entrails, which are appropriate to divination by extispicy; and storms, which are a manifestation of meteorological activity, not a sign thereof. Moreover, the translator’s addition of this restricted list seems oddly inconsistent with the poet’s confident assertion of Zeus’ presence everywhere.

Aratus’ account of the weather-signs characteristic of the days and phases of the Moon [*Phaen.* 799–818] is a challenge for readers of the Greek as well as of a translation, even when they have plenty of commentary and explanatory paraphrase to help them. To give an example from this section, in *Phaen.* 805–808, Aratus first observes that weather-signs given by the Moon at specific points in its cycle are valid only for a certain number of days within the month and then begins his account with signs from the period of the waxing crescent to the full Moon:

σήματα δ’ οὐ τοι πᾶσιν ἐπ’ ἡμασι πάντα τέτυκται·
ἀλλ’ ὅσα μὲν τριτάτῃ τε τεταρταίῃ τε πέλονται
μέσφα διχαιομένης, διχάδος γε μὲν ἄχρισ ἐπ’ αὐτὴν
σημαίνει διχόμενον.

But the signs are not all established for you for all the days of the month: those that occur on the third and fourth days are valid up to the half-Moon, those at the half foretell right up to the mid-month.

From these lines and the remainder of the section, the general rule appears to be that signs given at or near the beginning of a quarter hold good for that quarter: from waxing crescent to half-Moon, from half-Moon to Full Moon, from Full Moon to waning crescent, from waning crescent to New Moon; and then the cycle repeats itself with the waxing crescent.

What, then, will a student make of the following in Poochigian's version of *Phaen.* 806–808, especially since he omits Aratus' introductory statement in 805 that to obtain weather-signs from the Moon it is necessary to observe it at different phases of its cycle?

The third and fourth look to the seventh phase;
The seventh the fourteenth. [P861–862]

If I understand his translation correctly, there is a confusion of days and phases: signs given by the Moon on the third and fourth days after the new Moon are valid for the weather forecast up to the half Moon or seventh day (not 'phase') after the new Moon. What he means by 'seventh phase' I do not know. Similarly, signs given by the Moon on the seventh day are valid until the Full Moon or 14th day after the New Moon. Whatever the translator may have gained by this striving for syntactic compression in explaining the complicated topic of lunar weather-signs is lost in the riddling quality of the result.

At *Phaen.* 1091, the poet expresses the hope that 'the stars above will always be recognizable' for farmers as a sign of good weather (οἱ δ' εἶεν καθύπερθεν εὐοικότες ἀστέρες αἰεῖ!). In Poochigian's translation, '[m]ay all the planets and the stars be clear' [P1127], the addition of 'planets' is inexplicable since they do not have a role to play in weather forecasting in the *Phaenomena*, with the exception of the Sun and Moon, which are given separate treatment.

There are places where I find myself puzzled and even baffled by Poochigian's word choice. In an important passage of thematic significance [*Phaen.* 367–385, 387–397] that illustrates the operation of human intelligence in observing and reading the signs which Zeus placed in heaven, Aratus gives an account of how an anonymous inventor devised and named the constellation figures. In Poochigian's translation the activity of the inventor is described as follows:

Some one of those no longer living found
A way to lump stars generally and call
A group one name. [P384–386; emphasis mine]

The verb 'lump', which corresponds to the Greek ἐφράσσατ' ἡδ' ἐνόησεν ('he devised and contrived') [*Phaen.* 374], undoes utterly Aratus' reconstruction of the inventor's deliberate method of organizing proximate stars into recognizable shapes and then naming those shapes so

that they could be identified repeatedly on successive nights among the myriad stars that appeared. The role of discerning and articulating an order among the individual stars, so crucial to the inventor's activity, is erased. Kidd [1997] translates:

τά¹¹ τις ἀνδρῶν οὐκέτ' ἐόντων
 ἐφράσσατ' ἦδ' ἐνόησεν ἅπαντ' ὀνομαστί καλέσσαι
 ἤλιθα μορφώσας. [*Phaen.* 373–375]

constellations that one of the men who are no more devised and contrived to call all by names, grouping them in compact shapes.

The mental activity of devising and contriving is considerably more strenuous than lumping.

Other examples of peculiar word choice include the following. At *Phaen.* 408–410, Aratus explains how the appearance of the area around the constellation Altar can be interpreted as a weather-sign given by Night:

ἀλλ' ἄρα καὶ περὶ κεῖνο Θυτήριον ἀρχαίῃ Νύξ,
 ἀνθρώπων κλαίουσα πόνον, χειμῶνος ἔθηκεν
 εἰναλίου μέγα σῆμα.

Yet even round that Altar ancient Night, sad for the suffering of men, has set an important sign of storm at sea

This is rendered by

Night is an old, old crone who pities us.
 She stuffs the Altar with conspicuous
 Advice. . . [P423–425].

Aratus gives a more dignified picture of personified Night as ancient or primeval (*ἀρχαίῃ*) and introduces Altar and its vicinity as an important sign of storm for sailors. It is difficult to see what is achieved by describing Night as an 'old, old crone' and by replacing the *Phaenomena's* key word 'sign' («σῆμα») with 'advice', especially when the latter is the object of the verb 'stuff'.

¹¹ i.e. constellation figures.

A little later in this same passage, Aratus [*Phaen.* 433–434] says simply:

ἀτὰρ μετόπισθεν εἰκότα σήματα τεύχοι
 Νύξ ἐπὶ παμφανόωντι Θυτηρίῳ.

behind it [Centaur] Night is fashioning recognizable signs on
 the radiant Altar.

This becomes

Night like a high priest
 Sends forth distinctive signals from behind
 Her sacrificial Shrine. [P452–454]

The phrase ‘high priest’ is an unwarranted addition; ‘sacrificial Shrine’ is an odd substitution for Altar; and ‘from behind’, construed with ‘sacrificial Shrine’, is a mistake for an adverb indicating that Altar rises behind Centaur.

When Aratus says that the head of Draco

νεύοντι δὲ πάμπαν ἔοικεν
 ἄκρην εἰς Ἐλικῆς οὐρήν [*Phaen.* 58–59]

looks altogether as if it is inclined towards the tip of Helice’s
 tail

Poohigian expands this into

his head appears to nod
 At Helike’s tail like an assenting god.

At *Phaen.* 164, where the naming of the Goat as Olenian is explained, Aratus’ high-sounding phrase ‘interpreters of Zeus’ (Διὸς ὑποφῆται) is replaced with ‘every scholar’ [164]. But scholars are learned; Zeus’ interpreters are inspired.

Although Aratus [*Phaen.* 253] describes Perseus as a runner,
 ἵχλια μηρόνχει κεκοιμένος ἐν Διὶ πατρί
 he takes long strides as he runs in the realm of his father
 Zeus

in Poohigian’s translation, he becomes a walker:

[he] walks his father Zeus' property. [P259]

At P977, Poochigian's use of the word 'weathermen' suggests a special group involved in interpreting weather-signs when Aratus speaks more generally of men (*ἀνδράσι*) [*Phaen.* 932] who may have difficulty in determining the meaning of a weather-sign.

These examples of peculiar word choice, which I assume were motivated by a desire to create a more vivid image or a more striking expression or to make a rhyme, are, in my judgment, signs of a failure to trust the simplicity of Aratus' style.

There are fine passages of poetry in the translation. I note in particular the description of the storm-tossed sailors [P293–308] as well as the sections on wind-signs [P953–969] and rain-signs [P986–998]. In a famous acrostic, Aratus spells out the adjective «λεπτή», the first word in *Phaen.* 783, with the first letters of lines 783–787: «λεπτή» means 'thin', 'fine' or 'delicate', and in a metaphorical sense, 'subtle', 'refined'. The adjective in context describes the appearance of the waxing crescent Moon but it also has an aesthetic resonance, identifying a valued quality in the poetry itself. The acrostic is skillfully rendered into English with the adjective 'slender' [P837–843].

Poochigian's habit of attributing to the constellation figures the forms of movement that belonged to the original humans and animals, although somewhat exaggerated in comparison to Aratus' more restrained language, is largely successful. However, even after generous allowance has been made for the translator's own aesthetic intentions and the tight constraints imposed on him by his chosen form, rhyming iambic pentameter couplets, it seems to me that he too often strays from an accurate rendering of the original. When Aratus specifies the left shoulder of Charioteer or the forefeet of the Dog, or gives detailed instructions for interpreting weather-signs given by the Moon in its phases, or points out that the Altar and the area around it function as an important weather-sign for sailors, then, in my judgment, the translator is obliged to find a way of communicating that information in the target language: it should not be subjected to improvisation or free invention. A more diligent study of the resources that are available for the understanding of Aratus' Greek, for the interpretation of the poem and for the explication of matters astronomical and meteorological, and a more vigilant review of the manuscript by the press' readers would have resulted

in a more accurate and reliable translation. As it is, Poochigian's *Phaenomena* will give readers some impression of Aratus' poem as a finely wrought literary work but not as a didactic masterpiece that reveals an inspired vision of the cosmos and was deemed worthy of the learned attentions of no less an astronomer than Hipparchus.

In the section 'Translation Methodology' [xxviii–xxix], Poochigian offers the following enigmatic statement about English translations of the *Phaenomena*:

The two most frequently read translations were intended as service translations or cribs for the original Greek. [xxviii]

Neither 'service' nor 'crib' is a complimentary term. I assume he is referring to the prose translations of G. R. Mair [1921] and D. Kidd [1997]. In my own view, these versions are more than cribs. In his prose, Mair maintains a stylistic dignity, especially in the proem, with the help of archaisms and mild dislocations in word-order that is well suited to the subject and leaves one with the feeling of having been edified by a good sermon about the divine order of the cosmos. And there is an artfulness in the simplicity of Kidd's prose that gives readers a sense of Aratus' knack for the clear description of celestial topography and his strategic use of pattern and repetition in laying out the constellation figures. These two 'service' translations deserve explicit recognition.

In addition to the prose translations of Mair and Kidd, Stanley Lombardo's poetic version, *Sky Signs: Aratus' Phaenomena* [1983], should also be mentioned. Lombardo is a distinguished translator who has a gift for composing verse that reads well aloud. His loosely metrical translation accurately conveys the astronomical and meteorological information while at the same time giving readers a good impression of the economy and austerity of Aratus' style. He is not afraid to repeat words of thematic significance. In addition, Lombardo's introduction offers a sensitive appreciation of the *Phaenomena* as a didactic poem on astronomy and meteorology, as well as a meditation on the recognition and meaning of Zeus-given signs. It is regrettable that this book is no longer in print.

It is also worth mentioning that Poochigian is not alone in translating the *Phaenomena* into rhyming pentameter couplets. The first complete English translation of the poem is written in the same poetic form, John Lamb's *The Phenomena and Diosemeia of Aratus*,

published in London in 1848. It is a fascinating performance. Following the method of free adaptation employed by Aratus' Latin translators, Lamb makes additions to the text, often in the form of mythological references: Taurus is identified as the 'Tyrian Bull, Europa's treacherous beast' [*Phaen.* 180]; and the Swan is

th' adulterous bird, they say,
That lent his fair form Leda to betray. [*Phaen.* 283–284]

These allusions to Zeus as rapist in disguise have no place in a poem that exalts Zeus as a providential and beneficent deity. But, like others before him, Lamb felt that the constellations are in need of some erotic excitement to spice up the descriptions. Lamb anachronistically incorporates into the text the names used for individual stars, for example, 'Aldebaran's fire', i.e. α Tauri [*Phaen.* 183], and 'Scorpio's gem Antar', i.e., α Scorpii [*Phaen.* 320]. The diction is a stately mix of Shakespeare, Milton and the Romantic poets. At one point [*Phaen.* 114], Lamb actually inserts a line from Hamlet's 'To be or not to be' soliloquy, with one small change, into the story of Virgo. In keeping with the conventions of the time, Greek Zeus becomes Roman Jove. And, since in his introduction Lamb stresses that Aratus and St Paul were both natives of Cilicia and that the heathen poet was quoted by the Christian apostle [Acts 17.28], it is not surprising that the Jove of the poem is hymned like the God of the Psalms: 'Our Father—Wonderful—our Help—our Shield' [*Phaen.* 14]. The general format of Lamb's book may have served as something of a model for his successors: an introduction that focuses on the life of Aratus, the translation itself accompanied by illustrations, and explanatory notes that contain generous quotation from Aratus' Latin translators, from Manilius' *Astronomica*, and from the ancient commentaries on the poem preserved in condensed and abbreviated form in the scholia.

Three more English translations of the *Phaenomena* were published in the 19th century. In *The Skies and Weather Forecasts of Aratus* [1880], E. Poste, writing in a predominately iambic line that varies in syllable count, produced a more accurate translation than Lamb and, for the most part, employs a much simpler diction, eschewing the kinds of ornament and embellishment that misrepresent Aratus' stylistic austerity. Even when he waxes somewhat Miltonic,

the epic elevation seems appropriate, as in the description of Orion's encounter with the Scorpion sent by Artemis [*Phaen.* 639–642]:

She, dashing in twain the island's central mountain range,
From the yawning gulf sent against him far other monster,
The Scorpion, who him struck and slew, gigantic though he stood,
Far more gigantic; because he outraged Artemis divine.

In many ways, Poste is the best of the 19th century poetic translators. He is especially good on technical passages and his notes, with Greek and Latin quotation kept to a minimum, are efficient, helpful and interesting on matters astronomical and meteorological. In *The Phaenomena or 'Heavenly Display' of Aratos* [1885], Robert Brown rendered into blank verse the astronomical portion of the poem [*Phaen.* 1–732] and omitted the weather-signs. Brown states that he is placing 'before the English reader a faithful translation of the poem, as distinguished from a loose and inaccurate paraphrase' [1885, 2].

In taking up the banner of faithfulness in translation, Brown was apparently responding to what he perceived as the shortcomings of Lamb's version. Poste is certainly not guilty of the charge of 'loose and inaccurate paraphrase'. Brown does produce a faithful translation to the extent that a line-for-line blank verse rendering will allow. As a sign of his fidelity to the Greek original, he translates Aratus' unadorned list of the names of zodiacal constellations [*Phaen.* 545–549] as a list without adding descriptive epithets or other embellishments, a temptation that not all of Aratus' translators have resisted. His concern for fidelity also finds expression in a useful warning he offers at the end of his introduction. After commenting on the repetitive nature of Aratus' material and the limited scope for artistic achievement in a faithful rendering of the Greek, he observes that those considerations do not license attempts to improve the content:

But the attempt to improve facts when it is our duty to reproduce them, constitutes one of those faults, which, however common, is, when applied to ancient art or literature, almost unpardonable. [1885, 7]

Sage advice to translators of the *Phaenomena*.

To close out the 19th century, C. Leeson Prince had printed for private distribution only *A Literal Translation of the Astronomy and*

Meteorology of Aratus [1895]. Unlike Lamb, Poste and Brown, Prince produced a prose version, apparently the first in English, which, like the versions of Mair and Kidd, aims at a close rendering of the Greek and avoids poetic adornments. Prince was a physician with a strong interest in astronomy and meteorology. In fact, he had already published in 1871, as part of a larger work, *The Climate of Uckfield, Sussex*, a translation of the section on weather-signs. In undertaking a translation of the whole poem, he was motivated by a desire to set before his contemporaries what he regarded as an important document in the history of the observation of celestial phenomena and to incorporate Aratus' weather-signs into his own meteorological research and collection of weather-signs [1895, iii]. Prince, clearly regarding Aratus as an important predecessor and model, continued the tradition of recording and organizing weather-signs into categories. His translation is followed by a section entitled 'Some Remarks upon Local and Other Weather Prognostics' [1895, 53–82], in the introduction to which he writes:

However, for many years I have paid such close attention to most of the recorded prognostics that I am justified in endorsing the expressed opinions of the Ancients respecting them, and more particularly those which have stood the test of two thousand years and upwards. [Prince 1895, 54].

There is much to be learned from these translations of the *Phaenomena* about the reading and interpretation of the poem—Is it a practical guide to the stars? A literary *tour de force* with no practical application? A philosophical meditation on the cosmos?—about attitudes towards poetic discourse as a vehicle for the communication of scientific knowledge; about the literary trends, tastes and expectations of the translator's own cultural milieu; about strategies for turning the *Phaenomena* into an English poem or prose essay; and about the role of commentary and illustrations in supporting the translation and helping the reader through the details of astronomy and meteorology. But above all, these translations show that a poetic text of 1180 lines that offers instruction in fields of knowledge rather than historical or fictional narratives presents tremendous challenges to a translator working in verse or prose. The greatest challenge to

translators of the *Phaenomena* is the challenge of trusting the poet and respecting the poem.

BIBLIOGRAPHY

- Brown, R. 1885. *The Phaenomena or 'Heavenly Display' of Aratos, Done into English Verse*. London.
- Dicks, D. R. 1970. *Early Greek Astronomy to Aristotle*. Ithaca.
- Hornblower, S. and Spawforth, A. 1996. *The Oxford Classical Dictionary*. 3rd edn. Oxford/New York.
- Kanas, N. 2009. *Star Maps: History, Artistry and Cartography*. Berlin/Heidelberg/New York.
- Kidd, D. 1997. *Aratus. Phaenomena. Edited with Introduction, Translation and Commentary*. Cambridge.
- Lamb, J. 1848. *The Phenomena and Diosemeia of Aratus, Translated in English Verse with Notes*. London.
- Lasserre, F. 1966. *Die Fragmente des Eudoxos von Knidos*. Berlin.
- Levenson, J. A. 1991. *Circa 1492: Art in the Age of Exploration*. New Haven/London.
- Lombardo, S. 1983. *Sky Signs: Aratus' Phaenomena*. Berkeley.
- Mair, A. W. and Mair, G. R. 1921. *Callimachus, Hymns and Epigrams; Lycophron; Aratus*. Cambridge, MA/London.
- Manitius, C. 1894. *Hipparchi in Arati et Eudoxi Phaenomena commentariorum libri tres*. Leipzig.
- Martin, J. 1998. *Aratos. Phénomènes. Texte établi, traduit et commenté*. 2 vols. Paris.
- Poste, E. 1880. *The Skies and Weather-Forecasts of Aratus, Translated with Notes*. London.
- Prince, C. L. 1895. *A Literal Translation of the Astronomy and Meteorology of Aratus, with Some Bibliographical Remarks*. Lewes.
- Rashed, R. 1996. ed. *Encyclopedia of the History of Arabic Science*. 3 vols. London.
- Rihll, T. 1999. *Greek Science. Greece & Rome: New Surveys in the Classics* 29. Oxford.

Sider, D. and Brunschön, C. W. 2007. edd. *Theophrastus of Eresus: On Weather-Signs*. Leiden/Boston.

Voss, J. H. 1824. *Des Aratos Sternerscheinungen und Wetterzeichen*. Heidelberg.