# THREE PASSAGES OF ANCIENT PROLEGOMENA TO ARATUS* 


#### Abstract

An eighth-century Latin version of a Greek edition of Aratus preserves valuable ancient scholarship on the Phaenomena, including material not preserved in Greek. Examination of over thirteen thousand Latin-Greek correspondences enables one to interpret passages of the Latin that have so far resisted analysis, including information about an ancient edition equipped with critical signs and commentary, ancient discussion of the primary narratee in Aratus and Homer, and the alternative proem to Anclides (SH 84).


Keywords: Aratus; Aratus Latinus; didactic poetry; narratology; proem; scholia

## INTRODUCTION

Aratus' Phaenomena generated a great deal of interest during antiquity. Extracts from or copies of the poem are found (so far) on a dozen papyri. Six of these contain annotations, and we know of several ancient scholars who wrote studies of Aratus. The work is discussed in later astronomical treatises and other ancient scholarship. Substantial portions were translated into Latin, with more or less updating inspired by the scholarly tradition, by seven known and some unnamed writers. Its poetic influence can be traced in allusions by later authors in both languages. ${ }^{1}$ Of particular significance for Aratus' influence over Medieval western Europe was a Greek edition which Maass dubbed 'Anonymus II', a copy of which was taken to Francia and glossed into Latin probably in the eighth century. Besides the poem itself, which thereby became the 'Aratus Latinus', this edition was interspersed with a version of the Catasterisms ascribed to Eratosthenes, which provided extra mythological context for Aratus' descriptions of the constellations, as well as various prolegomena.

Some parts of these prolegomena, along with Aratus' poem and the Catasterisms, were preserved in Greek. ${ }^{2}$ These sections provide us with around thirteen thousand

[^0]bilingual correspondences, which are a substantial basis for interpreting the gloss and the process underlying its production. It was carried out by one or more people whose proneness to errors of word division (for example) shows their limited understanding of Greek. But the great majority of Greek words were attempted, largely in sequence. Thousands of Greek stems have favoured Latin equivalents. The prevalence of these word-for-word correspondences suggests the kind of linguistic knowledge that is based heavily on glossaries, and errors in some words betray a written source. For example, the three glosses on $\tau \varepsilon ́ \Lambda \Lambda \varepsilon \tau \alpha \downarrow$ ('rises')—namely, diuiditur, diuiduntur and absciditur-probably arose from a glossary containing a majuscule confusion between a form of $\tau \dot{\varepsilon} \lambda \lambda \lambda_{0 \mu \alpha ı}$ and something like $\tau \dot{\varepsilon} \mathrm{M} \eta \tau \alpha \mathrm{l}$ ('is cut'). More frequently, phonetic confusions show that the glossator knew the contemporary sounds of Greek but did not keep homophones apart, whether in his head or as he dictated; one example of many is $\dot{\alpha} \lambda \hat{i}$ 'in the sea' being glossed quidam (that is, ö $\lambda \lambda$ or, 'others') at Phaen. 158.

For the parts of the prolegomena where the Greek has been lost, we have only the Latin to go on. While scholars have emphasized the inadequacies of the glossator, most have despaired of understanding what the text originally meant. ${ }^{3}$ In particular, nobody appears to have systematically gathered the correspondences and errors mentioned in the last paragraph or appreciated their regularity and the extent to which they allow us to diagnose what Greek phrase might have given rise to the Latin. This article provides such a diagnosis for three passages. The argument will not be that we can always be sure of the original Greek wording, since we cannot account for how the glossator would have dealt with Greek words not represented in our data. However, using available parallels does lead us to a reconstruction of the overall sense, which can illuminate significant features of ancient scholarship on Aratus with an acceptable level of plausibility.

## I. CRITICAL SYMBOLS IN AN EDITION WITH COMMENTARY (2.5-20 MARTIN)

Excerpts from an editor's cover letter were included in Anonymus II, and in this instance an overlapping excerpt of the Greek is preserved in one manuscript. ${ }^{4}$ After the editor's explanation of his motivation, the text provides tantalizingly obscure information about the format of the work:

[^1]exemplum uero utens me signis quoque et indiciis de sexcentesimo et duplo et utrum et stellantium pauimento. scriptum autem si uideris uersum minus positum aliquid de quibus predictum est signorum [Greek ends] et sub paginem hoc in fronte,

[^2]scire oportet quia secundum signum scriptae scripturae ad alias quasque creditas. horum autem expositio in memoria ueniunt, et tamquam non in peccato, in quo autem est secundum pauimento intuenda atque narranda hiemalium, quae quidem melius secus pauimento feruntur.

Be aware that I use four symbols- $\chi$, diple, $\dot{\alpha} \mu \varphi t$ and the asterisk-in the text. You may see any of the aforementioned symbols written positioned next to a line ...

Where we have the Greek, we can explain some of the errors in the Latin: $\tau \varepsilon ́ \tau \tau \alpha \rho \sigma \iota$ was confused with $\tau \varepsilon \tau \varepsilon \dot{\rho} \alpha \sigma 1, \chi$ taken as the symbol for 600 , $\dot{\alpha} \sigma \tau \varepsilon ́ \rho ı ~ \varepsilon ̇ v ~ \tau \hat{\imath} t ~ c o n f u s e d ~ w i t h ~$ $\dot{\alpha} \sigma \tau \varepsilon \rho о \varepsilon ́ v \tau \omega v$ (cf. $\dot{\alpha} \sigma \tau \varepsilon \rho \frac{\varepsilon}{\varepsilon v \tau \alpha>\text { stellantia at 67.16 Martin), } \pi \alpha \rho \alpha \kappa \varepsilon \dot{\mu} \mu \varepsilon v o v ~ d i v i d e d ~}$ with $\pi \alpha \rho \alpha \dot{\prime}$ understood as 'minus', and so on.

The principal discussion of the passage after the Greek excerpt ends is Martin $H T$ (n. 1), 135-6. He saw that pauimentum ( $\delta \delta \alpha \varphi \rho \varsigma)$ and frons ( $\mu \varepsilon ́ \tau \omega \pi \sigma v$ ) mean not 'floor' and 'forehead' but 'main text-area' and 'margin', metaphors known elsewhere. ${ }^{6}$ The critical symbols may appear beside ( $\sigma \tau i \chi \omega 1 ~ \pi \alpha \rho \alpha \kappa \varepsilon \dot{\prime} \mu \varepsilon v o v)$ and below (sub paginem) the main text. To judge by parallels in Anonymus II or glossaries of that period, the
 the [sign] in the margin'. ${ }^{7}$ Martin's interpretation was therefore that these symbols routinely came in pairs, one beside and one below the text. But why did they need to be duplicated, except perhaps for a few longer annotations? By emending the manuscript's $\ddot{\alpha} v$ i̋ $\delta \eta \zeta$ ('If you see') to the homophonous $\ddot{\alpha} v$ そ̌ors ('You may see'), we can sidestep this problem while restoring to ơv its normal meaning in this unemphatic sentenceposition; the reader is warned about some cases of paired symbols, but these are no longer the main phenomenon explained in the following words, so they need not have been standard.

The next clause began at scire oportet quia. Since quia represents ő $\tau 1$ (x5/5), we are
 three explanations: the 'second sign' from the preceding list (diplê), or from each pair of symbols that Martin envisaged in the preceding clause (that is, those in the lower margin); or, finally, secundum represents $\kappa \alpha \tau \alpha ́$ in the sense 'according to', as below secundum pauimento represents $\kappa \alpha \tau \grave{\alpha}$ (this time 'within') tò $\varepsilon$ है $\delta \alpha \varphi \rho \varsigma .{ }^{8}$ This last interpretation makes it easier to identify a main verb and understand quasque in the

[^3]following phrase. scriptura represents $\gamma \rho \alpha \varphi \eta$, which a monastic copyist would know as 'Scripture' (cf. CGL 2.265, 2.555), though the required sense here is 'reading'. scriptae scripturae are then $\alpha i \gamma \varepsilon \gamma \rho \alpha \mu \mu \varepsilon ́ v \alpha ı ~ \gamma \rho \alpha \varphi \alpha$ í, 'the readings written', after which creditas could represent a verb such as $\dot{\alpha} v \alpha \varphi \varepsilon ́ p o v \tau \alpha 1$, 'are ascribed'. quisque, 'each', is hardly used elsewhere in the gloss on Anonymus II but, taken with 'according to the sign', we appear to be told that the different signs attributed readings to different authorities (perhaps editions, if the feminine gender of alias quasque can be relied on), one each. ${ }^{9}$ This use of critical symbols has been conjectured for ancient books such as P.Oxy. 3224, where several signs occur in proximity. ${ }^{10}$

Next, expositio probably represents something like $\dot{\varepsilon} \pi \varepsilon \xi \dot{\xi} \gamma \eta \sigma ı \varsigma$ : cf. exposuit $<\dot{\eta} \gamma \dot{\eta} \sigma \alpha$ тo at 44.14 Martin. An important detail which Martin did not discuss is that this 'explanation' lies in memoria: this must represent $\dot{\varepsilon} v \dot{\chi} \pi \sigma \mu v \dot{\eta} \mu \alpha \tau 1$, 'in the commentary' or similar. The gloss memoria < $\dot{\pi}$ ó $\mu v \eta \mu \alpha$ occurs less misleadingly at 217.1 Maass. ${ }^{11}$ The edition, in other words, was keyed to a commentary with explanations that weighed up the different readings. Contrast Martin's interpretation


Martin supposed that tamquam non in peccato derived from a parenthetic phrase such as $\check{\sigma} \sigma \tau \varepsilon \mu \grave{\alpha} \dot{\alpha} \mu \alpha \rho \tau-$, 'so that you will not get confused'. The three other instances of tamquam gloss $\dot{\omega} \varsigma$ or its homophone ö $\varsigma$, but a negative final clause suits Martin's idea anyway. $\dot{\omega} \mu \dot{\eta} \dot{\varepsilon} v \dot{\alpha} \mu \alpha \rho \tau i \alpha \mathrm{l} \gamma \dot{\varepsilon} v \eta ı$ might explain the following in quo ( $\sim \dot{\varepsilon} v \dot{\eta} \imath$ ). In any case, the possible source of error is whether the reading in the main text or the margins is preferable: secundum pauimento and secus pauimento represent $\kappa \alpha \tau \alpha ̀ ~ \tau o ̀ ~ e ̋ \delta \alpha \rho o \varsigma ~ a n d ~$ $\pi \alpha \rho \grave{\alpha} \tau \hat{1}$ غ́ $\delta \alpha \dot{\alpha} \varphi \varepsilon$ ı. ${ }^{13}$ But hiemalium ('of wintry') does not fit. Martin suggested that кع'́uعvov ('text') was misread as $\chi \varepsilon \mu \varepsilon \rho i(v) \omega v$. Rather, a confusion with $\chi \varepsilon i \rho \omega v$ ('worse') gives the required antithesis. The Greek may have said something like $\dot{\eta}$
 $\dot{\varepsilon} \delta \dot{\alpha} \varphi \varepsilon \iota 1 \varphi \varepsilon ́ \rho \varepsilon \tau \alpha 1$, 'the one visible within the main text should in fact be deemed worse, while the superior one is found beside the text. ${ }^{14}$ Contrast the procedure of Attalus of Rhodes, who corrected Aratus' text to make it 'accord with phenomena', at least according to his critic Hipparchus (Comm. 1.3.3).

To sum up this interpretation, Anonymus II included the cover letter of an edition that had critical symbols in the margins, including occasionally (not regularly) a pair of symbols with one at the foot of the column. Better readings were added in the margin,

[^4]rather than being incorporated into the text; in this regard, 2.19 hiemalium $<\chi$ عip $\omega v$ not $\kappa \varepsilon \dot{\prime} \mu \varepsilon v o v$. Parallels for interpreting 2.15 secundum as a reflex of $\kappa \alpha \tau \alpha \dot{\alpha}$ suggest that one use of the critical symbols was as sigla to refer to different authorities. Correct diagnosis of in memoria shows that the arguments surrounding these textual variations were originally presented in a separate commentary.

## II. THE NARRATEES OF THE ILIAD AND THE PHAENOMENA (3.2-13 MARTIN)

The editor next embarked on a discussion of the authentic form of the start of the Phaenomena, about which we have some information from other ancient scholarship. Some deemed the familiar proemic hymn to Zeus (Phaen. 1-18) to be spurious and preferred alternatives (non aestimant hoc Arati esse prouerbium ... sed haec auferentes alia praecipiunt, 2.23-5 Martin). These included a proem addressed to Anclides, here called unum de sociis qui uerbum fecerat ( 2.22 Martin): if this glosses something like हैv $\alpha \tau \bar{\nu} v \dot{\varepsilon} \tau \alpha i \rho \omega v$, öऽ $\dot{\varepsilon} \lambda о \gamma о \pi o i \varepsilon$, it is the only tradition about Anclides' literary activity. ${ }^{15}$ This proem will be discussed in section III. A third option was to start at line 19: quidam tamen sic et alii aliter (3.2 Martin) represents oi $\mu \grave{\varepsilon} \nu$ ö $\mu \omega \varsigma \ldots$ к $\ldots \grave{1}$ $\ddot{\alpha} \lambda \lambda v \delta 1 \varsigma \ddot{\alpha} \lambda \lambda \mathrm{ol}$ from that line, and the following word, profanant ('they desecrate', inappropriately), is probably a corruption of $p$ (rae)fantur, 'they preface it with'.

The editor's subsequent discussion of these options includes an idea that has not been understood properly:
hi quidem ut Aratum faciunt per totam creaturam ad quendam locu<tu>m ${ }^{16}$ depinxerunt hos uersiculos ut cognoscatur ad quem est eorum suggestio. hoc quidem est bene compositum: facturae consuetudo. etenim Homerus ubi dicit nuncupare hos apices alterutris, hoc est uocare, et in aliis in quibus non est manifestum scire, prout scias quisnam: quantum enim potest nunc hoc scire quisnam. et rursus nuncupare et zacynthum extentum decorum esse prout nuncupatur quisnam. absque nisi et Homerum nuncupare quidem clamare aliquem.

The first sentence expresses the idea that the proem to Anclides (dismissively called uersiculos) was created to provide an answer to the question of whom Aratus was talking to in lines such as 733 (ovंख ópóals...;). The idea recurs in a scholium ( $\mathrm{M} \triangle \mathrm{KA}$ ) on that line:




The apparent direction of the discourse towards somebody misled people into inserting the proem to Anclides. However, they did not realize that it is poetic custom. Compare Homer: 'Then you would not see ... snoozing' [II. 4.223] ...

[^5]As the editor and scholiast pointed out, inclusion of a second-person narratee was an established epic trope, which does not require a reader to know anything specific about the narratee's identity. This point is made several times in Homeric scholia, which allow us to identify the parallels adduced in the Latin passage, and to add these to the list of correspondences between Aratean and Homeric scholarship. Compare:
$\Sigma$ Ariston. Il. 3.220a Erbse: $\varphi \alpha i ́ \eta \varsigma ~ \kappa \varepsilon v: ~ o ̈ \tau 兀 ~ \tau o ̀ ~ \varphi \alpha i ́ \eta \varsigma ~ \tau \eta ̀ v ~ \varphi \alpha v \tau \alpha \sigma i \alpha v ~ \varepsilon ̈ \chi \varepsilon ı ~ ஸ ́ \varsigma ~ \pi \rho o ̀ s ~ \tau \grave{v ~ ' E \lambda \varepsilon ́ v \eta v ~}$


'You would say': 'You ... say' gives the impression of being spoken to Helen. However, it should be understood in accordance with Homeric practice as equivalent to 'Someone would have said', as is the case in 'Then you would not see ... snoozing' for 'someone would ... see'.


'You would not recognize the son of Tydeus': The feature of apparently turning to a person is nice. Cf. 'You would say he was some raging person' [3.220]. ${ }^{18}$

Il. 3.220 is the key to our Latin: nuncupare et zacynthum extentum has nothing to do
 ( $\sim \tau \varepsilon \tau \alpha v \cup \mu \varepsilon \varepsilon^{v} \alpha \iota$ or $\left.\tau \varepsilon \tau \varepsilon เ v o ́ \mu \varepsilon v \alpha l\right) .{ }^{19}$ The Latin comments that the line is 'appropriate' (decorum), and this suggests a viable critical idea that the Homeric scholia do not preserve. If Antenor had directed 'You would say ...' at his addressee Helen specifically, his claim about her initial impression of Odysseus would be unsuitable, since she knows Odysseus better than Antenor does.

The inference that nuncupare glosses poins enables us to identify nuncupare hos
 'You would say that unwearied ... each other'. ${ }^{20}$ One of the few verbs to appear in this unspecific second-person optative in the Iliad is $\gamma$ voins, which must be represented by scire (cf. Phaen. 769 scimus < $\gamma \mathrm{l}$ ต́бконعv). This verb is indeed used in aliis in quibus non est manifestum, that is, with a negative when the situation is unclear (Il. 5.85; cf. 14.58). The passage seems to end with humour: the trope under discussion ( роins, nипсирare) is incorporated into a challenge from editor to reader to claim instead that Homer was really addressing a distinctive person.

I end exempli gratia with a reconstruction of the Greek underlying the passage quoted above, and a translation of the sense:



[^6]




The one group [who prefer the proem to Anclides], since they made Aratus out to be talking to someone throughout the whole poem, copied out these lines so that the person to whom its advice is directed might be known. This is nonsense: it is a poetic custom. After all, Homer says somewhere 'You would say that they untiring ... against each other' (that is, 'you would call them ...'), and 'you would recognize' in other passages where things are unclear, standing for 'someone would recognize'; indeed, it is equivalent to the modern 'someone would recognize'. And again, the phrase 'you would say he was a raging person', standing for 'one would say', is appropriate-unless you 'would say' that even Homer is addressing somebody.

## III. THE PROEM TO ANCLIDES (152-3 MAASS, SH 84)

Part 6 of Anonymus II (excluded from Martin's edition) is a complete gloss on an alternative ancient proem of the Phaenomena. We also have various testimonia to this proem to Anclides, including quotations of around two and a half lines in a Greek introduction said to be 'Achilles On Exegesis' in Vaticanus gr. 191.22 The Greek and the two Latin glosses of the first line and a half immediately demonstrate the uncertainties that any attempt at reconstruction faces. While the possibility that the Latin continued to garble the Greek beyond recognition is unfalsifiable, I will try to demonstrate the plausibility of an alternative hypothesis, namely that the Latin was far less distorting for the majority of the proem.

> oủpovíŋv $\psi \alpha v ́ \sigma \varepsilon ı \alpha \varsigma ~ ह ̈ \pi ı ~ \tau \rho i ́ ß o v ~$
> 'Anclides, sacred scion of guest-friends, come, and together with me touch the heavenly path'
praeclara ostensio sacri uoluminis, namque cum mihi caelestem properaret adminiculum (Anonymus II.6)

Anclidis ostensio sacrum praepositum, itaque caelestem uitam peragens (Anonymus II.3)
Confusion of $-\delta \eta \xi \varepsilon ı v-$ and $\delta \varepsilon i ̂ \xi \imath v$ has led both versions of the Latin to the word ostensio, 'demonstration', under the influence of $\delta \varepsilon i \xi^{\prime} \imath v$ occurring at the start of Anonymus II. 1 (102 Maass). ${ }^{23}$ $\theta \dot{\alpha} \lambda$ os was not understood, and both versions add a noun for what the
 positive, presumably via a development such as 'nonsense' > 'chatter' > 'fluency'.
${ }^{22}$ 32-4 Martin. The subscription attributes the essay to Achilles (f. 205r), excerpts from whose essay On the Universe have just been presented on fols. 194v-203r. However, an intervening title on f. 203 v refers to 'Distinctions from other works', so there is room for doubt about the sequence and reliability of the ascriptions. On Achilles, see C.E. Augerinos, "A $\chi \lambda \lambda \lambda \varepsilon v ́ s ~ o ~ \psi \varepsilon v \delta o-T \alpha ́ \tau \iota \rho \zeta ", ~$

${ }^{23}$ For the name, cf. Anakleides in SEG 25.936 (Naxos, c. 75 b.c.e.); Anakles has four hits on http:// clas-lgpn2.classics.ox.ac.uk (last accessed 9/3/2022). L. di Gregorio, 'L'Arato perduto', Aevum 58 (2014), 59-98, at 77 proposes that it is a speaking name for Antigonus Gonatas; that would be considerably easier to understand if any word compounded from $\dot{\alpha} \nu \alpha-$ and $\kappa \lambda \varepsilon \varepsilon^{\circ} \rho$ existed outside of onomastics. Di Gregorio ([this note], 83) finds support in the idea mentioned by Anonymus II. 3 (5.12 Martin) that Antigonus himself inserted a proem. However, hoc there may refer to the Hymn to Zeus, which has been the main topic before.
'demonstration' of a proem might address. In the second line, $\psi \alpha$ v́бعı $\alpha \varsigma$ seems to have caused trouble: Anonymus II. 3 simply omits it, and uitam peragens might translate $\tau \rho i ́ \beta \omega v$ 'spending time' rather than $\tau p i$ ißov 'path'; properaret in Anonymus II. 6 possibly derived from $\sigma \pi \varepsilon v ́ \sigma \varepsilon 1 \alpha \varsigma$, 'may you hurry'. ${ }^{24}$ Conversely, the gloss on $\sigma v ́ v ~ \mu o ı, ~ c u m ~ m i h i, ~$ shows how at other times a remarkably literal process imprinted the Latin with features of the Greek original, in this case that oúv governs a dative whereas cum governs an ablative.

Where the quotation in On Exegesis and Anonymus II. 3 finishes, Anonymus II. 6 continues with a series of nominative agent nouns:
... conditor saeculi auctor et custos mundi ...
saeculum appears in two other places as a gloss on $\alpha i \omega$ v (163.81, 171.2 Maass); the noun mundus < кóб的 (x7/7); custod- < $\varphi \cup \lambda \alpha \kappa-(x 8 / 9)$. The person referred to here as the 'creator of the ages' and 'guardian of the universe' is not Anclides: we need a change of subject. Greek proems standardly effect a transition away from the opening address using a relative pronoun, and the addition of <cuius> restores sense with minimal fuss: the subject is then the builder of the 'heavenly path' to which Anclides was invited. ${ }^{25}$ Of the two words glossed elsewhere with conditor, one is too long ( $\delta \eta \mu$ ıovprós), while the other ( $\pi$ oın $\quad$ ńs, 1.14 Martin) can scan, and would set up a suggestive analogy between the work of the deity and the poet, which in my view returns at the end of this proem. ${ }^{26}$ One possible reconstruction is:

> ... whose author
> was the founder of the ages and the guardian of the universe

There follows the first of two lists that balance each other and create a clear symmetry in the proem.
(i) quantaue cumoccidentali partibus constituta,
(ii) aut quanta a finibus reuoluta per singulos dies,
(iii) quantaue inlustrantur,
(iv) et quorum nobilium totidemque creator Iouis Saturnus Marius puer a primordio ut fuerat cultor,
(v) quantaue diuitia [diuina B] tempestas ac serenitas sacra paret.

Both lists appear in Latin with anaphora of quanta, 'as many (things) as ...'. Compare the brief example in the Homeric Hymn to Mother Earth (30.2-4):27

[^7]



[Earth] ... who nourishes all things that exist: all those that traverse the bright land, and all that traverse the sea, and all those that fly to and fro-it is from your prosperity that these are nourished.

Lists with anaphora of this pronoun are not especially common in Greek proems, making the double appearance here more striking. But anaphoric lists with other pronouns are among the most common structural features of Greek proemic (and other) hymns. ${ }^{28}$ In our case, the list appears to expand on various parts of the universe, mentioned in the preceding phrase.

Element (i) refers to the question of which constellations dip below the horizon as the sun enters each zodiac sign. This is a major concern in the Phaenomena (559-732) and in the first ancient introduction to Anonymus II, where the calques cumoccidentalis and cumorientalis occur four times for 'simultaneous settings/risings'. ${ }^{29}$ The focus on celestial phenomena of chronological significance follows smoothly from the preceding phrase, where the 'guardian of the universe' was also the 'founder of the ages'. The glossator's usage of many of the Latin words here points to likely Greek equivalents. ${ }^{30}$ I suggest:
 4
[guardian of] all the parts that are arranged as setting together <with the zodiac signs>

For $\mu \varepsilon ́ p \eta$ used alongside $\sigma \cup \gamma \kappa \alpha \tau \alpha \delta v v^{\circ} \mu \alpha \downarrow$ to refer to 'parts' of constellations, see 169.5-6 Martin. $\mu 0 i \bar{p} \alpha \mathrm{t}$ is used prominently for 'zodiac signs' in the relevant section of the Phaenomena (560,581); ${ }^{31}$ the pair of similar words could explain why the gloss ended up only with partibus.

Where the settings of element (i) mark moments on an annual scale, element (ii) refers to the daily cycles of the sun and fixed stars relative to the horizon. singuli < غ̈кобтоร or $\dot{\varepsilon} \kappa \alpha ́ \tau \varepsilon \rho о \varsigma ~ x 17 / 18, ~ t h e ~ l a t t e r ~ b e i n g ~ i n a p p r o p r i a t e ~ h e r e, ~ w h i l e ~ d i e s ~$ < $\hat{\eta} \mu \alpha \rho / \dot{\eta} \mu \varepsilon ́ \rho-\mathrm{x} 9 / 11$; a finibus glosses $\dot{\varepsilon} \kappa \pi \varepsilon \rho \alpha \dot{\tau} \tau \varsigma$ at Phaen. 821 in a similar context. I therefore suggest:

[^8]$\grave{\eta} \delta^{\prime}$ ő $\sigma \sigma^{\prime} \varepsilon \dot{\varepsilon} \kappa \pi \varepsilon \rho \alpha \dot{\alpha} \tau \eta \zeta \hat{\eta} \mu \alpha \rho \sigma \tau \rho \varepsilon ́ \varphi \varepsilon \tau \alpha \iota \kappa \alpha \theta^{\prime}$ ह̈к $\alpha \sigma \tau о \nu$,
and of all things that revolve each day from the distant horizon
I postpone discussion of elements (iii)-(iv) until after the contrast of foul weather and fair weather (tempestas ... serenitas) in element (v). Again, several words provide pointers to the Greek: tempestas $<\chi \varepsilon \mu-$ (x17/20), ac/atque $<\kappa \alpha i(x 8 / 8)$, seren$<\varepsilon v ̉ \delta 1-(x 5 / 6)$ and pareo 'appear' < $\varphi \alpha(\varepsilon)$ ív $\omega$ (x6/6). sacer glosses iعpós (x5), except
 became serenitatem sacrae disciplinae. Here too, phonetic confusion of ŋ̀ $\bar{\rho}$ - and iepreveals the noun for $\varepsilon$ v̌ $\delta$ os. The 'storm/winter' and the 'fair weather' were originally the objects of a transitive verb, whose implicit subjects were thus the constellations that herald seasonal weather. Finally, the majority reading diuitia ('rich things') seems wrong, while MS B's correction diuina is plausible given parallels such as Oppian, Hal. $3.47 \chi \varepsilon$ £̂ $\mu \alpha$ $\Delta$ tós ('Zeus's winter'). Hence I reconstruct:
 8
and of all things that bring into view divine wintry weather and a bright sky.
Element (iii) seems to refer to sunlit regions such as the surface of the earth, the sun having just been implied in element (ii). Element (iv) is more obscure. Maass supposed that there was a list of planets, in which Jupiter and Saturn are still visible, while Mercury might lie behind Marius (read Mercurius or Maeadis?) puer. However, it is difficult to fit in Mars and Venus. A more likely conjunction of Saturn and some 'notables' (nobilium), and one connected to the security of the cosmos (cf. custos mundi above), is the idea of Kronos overseeing Tartarus and its divine and human occupants. This conception has its roots in epic tradition (Il. 14.274; Hes. Theog. 851), which sometimes emphasized the sunless nature of Tartarus (Il. 8.479-81), so that there is an effective contrast with element (iii). The reference would engage with the ancient critical tradition of discussing how Aratus' cosmos relates to those of his epic predecessors. Hesiod's positioning of Tartarus is compared in another preface preserved in a branch of the Aratean scholia (23, 540 Martin). Indeed, the scholia record that some scholars understood the 'earlier generation' invoked in Phaen. 16 as the Titans. On this reading, Marius needs to be emended into a reference to one of Kronos' parents, Ouranos and Gaia: Matris, Mother Earth, is the obvious solution. Otherwise, we have few clues about the Greek phrasing here, other than that $a$ primordio occurs in glosses on Phaen. 388 д̀ $\pi$ ò $\pi \rho o \tau \varepsilon ́ \rho \omega v$ and $735 \pi \rho \omega ́ \tau \eta$. One might hesitantly propose something like:
6

> and of all that are illuminated from above, and where, together with the notorious, the Zeus-begetting child of Mother is settled, as from the very first ${ }^{32}$

[^9]If this is approximately right, the proem chose to allude to the deadest part of the Hesiodic cosmos, overlaying it with new mythography if Kronos lived there literally 'from the first' rather than as a result of Hesiod's Succession Myth.

We return to firmer ground with the following line, which is cited in On Exegesis:

Together with seven-fold decades of the cycling years
septuplum cum decies cummulantur anni
The 'cycling years' make a connection to the preceding phrase about the constellations that bring seasonal weather, but the focus on a seventy-year period is a new thought: the asyndeton marks a transition rather than an explanation. Moreover, two testimonia (On Exegesis, Anonymus II.3) refer to the line to discredit the proem to Anclides, and both relate it to the subsequent words. On Exegesis says that the seventy-year period refers to the time in which the sun returns to its starting-point in the sky, and complains that this is incompatible with Aratus' mention of the Metonic cycle (Phaen. 753). This aligned 19 solar cycles with 235 lunar ones, and hence specified the need to intercalate seven months into the civil calendar across each such period. Meanwhile, Anonymus II. 3 seems to complain that the proem contains the nonsensical claim that the poet received instructions about his topic seventy years previously:
quia et enuntiatio praefationis quid faciat adloquitur ante septuaginta annos dicit adnuntiatum quasi nihil dicat.

Possible interpretation: [Note] also that the proem's announcement stating what he is doing claims that he was informed of it seventy years before, as if he were talking nonsense. ${ }^{34}$

The two objections, while separate, are compatible. The claim in On Exegesis relates to the next words of the Latin gloss:
cuncta mihi solis locupletat
locupleto, 'I enrich', seems out of place, but locus and ple- produce the sense that the testimonium found: 'all of the sun's locations' + 'filled'. Then follows:
quando mei memoriam karissimi filii honorificent pro eo an ex aliorum beatitudine qui Olimpum habent.

In light of the testimony of Anonymus II.3, the sequence quando ... memoriam karissimi filii refers to the daughters of Memory, the Muses, telling the poet-narrator long since to perform a song of honour. filii ('sons') suggests that the Greek had a gender-neutral word for 'child'. There follows an obvious variant of the epic formula $\mu \alpha \kappa \alpha ́ \rho \varepsilon \sigma \sigma \iota ~ \theta \varepsilon o i ̂ \sigma ' ~ o i ̀ ~$
 that pro and pro eo quod occur thirteen times in glosses on $\delta$ ó or or ('on account of') suggests that the Muses asked the poet to honour $\Delta^{i} \alpha$, Zeus, above the other

[^10]gods. ${ }^{36}$ Several other regular correspondences between Latin and Greek point to a reconstruction such as the following: ${ }^{37}$

> 'For me the sun's whole <exchange> of locations is reaching completion, since the dear children of Memory <told> me to esteem
> Zeus before the other blessed ones who occupy Olympus.'

I reserve discussion of the sense here until my concluding paragraphs.
The next words are as follows:
nondum perierunt caeli cultores qui signa et prodigia patris ad omnes tribuit, ...
The first four words here appear to assert that 'the inhabitants/worshippers of the sky have not yet died', but such a thought went without saying. Rather, like many a student, the glossator expected a simpler word order and allowed himself to overlook the endings. The person qui signa tribuit, 'who attributed signs ...', was the subject of 'has not yet died', while the inhabitants of the sky, who have just been contrasted with Zeus, were the ones to whom signs were wrongly attributed. nondum $<$ ov, ov̋ $\pi \omega$ or $\mu \dot{\eta} \pi \omega$ (x6/6), pereo represents $\dot{\alpha} \pi o ́ \lambda \lambda \nu \mu \alpha ı$ (once correctly, and Phaen. 712 $-\alpha$ đغ́ ${ }^{2}$ oıto becomes pereunt by confusion), caelum < ov̉p $\alpha v$ - (x24/26), sign- normally $<\sigma \eta \mu-(\mathrm{x} 54 / 93+6$ instances of confusion) or $\zeta \omega \mathrm{t} \delta \mathrm{t}-(\mathrm{x} 21)$, pater $<\pi \alpha \tau \eta \rho$ (x10/10), omnis $<(\dot{\alpha}) \pi \alpha \varsigma(x 109 / 113) .{ }^{38}$ Hence for example:
'But the <account of experts?> has not yet vanished, which/who attributed to all the Heaven-dwellers the father's signs and portents'

The implication that it was misguided to hold some quite standard opinions, such as that Apollo had a role in augury, constitutes a sharpening of the position in the body of the Phaenomena, which gives primacy to Zeus (for example 743, 769-71), but does admit isolated references to 'the gods' giving signs (732), to an anthropomorphic Night doing so (408-10), and to the 'stars of Poseidon' (756). ${ }^{39}$

[^11]Here we reach the second list of 'all that' belongs to a certain category, in this case Zeus's 'signs and portents':
(i) et quanta in mare seu in terra uel quanta circa ignem significantur
(ii) aut quanta quadrupedibus et quanta uolucribus natant hinc atque inde bruta animalia monstruosa hieme uel aestate
(iii) sacrae conuentionis aut quaecumque tonitrua et fulgura adferentes spiritum repleta

The categories discernible here-signs at sea, on land and around flames; signs from animals and birds; signs from thunder and lightning-are a reasonably complete précis of the second half of the Phaenomena (from line 733). This acquired its own title, the Diosem(e)iai, a word which encapsulates our proem's insistence on the primacy of Zeus in sending omens in the form of phenomena in the natural world. ${ }^{40}$ In element (i), the correlations of terra to $\gamma \bar{\eta} / \gamma \alpha \hat{i} \alpha$ (x50/58, plus at least three confusions), circa to $\pi \varepsilon \rho i ́(x 8 / 9)$, ignis to $\pi \hat{\jmath} \rho(\mathrm{x} 4 / 4)$, and significo to $\sigma \eta \mu \alpha i v \omega$ ( x 7 ) suggest an original such as:

> 'both all at sea and on land, and all that are signalled around a fire'

Element (ii) also has several words suggestive of the Greek source: quadrupes

 (x4/4), hiem- < $\chi \varepsilon \mu-$ (x30/36, plus 1 confusion), aest- ‘summer heat' < $\theta \dot{\varepsilon} \rho o s$ (x13/16, plus 1 confusion). However, these lines are harder to reconstruct because of some likely misprision. quanta uolucribus natant ('all the things that swim by means of birds') must contain an omission, for example 'all the things [sc. signalled] by birds <if they/ when they/which> swim ...'. And in fact, though significant birds in Aratus are often washing themselves, the position of animalia monstruosa suggests a summary of what precedes including quadrupeds, which do not go swimming in the Diosemeiai. I infer a confusion of véoual 'go' and vé $\omega$ 'swim'. This reasoning prompts the following reconstruction:
ö $\sigma \alpha \delta^{\prime} \alpha \hat{v} \theta ı \varsigma \tau \varepsilon \tau \rho \alpha \pi o ́ \delta \varepsilon \sigma \sigma \iota v$,
16

 $\chi \varepsilon \dot{\mu} \mu \alpha \tau \circ \varsigma$ عौtє $\theta \dot{\rho} \rho \circ \cup \varsigma$,
'and also all those [sc. signalled] by four-footed creatures, and all those <by the tribes> of winged ones, ${ }^{41}$ <such as> go to and fro, being among animals the ones ominous for mortals, in winter or summer'

[^12]The suggestive words in element (iii) are sacer < iepós and repleo $<\pi \lambda \eta$ - (see above), tonitrua < $\beta$ pov $\tau \alpha$ í in Phaen. 924 , spir- $<\pi v \varepsilon v-/ \pi v o-(x 8 / 8)$. The astronomical term behind conuentio is $\sigma$ v́voסo̧, 'alignment of sun and moon', the juncture between two synodic months; the sense occurs frequently in the scholia and in chapter 5 of the Theophrastean On Signs, which is the closest comparandum for the Diosemeiai. ${ }^{42}$ This period was indeed 'sacred': for example, new-month festivals and worship of Hermes, Hecate and Aphrodite were clustered there. Hence I propose:


and everything that thunder and wind-filled lightning bolts bring with them during the sacred juncture [sc. of months]. ${ }^{43}$

The end of the proem's second list brings us to its concluding lines:
in aetheria summitate omnia signa quae super terra fiunt a Ioue fieri
We move from the sublunary signs of what precedes to the heights of the upper sky and to Zeus. ${ }^{44}$ The glossator uses fieri twenty-three times with a good degree of accuracy, normally to represent an infinitive: I infer that a verb governing indirect discourse has dropped out at the start. After the preceding polemic against the traditional view that various gods send portents, that verb must have a form like 'But $I$ declare/think'. For example:

21

$<$ But I declare> that in the ethereal heights all signs such as occur above the Earth are from Zeus.

As at the start and centre of the proem, the narrator has made an overt appearance. Anclides resurfaces too:
quod per omnia facta fabulis disponam quasi optima, tu autem cum sapientia hic intelleges.
Hymnic proems also often end with the contrast of performer and addressee. Here disponam ('I will arrange') suggests $\delta \alpha \alpha i \theta \eta \mu \mathrm{l}$ and a further return to a feature I suggested for conditor in line-namely, a parallelism between the poet's work and that of the deity being discussed, whom we now know to be Zeus bestowing a fine organization on the cosmos, to be matched by Aratus' fine organization of his discussion. ${ }^{45}$ fabula

[^13]glosses $\mu \hat{v} \theta o s$ in its other occurrence ( 4.5 Martin). The promise to lay out the topic is the result of a belief in Zeus's power, so quod should represent 'therefore' rather than 'because' or 'which', perhaps pointing to an ambiguous Greek word. Then per, in the context of praising Zeus, may well reflect the same confusion of $\delta$ ó with $\Delta i \alpha$ which I posited above in pro eo. The resulting duplication of $\delta 1 \alpha$ in the line, once as $\Delta i \alpha$ and once in $\delta \iota \alpha \theta \dot{\eta} \sigma \omega$, far from being inelegant, corresponds to similar etymological play found repeatedly in the scholia to Phaen. 1-18, emphasizing both how Zeus pervades the cosmos and how Aratus' task relates to Zeus. ${ }^{46}$ In the final line, the stem sapient- appears one other time, in a gloss on Phaen. 473 甲pévac. Since cum glosses $\mu \varepsilon \tau \alpha ́ \alpha$ six times, cum sapientia represents the formula $\mu \varepsilon \tau \dot{\alpha} \varphi \rho \varepsilon \sigma^{\prime}(v)$. intellego occurs twice, both times for voź $\omega$. All this suggests something like the following:
'Hence I will lay out in words/myths Zeus and all the deeds <of Zeus>
as finely as possible: and you in turn will understand these things in your mind. ${ }^{47}$
As noted at the outset, the primary aim of this discussion has not been to reconstruct the wording of this Greek proem from the Latin gloss. Many parts of the twenty-four lines in my reconstruction are uncertain. Instead, the process of reconstruction was the essential means to test and, I hope, render plausible the hypothesis that the Latin here was a reasonably complete and sequential gloss on the original, subject to errors which are themselves identifiable by means of parallels within Anonymus II; and, if that hypothesis is plausible, the means to extract enough of the sequence of thought to interpret the proem's effect.

An exercise of this type is insufficient to evaluate the stylistic judgement in On Exegesis that this proem exhibited к $\kappa \kappa \circ \zeta \eta \lambda i \alpha$, 'affectation, bad taste', which was incompatible with the rest of the Phaenomena. ${ }^{48}$ However, some artistry is visible on the level of structure. The proem starts and ends with the narrator and Anclides, while its centre features the narrator with the Muses and an opponent; the middle of each half is largely composed of balancing lists with anaphoric ő $\sigma(\sigma) \alpha$.

The didactic voice of the Phaenomena is reshaped. The poem becomes a pious xenia gift ( $\xi$ zív $\omega$ v iepòv $\theta \alpha \dot{\alpha} \lambda o \varsigma$ ), more pleasing to Zeus Xenios than a commission by Antigonus Gonatas, as in the standard biographical account. ${ }^{49}$ As in Nicander, the

[^14]proem begins with a named addressee, rather than with Zeus, who in Works and Days had taken pride of place before the introduction of Perses. ${ }^{50}$ Anclides is probably youthful (a common connotation of $\theta \dot{\alpha} \lambda \mathrm{\lambda} \varsigma \varsigma$, 'scion'), and is invited to a companionable ( $\sigma v v^{\mu} \mu \mathrm{t}$ ) journey, despite the apparent age gap to a narrator who has been mulling the topic over for seventy years after receiving instruction from the Muses. Ancient readers presumably imagined a boyhood poetic initiation to account for this. Besides the obvious contrast with Hesiod (Theog. 22-34), whom the Muses advised to sing about all the gods, it is tempting to compare Callim. Aet. fr. 1.6 Harder $\tau \hat{\omega} v \delta^{\prime}$ غ̇t $\dot{\varepsilon} \omega v$ $\dot{\eta} \delta \varepsilon \kappa \alpha ̀ \varsigma ~ o v ̉ \kappa ~ o ̀ \lambda i \gamma \eta$, 'the decade of my years is no small one', for a proemic reference (possibly, indeed, in a revised proem) to the poet's age, followed by recollection of his initiation into poetry as a schoolboy (fr. 1.21-8). But in our proem different resonances are available from those in the Aetia. It relates the tradition of a seventy-year life-cycle (Sol. fr. $27 I E G^{2}$, etc.) to Callippus' attempt to refine the cycle of Meton and Euctemon by quadrupling its length into a correspondence of 76 solar years with 940 lunar months. The ageing poet thereby gains an affinity for his topic embedded in the chronology of his life, but also embraces the more technical and cutting-edge alternative to the Metonic system. ${ }^{51}$ The poet's lifetime and the Callippic cycle are just two of many levels of time thematized in this proem, from Zeus's founding of time itself, through coincidences measured by the zodiac, the daily cycle, the mythological generations behind Zeus, seasonal change and the synodic months.

The representation of an older and wiser narrator may be an early response to the ancient topos of questioning how much astronomy Aratus knew. ${ }^{52}$ The naming of a primary narratee contributes to this, as we become in some sense overhearers of Aratus' special knowledge. ${ }^{53}$ The narrator will lay things out with a skill worthy of Zeus, and Anclides will as a result 'touch' the sky briefly ( $\psi \alpha$ v́бعiac in line 2) and gain understanding (intelleges at the end). This is far from the Hipparchan Aratus, after whom one has to clean up if the reader is to learn. ${ }^{54}$ The image of narratorial wisdom also redirects the broadly Stoic primacy of Zeus in Phaen. 1-18. ${ }^{55}$ Instead of

[^15]such formulations as 'All the streets are full of Zeus' (2), with their emphasis on humanity sharing access to Zeus as a ubiquitous and beneficent presence, the alternative proem offers a blunter, more polemical tone where the narrator's knowledge is contrasted with the errors of others. Specifically, the Muses have declared privately that other gods, including themselves, are less worthy; people who think that all sorts of deities are involved in sublunary signs are wrong (they are 'signs of the father', 14), and anyway fail to focus on the crucial importance of heavenly signs, which come from Zeus. The proem in fact contains an implicit interpretation of the relative importance of the different parts of the Phaenomena: though it has more to say about the Diosemeiai than much of the Aratean tradition, that part is relegated to a secondary status already by the reference to the 'path of heaven' in line 2, while the importance of the section on simultaneous settings is acknowledged in line 4.

What emerges from this analysis, I submit, is a coherent train of thought, into which the testimonia about the proem fit naturally. It betrays not only poetic artistry from the composer but also a confidence to create a new poetic programme whose differences from the hymn to Zeus touch on many of the central points of both ancient and current interpretation of Aratus' didacticism-what sort of knowledge he has, what sort of cosmos he describes, how he compares to Hesiod, and our level of insight as learners and addressees.


[^0]:    * I thank Jess Lightfoot, Tom Phillips, Helen van Noorden and Armand D'Angour for advice and encouragement, and acknowledge the valuable input of $C Q$ 's reader.
    ${ }^{1}$ See especially J. Martin, Histoire du Texte des Phénomènes d'Aratos (Paris, 1956), hereafter HT; M.D. Reeve, 'Aratea', in L.D. Reynolds and N.G. Wilson (edd.), Texts and Transmission (Oxford, 1983), 18-24; H. le Bourdellès, L'Aratus Latinus: Études sur la culture et la langue latines dans le Nord de la France au VIIIe siècle (Lille, 1985); M. Erren, 'Arat und Aratea, 1966-1992', Lustrum 36 (1994), 189-284, at 217-21, 259-83; D. Kidd, Aratus Phaenomena (Cambridge, 1997), 36-48; R. Luiselli, 'Aratus', CLGP 1.1.3, 43-155; E. Gee, Aratus and the Astronomical Tradition (Oxford, 2013); K. Volk, 'The world of the Latin Aratea', in T. Fuhrer, M. Erler and P. Derron (edd.), Cosmologies et cosmogonies dans la littérature antique (Entretiens Hardt 61) (Vandœuvres, 2015), 253-89. The following editions are referred to by editor's name alone, preceded by the relevant page and line numbers without the abbreviation p. or pp.: E. Maass, Commentariorum in Aratum reliquiae (Berlin, 1898) and J. Martin, Scholia in Aratum vetera (Stuttgart, 1974).
    ${ }^{2}$ Shortly after this article was accepted for publication in $C Q$, I learned that some pages in the same tradition as Anonymus II have been discovered in the Codex Climaci Rescriptus. See now P.J. Williams et al., 'Newly discovered illustrated texts of Aratus and Eratosthenes within Codex Climaci Rescriptus', CQ 72 (2022), 504-31.

[^1]:    
    
     $\sigma \tau i \not \chi \omega \iota \pi \alpha \rho \alpha \kappa \varepsilon \dot{\mu} \mu \varepsilon v \circ \vee$ हैv $\tau \iota \tau \omega ิ \nu$ $\pi \rho о \varepsilon ı \eta \mu \varepsilon ́ v \omega \nu$ бпиєí $\omega v .$.

[^2]:    ${ }^{3}$ One example of the many complaints: the comment by H. Lloyd-Jones and P. Parsons on SH 84 'prooemium Latine vertit vel pervertit Anon. II'.
    ${ }^{4}$ Biblioteca Medicea Laurenziana, Plut. 87.10, f. 183v. For transcriptions of the key Latin manuscripts by I. Dobcheva, see https://aratea-digital.acdh.oeaw.ac.at (last accessed 9/3/22).
    ${ }^{5}$ The manuscript has $\gamma \rho \alpha \varphi \eta \geqslant v \delta^{\prime} \not \partial v$ i̋ $\delta \eta \varsigma$. My $̂ \delta o 1 s$ is discussed presently.

[^3]:    ${ }^{6}$ See D. Manetti, 'La terminologie du livre: à propos des emplois d'v̋ $\varphi \circ \varsigma$ et $\varepsilon$ है $\delta \alpha \rho \circ \varsigma$ dans deux passages de Galien', REG 119 (2006), 157-71. In the passage translated, however, an 'in-text asterisk' is unlikely, and $\varepsilon$ है $\alpha \alpha \rho \circ \varsigma$ is better taken in the sense 'edition (as opposed to hypomnema)', a meaning Manetti ([this note], 166) notes for $\dot{\varepsilon} \delta \dot{\alpha} \varphi p$ ov in $\Sigma$ Pind. Ol. 5 inscr. a. The hypomnema in question will appear below.
    ${ }^{7}$ In Anonymus II, et derives from к$\alpha i$ in $c .405$ of the 470 instances where the Greek is extant, including those where strings such as $\kappa \varepsilon$ and $\kappa \alpha \tau$ - were misread. Statistics like this will be abbreviated below in the form 'et $<\kappa \alpha$ í x405/470'. sub $<\boldsymbol{i} \pi \mathrm{o} \mathrm{x} 36 / 37$ and frequently as a preverb. paginem most likely represents $\sigma \varepsilon \lambda i \varsigma:$ cf. $C G L 2.140$ pagina: $\sigma \varepsilon \lambda \hat{\eta} \varsigma$. hic $<\dot{o}$ around twenty-five times.
    ${ }^{8}$ secundus $<\delta \varepsilon v ́ \tau \varepsilon \rho о \varsigma ~ x 4$, secundum $<\kappa \alpha \tau \alpha ́ ~ x 12$.

[^4]:     [sc. $\varepsilon \kappa \kappa \delta o \sigma t v] ~ \dot{\alpha} v \alpha \varphi \varepsilon ́ \rho o v \tau \alpha l$, 'Be aware that the readings written are ascribed to each of the other [editions] according to the symbol'. For this scholiastic usage of a bare feminine, see e.g. $\Sigma$ Did. Il. 1.91 Erbse. quisque corresponds to $\varepsilon$ ह́к $\alpha \sigma \tau<\varsigma$ in two glossaries approximately contemporary to the earliest manuscripts of the Aratus Latinus, CGL 2.165-7, 2.288.
    ${ }^{10}$ See K. McNamee, Sigla and Select Marginalia in Greek Literary Papyri (Brussels, 1992), $102-9$, discussing the varied uses of $\chi$ and diplê, and the possibility that different signs were sometimes used like sigla.
    ${ }^{11}$ Martin printed in memoriam, a simplification only found in the class of manuscripts which attempted to rationalize the Latin without recourse to the Greek original. memoria and memorialis
    
    ${ }^{12}$ Martin $H T$ (n. 1), 135-6. The extant scholia occasionally discuss variants in terms of particular
     and $\dot{\sim} \pi \mathrm{o} \mathrm{\gamma ovví} \mathrm{\delta os} \mathrm{in} \mathrm{254)} ,\mathrm{but} \mathrm{without} \mathrm{references} \mathrm{to} \mathrm{critical} \mathrm{symbols}$.
    ${ }_{14}^{13}$ secus < $\pi \alpha \rho \dot{\alpha} \times 4$, though other instances correspond to $\kappa \alpha \tau \alpha \dot{\alpha}, \pi \rho o ́$ and $\pi \rho o ́ s$.
    14 autem < $\mu \varepsilon ́ v \times 9$. Anonymus II uses intuo [sic] three times for ( $\varepsilon \dot{i} \sigma) \alpha v 1 \delta \dot{\omega} v$ and $\theta \varepsilon \alpha \dot{\alpha} \sigma \alpha \theta \alpha 1$, neither of which seems as appropriate as $\dot{\varepsilon} v o \rho \alpha \hat{\nu}$ (CGL 2.299) here. In Phaen. 965, iคض́кعббıv > narrantes betrays a connection to عip $\uparrow \kappa \alpha$.

[^5]:    ${ }^{15}$ uerbum < $\lambda$ óros (x9/9), while the active of facio < $\pi$ oté $\omega \times 22 / 25$.
    ${ }^{16}$ My supplement; Aratum is a standard correction for the manuscripts' apatum, aptius. Otherwise, I give the four primary manuscripts' principal reading. In line 3, Martin's etenim est reflects later manuscripts whose scribes were trying to produce sense from the Latin.
    ${ }^{17}$ The proem was addressed, not ascribed, to Anclides, so $\dot{\alpha} v \alpha \varphi \varphi \rho \rho o ́ \mu \varepsilon v o v ~ s h o u l d ~ b e ~ d e l e t e d ; ~ i n ~ a ~$ discussion of the passage's authenticity, it was a comprehensible error. Maass emended to $\varphi \varepsilon \rho$ р́ $\mu \varepsilon v o v$, 'transmitted'.

[^6]:    ${ }^{18}$ Similarly $\Sigma$ Ariston. 3.392b, 4.429-31a, 14.58a, 15.697 Erbse. Cf. I.J.F. de Jong, Narrators and Focalizers: The Presentation of the Story in the Iliad (Amsterdam, 1987), 54-7.
    ${ }^{19}$ The glossator did not recognize $\kappa \varepsilon(v)$, and confused it with $\kappa \alpha i$ on at least eleven other occasions. Elsewhere, nuпсиро glosses the stem $\kappa \lambda \eta$ - or, by error, $\kappa \varepsilon \kappa \lambda 1-(\mathrm{x} 6)$. Il. 3.220 is the parallel for the trope given in $\Sigma$ vet. Eur. Or. 314.12 Mastronarde.
    ${ }^{20}$ This line and 4.220 are cited for the construction in $\Sigma$ R Ar. Ach. 24a Wilson. It is cited alongside Phaen. 287 in [Longinus], Subl. 26.
    ${ }^{21}$ Martin suggests $\varepsilon u ̋ \eta \theta \varepsilon \varsigma$ in his apparatus criticus, and he may be right. However, later in the gloss on Anonymus II, bene composita describes the objection that it is inconsistent for Zeus to arrange the constellations (Phaen. 10-11) when Virgo and Corona Borealis arrived in the sky within human history (133-6, 71-3); a counter-objection follows. This corresponds to 5 Q Arat. 96-7, in particular

[^7]:     image in a didactic proem at [Opp.] C. 1.20. The author suggestively combines the 'path' of structured enquiry, the role the 'paths' of the stars will play in the poem as a whole, and such heavenly paths as feature in Pl. Phdr. 247b or Heracl. Pont. fr. 96 Wehrli.
    ${ }^{25}$ The omission would have induced the preceding verb properaret to gain its third-person ending. I use pointed brackets to mark Greek words in my reconstruction that were not glossed.
    ${ }^{26}$ The treatment of the first syllable as short is common in drama, and cf. Matro, fr. 6.5 Olson-Sens, Callim. Anth. Pal. $9.566 .1=8.1$ Pfeiffer $=1305$ HE. Many editors remove the iota in such cases. For auctor $\sim \dot{\alpha} \rho \chi \chi \eta \gamma$ ¢́g, see CGL 2.26, 246.
    ${ }^{27}$ So e.g. in hymnic language at Plut. Es. Carn. 993C (ö $\sigma \alpha \ldots$... ö $\sigma \alpha \ldots$ ö $\begin{gathered}\text { orv ... ö ós ...), in the }\end{gathered}$
    
     öवтぃ, probably listing types of scholar-poets).

[^8]:    ${ }^{28}$ See O. Thomas, 'Powers of suggestions of powers: attribute lists in Greek hymns', in R. Laemmle, C. Scheidegger Laemmle and K. Wesselmann (edd.), Lists and Catalogues in Ancient Literature and Beyond (Berlin, 2021), 145-67, at 163-4.
    ${ }^{29}$ Maass's cum occidentalibus (152.7, as in MS C) is a misguided simplification. Aratus' section is called the $\Sigma v v \alpha v \alpha \tau o \lambda \alpha i$ ('Coincident risings') in Hipparchus, Comm. 1.1.1. The 'Coincident risings and settings' is recognized as the second of three main sections in Vita 2 (12.5 Martin).
    ${ }^{30}$ quantus $<$ ö $\sigma(\sigma) \mathrm{o} \mathrm{x} \times 11 / 13$; the other two cases ( $<$ ö $\delta$ ', $\dot{\omega} \varsigma$ oí) are probably mistaken versions of the same correspondence. cumoccidentales $<(\sigma v \gamma) \kappa \alpha \tau \alpha \delta v ́ \sigma \varepsilon 1 \varsigma$ (x3/3) and occid- 'set' $<\delta v(v)$ (x44/44). pars $<\mu \varepsilon ́ \rho o \varsigma ~(x 11 / 15$, including 48.2-3 Martin, where the variation pars/aerem derives from A/Mépo̧; cf. 49.23 Martin). constitu- < ( $\delta 1 \alpha) \tau \alpha \sigma \sigma \omega \mathrm{x} 8$, plus a likely confusion at Phaen. 757 тعтขүиغ́v $\alpha$.
    ${ }^{31}$ Contrast Hipparchus' use of $\mu 0 i \mathrm{p} \rho \alpha$ when talking about coincident settings, for degrees within a zodiac sign, e.g. Comm. 1.5.17'the 27th portion of Taurus'. This became sors in Aratus Latinus at e.g. 183.7 Maass.

[^9]:    ${ }^{32}$ A ninth-century Latin-to-Greek glossary correlates totidem with $\alpha$ v̇ז $\alpha$ îs, i.e. the comitative use of
     'dispenser of Zeus['s oracles]', used of Apollo in Anon. Anth. Pal. 9.525, and $\theta$ عoтóкoç in Christian writers. Either K $\rho$ óvoş or Saturnus would be an intrusive gloss in my reconstruction.

[^10]:    ${ }^{33} \dot{\varepsilon} \pi \tau \dot{\alpha} \kappa \iota$ is tempting; one expects $\varepsilon$ ह̌ $\pi \tau \alpha \chi \alpha$ to mean 'in seven parts'.
    
    
    ${ }^{35}$ Hes. Op. 139, H. H. Ap. 498; similarly Hes. Theog. 101 and [Sc.] 79 (without $\theta$ عós). The Homeric version of the formula (x10) does not include $\mu \alpha \alpha^{\prime} \kappa \alpha \rho$.

[^11]:    ${ }^{36}$ For confusion of $\delta \dot{\alpha}$ and $\Delta i ́ \alpha$, see below, 45.16, 47.5 Martin, and Phaen. $886 \Delta \Delta \dot{c} \theta \varepsilon v>$ pro eo quod.
     including an instance of confusion) and repleo $<\pi \lambda \eta$ - ( $\mathrm{x} 5 / 6$ ). quando $<$ öт $\tau$ or variants ( $\pi$ отє, $\dot{\delta} \pi(\pi)$ óte, ő $\tau \alpha v) x 42 / 57$, plus at least eight cases where confusion with ö $\tau \varepsilon$ is likely. memoria $<\mu \nu \eta \mu-$ (x4/4); for Mneme instead of Mnemosyne, see e.g. Paus. 9.29.2, Diog. Laert. 6.14. For filius $\sim \tau \varepsilon ́ \kappa v o v$ in the capitula of the Hermeneumata, see CGL 3.181, 254, 303, 407. honor- $<\tau \mu-$ or $\tau \eta \mu$ о (x17/18); in $\pi \rho \circ \tau \mu \hat{\alpha} \nu$, $\pi \rho \rho$ - would point self-reflexively to the proemic function of the passage. alius
     Musis < $\mu \hat{\alpha} \varsigma \tau_{\text {©̂v }}$ Movō̂v.
    ${ }^{38}$ For prodigium $\sim \tau \dot{\varepsilon} \rho \alpha \varsigma$ and (at)tribuo $\sim(\pi \rho o \sigma) v \varepsilon ́ \mu \omega$, see CGL 2.160, 453 and 2.22, 201, 442 respectively.
    ${ }^{39}$ 'Stars of Poseidon' is an interpretation found in the scholia. Kidd (n. 1) interprets Побعاס $\dot{\alpha} \omega \mathrm{vos}$ here to mean '[seen] near sea-level'.

[^12]:    ${ }^{40}$ 9.20, 371.12 Martin; Philoponus, In Arist. Mete. page 99, $\Sigma$ Ar. Pax 1067a Holwerda. Plutarch dedicated an essay to this section (frr. 13-20). For evidence of a section break here in ancient copies and commentaries, see Kidd (n. 1), 425.
    ${ }^{41}$ The glossator would have omitted $\varphi v ́ \lambda o r s$. He confused $\varphi \hat{v} \lambda 0 v$ 'tribe' with $\varphi$ pi í $\alpha$ 'affection' in Arat. 103 (dilectio), and performed adaptive transliteration at line $963 \varphi \hat{v} \lambda \alpha$ ко $\lambda_{0} \omega \hat{v}$ 'tribes of jackdaws' > fulica ('coot').

[^13]:    ${ }^{42}$ The text's relationship to both Theophrastus and Aratus is disputed: D. Sider and C.W. Brunschön, Theophrastus of Eresus: On Weather Signs (Leiden, 2007), 13, 16-18, 42-3. In Vent. 17 Theophrastus makes a similar point about weather in $\sigma$ v́vo $\delta o$ or being more wintry. For $\sigma$ vivoסos 'synod' ~ conuentus or conuentio, see CGL 2.115, 446.
    ${ }_{43}^{43} \pi v \varepsilon v \mu \alpha \tau o \pi \lambda \eta \theta \varepsilon i ̄ \varsigma$ is not attested. For thunderstorms portending winds, see Theophr. Sign. 32.
    ${ }^{44}$ aetherius or -eus < $\alpha$ i日́́plos (x2/2). summ- < $\dot{\alpha} \kappa \rho-\mathrm{x} 36 / 41$, plus 1 confusion. super $(-)$ mainly represents $\dot{\varepsilon} \pi i ́(x 73 / 113$ plus at least five confusions) or $\dot{u} \boldsymbol{\varepsilon} \hat{\rho}$ (x20 plus probably eight confusions). The indicative of $f i o<\gamma i(\gamma)$ voucl $(x 7 / 8)$.
    ${ }^{45}$ pono in the active < riӨ $\eta \mu \mathrm{l}$ ( $\times 18 / 21$; the passive is more variable). Naturally, Aratus' ordering of the material is discussed in the scholia, which generally praise him for introducing each constellation with reference to previous ones, and for finding ways to cover the whole northern hemisphere section by section: 100.17, 103.2, 107.16 Martin, etc.

[^14]:    
    
     386.11-13~388.12-15 Martin, where $\delta$ ód 'through' occurs eight times in an explanation of how Zeus manifests his presence 'on all sides' (Phaen. 772). The wordplay stems from Hes. Op. 3 őv $\tau \varepsilon \delta 1 \alpha ́$. For Leonidas, Aratus' creation makes him 'second to Zeus' (Anth. Pal. 9.25.5-6 $=2577-8$ $H E)$. On the parallelism, see R.L. Hunter, On Coming After, vol. 1 (Berlin, 2008), 157-63; K. Volk, 'Letters in the sky: reading the signs in Aratus' Phaenomena', AJPh 133 (2012), 209-40.
    ${ }^{47} \tau \hat{\omega}$ (or $\tau \grave{\omega}$ or $\tau \hat{\omega} \mathrm{t}$ in manuscripts) > quod in Arat. 545. Elsewhere factum corresponds to part of $\gamma i v o \mu \alpha l$, and ëp $\gamma o v$ is normally glossed opus (x4/5). I have equivocated over the sense of $\mu v v^{\prime} \theta$ ots in view of the importance of myth within Aratus' didacticism and later popularity. See Hunter (n. 46), 182-5.
    ${ }^{48}$ 33.24-5 Martin. For како弓ŋ $\lambda^{\prime} \alpha$, see especially [Demetrius], Eloc. 186-9, [Hermogenes], Inv. 12.
    ${ }^{49}$ So in the Vitae: 8.3-11, 16.24 Martin. The report of On Exegesis that some copies began with 'Avtí $o v e, \xi \varepsilon i ́ v \omega v$ ícòv $\theta$ ó $\lambda$ os (SH 85) would add a particularly forced spin to this, as if Antigonus' ancestors had been guest-friends of Aratus' family in Soloi.

[^15]:    ${ }^{50}$ One passage may, though its reconstruction is particularly uncertain, 'bury' Hesiod's Theogony like a poetic Titan in Tartarus (see above). For the pervasive comparison of Aratus with Hesiod in antiquity, cf. 43.21-2 Martin. For modern instances, see e.g. A.L. Gallego Real, El hipotexto hesiódico en los Phaenomena de Arato (Amsterdam, 2004); Ch. Fakas, Der hellenistische Hesiod (Wiesbaden, 2011); H. van Noorden, Playing Hesiod (Cambridge, 2015), 168-203.
    ${ }^{51}$ For the use of the Metonic and Callippic cycles by different groups, see Di Gregorio (n. 23), 92. Perhaps there is a more specific hint that Aratus' career was aligned with the first Callippic cycle, from the summer solstice of 330 to that of 254. Since its end fell during the reign of Antigonus Gonatas, this is compatible with the basic ancient biographical traditions about Aratus. Intertextual arguments suggest an earlier actual date for the Phaenomena if, for example, its opening is alluded to in Theoc. 17.1 and if that poem dates from the 270s. See R.L. Hunter, Encomium of Ptolemy Philadelphus (Berkeley, 2003), 3-8, 98-9.
    ${ }^{52}$ For a recent discussion, emphasizing some of Aratus' modifications of Eudoxus, see S. Mastorakou, 'Aratus' Phaenomena beyond its sources', Interpretatio (2019) (online).
    ${ }^{53}$ Contrast P. Bing, 'Aratus and his audiences', MD 31 (1993), 99-109, at 99-101 on the inclusive quality of Aratus' vague narratee, and M. Fantuzzi and R. Hunter, Tradition and Innovation in Hellenistic Poetry (Cambridge, 2004), 228, 'it is far from Aratus' purpose to claim special, privileged, "scientific" knowledge'.
    ${ }^{54}$ Comm. 1.1 with J. Lightfoot, 'Hipparchus' didactic journey: poetry, prose and catalogue form in the Commentary on Aratus and Eudoxus', GRBS 57 (2007), 935-67, at 946-7.
    ${ }^{55}$ See C. Cusset, 'Aratos et le stoïcisme', Aitia 1 (2011) (unpaginated). An alternative approach here would be through M. Hose, 'Der alexandrinische Zeus: zur Stellung der Dichtkunst im Reich der ersten Ptolemäer', Philologus 141 (1997), 46-64 on the politics of the different Zeuses of Hellenistic poetry as figures of monarchical power.

