FEW NOTES ON THE STRUCTURE OF ARATUS' PHAENOMENA

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Γινώσκεις τάδε καὶ σύ τὰ γὰρ

συναείδεται ἤδη ἐννεακαίδεκα κύκλα φαεινοῦ ἠελίοιο, ὅσσα τ' ἀπὸ ζώνης εἰς ἔσχατον Ωρίωνα νὺξ ἐπιδινεῖται Κύνα τε θρασὺν Ώρίωνος, οἵ τε Ποσειδάωνος ὁρώμενοι ἢ Διὸς αὐτοῦ ἀστέρες ἀνθρώποισι τετυγμένα

σημαίνουσιν.1

You too know all these (for by now the nineteen cycles of the shining sun are all celebrated together), all the constellations that night revolves from the belt to Orion again at the end of the year and Orion's fierce Dog, and the stars which, when sighted in Poseidon's realm or in that of Zeus himself, give clearly defined signs to men.²

Aratus invokes *nineteen years* period, to be precise, 19 Tropic years, which would make 6940 days in total. This is so-called Metonic cycle, which equates the lunar and the solar year. But meteorological signs, that are the primary scope of the poet, are relative only to the solar year, therefore, as Douglas A. Kidd suspects in his commentary of the poem, Aratus, concluding his description of time measurement, mentions Metonic cycle only "for the sake of completeness" (exactly the same way he does for the planets at the end of the description of constellations, as their irregular movement in the celestial sphere gives no tangible benefit to his description of the *regular*, annual meteorological phenomena³), as (again, quoting Kidd) "there is no evidence that it was ever adopted by any Greek state for its civil calendar"⁴.

However, the aforementioned Metonic cycle brings out some interesting compositional nuances of the *Phaenomena*, let alone polished poetics of the verse 753. Bearing in mind the intellectual challenge of *leptotēs*,

¹ *Phaen.* 752–7. Quoted from: Aratos, *Phénomènes*, texte établi, traduit et commenté par Jean Martin, tome I–II, Paris: Les Belles Lettres, 1998, **46 (hereinafter re**ferred to as "Martin 1998").

² Aratus, *Phaenomena*, edited with introduction, translation and commentary by Douglas A. Kidd, Cambridge: University Press, 1997, 129 (hereinafter referred to as "Kidd 1997").

³ Kidd 1997, 434: "Why then did Aratus insert this brief reference to the 19-year cycle, if it was not strictly necessary for his purpose? I suspect that he wished to complete, for the sake of completeness, the tally of time-periods, in much the same way as he included a brief note on the planets (454-61) in order to complete the list of ἄστρα." Also cf. Martin 1998, 462: "[...] l'ennéakaidékaétéride (sc. Metonic cycle – P. G.) semble avoir eu pour objet non pas d'intégrer le mois lunaire dans une « grande année » solaire, mais d'établir une correspondance, renouvelable tous les dix-neuf ans, entre les événements astronomiques et tous les calendriers lunaires possibles. L'année solaire est comptée à partir du solstice d'été, qui est annoncé par le lever complet d'Orion (vers 518, 587-588, 730), et suivi par le lever du Chien."

⁴ Kidd 1997, 436.

which is always thrown down by the Hellenistic poets and should be expected, it emerges, step-by-step, that the poem contains a certain structural symmetry, which is not so evident at first glance. Let's take a closer look at the structural composition of the poem's technical part: of celestial circles (*c*), simultaneous risings and settings of the Zodiac constellations that shape the ecliptic circle (*d*), and the description of time periods (*e*). The inner compositional harmony of our first large part ((*a*)(*b*)) is quite evident: the description commences with *northern* circumpolar constellations and

19–318:	Northern constellations (a)	Beginning:	The Bears (26) (circumpolar constellations)
		End:	Capricorn (316) (southern Tropic)
322-450:	Southern constellations (b)	Beginning:	Orion ≈ <u>Cancer</u> (323) (northern Tropic) Gemini ≈ <u>Cancer</u> (450) (northern Tropic)
462–558:	Celestial circles (c)	Beginning: End:	Cycle of the year (464) Gemini (481) Gemini (549) Cycle of the year (551)
559–732:	Simultaneous risings and settings (d)	Beginning of the Tropical year: Cancer End of the Tropical year: Gemini	Orion, rising together with Cancer (587–588) Orion, rising together with Gemini (730)
733–757:	Periods of month and year (e)	Night (740) Month (733–739) Year (741–751) Metonic cycle (753)	Orion's belt (754) Orion's edge (755)

Fig. Structure of the technical part of Phaenomena

The major technical part of the poem (except the proem and the description of planets which is irrelevant to the consistency of meteorological signs), up to the verse 757, all this part may be divided into two large parts: description of constellations, on the one hand, and description of time measurement, on the other. While the first large part may be expanded to the description of the northern constellations (*a*) and that of the southern constellations (*b*), the second large part may be divided into the description

concludes with Gemini that are near Cancer, where the *northern* Tropic is situated (reflected by the arrow on the right). Furthermore, the transition from the northern constellations (*a*) to the southern ones brings out one nice peace of chiastic composition (two crossed arrows and a dotted square): the northern constellations are concluded by Capricorn, where the *southern* Tropic is situated, while the *southern* constellations commence with Orion, which is near Cancer, where, as mentioned earlier, the *northern* Tropic is situated. Besides, one can notice a strict system, according to which the technical material is composed: the description of the southern constellations commences and ends practically in the same point of the celestial sphere, and the common point, again, is Cancer (underlined <u>Cancer</u> in the figure).

The constellation of Gemini not only connects two largest structural units together ((a)(b) and (c)(d)(e)) (arrow connecting two large parts), but also becomes a conjunctive element of the latter: the description of the celestial circles (c) starts and ends with Gemini (dotted square), then the description of simultaneous risings and settings ends with Gemini (arrow on the right), which is situated between Cancer and Orion, which is the most important figure of the end of the part (d) and the end of the part (e) (reflected by two arrows: on the left and on the right).

So, it's quite clear that the core points of this technical part of Phaenomena are the neighbouring constellations of Cancer, Gemini, and Orion. Above all, Cancer and Gemini denote respectively the beginning the end of the tropical year (in this constellation, there is a northern, or summer Tropic), therefore can be regarded as seasonal boundaries. Secondly, Orion and his guard, the Great Dog, are extremely clearly visible (enough to remember Sirius, the brightest star in the sky), and thus can be regarded as perfect guides. Thirdly, Orion, including his belt, is one of the oldest, best known, and most easily recognisable constellations. And finally, those three constellations are the Westernmost ones, and this fact is practical, important, and useful for sailors.

Aratus somewhat stresses on cyclic alternation of visible phenomena and inter-

weaves space and time in an astonishingly organic way. This means that his described phenomena exist, above all, in space, as they are visible, but their meaning as such is crystallised only when perceived in time. Mentioned in the beginning of the article, the intellectual challenge of leptotes, which is, technically speaking, the embodiment of principles of the Hellenistic poetics, is perhaps the most important feature of Hellenistic approach to aesthetics, in general. The poem itself can be figuratively regarded as the celestial sphere, a kind of micro-cosmos projected to the macro-cosmos, which is shaped by Stoic Zeus. Aratus delivers his balanced text-the Phaenomena-to the reader exactly the same way as Zeus reveals to men his eternal signs-the phaenomena. At the same time his poem becomes one of the divine phenomena and is to be regarded as hierarchically superior to all other signs, through which they are exclusively interpreted and revealed. Thus being part of all possible phenomena, the poem is unclosed as the whole comprising all other signs that would not be valuable as such or even exist without the presence of the former. All that is scarcely surprising, for it should be expected from a Hellenistic poet, as leptos as Aratus. Surprising is the way the poet encrypts this depth-harmony of the plot under some surface-harmony of the poem, which is no less tuneful. From this perspective, the place and role of Metonic cycle in the poem, "Cycle of the cycles", which crowns the description of time periods (begun with the night and proceeded with the month and the year) (e), becomes quite meaningful, although, as it may first seem, Aratus mentions it episodically and without further development.

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KELIOS PASTABOS APIE ARATO POEMOS REIŠKINIAI STRUKTŪRĄ

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Santrauka

Poemoje *Reiškiniai* (*Phaen.* 752–757) Aratas labai glaustai užsimena apie Metono ciklą – devyniolikos tropinių metų laikotarpį, per kurį susilygina Mėnulio ir Saulės kalendoriai. Ši techninė informacija (negana to, išreikšta gana mįslingai) iš pirmo žvilgsnio nėra svarbi poemos skaitytojui ir pačiam poetui, kurio pirminis tikslas – meteorologinių ženklų, susijusių su laiko matavimu ir apskaičiavimu, aprašymas. Tačiau išsamiau paanalizavus poemos, tiksliau, jos techninės dalies (išskyrus įžangą ir planetų aprašymą) iki 757 eil. struktūrą išryškėja įdomių ir iš pirmo žvilgsnio nepastebimų poemos kompozicijos niuansų, ką ir kalbėti apie rafinuotą minėtos ištraukos (752–757)

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stilistiką. Aptariama poemos techninės dalies struktūra apibendrinama išsamia schema (*Fig.*), kuri atskleidžia, kad *leptotēs* principas Arato taikomas anaiptol ne vien teksto paviršiniam lygmeniui. Gana techniškos poeto dėstomos medžiagos struktūrinis harmoningumas lyg ir nestebina (nes to iš helenistinio poeto reikėtų tikėtis), tačiau kur kas labiau kelia nuostabą tai, kad šis daugiaplanis, motyvuotas harmoningumas slypi po savo ruožtu darnia paviršinės struktūros tvarka ir pastebimas anaiptol ne plika akimi. Žvelgiant iš šios perspektyvos, Metono ciklo paminėjimas įgauna aiškią prasmę, nors iš pirmo žvilgsnio taip anaiptol neatrodo.

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