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Manilius and Aratus: two Stoic poets on stars[*]

JOSÈPHE-HENRIETTE ABRY (UNIVERSITÉ JEAN MOULIN LYON 3)

ABSTRACT: This paper offers the first specific study of the relationship between Manilius' *Astronomica* and Aratus' *Phainomena*. It first notes some apparent similarities in the structure of the two poems, before moving on to the deep changes that Manilius has consciously made. Manilius can be seen to concentrate on the scientific content of his topic and to marginalise pathos and poetical ornaments associated with descriptions of the constellations. In particular, this paper notes the implications of Manilius' replacement of two famous passages from Aratus—the proem to Zeus and Dike's catasterism—with an optimistic, 'historical' version of civilisation gained by human reason alone. By this, Manilius intimates that stars are no longer signs sent by a fatherly god, but agents of fate in a world ruled by the most absolute fatalism; through astrology, men must make the effort of deciphering the ambiguous messages and difficult grammar of the stars, in order to rise up to god and discover their true being.

Wilson's remark that 'for a serious account of Manilius' literary technique in book 1, we still await an extensive comparative study with that of Aratus'[1] still remains true. Although the question of the relationship between the two poems has long been known, no extensive study has yet been conducted and the link between *Astronomica*, a didactic poem on astrology in five books written by Manilius, an unknown poet, in the very last years of Augustus' reign, and Aratus' famous *Phainomena* remains rather ill-defined. The many similarities, particularly in Manilius' book 1, were noticed long ago, but the most recent studies have not made significant progress. Romano, in her thesis on the structure of the *Astronomica*, Salemme, in his 'Introduzione', and even Hübner, in his article for *ANRW*, all stressed the fact that Manilius had Aratus' poem constantly in mind as he was writing his first book, and that the connection between the two texts is of paramount importance;[2] but none of them devoted any specific examination to this point, Romano being satisfied with a survey,[3] Salemme focusing mainly on

[*] I would like to express my deepest thanks to Prof. R. Maltby and Dr S.J. Green who invited me to participate in the Leeds International Classics Seminar (11 May 2007) where a first draft of this paper was given.

[1] Wilson (1985), 284.

[2] Romano (1979), 22: 'per il primo libro... il rapporto di Manilio con Arato... costituisce il fulcro della problematica relativa a questo libro.' Hübner (1984), 249: 'Im ersten Buch folgt Manilius im wesentlich Arat, doch am Ende des Buches entfernt er sich von seinem Vorbild.' More recently, Hübner (2005) has again devoted some pages to the place of Manilius in the Aratean tradition, seeing the same 'descensus' structure in both poems and the same paradoxical opposition between *Kleinheit* and *Grösse* (large- and small-scale); but he did not ask any question about the absence of the proem to Zeus and Dike's catasterism in the *Astronomica*.

[3] She simply took an example, the Bears (1979, 28-9), and quoted Aratus, Manilius and Germanicus without commenting further. However, she was right in saying that 245-442 form 'gli *Aratea* maniliani' in her conclusion on the structure of book 1 (1979, 27-36).

the catasterisms in his chapter 'La funzione del mito', and Hübner, through his copious notes, calling attention to the fact that the relationship between the two poems is not limited to the description of the constellations (*Astr*. 1.262-445). Now, in the absence of any special study, these similarities, quite evident in the *sphaera*, are actually blurred in the other parts of book 1, not to mention the other books. On the other side, Aratean scholars, who pay due attention to the Latin translators of the *Phainomena* (Cicero, Germanicus, Avienus) and to the many poets who derived their inspiration from it (Virgil and Ovid being the most noticeable), generally ignore Manilius: Erren's bibliography mentions his name only to dismiss him.[4]

This is the gap that I will attempt to fill, at least partially: the many common features between the two poems require deeper and closer inspection.[5] However, as a systematic comparison would exceed the limits of this paper, I shall not take Manilius' literary technique but Stoicism as a kind of Ariadne's thread. The *Phainomena* is widely considered to be a Stoic poem: even if its philosophical message is in fact rather limited,[6] it was accepted and read as a Stoic classic by Roman writers of the Republic and Empire until the third century. The same can be said of the *Astronomica*, in which the mark of the Stoa is noticeable principally in book 1 and in the doctrinal parts (mainly the proems of 2, 3 and 4) of the following books.[7] For the sake of clarity, I deliberately leave aside Germanicus' *Phaenomena*, even though the prince's translation was written contemporaneously with Manilius' *Astronomica*: the relationship between the two men and their texts is still uncertain.[8] However Possanza's recent book has developed a hypothesis which may help to solve this intricate point.[9]

1. The *Astronomica* and the *Phainomena*: structural symmetries

A comparative approach to the structure of the two poems makes it immediately clear that Aratus' poem is the core or, better said, the mould of

[4] Erren (1994), 191: 'Eratosthenes, Nigidius Figulus, Hygin und vor allem Manilius bleiben ausgespart.' Lewis wrote more cautiously (1985, 97): 'The first book of Manilius' *Astronomica*, although not a translation, shows itself to be much indebted to the astronomical information presented in the *Phaenomena*.'

[5] The main question is still open: did Manilius have direct knowledge of Aratus' poem or did he know it through the translations by Cicero and Germanicus? This would require closer examination.

[6] See Kidd's introduction (1997), 10-12; Lewis (1985), 106: 'It is unlikely that the *Phaenomena* was originally and intentionally a Stoic work'; Hunter (1995), 4: 'Modern interpretation must tread carefully. We can hardly speak of a firm body of "Stoic dogma" at a date as early as that normally supposed for the *Phainomena*.' For the opposing view, see Gee (2000), 70-84.

[7] Cf. Abry (2005).

[8] I have already given the main points of the question: Abry (1993).

[9] Until recently, it was generally supposed that Germanicus wrote his translation between 13/14 and 19 CE (Lewis 1985, 96, n. 8), in the very same period in which Manilius composed his *Astronomica* (9-15 CE), so that it was impossible to tell which poet imitated or criticized the other one (Abry 1993). Developing Fantham's hypothesis, Possanza (2004, 233-5) argues for an earlier date: between 4 and 7 CE, with some later additions after Augustus' death. In that case it becomes obvious that Manilius' poem was composed to react against what he considered as dangerous poetical trends.

Astronomica. Book 1 could even be called Manilius' *Aratea*, so close is the way in which the Latin poet has followed the *Phainomena*, first in his description of the northern and southern constellations, the *sphaera* (*Ph*. 19-461, *Astr*. 1.275-442), and then in his enumeration of the celestial circles (*Ph*. 462-558, *Astr*. 1.462-804); these are the well known passages on which the attention of scholars has focused, as if Aratus' influence had stopped there.

Before I return to these two passages, it is perhaps necessary to recall that Aratus' poem has three neatly-defined parts: after the proem (1-18), Aratus describes the heaven in order to make his readers more familiar with stars (19-461); in the second part of his poem, Aratus accounts at some length (559-732) for the synchronic risings and settings of the extra-zodiacal constellations he has just described: all through the year, as they rise and set every night simultaneously with the zodiacal constellations, these stars work as a kind of giant clock which enables sailors and countrymen, Aratus' alleged addressees,[10] to tell the time rather easily; if some part of the sky happens to be clouded, the visible constellations indicate what does not appear. By watching the stars, men are able to tell what the hour of the night or what the season of the year is, which can be useful for agricultural work as well as for sea trade. After this part, in which Aratus also includes the definitions of the days of the month and the sun's path through the Zodiac (733-57), comes the famous third part, the *Diosemeiai*, the signs indicating weather (758-1141): these signs may be given from the appearance of the moon, the sun, certain constellations (*Ph*. 778-908), or from natural phenomena, such as birds and animals. Such is the threefold division of the poem: after the *ekphrasis* of the heavens, Aratus explains the essential link between stars and time (daily, monthly and annual) before developing his main concern: how to learn the signs that Zeus' fatherly benevolence displayed in nature to help farmers and sailors foresee the forthcoming (inclement) weather and guard against dangers awaiting their crops or ships respectively. This is the message announced in the proem which roughly sums up the Stoic thought of the *Phainomena*.

Aratus' tripartite structure has left evident marks in Manilius' *Astronomica*. First, the synchronic risings of the extra-zodiacal constellations are the subject-matter of book 5.32-709: in the proem of this book, the poet tells the reader he has changed his mind and he will not account for planets (exactly as did Aratus, *Ph*. 460-1),[11] but he will explain another point, i.e. the influence imposed on children at their birth by extra-zodiacal constellations when they rise; Manilius even promises to tell about their action when they set; unfortunately this account has disappeared, probably in the long lacuna of 166 lines after 5.709. In fact this is quite a new subject-matter, rarely found in astrological books,[12] and it is easy to

[10] On this poetical fiction, see Bing (1993).

[11] Hunter gave a convincing explanation for this refusal (1995), 7-8: vagrant planets are too uncertain and lack *kosmos*.

[12] It can be found only in Firmicus Maternus, *Mathesis* 8.5-17, following the same source as Manilius; this source has been identified with Asclepiades of Myrlea (Boll 1903, 543-6) and with Teucros of Babylon (Hübner 1993). The *Liber Hermetis Trismegisti* cap. 25 also shows signs of having the same origin (Hübner 1995).

explain Manilius' decision: the so-called *paranatellonta* provide the poet with 'a bouquet of character and vocational sketches',[13] vivid pictures of human skills and activities, which widen and strengthen the zodiacal influences developed twice in book 4. Therefore Manilius has logical and poetical reasons for including this, but the fact that Aratus had devoted a long account to the risings and settings of extra-zodiacal constellations (559-732), although for a different, mainly practical aim,[14] may have induced Manilius to choose this special matter in its astrological cloak for book 5.

Another element of structural symmetry appears still more significant: the last part of the *Phainomena* (758-1141) is devoted, as we know, to the signs that Zeus' benevolence displayed in the sky to indicate the forthcoming weather and impending dangers. But the *Diosemeiai* was the weakest part of the poem because it could appear useless or out of date.[15] For obvious reasons, in the first *Georgic*, Virgil is still heavily dependent on Aratus' thought: farmers must be able to forecast the weather in order to do their necessary agricultural work at the right time to procure the best harvest. But this is poetic convention, for ancestral experience had long ago imparted to country people the ability to know the weather, fair or foul; agricultural calendars gave the main indications,[16] and, in fact, Virgil's thought is very close to Aratus' in this respect.[17] Germanicus certainly tried a kind of compromise, replacing the Aratean signs with another kind of weather prognostics, deduced from the qualities ascribed to the planets which supposedly cause certain types of weather.[18] Manilius goes further: weather lore is no longer of value; most important now is to know the future, predicting everyone from his birth, and this is what men must be able to read in the stars. Keeping the frame of Aratus' poem, he then substituted for the *Diosemeiai* a handbook of astrology (books 2 to 4) dealing with the tenets of zodiacal astrology, to which he added book 5 about the risings and settings of the stars.[19]

Before I turn to this most significant issue, I would like to add another remark: the *Phainomena*'s central part (559-757) deals with the passing of time, the rhythm of the rising and setting constellations every night, the monthly phases of the moon and the annual course of the sun along the ecliptic. Why did Aratus

[13] Goold (1977), xciii.

[14] Kidd (1997), 377: 'The ancient commentators understood the purpose of these observations as being to tell the hour of the night.'

[15] See Martin 1956, 14-19, who underlines the internal link between the proem and the *Diosemeiai* and, at the same time, the fact that both parts were likely to be questioned for philosophical or theological reasons, the proem being discussed, and even replaced by apocryphal openings, and the *Diosemeiai* being omitted as an unnecessary or obsolete part: 'comme les Stoïciens ne tard(ère)nt pas à se laisser gagner (par l'astrologie), les pronostics aratéens risquaient l'indifférence, la suppression, la falsification' (18).

[16] Columella *RR* 11.2; Pliny *NH* 18.78-86.

[17] Virgil, *G*. 1.351-5: before adapting closely Aratus' *Diosemeiai*, he sums up *ipse Pater statuit*... See Thomas (1988), 127.

[18] See Possanza's analysis (2004, 110): 'Germanicus's treatment of meteorology is fundamentally different from Aratus's... The stars and planets are not signs of the weather, rather they actually *cause* it...'

[19] From Manetho's fragments, it seems likely that other poets did the same as Manilius, using the *Phainomena* as a kind of astronomical introduction to an astrological poem.

devote nearly 200 lines to this topic? The reason he gives looks rather insignificant: 'It can be well worth while, if you are watching for day-break, to observe when each twelfth of the Zodiac rises' (559-60); the fact remains that the necessity of measuring the passing of night induced the poet to complete, for the sake of completeness, the tally of time-periods so that he even inserted a brief reference to the Metonic cycle (752-7);[20] according to Martin, his purpose was to teach the stable and regular signs linked to the very structure of the universe, before developing the contingent, variable signs of meteorology.[21] The importance of this passage is apparent from lines 740-57, where many echoes of the proem are to be heard:[22] men can only recognise signs that Zeus displays night by night and month by month if they have an idea of the whole mechanism ruling the rhythm of time. Now it is worth observing that time plays a central part in *Astronomica* too: in fact, in book 3, dealing with the difficult computation of the horoscope, Manilius inserts a long parenthesis (203-509)[23] on what we might call the 'relativity of time', recalling first that day length varies according to seasons (225-40) and latitude (301-84); as an astrologer needs to know precisely the specific moment of a birth, Manilius warns him against the common error 'which attributes two hours each to the risings of the signs and reckons the stars as identical with equal ascensions';[24] so it is necessary to use a uniform measure of time (the equinoctial hour), then to learn the rising times of the signs which depend on latitudes (furthermore, they will help to reckon the length of life allotted to every one, 560-617). In order to understand these notions, the reader is even invited by the poet to a fascinating journey from Equator to Pole, from the equatorial regions where nights and days last 12 hours throughout the year without any change, until one reaches the Pole where the year consists of one day and one night six months each. For intermediate climates, e.g. for Rome, there are simple mathematical ways to know at what rate daylight increases between midwinter and midsummer: it is just a striking mathematical progression (443-82). Housman's famous opinion on this long and difficult account was that the poet delighted in putting sums and tables into hexameters[25] as well as wanting to show the mathematical and perfect mechanism of the cosmos, and that the poetical description of tropic signs at the end of book 3 was just a terminal ornament imitating Lucretius' description of the seasons (5.737-47) without connection with any theme of book 3. Actually, after such heavy mathematical paragraphs, this epilogue takes the reader back to the familiar activities which peacefully follow one another as seasons pass on, and is in keeping with the main theme of the book: time and the different forms this abstract notion can take. It is certainly not a matter of chance that both Manilius and Aratus stressed the problems related with the definitions of time, and placed their reflections on the connection between stars and time precisely in the middle of their poems. Their starting point was identical: it is as important 'to observe when each twelfth of the

[20] Kidd (1997), 434.
[21] Martin (1997), I, lxxi-ii.
[22] *Ibid*.
[23] On this passage, see Abry (2006).
[24] *Astr*. 3.218-20. Translations of Manilius are based on Goold (1977).
[25] Housman (1903-1930), III, xiv: 'the more arithmetic the merrier'!

Zodiac rises' for sailors or farmers waiting for dawn as it is for the astrologer wanting 'to determine the native's horoscoping degree when it rises from the submerged bowl of the heavens' (*Astr*. 3.204-5). Both poets were faced with the necessity of expelling the common error that evenly attributes two hours and thirty degrees of the ecliptic to the rising of each sign; this is why Aratus advised that, every night, be it a winter long night or a summer short night, 'six twelfths of the circle always set and the same number rise' (554-6), an apparent anomaly for which Manilius accounted in the long chapter of 3.203-509.

From the structural similarities between the two poems, which go far beyond the *sphaera*, it is already clear that the Greek poem was a frame,[26] the structure of which is still to be seen in the *Astronomica*. Leaning on Aratus' *Phainomena*, Manilius wanted to broaden it in order to make it a complete *Weltgedicht*, displaying Stoic cosmology in book 1 to prepare his astrological poem in the next books; this is why he inserted a first part on the origin and nature of the universe (1.118-254) before the *Sphaera*, the conclusion of which he amplified with a long *excursus* on the orderliness and immutability of the celestial motions, marvelling at the regularity of their orderly movements which clearly argues against Epicurean theory that the cosmos is god himself.[27] Even the brief allusion to comets (*Ph*. 1292-3) may have given rise to the last part of book 1; Manilius inserts there a long account of these phenomena, the nature of which is unknown: they may be signs sent by some merciful god to warn men against impending dangers such as plague or war.[28] Unlike the rigid fatalism of books 2 to 5, this is the only hint of the Aratean doctrine of signs left in the *Astronomica*.

The short and refined *monobiblos* in which the poet of Soloi already included an image of the universe was then extended into a larger work according to a trend common to Latin didactic poetry. It underwent not only amplifications but, above all, an important modification: astrology has replaced meteorology, as the Stoic doctrine of signs gives way to faith in the most absolute fatalism.

My analysis will now focus more on the specifics in order to explain why Manilius' poem seems so distant from the Aratean tradition that it is often felt not to belong to it.

2. Revisions and refusals

If the connection between *Astronomica* and *Phainomena* is not always obvious, the reason lies in the changes that Manilius, unlike Cicero and Germanicus, imposed on his poem's purpose, in order to stress the distance from his famous antecedent.

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[26] Romano (1979), 30: 'L'impressione più generale è che i *Phainomena* abbiano costituito soltanto una traccia entro cui Manilio si è mosso con una certa libertà...' See the Appendix for an attempt to summarise this frame in tabular form.

[27] *Ph*. 451-3, *vs Astr*. 1.474-531.

[28] *Astr*. 1.874-5. Manilius there follows Lucretius (the plague) and, in particular, Virgil, who developed the signs given from the appearance of the sun (*G*. 1.438-49, Aratus 819-91) to introduce the epilogue of the first *Georgic*, where they foreshadow Caesar's murder and civil wars (*G*. 1.466-8).

The first difference appears in the description of the constellations: not only did Manilius shorten Aratus' *sphaera*,[29] but he modified its order; instead of describing the constellations group after group, place after place, with respect to the zodiacal signs (the reader's attention has always to move in zigzag fashion from north to south), he enumerates them from left to right, the sphere rotating in a way opposite to the apparent movement, following an order which is nearly the same as Geminus' and Hyginus'. Furthermore his description is much shorter and less precise in locating the constellations; a few examples: the polar Dragon's terrible appearance prompts eighteen lines in Aratus (45-62) in which he first indicates its location 'between the two Bears'; then the impressive comparison to a river winding between the animals allows him to describe with some precision the long sinuous stretch of the Dragon's body (from the head to the tip of the tail, through the coils) with respect to both Bears; there follows a description of its head, the features of which (temples, eyes and chin) are marked out by five stars, and which seems to be inclined towards the tip of Helice's tail. The passage concludes with the location of the head near the polar circle. This 'complex piece of astronomical description'[30] is given dramatic life with the river simile, the enormous size and the frightening aspect of the snake which both Cicero and Germanicus capture in their translations through different stylistic devices. In comparison, the shortness of Manilius' indication is striking:

> has inter fusus circumque amplexus utramque
> dividit et cingit stellis ardentibus Anguis,
> ne coeant abeantve suis a sedibus umquam. (1.305-7)
>
> Sprawling between them and embracing each the Dragon separates and surrounds them with its glowing stars lest they ever meet or leave their stations.

The beginning of line 305, *has inter*, is a clear reference to Aratus τὰς δὲ δι᾽ ἀμφοτέρας, which both Cicero and Germanicus translate exactly. This is a kind of intertextual signal to indicate that the poet knows that Aratus and his Latin translators began in this way. But he immediately stops there, refusing to follow them in frightening the reader with an imaginary monster by describing its winding coils—the location of which is not as clear-cut as his predecessors had envisioned—or magnifying the light of its stars.[31] Instead of a picturesque and fanciful description, Manilius chooses to insert a brief notice stressing the immobility and the stability of this group of three constellations and their paradoxical link by means of a double antithesis (*dividit* / *cingit*, *coeant* / *abeant*).[32]

Numerous additional examples might be added: Aratus devotes eight lines to the mysterious figure of Engonasin, about which we know nothing but its figure in the shape of a man crouching; two lines (314-5) are enough for Manilius just to indicate its northern location without any precision, using a Latin circumlocution

[29] *Astr*. 1.275-442 (= 168 lines) *vs Ph*. 20-453 (= 434 lines).
[30] See Possanza (2004), 146-51.
[31] Compare Cicero's three fragments (VIII, IX and X), a description 'tourmentée et expressive, amplifiant l'éclat d'étoiles en vérité modestes' (Soubiran 1972, 160 n.5 and 9).
[32] The same can be said of the constellation of Ophiuchus, the Snake-holder: Aratus 75-87, Germanicus 75-87, Manilius 1.331-6.

to render its Greek appellation and an elliptical way of saying that he will not linger on a figure about which so little can be said. The *sphaera* gives Aratus the opportunity for an *ekphrasis* in which the heavens are seen as a work of art, and the poet lingers with pleasure on his description of it; by contrast, Manilius rejects nearly every mark of precision which might help locate constellations in respect to each other, as he drops many of the descriptions which might indicate the outline of the constellations,[33] and many picturesque details and pathos, sometimes even being satisfied with a quick and dry enumeration as if he just wanted to remind the reader of what had become a popular topic.

As he rejects graphic description, so Manilius also puts aside mythological ornaments. Even before he condemns poets who reduce the heavens to stellar legends and catasterisms,[34] he already applies this guiding principle in book 1: while Aratus, introducing the Bears, explained why Zeus rewarded the animals which nourished him by placing them into the sky (30-7), Manilius only indicates their position around the axis, and their function as navigational guides (the original meaning of cynosures!) to guide sailors by indicating the north. It has often been noticed that his attitude is not entirely coherent: in book 1 he happens to introduce a few mythological stories, wanting to display his ability to use them;[35] but it is striking that he deliberately omits some of the catasterisms Aratus had introduced in his poem (the Horse, Orion) or chooses a different legend (the Lyre) or gives a legend where Aratus was silent (the Swan). And his aloof attitude, straight away noticeable from his presentation of the Bears,[36] hardens in the proem of book 2 before it changes little by little as the poem goes by, until the reversal in the proem of book 5 (12-26). In fact, Manilius does not wholly reject catasterisms, which were an integral part of the poetry of the heaven at this time; what he refuses is poetry displaying catasterisms as a refined learned play, blurring the severe beauty of an orderly divine cosmos; his refusal is philosophical as well as aesthetic:

> sed mihi per carmen fatalia iura ferenti
> et sacros caeli motus ad iussa loquendum est,
> nec fingenda datur, tantum monstranda figura.
> ostendisse deum nimis est: dabit ipse sibimet
> pondera. Nec fas est uerbis suspendere mundum:
> rebus erit maior. (4.436-41)
>
> Yet, as I seek to expound in verse the laws of destiny and the sacred motions of the skies, my words must conform to what is bidden: I am not permitted to

[33] The explanation for this choice lies in 1.458-68: 'Nature is satisfied with merely indicating the forms of the constellations and depicting them by certain stars', and it is up to human reason to recognize the whole drawing.

[34] *Astr*. 2.25-38. Who are the poets whom Manilius criticizes? Is it Aratus? In the *Phainomena* we find only 9 catasterisms (the Bears, 30-7; the Crown, 71-3; Virgo, 96-136; the Goat, 163-4; Cassiopeia, 653-8; the Horse, 216-21; the Lyre, 269-72; Orion, 635-46; Argo, 348-52) and some allusion to the Pleiades (?) and to Eridanus. Manilius more likely alludes to Germanicus, who gave a greater importance to mythology, in particular in the *excursus* on the zodiacal signs, 532-64. This was one of the most important changes in Germanicus' translation.

[35] See Abry (1993) about Germanicus.

[36] The same is true in the story of Dike, to which I shall return later.

> fashion, but only to describe, the pattern. To show the deity is more than enough: he himself will establish his authority. Nor is it right to let heaven hang from words:[37] in the reality it will prove even greater.

If he drops a good part of descriptions and mythology, Manilius does, on the other hand, develop the scientific aspects of his poem.[38] We have already seen that the long parenthesis of book 3.203-509 was a scientifically complete commentary on *Phainomena* 559-62, Manilius feeling it necessary to give an exact definition of the notion of time, in particular of the hour which Aratus uses in the less precise meaning.[39] Another good example lies in the celestial circles: with the exception of the Milky Way, which is visible, all other circles were devised by the human mind, which recognised that the sun in its annual motion along the ecliptic ran from one Tropic ('the turning point') to the other and crossed the Equator. The definitions of these four fundamental circles (summer and winter Tropic, Equator and Ecliptic) are sufficient for Aratus, who first introduced the Milky Way in such a way that the reader's fancy can argue from the seen to the unseen. Unlike this rather succinct account (*Ph*. 462-558, 97 lines), Manilius writes a complete and accurate chapter[40] giving definitions for no less than eleven circles! To the four circles which Aratus had described, he adds both arctic and antarctic circles, then the two colures, which run through the poles and the equinoctial points, and the local circles, i.e. the meridian and the horizon, which are not fixed but move with the observer: he certainly judged Aratus' chapter to be insufficient and outdated from a scientific point of view, and wished to replace it with a complete account including all the scientific definitions necessary to follow the important exposition on the variations of time to come in book 3.[41]

By reducing the description of the constellations and the importance of the mythological element, and by amplifying the scientific parts, Manilius already deeply changed the appearance of Aratus' poem. I must now address the most famous passages of Aratus' poem, which make the Latin poet's choices clear in respect to his Greek antecedent: the proem to Zeus and the catasterism accounting for the figure of Virgo amongst zodiacal constellations. Both are missing in Manilius' *Astronomica*.

The opening 'Hymn to Zeus' (1-18) owes its fame to the message it conveys: the fatherly benevolence of Zeus and the rational order of the universe he rules are revealed by the signs (σήματα) he displayed to assist mankind. Men celebrate him

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[37] The text of the mss, *suspendere*, has been defended by Hübner (1984) 128 and n.4, and printed by Flores (2001), against Bentley's correction *splendescere*, printed by Goold (1977). Housman printed *splendescere* (1930), but went back to †*suspendere* in his *editio minor* (1932). More recently, Volk (2001), 96 and n. 18, has also defended the text of the mss. The meaning is that the poet is not allowed to make the world (= god himself) depend on human words, any more than it is permissible to shape it according to human fancy (2.37-8).

[38] In that way, Manilius is quite representative of the Stoic trend at imperial times: see Jones (2003). In particular, it is worth noting that one of Manilius' sources was presumably identical with Cleomedes' source in his handbook *On the Heavens*: Abry (2006).

[39] See in particular *Astr*. 3.238-55; Kidd (1997), 377.

[40] 1.539-804: 264 lines including the *excursus* about the Milky Way.

[41] To these scientific additions, it is necessary to add the doxography about the nature of the comets (*Astr*. 1.813-73) and the geographical description of the *oikoumene* (4.585-695).

in every place as a father warning them against potential dangers and prompting them to work. This theme, the origin of which is admittedly Stoic, is summed up in the famous *incipit* ἐκ Διὸς ἀρχόμεσθα; it became Aratus' motto, and was imitated not only by all Latin translators of the *Phainomena*,[42] but also twice by Virgil[43] and Ovid,[44] so that it almost became a proverb. Manilius completely drops both the *incipit* and the hymn to Zeus: in his own proem, he chooses first to stress the poetical act (*carmine*) by which he will gain a deeper knowledge of the universe and disclose to men the god-given skills of astrology and the operation of divine reason (*caelestis rationis opus*); and then to substitute a hymn to Cyllenius, i.e. Mercury, the Hermes Trismegistus of astrological writings, for the hymn to Zeus.[45] Moreover Jupiter himself is nearly absent from the *Astronomica*: for *ratio* 'freed men's minds from wondering at portents by wresting from Jupiter his bolts and power of thunder and ascribing to the winds the noise and to the clouds the flame' (1.103-5). He is not even the frightening god of thunder; he is just a futile creation of mythology, whose infancy or love affairs are recorded by catasterisms upon which poets' fancy can play.[46] However, for Manilius the world still remains *filled with god*; in fact it is god himself.[47] The whole cosmos is a living being, permeated by the divine *pneuma* pervading every part; it is the cosmic god who reveals his severe might through stars, not to tell men when to work but to invite them to rise up to him[48] and, through astrology, to discover their true being, the kinship, the *sympatheia* which links every single being or every single part of the cosmos to the whole.

By suppressing any reference to the hymn to Zeus, Manilius simultaneously rejects the message it conveyed, and that was displayed in the *Diosemeiai*, for which he substituted an astrological treatise: now for Manilius stars are no longer the signs of Zeus' providential care, messages that men are free to take into account or not. In a world in which everything is linked by the physical bond of *sympatheia*,[49] no one can stay on the outside, freedom does not exist any longer, stars are causes; as animate beings they exert a mechanical and necessary action

[42] Cic. *Leg.* 2.7: *a Iove Musarum primordia, sicut in Arateo carmine orsi sumus*; cf. *Rep.* 1.56: *imitabor ergo Aratum qui* (...) *'a Iove' incipiendum putat.* Germanicus, 1: *ab Iove principium magno deduxit Aratus / carminis*. The expression was older than Aratus and became a proverb after him. On the fascination exerted by the first line, see Fakas (2001), 5 n.1.

[43] *ab Iove principium Musae: Iovis omnia plena*, *Buc.* 3.60; *ab Iove principium generis*, *Aen.* 7.219.

[44] *ab Iove, Musa parens—cedunt Iovis omnia regno—* / *carmina nostra move*, *Met.* 10.148; *ab Iove surgat opus*, *Fast.* 5.111.

[45] Moreover the way in which he stresses the novelty of his endeavour *(novis Helicona movere* / *cantibus*, 1.4-5) is enough to prove the freedom he claims with respect to the Aratean inheritance which should be his.

[46] Catasterisms: infancy (1.370; 2.15, 20; 5.132); Taurus and Europe (4.491and 682); Leda (1.337 and 5.25); the Eagle, Jupiter's bird (1.343, 435); Gigantomachy (1.423, 431). Only in 4.908 does the name Jupiter have the meaning of 'world ruling god'.

[47] *Astr*. 1.247-54, 2.60-66.

[48] *Astr*. 4.390-4 and 915-21.

[49] *Astr*. 2.82-6. On that particular issue, see Lapidge (1980).

on all men, whose lives they totally determine.[50] And, what is worse, depending on their dispositions, they can be harmful: Manilius' world divinity is no longer Aratus' benevolent Zeus caring for men or the divine providence which created everything for the sake of mankind, as Balbus eulogises in the *de natura deorum*. The *Astronomica* is permeated with a deep pessimism; evil abounds in the world: hatred, war and crime are to be found everywhere. Disorder can occur in both natural phenomena[51] and men's lives,[52] and the cause lies in heaven: disfigured signs will engender disabled men (2.256-4), discordant aspects between signs will generate hatred and wars (2.570-607, 635-41), some degrees are harmful by themselves (4.411-501) and, depending on the characteristics they are given from their figures, signs will produce debauched, violent, treacherous or cruel folk who are left no choice but to accept their ill fated condition.

Missing too in the *Astronomica* is the digression accounting for the figure of Virgo amongst zodiacal constellations (*Ph*. 96-136). This passage is a close re-writing of two Hesiodic myths: the story of Dike, Zeus's daughter sitting near her father and complaining about human injustice (*Erga* 256-62), which follows the long narrative telling how mankind degenerated, from the Golden Age until the Bronze period (*Erga* 106-201). Aratus rearranged the two myths into one narrative, the longest catasterism in the *Phainomena*, in which he summed up the pattern of decadence of mankind in three periods: first there was the Golden Age, when Justice used to dwell among men who enjoyed the due prosperity they gained by their work, then the coming of sea trade, the use of knives and the habit of eating flesh brought about a deterioration which ended in the age of Bronze, a time when human perversity compelled Dike to fly to the heavens where, as Virgo, she still looks upon men and their deeds, remaining a source of permanent moral admonition.[53] Of course, Manilius knows the story, to which he twice briefly alludes, showing once more his scorn for myths:

> Erigone surgens, quae rexit saecula prisca
> iustitia rursusque eadem labentia fugit,
> alta per imperium tribuit fastigia summum,
> rectoremque dabit legum iurisque sacrati
> sancta pudicitia diuorum templa colentem. (4.542-6)[54]
>
> At her rising Erigone, who reigned with justice over a bygone age and fled when it fell into sinful ways, bestows high eminence by bestowing supreme power; she will produce a man to direct the laws of the state and the sacred code, one who will tend with reverence the hallowed temples of the gods.

[50] The whole proem of book 4 is a doctrinal affirmation of the determinism illustrated all through the poem: Sirius 'stirs up war (*bella facit*) and restores peace (*pacemque refert*) and... affects the world with the glances it gives it and governs with its mien', *Astr*. 1.405-6. Aries 'will engender (*dabit*) minds bent on plunder', 4.508; the Corn-Ear 'engenders (*ingenerat*) a love of fields and of agriculture', 5.272; it 'will produce (*faciet*) a man who carves panelled ceilings...', 5.588.
[51] *Astr*. 4.821-65.
[52] *Astr*. 2.579-607; 4.69-85, and 91-105.
[53] Schiesaro (1997), 13.
[54] Cf. 5.276-8.

But in the long proem of book 1, after the eulogy of astrology, he widens his theme to the story of human civilisation, starting from the most ancient time (*rudis... vita*) when, unable to understand the celestial phenomena, men originally lived a dull and bewildered life (66-78); slowly, time (*longa dies*, *vetustas*), work (*labor*) and *fortuna* gave rise to conditions promoting the development of civilisation, discoveries succeeded each other (language, agriculture, sea trade) until recent times when the human mind (*ratio*) accounted for the meteorological phenomena which once frightened men. Gradually ascending towards heavens, it identified stars and gave their names to the constellations;[55] it understood their motions and detected the divine order ruling them (95-105). Now the last stage is to gain access to the ultimate explanation, i.e. the link between man and stars and, by means of poetry, to reveal the divine lore of astrology (106-12). Occurring nearly at the same place as Dike's tale (96-136), this history of human civilisation (1.66-112) shows a close connexion with it.[56] But instead of telling a myth illustrating a pattern of decadence, Manilius gives a kind of optimistic, history-like version: civilisation is the result of a slow progression, done without the help of any god, thanks to human skills alone, and this evolution is totally directed towards the higher stage, the disclosure of fate. This is a complete reversal of the Aratean view: no *aurea aetas*, no degeneration from age to age, no hint of mankind needing the divinity's care, but a slow and progressive evolution of mankind using its ingenuity (*sollertia*) and rational ability (*ratio*) until it produced the contemporary civilisation of which the poet will give some glimpses in books 4 and 5. The enumeration of natural phenomena (thunder, hail, snow, rain and wind, 99-105, cf. *Ph*. 909-1141), the causes of which are now obvious, may allude to Lucretius' book 6 as well as to Aratus, which are both implicitly criticised. Free from childish fears, men must now use the reason they share with the divine to read the heavenly message it displays, i.e. no longer the signs of bad or fair weather, but the explanation of human nature which is part of the universal divine being[57] and, at the same time, the explanation of individual destinies. But this message is not plain: *dissimulant, non ostendunt mortalibus astra* (4.367), and the difficult grammar of the stars requires some effort to be deciphered. The religious feeling which permeated Aratus' poem and the faith in god's fatherly attitude have been transformed into a perceptible anxiety in the presence of a god who displays his true being through the stars and remains hidden, asking to be searched out through a religious quest (4.915-21); one is left to fear that one might not be able

[55] Here too Manilius differs from Aratus (367-85) who inserted a brief *excursus* on the origin of the constellations and the tale of the first astronomer who recognized their pattern and named them: Kidd (1997), 318-9.

[56] Fakas (2001), 150 already felt the link between Aratus' *excursus* and Manilius' *kulturgeschichtliche Exkurs*.

[57] *Astr*. 4.883-95. The whole epilogue of book 4 (866-935) develops a Stoic anthropology echoing the ideas displayed at the end the proem of book 1; the abundant vocabulary of biological generation between man and divinity (*parens*, *geniti*, *partus*), quite frequent in Stoicism, sounds there as variations on Aratus 5, τοῦ γὰρ καὶ γένος ἐσμέν...

to achieve this hermeneutical endeavour, in spite of the 'reason which triumphs over all'.[58]

3. Conclusion

The comparative study of structural elements has shown that the *Phainomena* is, in fact, a kind of subtext inside the *Astronomica*: Manilius keeps the framework of the Greek poem, but substantially changes its main features. He is certainly one of Aratus' heirs, but unlike the Latin translators, unlike Germanicus specifically,[59] he rejects the Aratean inheritance while writing a poem of Stoic orientation.

Why this complex and subtle intertextual relationship? It is widely recognised that the *Phainomena* was written at the beginning of the third century, at the time of early Stoicism, and that the philosophical contents of the poem are rather limited and subject to debate. The poem's exceptional fame in antiquity lay not only in its subject-matter (Zeus' care, the *ekphrasis* of the heavens), but above all in the fact that it became, with Homer, one of the most studied books, one of the most read and commented poems.[60] Hence the numerous editions, the commentaries aiming either at correcting what the progress of science had shown to be errors (Hipparchus), or at providing the reader with introductions giving definitions, theoretical explanations necessary to understand the scientific context (Achilles, Geminus, Cleomedes), or at amplifying the mythological content (Hyginus). It is worth recording that the Stoics were extremely active in this work of edition and commentary, and they never stopped reading, studying and interpreting this basic text.[61]

However, as the Stoa progressed, Aratus' theological message became less relevant and, through the generations, the notion of a fatherly and benevolent Zeus yielded to the new idea of an immanent divinity who may still be called Jupiter by convention, but has nothing to do any longer with the anthropomorphic Zeus of the classical religion or mythology. As soon as some Stoics (Diogenes of Babylon? Posidonius?) became interested in astrology, which was spreading through the Hellenistic world, the *Phainomena* still aroused admiration, but only as a refined élite text; and it became tempting to retain some parts of the poem, to modify them deeply, and to drop those that were obsolete. This was perhaps the challenge that faced both Manilius and Germanicus: who would be the Augustan Aratus? Would it be the prince who decided to make a formal translation of Aratus' poem, keeping its appearance but introducing deep changes in it (the dynastic politics of the imperial house in the proem, astronomical corrections, a complete mythologizing of the stars...)? Or the unknown poet who, also starting

[58] Book 4 ends with a praise of reason summing up the victories enumerated in book 1: *ratio omnia vincit*, 4.932.

[59] Romano (1979), 28 writes with some exaggeration: 'Manilio ha tenuto presente Arato in maniera molto evidente, spesso con una fedeltà non dissimile da quella di un Cicerone o di un Germanico.'

[60] Lewis (1985), 113-7.

[61] Martin (1956), 12-34. Hunter (1995), 4: 'it is clear from the scholia that a Stoicising interpretation set in early.' This Stoicising reading is particularly obvious in the second book of the *de natura deorum*.

from Aratus, wanted to write the Stoic poem of his time, expressing a most complete and accurate, a most scientific conception of the universe, a poem wholly devoted to praising the might of the cosmic god, free from myths, whose severe order and mathematical law man can reach by the study of astrology.

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Appendix: *Astronomica* and *Phainomena*: structural symmetries

Aratus' *Phainomena*	**Manilius' *Astronomica***
Proem: Constellations as signs, providence of Zeus (1-18)	Proem: Knowledge and astrology (1-112)
(> 96-136: Dike, *excursus*)	(Astronomy and civilisation, 66-112)
	Book 1: Manilius' *Aratea*
	I) 118-254: The origin and nature of the universe
	Transition: it is ruled and animated by God
Part 1: Constellations and celestial sphere (19-558)	**II**) The *sphaera* (255-455)
	262-274: The zodiac
19-26: Axis and poles	275-293: Axis and poles
26-62: Northern circumpolar constellations.	294-307: Northern circumpolar constellations
63-318: Constellations between circumpolar stars and Zodiac	308-372: Northern constellations
319-321: Transition to southern hemisphere	373-386: Transition to southern stars
322-450: Southern hemisphere	387-442: Southern hemisphere
	443-455: Southern Bears and Pole
451-453: Conclusion of description of fixed stars: their **orderly motions**	Conclusion, 456-538: constellations do not have full shape; the **orderliness** of celestial **motions** shows that universe is God himself
454-461: Refusal to describe planets	539-560: How to measure the distance from earth to heaven
Part 2: The passage of time (462-757)	> (Book 3: time and its different forms)
Circles: Milky Way, tropics, equator, zodiac	**III**) The 10 circles + Milky Way (561-804)
559-732: **Simultaneous risings and settings**	(> Book 5, 32-709: influences of the *paranatellonta*).
733-739: Days of the month, moon's waxing and waning	
740-751: Sun's path through Zodiac	

752-757: The cycle of Meton	
	IV) 809-873: The comets
Part 3: **Weather signs**, the *Diosemeiai* (758-1154)	Books 2-5: **the handbook of astrology**
Second proem, importance of observing weather signs	
773-908: Celestial signs from sun, moon and other objects	
909-1141: Atmospheric and terrestrial signs: wind, rain, fair weather, rainstorm, hail; prediction of coming summer	
1142-1154: Closing exhortation to observe and heed the signs	

Abrégé

Bien que le lien qui unit les *Astronomiques* du poète latin Manilius aux célèbres *Phénomènes* d'Aratus ait été signalé depuis longtemps, aucune étude particulière n'a été consacrée jusqu'ici à cette question. Le but de cet article est d'abord de relever les ressemblances que l'on observe dans la structure des deux œuvres: loin de se limiter à la description des constellations comme on l'a généralement remarqué, l'influence des *Phénomènes* semble s'être étendue à l'ensemble des *Astronomiques.* Première observation: la troisième partie des *Phénomènes*, les *Diosemeiai*, consacrée aux signes que Zeus a placés dans la nature pour mettre en garde les paysans et les marins contre les dangers qui les guettent, a été remplacée par un traité d'astrologie zodiacale (chants 2 à 4); ensuite, le chant 5, traitant des *paranatellonta*, reprend, sous une forme astrologique, les levers et les couchers simultanés des constellations extra-zodiacales (*Ph.*, 559-732). Enfin, la difficulté de mesurer avec précision l'heure pendant la nuit et la nécessité de combattre l'erreur courante selon laquelle toutes les constellations zodiacales mettent un temps égal à se lever a conduit Manilius, après Aratus, à un long développement sur les définitions de la notion de temps, placé dans la partie centrale de l'un et l'autre poème.

Mais Manilius a introduit de profonds changements à l'intérieur de cette structure sensiblement parallèle: abrégeant et modifiant la présentation des constellations, refusant une poésie descriptive qui joue sur le pathétique et sur les ornements poétiques, limitant la place des catastérismes, il a, en revanche, développé le contenu scientifique du sujet. Et surtout il a délibérément rompu avec la tradition aratéenne en laissant tomber les deux parties les plus fameuses des *Phénomènes*, le prélude à Zeus et l'*excursus* de Dikè auquel correspond, de fait, la seconde partie du *prooemium* (*Astr*., 1, 66-112); à un mythe narrant la dégénérescence progressive de l'humanité, le poète latin oppose une version historicisante et relativement optimiste des conquêtes de la raison humaine. Celle-ci a désormais expliqué les phénomènes météorologiques, sujet des *Diosemeiai* (et aussi du chant 6 de Lucrèce). Il faut maintenant aborder un sujet plus élevé: les étoiles qui révèlent non pas le temps qu'il fera, mais les destinées individuelles et collectives. Elles ne sont plus les signes qu'une divinité bienveillante envoie à des fins pratiques, mais les agents du destin par l'influence qu'elles exercent dans un univers dont toutes les parties sont unies par le lien physique de la *sympatheia:* la suppression du prélude à Zeus est donc liée au remplacement des *Diosemeiai* par un exposé d'astrologie et la doctrine aratéenne du signe, dont on trouve encore une trace au chant 1, fait place à l'expression du fatalisme le plus absolu. En même temps, la figure de la divinité suprême s'est considérablement modifiée: ce n'est plus le Zeus paternel et bienveillant d'Aratus, mais une puissance qui se confond avec le monde lui-même dont l'homme est une partie, mais dont le mal fait aussi partie intégrante. Par l'intermédiaire des étoiles, le monde divin adresse à l'homme des messages mais, loin d'être facilement lisibles, ceux-ci exigent d'être déchiffrés, la raison humaine doit faire l'effort d'apprendre à les lire pour s'élever jusqu'à la divinité grâce à l'astrologie conçue comme une véritable ascèse.

À partir du poème d'Aratos dont le cadre est encore reconnaissable dans les *Astronomiques*, Manilius a certainement voulu écrire le grand poème stoïcien conforme à l'attente d'une époque marquée par l'influence triomphante de l'astrologie à la fin du règne d'Auguste.