THE STAR MENAGERIE: PERSONIFICATION IN ARATUS 19–453 AND MANILIUS 1. 263–446

Marko Vitas
Centre for Languages and Literature
Lund University

Abstract. This paper compares Manilius’ use of personification to that of Aratus and his Roman translators. First, I reevaluate the role of personifications in the astronomical texts. I explain the term “personification of the second level” and argue that this type of personification leads to the presentation of the constellations as alive rather than conventional. Further on, it is shown in the paper that Manilius used fewer personifications than Aratus and other comparable texts. I offer two solutions for these results.

Keywords: Aratus, Aratea, Manilius, personification, animals.

1. Introduction

The aim of this paper is to examine the use of personification in the poetic catalogue of constellations in the opening book of Manilius’ Astronomica (1. 263–446). A broader perspective will be achieved through a comparison with the use of personification in the texts of the Aratean tradition and (to a lesser degree) with instances in the later books of Manilius himself.¹

Aratus’ catalogue of constellations (19–453) is an appropriate material for comparison, as it is likely to have served as Manilius’ more or less direct model for his own catalogue (cf. Volk 2009, 34–35). Among the surviving Latin translations of Aratus, the one by Cicero could have been used by him, while the one by Germanicus may or may not precede Manilius by a couple of years.² Avienus’ translation of Aratus (IV century) is, of course, much later but will serve as a useful benchmark for comparison.

In the first part of the essay, I will offer a working definition of personification and support my argument with some theoretical considerations. I will then list the results of the statistical analysis of the presence of personifications in Aratus (and in the Aratean tradition, i.e., the Roman translations of Aratus) and Manilius. Results will be followed by a discussion of the observed tendencies.

¹ All editions and commentaries I have used for Aratus, Cicero, Germanicus, Avienus and Manilius are listed in the bibliography.

² The dating of both Germanicus’ Aratea and Manilius’ Astronomica are a matter of slight controversy. Most that can be said with certainty is that both texts belong to the first two decades of the first millennium (cf. Le Becuille 2003, vii–x; Zehnacker 1989, 319; Possanza 2004, 233–235 for Germanicus; Volk 2009, 3–4, 137–161 for Manilius).
2. The Terminology and The Theoretical Background

Nowadays, the whole sky is filled with constellations that are clearly delimited but shapeless, essentially akin to the boundaries that exist between different countries. Every star is identifiable by its own unique name (such as ζUMa or Mizar). Back in the ancient times, a star usually did not even have a name but was instead identified by its place in the constellational figure. For example, the bright star that is today referred to as ζ Ursae Maioris (ζUMa) used to be known only as “the one in the middle of the tail of the Great Bear.”

For these reasons, the shapes of the constellations played a much more important role in ancient astronomy than they do in modern astronomy. Constellations were sometimes imagined as humans (mythological figures or representatives of certain professions) but most often as animals. This curious selection of creatures from land, sea and air did not provide rewarding material only for the professional astronomers. Astronomical poets also benefited from such colorful material, which enhanced their wit and helped them exercise their imagination.

I think it is useful to think of the ways in which poets presented these constellations in their poems in terms of personifications. I divided astronomical personifications into two categories: personifications of the first level and personifications of the second level. This classification needs further explanation.\(^3\)

Shapes and figures of all constellations (be it humans, animals or inanimate objects) are necessarily personified (cf. Hübner 2011, 141: “The entire starry firmament can be comprehended as a sum of metaphors”). Each time when one talks of the tail of the Great Bear (instead of the stars ηζεδUMa) or of the Dog’s mouth (instead of saying αCMa or Sirius), one is in effect using a personification. However, since there was no other way of pointing to a particular star than by mentioning the exact point on the body of the personified constellation where it was positioned, this type of personification is not primarily poetic or literary. It is equally present in the ancient scientific prose treatises on the subject. This type of personification will be called the personification of the first level. It is important to remember that the use of such personifications was technical and almost inevitable in any text concerned with astronomy and constellations.

Therefore, to mention the back of the Great Bear would only be a personification of the first level. However, if one claims that her back was shaggy (cf. Germanicus, 29 horrida terga), more than basic information about the constellation or the particular star is delivered. The stars are only capable of depicting a basic outline of a bear and cannot represent such picturesque details as the shagginess of the bear’s back. Such descriptions make the constellations seem more real and more similar to the actual animals than they need to be. These are the personifications of the second level. Unlike the conventional personifications of the first level, they are a thoroughly poetic device.

To take another example, the claim that the Dog has a mouth (and that there is a

\(^3\) I have first defined personifications of the first and second level and offered a thorough analysis of personifications in the Aratean tradition in Vitas 2016, 82–105.
star in its mouth) is a pure instance of the personification of the first level. However, to represent the Dog as a watchdog (Arat, 326 φρουρός) or as a hound on its way to track down its prey (Arat, 339 διώκεται) is to engage in a purely fictional, poetic discourse and to say nothing of the actual disposition of the stars in the constellation. That is the personification of the second level.

Since the personifications of the second level do not have a clear communicational purpose as the personifications of the first level, what is their purpose and why did they appear in the astrological texts? Several tentative explanations could be offered:

1. An illustrated accessory, such as a celestial map or globe, could have been used as a source of inspiration for the personifications of the second level. This idea develops further the theory according to which Aratus himself used some sort of a celestial globe as his template for writing the Phaenomena (cf. Erren 1967, 7).4

2. The personification of the second level could also be understood as a rhetorical ruse. The procedure of amplificatio comes to mind first. Amplificatio is to be understood, according to Lausberg (1960, 145), as the process of upgrading a natural base (in this case, the stars) through an artistic provision (such as the personification of the second level).

3. The personification of the second level may also be used as a way to make the constellations seem more alive and more real, in the sense that the constellational Dog shows similarities to the common earthly dog. Steinmetz (1966, 467) has argued that Aratus’ constellations are “Stern bilder” in contrast to Germanicus’ “Sternbilder” (his spacing). This conclusion arises from the fact that Germanicus uses more star myths than his model (a view elaborated in Possanza 2004, 169–173), but it could equally be applied to his overwhelming use of the personifications of the second level (cf. Vitas 2016, 101–102).

4. This kind of personification could have also reached astronomical poetry from non-astronomical poetry, where constellations and other astronomical features nevertheless made regular appearance. For instance, Horace talks of stella vesani Leonis, “the star of the raging Lion” (Carm. 3. 29. 19).

Now, the first two options are certainly not sufficient by themselves. While it may be helpful to consider the influence from illustrations in some instances, it is by no means an appropriate explanation for all or at least the majority of the cases. It is hard to imagine how an illustration could represent the Dog as a warden (Arat. 326, Germ. 333, Av. 724) and even less so how it could depict Andromeda’s “odorous hair” (Av. 470 odorato crine […] Andromedae) etc. On top of that, neither illustrated templates nor rhetorics provide us with the reasons for the ancient poet’s use of the personifications of the second level. In the best case, they suggest what might have been the poet’s tools for adding them.

---

4 This explanation has been attempted by various scholars in isolated commentaries to select passages of ancient astronomical writers: cf. Le Beeuflle 2003, ad Germanicum, 204: substricta [... ] palla (about Andromeda); 283: fugit instantem sibi Pegaso ala (about the Swan); Soubiran 2002, ad Cic. Arat., 24: vincentis talarius aptis (about Perseus’ footgear).
The third and fourth options seem more convincing. It appears that especially in astrological writings, constellations were readily connected to their earthly counterparts: for instance, those born under the sign of the Lion were likely to succumb to excessive cruelty etc. (cf. Volk 2009, 96–97). In any event, thanks to the personifications of the second level, the sky did not seem to have been covered by conventional constellations in various unrecognizable shapes but by real Dragons, Hy- dras, Dogs chasing after Rabbits, by flying Horses and dangerous Lions. It is needless to say that the erudite poets did not really mistake the sky for some heavenly version of the Noah’s ark, crumbled with animals and other beings. It is, however, likely that they wanted to represent the celestial vault as such: not as a fixed, determined and final product of some cold scientific investigation but as a vibrant, living spectacle.

3. Methodology

Before discussing the results, it is appropriate to make a few remarks on how the counting was performed. First of all, there is a total of 48 constellations that are discussed by both Aratus (and his Roman translators) and Manilius. Within the scope of a description of a single constellation, no personifications, one personification or several personifications may be present. In order to make the counting as straightforward as possible, I have decided to count every description of any one constellation as the appearance of the personification of the second level as long as it contains at least one personification of the second level. No distinction has been attempted between descriptions containing only one personification and those containing several.

There are, however, many ambiguous cases where one cannot be certain whether an expression is indeed a personification of the second level or not.

For instance, if Aratus describes the Dragon as σκολιοῖο Δράκοντος (70) he can either be pointing out the zig-zag disposition of the stars in that constellation or the swerving coils of the actual Dragon.

Alternatively, ambiguity can occasionally arise when it cannot be determined whether a certain part of an animal’s body is mentioned because it is depicted by certain stars or because it is characteristic of the animal in question. For instance, Germanicus (341) calls the constellation of the Hare auritum (“long-eared”), and it is hard to be sure whether certain stars are meant by it (perhaps νλικLep) or if the ears are rather mentioned as a characteristic feature of the actual animal.

Such doubtful cases were, as a rule, not counted as personifications of the second level in order to obtain clear and unambiguous data.

It should also be mentioned that the mythological elaborations of certain constellations were not counted among the personifications of either level. In such excurses, the constellational figure is connected with a mythological figure by way of allusion. For instance, Aratus (96–136 and his translators)5 famously associated the constellation Virgo with the Goddess of Justice and recounted her myth together with the description of the actual constel-

---

5 Cic. Arat. fr., xvii, xviii, xix; Germanicus, 96–139; Avienus 273–352.
lation. To take another example, Manilius alludes to the myth about the ship Argo in his account of the (now obsolete) constellation of the Ship (cf. 1. 423–425).

Why do we exclude mythology from the count of the personifications of the second level? Admittedly, both personification and mythologization largely serve the same purpose – namely, representing constellations not as groups of stars, but as real, intelligent creatures. I think, however, that it should be recognized that they are two different means of reaching that goal and that personification ought to be considered on its own if we are to judge its importance and merit. Furthermore, even the exact outcome of the personification is not quite the same as the outcome of the mythologization. The latter associates the constellation with the distant past and the unbelievable events, while the former, first and foremost through its homey descriptions of animals, is strongly ingrained in the everyday reality of the ancient world. Personification is therefore, in my opinion, by far the stronger of the two.

4. Results

The results are presented in Table 1. In the first and the second column, the 48 constellations are numerically listed in the order in which they appear in Aratus’ catalogue of constellations. The following five columns reflect the state of personifications in Aratus’ work (the third column), in those of his three translators (the fourth, fifth and sixth columns) and, finally, in Manilius’ work (the seventh column). Each of the last five columns is divided into two subsections: the first one refers the reader to the exact verses of the relevant poet in which the constellation is treated; the second, containing either the “+” or the “−” sign, signals whether the personification of the second level is present in the description of the given constellation.

I shall now shortly summarize the results which will receive a fuller discussion in the following section. As it had already been mentioned, there were a total of 48 constellations in Aratus’ catalogue of constellations. Aratus has used personifications of the second level for 16 constellations (roughly one third or 33% of all cases).

When it comes to Aratus’ translators, all three of them have much higher scores on the personifications of the second level: Cicero 30 (or 62.5%); Germanicus 34 (or 71%); Avienus 35 (or 73%).

Additionally, if we combine the results of Cicero and Germanicus, the two translators (the second one only possibly) who could have influenced Manilius, even more commanding results are obtained. If results are counted in such a way that a “+” is registered whenever there is at least one “+” sign in the columns four and five, we learn that 37 constellations (or 77%) might have had the second level personifications before Manilius published his Astronomica.

In Manilius, only 9 constellations (or roughly 19%) were described with the help of the personifications of the second level. They are thus considerably fewer than in Aratus, to say nothing of his translators.

---

6 Aratus himself did not attempt a similar connection, although his translators did: cf. Cic. Arat. 126: Argo; Germanicus, 345: Argoae […] puppis; Avienus, 756: Iasoniam […] Argo.
| Table 1. Personifications of the second level in Aratus, the Latin translators and Manilius. |
|---------------------------------------------------------------|
| | Aratus | Cicero | Germanicus | Avienus | Manilius |
|---|---|---|---|---|---|
| 1. | Ursa major & Ursa minor | 26–44 | fr. v, vi, vii | 24–47 | 99–137 | 294–304 |
| 2. | Draco | 45–62 | fr. viii, ix, x | 48–64 | 138–168 | 305–307 |
| 3. | Hercules | 63–70 | fr. xi, xii | 65–69 | 169–193 | 314–315 |
| 4. | Corona borealis | 71–73 | fr. xiii | 70–72 | 194–203 | 319–330 |
| 5. | Ophiuchus | 74–88 | fr. xiv, xv | 73–87 | 204–253 | 331–336 |
| 6. | Scorpio | 83–86 | fr. xv | 81–82 | 238–241 | 268 |
| 7. | Chelae | 88–89 | Ø | 89–90 | 248–253 | 267 |
| 8. | Arctophylax | 91–95 | fr. xvi | 90–95 | 254–272 | 316–318 |
| 9. | Virgo | 96–136 | fr. xvii, xviii, xix | 96–139 | 273–353 | 266 |
| 10. | informata Ursae majoris | 137–146 | fr. xx, xxi | 140–146 | 353–366 | Ø |
| 11. | Cancer | 147 | fr. xxii | 147 | 379–390 | 266 |
| 12. | Gemini | 147 | fr. xxii | 148 | 368–378 | 265 |
| 13. | Leo | 148–155 | fr. xxii | 149 | 391–404 | 266 |
| 14. | Auriga | 156–166 | fr. xxv | 157–173 | 405–420 | 361–364 |
| 15. | Taurus | 167–178 | fr. xxvii, xviii | 174–183 | 421–439 | 371 |
| 16. | Cepheus | 179–187 | fr. xxix | 184–192 | 440–446 | 354 |
| 17. | Cassiopeia | 188–196 | fr. xxx | 193–200 | 448–458 | 354–355 |
| 18. | Andromeda | 197–204 | fr. xxxi | 201–206 | 459–469 | 355–357 |
| 19. | Pegasus | 205–224 | fr. xxxii | 207–223 | 470–507 | 347–350 |
| 20. | Aries | 225–232 | fr. xxxiii | 224–233 | 508–526 | 263 |
| 21. | Delphinus | 233–238 | 4–9 | 234–240 | 527–538 | 351–354 |
| 22. | Pisces | 239–248 | 10–19 | 241–247 | 539–560 | 273–274 |
| 23. | Perseus | 249–253 | fr. xxxii | 207–223 | 470–507 | 347–350 |
| 24. | Pleiades | 254–267 | 27–41 | 255–269 | 568–617 | 371 (?) |
| 25. | Lyra | 268–274 | 42–46 | 270–274 | 618–635 | 323–330 |
| 26. | Cygnus | 275–281 | 47–54 | 275–283 | 636–644 | 337–341 |
| 27. | Aquarius | 283–284 | 56 | 284–285 | 645–649 | 272 |
| 28. | Capricornus | 284–299 | 57–71 | 286–305 | 650–668 | 271 |
| 29. | Sagittarius | 300–310 | 72–83 | 306–314 | 669–688 | 269–270 |
| 30. | Sagitta | 311–312 | 84–86 | 315 | 689–693 | 342–343 |
| 31. | Aquila | 312–315 | 87–90 | 315–320 | 694–699 | 343–345 |
| 32. | Delphinus | 316–318 | 91–95 | 321–323 | 700–710 | 346–347 |
| 33. | Orio | 322–325 | 102–106 | 328–332 | 718–723 | 387–395 |
| 34. | Canis Major | 326–337 | 107–119 | 333–340 | 724–746 | 401–411 |
| 35. | Lepus | 338–341 | 120–125 | 341–343 | 747–755 | 412 |
| 36. | Navis | 342–352 | 126–138 | 344–355 | 756–768 | 412–415 |
| 37. | Cetus | 353–358 | 139–144 | 356–361 | 769–779 | 415–416 |
| 38. | Eridanus | 359–366 | 145–154 | 362–371 | 780–806 | 439–440 |
Instances of Manilius’ use of personification of the second level are found in the following passages:
1. In 263: *aurato in vellere* (about Aries);
2. In 270: *missurus iamque sagittam* (on the Archer “intending” to shoot an arrow);
3. In 273: *Piscibus assuetas avide subeuntibus undas* (about the Fish “avidly” swimming in the water);
4. In 315: *species sibi conscia causae* (on the Kneeling Figure, modern Hercules);
5. In 332–336: *torto corpore [...] explicet nodos sinuataque terga per orbes... reflexus... molli cervice... per laxa volumina [...] semper erit paribus bellum, quia viribus aequant* (on the fight between Ophiuchus and the Snake);
6. In 346: *tum quoque de ponto surgit Delphinus ad astra* (the sea as the provenance of the constellation of the Dolphin);
7. In 348–349: *quem rapido conatus Equus comprehendere cursu festinat* (on the Horse “trying” to catch up with the constellation of the Dolphin);
8. In 359: *fugiendaque Gorgonis ora* (about the “frightening” Gorgona’s head, carried by Perseus);
9. In 433–434: *quam propter Cetos convolvens squamea terga / orbibus insurgit tortis et fluctuat alvo* (on the constellation of the Sea Monster).

### 5. Discussion of the Results

The results have unearthed a curious discrepancy between the amount of the personifications of the second level in the Aratean tradition (especially the translations) and in Manilius. How can we account for this discrepancy?

First of all, we have to take into account that the list of constellations in the *Astronomica* comes closer to a resumé of constellations than to a full-fledged discussion. It spans over 183 verses (263–446), which is rather short when compared to Aratus’ 424 verses (26–450) or Germanicus’ 409 verses (24–433), to say noth-
The compressed state leaves the catalogue bereft of many opportunities to introduce a personification of the second level.

First, Manilius is compelled to leave out several of the less important constellations altogether (marked with Ø in our results table: *Aqua, Corona borealis* and two Aratean accounts of the anonymous stars not belonging to a particular constellation).

Second, all constellations are discussed in a limited scope. Manilius seldom determines the position of one constellation through the position of another while that is a source of many personifications of the second level in the Aratean tradition. For instance, Germanicus’ description of the Lyre would not have contained personifications of the second level if the position of the Lyre had not been described through the position of the Dragon and the Kneeling figure (which both contained personifications of the second level).

Third, it should be noted that Manilius himself considered his first book only as an astronomic primer meant to provide the reader with sufficient expertise to delve into deeper astrological truths (cf. Volk 2009, 16–17). In contrast, the catalogue of constellations represents more than a half of the *Phaenomena* proper (1–732). Therefore, in the Aratean tradition, the catalogue is of major concern and has duly received a thorough and loving treatment. In Manilius, it is but a bump on a road to astrology and had to be dealt with succinctly.

Therefore, one possible explanation for the sparing use of personifications of the second level in Manilius’ catalogue is that its abridged, unadorned state allowed no substantial elaborations.

Other explanations are also available. Namely, Manilius openly expresses his disgust for the fanciful ideas according to which the heavenly constellations originated on the Earth. Several such ideas are disparaged by Manilius in the preem to the Second Book (2. 25–38): some of them are mythological (for instance, that Cynosura was transferred to the Heavens because of her service to Jupiter), while others rather point to the personifications of the second level (for instance, that the Lion was transferred because of his pray and the Cancer because of his bite). Manilius condemns the practice in no uncertain terms: according to the proponents of such ideas, the Earth, in spite of being dependant on those very constellations, would absurdly have had a hand in creating them through fanciful fables.

Can it be that the personifications of the second level were avoided in order to loosen the connection between the constellations and the actual animals on Earth? I looked for clues in the catalogue itself.

Already in Aratus there are some anti-personifying passages and expressions (his score of personifications of the second level is higher than Manilius’ but still not very high). For instance, Aratus occasionally compares a constellation to its living counterpart in a way that makes it abundantly clear that the constellation itself is not alive. A striking example is the statement that the constellation of Hydra looks “as if she were alive” (444: τὸ δὲ ζωόντι
ἐοικός), which, in turn, leads to the inevitable conclusion that it is in fact not.

Are there such passages in Manilius’ catalogue as well? Take, for instance, his description of the constellation Sagitta: hinc imitata nitent cursumque habitumque sagittae / sidera (1. 342–343). The poet makes it clear that the stars only “imitate” the appearance of an arrow. Similarly, in his description of the Hydra, Manilius claims that its “scaly back” is only imitated by the stars (1. 143–144).

Furthermore, in the description of Orion, Aratus’ translators were prone to describe not only the man himself but also his sword (absent from Aratus), usually through personifications of the second level (cf. Germanicus, 332: sic vagina ensis; Avienus, 723: auratum [...] ense). Manilius, on the contrary, mentions the sword but informs the reader that it is made out of three stars (1. 391: et tribus obliquis demissus ducitur ensis), which is a clear anti-personifying element.

Nevertheless, this should not lead us to a premature conclusion that Manilius consistently suppressed any and all instances of personifications of the second level. Katharina Volk (2011, 114–119) is completely justified in talking of “Manilian self-contradictions” and pointing out the contrast between his proclaimed renunciation of the catasterisms and his actual involvement in the astral myths throughout the poem. Inconsistencies in Roman poetry can often be considered intentional – Manilius could have resorted to this device in order to incorporate opposing views in his poem.

These self-contradictions or inconsistencies are observable even if we move from mythology to the realm of personifications of the second level. For instance, in spite of having the lowest score of personifications of the second level and in spite of introducing anti-personifying elements, Manilius does use personifications of the second level in nine cases (see Table 1), thus creating a disbalance between these and the majority of the cases.

Furthermore, some other portions of Manilius’ text contain a considerably higher percentage of personifications of the second level. For instance, in the section of the Book 4 (124–293), Manilius reflects on how each of the zodiac signs affects persons born under it (we leave aside the vexed issue of how each person’s affiliation to a particular sign is determined). Descriptions of most of the signs can be regarded as containing a personification of the second level. The Ram is connected to wool (124), the Taurus to pastures (140), the Lion to cruelty (176), the Virgin to barrenness (202–203: Virgo / nec fecundes erit – quid mirum in virgine – partus?), the Scales to measurements (205), while the Scorpion’s poisonous tail is also pointed out (217) as well as the Fishes’ propensity for the sea business (274). This is, of course, in the starkest contrast to the treatment of the zodiac constellations in the catalogue, where only three descriptions contain (very moderately elaborated) personifications (cf. supra).

6. The Conclusion

To sum up, Manilius’ catalogue of constellations in the First book of his Astronomica contains a relatively small amount of personifications of the second level. Manilius’ probable model (Aratus), his possible models (Cicero and Germanicus) and a
late but comparable text (Avienus) all contain many more personifications of the second level than Manilius. This discrepancy begs for explanation. I have suggested two possible solutions.

First, I have drawn attention to the fact that Manilius’ catalogue of constellations is considerably less extensive than the catalogues of the Aratean tradition and that it was probably meant as a useful overview in the first place, while the Aratean catalogues span over large portions of their respective texts and can (indeed should) be regarded as their core. This could, in turn, have induced Manilius to omit all that is not immediately necessary.

Second, I relied on Katharina Volk’s observations about Manilian self-contradictions to suggest that on the backdrop of the poem, the sparse presence of personifications of the second level in the catalogue presents one such case of self-contradiction.

Finally, I should say that I do not view these solutions as mutually exclusive. It is certainly attractive to think that the right approach is the combination of the two.

REFERENCES

Erren, M. Die Phaenomena des Aratos von Soloi: Untersuchungen zum Sach- und Sinnverständnis. Wiesbaden: Franz Steiner Verlag GMBH, 1967
Gain, D. B. The Aratus ascribed to Germanicus Caesar. London: Athlone Press, 1976
Goold, George Patrick. (ed.) Manilius. Cambridge, Mass: Harvard University Press, 1997
Hübner, Wolfgang. “Tropes and figures” in Forgotten stars: Rediscovering Manilius’ Astronomica (Volk, K & S. Green, eds.). Oxford: Oxford University Press, 2011
Kidd, Douglas. (ed.) Aratus: Phaenomena. Cambridge: Cambridge University Press, 1997
Lausberg, Heinrich. Handbuch der literarischen Rhetorik. München: Max Hueber Verlag, 1960.
Le Boeuffle, André. (ed.) Germanicus: Les Phénomènes d’Aratos. Paris: Les Belles Lettres, 2003
Martin, Jean. (ed.) Aratos : Phénomènes 1-2. Paris: Les Belles Lettres, 2002
Possanza, Mark. Translating the Heavens: Aratus, Germanicus, and the Poetics of Latin Translation. New York: Lang Classical Studies, 2004.
Soubiran, Jean. (ed.) Aviénus: Les Phénomènes d’Aratos. Paris: Les Belles Lettres, 2003
Soubiran, Jean. (ed.) Cicéron : Aratea. Fragments poétiques. Paris: Les Belles Lettres, 2002
Steinmetz, P. „Germanicus, der Römische Arat“. Hermes, 94 Bd. (1966), H. 4, 450–482.
Vitas, Marko. “The poet’s new clothes: A study of Aratus’ original style as reflected in the three Roman translations of his Φαινόμενα” in Lucida intervalla, vol. 45 (2016), pp. 69–116
Volk, Katharina. Manilius and his intellectual background. Oxford: Oxford University Press, 2009
Volk, Katharina. “Manilian self-contradiction” in Forgotten stars: Rediscovering Manilius’ Astronomica (Volk, K & S. Green, eds.). Oxford: Oxford University Press, 2011
Zehnacker, H. „D’Aratos à Aviénus. Astronomie et idéologie“. Illinois Classical Studies, vol. 14 (1989), no. 1/2, 317–329.

ŽVAIGŽDŽIŲ ŽVĖRYNAS: PERSONIFIKACIJA ARATO REIŠKINUOSE (19–453)
IR MANILIJAUS ASTRONOMICA (I, 263–446)

Marko Vitas
Santrauka
Pirmojo straipsnio dalyje („İvadas“) pateikiai ižanga ir aptariai straipsnio struktūrą. Antrojo dalyje („Terminologija ir teorinė prieiga“) pristatoma teorinė prieiga ir aiškinami straipsnyje vartojami terminai. Detaliau aptariai pirmojo ir antrojo lygmenų personifikacija. Antrojo lygmenų personifikacija apibūdina kaip po-
etinė priemonė, kuria autorius vaizduoja žvaigždyną tikresnį negu būtina. Trečioje straipsnio dalyje („Metodologija“) pateikiama atlikto tyrimo metodologija: nurodoma, kaip skaičiuotos antrojo lygmens personifikacijų nurodymas, pagrindiniai principai remtasi lyginant gautus Manilijaus veikalo duomenis su Arato veikalo duomenimis. Ketvirtoje dalyje („Rezultatai“) gauti rezultatai pateikiami lentelėje. Nustatyta, kad Manilijaus žvaigždynų kataloge (pirmoji Astronomica knygoje) antrojo lygmens personifikacijų vartojama mažiau. Penktoje straipsnio dalyje („Rezultatų aptarnavimas“) aptariami rezultatai ir pristatomi galimi pastebėtų tendencijų sprendimai. Šeštoje dalyje („Apibendrinimas“) pateikiami tyrimo apibendrinimai.