

## Hipparchus and Aratus

Aratus' *Phaenomena*, has recently received scholarly attention after centuries of general neglect. The attention is justified: the *Phaenomena* was well received by Aratus' poetic contemporaries, translated at least seven times into Latin by figures including Cicero and Germanicus Caesar, and imitated by many. Uniquely, moreover, there is preserved a somewhat neglected commentary written in the mid-second century B.C. by the astronomer Hipparchus, who provides us with evidence of a literary commentary tradition prior to his astronomical commentary.

In opposition to the focus of earlier commentators on literary exegesis, Hipparchus objects that Aratus' audience is bewitched by Aratus' powerful poetics, and consequently does not challenge Aratus' outdated astronomy based on two fourth century prose treatises by Eudoxus of Cnidus. Hipparchus' criticisms reflect a divergence between the poetic and literary reception of Aratus, on the one hand, and the scientific reception, on the other, which criticizes his imprecision. With this in mind, Germanicus' translation represents an interesting shift in the Roman period, when Hipparchus' commentary eventually becomes fused with the tradition of the *Phaenomena*, emphasizing technical accuracy and, in the case of Germanicus, re-emphasizing Aratus' poetic form.

Hipparchus criticizes Aratus' precision, thus demonstrating the problem with using poetry to convey technical knowledge. The unexpected effect of the commentary, however, is to update Aratus' poem, and enhance its relevance. The resulting reception in the first century AD indicates that Hipparchus and Aratus were read together as a unit of astronomical authority. In this scene, Germanicus takes into account corrections by

Hipparchus, even while he uses typical techniques of expansion and economy to maintain the form and length of Aratus' original poem. So while Aratus tells us that the tail of Cynosura and the feet of Cepheus form an equilateral triangle (184-85), Germanicus accounts for Hipparchus' correction (1.5.19) by expanding the section to emphasize that Cynosura's tail and Cepheus' feet form an isosceles triangle (188-91). At the same time, however, Germanicus emphasizes the poetic form of the *Phaenomena* by attempting to match the overall length of Aratus' astronomical portion, despite such expansions and additions, by economizing where he might. He celebrates this quality of his poetry in a metapoetic reference occurring in his address to Virgo, whom he tells that his "horses will stay, and I, delighting in my drawn reins shall sing of you and your venerable godhead." (101-2).

Germanicus' paradoxical relationship with Hipparchus comes to a head in a passage on the simultaneous risings and settings of the signs of the zodiac. Hipparchus spends a good deal of time criticizing this section of Aratus' *Phaenomena*, likely because it requires the most precision. Hipparchus' main criticisms are that Aratus does not take into account that some constellations take more time than others to rise and set, some lie above or below the ecliptic, and that some overlap. His recommendation, then, is to divide the zodiac belt into perfect twelfths, and then to talk about what constellation sets at the rising of each twelfth. Germanicus responds with another poetic expansion: he qualifies that it will be necessary to observe how long each constellation of the zodiac takes to rise and set. Beyond explaining that the constellations take different amounts of time to rise and set in three lines (579-81), however, Germanicus also insists on the poetic form in the same section by expanding to accommodate mythical material as well,

adding several new catasterisms (532-70) and accompanying his qualification (579-80) with an expansion of Aratus' original ὄρεος into a small catalogue of examples of mountains from myth (583-88).

Currently the popular way to approach Germanicus' poetics has been to talk about how Germanicus Romanizes the *Phaenomena*. While such a discussion is not uncalled for, my approach will rather be to talk about Germanicus' translation as a part of a larger debate about the proper purpose of poetry: whether it was strictly to entertain or could educate as well. Although Aratus' Hellenistic peers unanimously agreed that the *Phaenomena* was remarkably accurate, Hipparchus pointed out his errors, suggesting that Aratus' poetics had demanded consent. The *Phaenomena* earns Cicero's praise for this precise reason, however, and he is either unaware of or unconcerned with Hipparchus' commentary. Germanicus' poem reflects a step further in the reception of the *Phaenomena*: he has taken account of Hipparchus—not to mention other astronomical sources—but he reaffirms the its poetic form through various methods of expansion and resulting economy typical of Latin poetry. So far from taking away from the *Phaenomena*'s appeal Hipparchus merely updated the astronomy, and furthered its use as a serious astronomical text.