

# "Lucretius on the Size of the Sun", by T.H.M. Gellar-Goad

Post by "Cassius" of June 15, 2022 at 11:46 AM

This post and the next are the two final sections of this article, for those who don't have access to the full thing. I consider this to be little short of a brilliant summary of the issue:

## Quote

### Size of the Sun as Epicurean Shibboleth

The Epicureans did not believe that the sun was the size of a human foot. They distinguished between the sun's actual size and the size of its appearance, the latter of which was the only magnitude measurable from earth with the technology available. In this matter as almost everywhere else, the Epicureans appealed to the truth of sense-perception - with the important caution that discerning reality from appearance requires perception-based judgment, which itself is not guaranteed to be true. In Lucretius' poem, the discussion of solar magnitude adds more detail to Epicurus' original conception, especially with the introduction of the sun's heat into the passage. Complicated style emphasizes how full of hedges and conditioned claims the Lucretius-ego is, and his thorny exposition of the doctrine amounts to a didactic challenge that sends readers elsewhere in his work, to ponder perspective and to hunt down a proper understanding of this aspect of the natural world.

By staking out a stance of *aporia* conditioned by sense-perception and reasoning thereupon, the Epicureans did in fact prove to be less wrong than everyone else. Algra emphasizes that "all ancient estimates of the size of the sun, including those put forward by the mathematical astronomers, were false." The failing of ancient mathematical science in estimate-making was pervasive since, Geoffrey Lloyd notes, "an important recurrent phenomenon in Greek speculations about nature is a premature or insecurely grounded quantification or mathematicisation." Epicurus and his school, in avoiding a concrete statement of the sun's size, avoided being concretely wrong, in contrast to Eudoxus and all the rest. The sun passage in DRN pushes the reader towards non-commitment rather than risking such a misjudgment.

In closing I argue that the size of the sun is an Epicurean shibboleth. In Epicurus, in Lucretius and in Demetrius, we see the same *nostrum* repeated, with progressive elaborations that do not fully clarify the basic precept. The persistence of Epicureans in this formulation is not so much the result of reflexive dogma or pseudo-intellectual obscurantism as it is a passphrase, a litmus test. Think like an Epicurean, and you will

figure out that the sun's appearance and the sun itself are two related but distinct things with two different sizes; that you must keep the infallible data of the senses, tactile as well as visual, in proper perspective when making judgments about your perception; and that the available data is insufficient to estimate the sun's magnitude to an acceptable degree of confidence (compare Barnes: 1989, 36). Think that Epicureans believe the sun's diameter is a foot, that they are absurd, and you have exposed yourself as un-Epicurean. The first/second-century AD Stoic doxographer Cleomedes, who as Algra points out "nowhere takes account of the Epicurean principle of multiple explanations," likewise fails this test when he mocks Epicurus' position on the size of the sun.

Thinking like an Epicurean – rather than figuring out the actual size of the sun – is, I suggest, the point of the Lucretian passage on the size of the sun, as it is indeed the fundamental point of Epicurean natural philosophy generally. Constantina Romeo suggests that Epicurus' moral program of liberating humankind from the fear of death motivates his followers' ardent defense of his claims on the sun's size. Since Epicurus presented understanding of the natural and celestial world as essential for a life of ataraxia, *"nel momento in cui lo Stoico ritiene di avere dimostrato l'errore di Epicuro nella scienza della natura, sostiene pure che Epicuro non ha dato nessun conforto di fronte alla morte"* ("in the moment in which the Stoic [Posidonius] thinks he has shown Epicurus' mistakes in natural science, he also claims that Epicurus has provided no comfort in the face of death").

Yet Posidonius has actually failed the test, has misunderstood the stakes of the debate. Precise measurement of the sun's size is not what is at issue for the Epicureans, and so proof of scientific error does not vitiate Epicurus' moral philosophy. The Epicureans pushed back so fiercely against their opponents' (mis)characterizations of Epicurus' position because of the underlying epistemological and phenomenological principles. It does not matter to Epicurean ethics or to ataraxia whether the size of the sun is known. After all, the Epicureans did not even need to affix a certain size to the sun to accomplish their core epistemological objective: to remove anxiety about divine control over cosmological phenomena. What matters, and the underlying reason for this Epicurean shibboleth, is a readiness to use careful reasoning and good judgment to embrace uncertainty about the nature of things without succumbing to the anxiety-inducing fear of death.

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