What did Epicurus say about the size of the sun and whether the Earth was round or flat?

Post by “Eikadistes” of January 11, 2023 at 7:18 AM

I wanted to document that vocabulary used to express the idea that the Sun is "*about as big as it seems*" *(EP 91.1-3)*.

...**ΜΕΝ ΤΟ ΠΡΟΣ ΗΜΑΣ ΤΗΛΙΚΟΥΤΟΝ ΕΣΤΙΝ ΦΑΙΝΕΤΑΙ**

"...μέν τὸ πρός ἡμᾶς τηλικοῦτόν ἔστιν φαίνεται."

(...mèn tò prós hēmâs tēlikoûtón éstin phaínetai)

"...**is for us what it appears to be**" *(Bailey).*

"...**relative to us is just as big as it appears**. [This is also in book 11 of the *On Nature*; for he says, if its size had been reduced because of the distance, its brightness would have been even more reduced; for there is no other distance more symmetrical with this [degree of brightness]]" (Inwood & Gerson).

“...**relative to us is as great as it appears** [*This he also says in the eleventh book of his work On Nature; 'for if', he says 'the size of a star had dimished on account of the distance, its brightness would have dimished much more.*'] For there is no other distance that could better correspond to this size.” (*Mensch*).

"...**in relation to us, is as large as they appear**. <<This is also in On Nature Book 11 [F81]: 'For if,' he says, 'they had lost their size because of the distance, much more would they have lost their color'>> For there is no other distance more congruent with that." (*White*)

I am reflecting on the word ΤΗΛΙΚΟΥΤΟΝ (τηλικοῦτόν or *tēlikoûtón),* a parsed form of τηλικοῦτος (*tēlikoûtos*) meaning "*of such a magnitude*", or "*as great as*". I like the latest translation by Stephen White (2021), "is as large as they appear", because that is how I think of the Sun (*subjectively, it seems to me to be larger than any terrestrial object*).

The allusion to Book 11 of *On Nature* seems to present the following argument (based on my reading): *If the Sun were both small and distant, it would appear dim or colorless. However, the Sun is very bright and colorful. Therefore, the Sun cannot be both small and distant.* Based on Epicurus' rhetorical approach of entertaining a negative, I presume that he was implying either (1) the Sun is *very close*, (2) the Sun is *very big*, or (3) *both*.

Anyone (*like Epicurus*) who sailed across the Aegean (**multiple** times) would have known that the Sun does not reduce in size the further you sail from the horizon, so it must be significantly

more massive than the mountains that shrink in the distance, or, as Anaxagoras proposed one century earlier, "larger than the Peloponnese**".** A ball of fire supposed to be the size of *a loaf of bread*, or a *house*, or even *a city* would never lead to this phenomena.

(It is also interesting that Epicurus' hypothetical description of a "small" and "distant" Sun matches the description of a "star", but I digress, since we have no evidence of Epicurus commenting on the correlation...)

Epicurus clearly misunderstood the fact that the Sun is actually over 100 times larger than the Earth. I am, however, **very** suspicious of *what I consider to be* a dubious claim that Epicurus thought the sun was a glowing basketball.

Translators of Diogenes Laërtius later note that Epicurus "*says [...] in the twelfth book of his work* On Nature *[...] that the sun is eclipsed when the moon obscures it, and that the moon is eclipsed by the shadow of the earth [...] This is also said by Diogenes the Epicurean in the first book of his* Selected Writings" (Mensch 525); "<<*In* On Nature *Book 12 [F83] he says these things and also that the sun is eclipsed when the moon overshadows it, and the moon when the earth's shadow does so [...] This point is also made by Diogenes the Epicurean in* Selections *Book I*.>>" (White 444)

Considering the lines following this description in the *Epistle To Pythokles*, where Epicurus acknowledges that the objective size of the Sun may **vary** from our perspective ("***vary***" being the key word; 91.3-92.1), it seems unlikely that he was making a hard argument that the Sun is some kind of hyper-radiant grapefruit. His Epistles on astronomy and geoscience weren't dogmatic, and, like his other explanations, his approach was intended to be flexible to accommodate new observations and discoveries, so long as the conclusions never contradict sensory evidence.