Eastwood, Bruce Stansfield

Descartes on refraction. Scientific versus rhetorical method. (English) Zbl 0554.01009


The author develops and modifies arguments in earlier studies on Descartes’s Dioptrics by A. I. Sabra [Theories of light from Descartes to Newton, London, 1967, Ch. 4] and by G. Buchdahl [Metaphysics and the philosophy of science, Cambridge (Mass.), 1969, pp. 118-147]. The question he discusses is what kind of argument Descartes presented in dealing with refraction in the Dioptrics. He summarizes Sabra’s and Buchdahl’s answers to this question as “an attempt at proof” and “a recounting of the method of discovery” respectively.

His own conclusion may best be rendered in the author’s own words (p. 485): “The exposition below interprets Descartes’s actual presentation of refraction in the Dioptrics 1 and 2 as an exercise in a distinctive rhetoric, cast in the mode of persuasive instruction for an idealized artisan. While Descartes seems to have a physical theory in the back of his mind, the account we are dealing with does not present it. Revealing the law of refraction through easily understood analogies between light and common observables, his narrative instructs and persuades in everyday terms. What he offers is surely an explanation but just as surely not a proof. What he explains is a way to understand a refraction diagram. His vocabulary and methods of explanation, which employ a distinct type of analogical reasoning, make it clear that persuasive description, not proof or discovery, is the purpose of the account. The Dioptrics is an essay in educational, and thereby rhetorical, method rather than an example of scientific method.”

Reviewer: H.J.M.Bos

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Biographic references:

Descartes, R.

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