IV. OVERVIEW AND COMMENTARY ON ORESME’S DE VISIONE STELLARUM

A. General Overview of the De visione stellarum

Atmospheric refraction is both an astronomical irritant and an intellectual puzzle. A major problem for observational astronomers since Ptolemy, it still baffled Newton who consumed nearly a year of his life finding a correct understanding of the problem in order to aid the astronomer John Flamsteed.1 Despite its complexity, it has been a delightful puzzle for students of optics and mathematics, and for the armchair astronomer. Further, it also has a philosophical dimension, for it questions our ability to know true reality through the senses. For if everything we observe, from a stone to a star, is shifted and distorted in incalculable ways by the medium we inhabit, then how trustworthy are our perceptions of physical reality? Oresme was uniquely suited to tackle a many-sided scientific and philosophical problem such as refraction since he was a mathematician, a perspective, a philosopher, and a bit of an armchair astronomer as well.

His elder colleague, Jean Buridan, noted Oresme’s keen interest in meteorological phenomena quite early.2 In his Quaestiones super meteorum this famous arts master said: “The Reverend Master Nicole Oresme said to me himself to have once seen two [mock suns or parhelions], one on either side of the sun.”3 Oresme himself

---

1 This was not entirely altruistic: Newton desired to “exchange” his solution for Flamsteed’s raw astronomical data.


explained such mock suns by means of atmospheric refraction and reflection in the *De visione*. Indeed, in the air, sometimes such refractions or reflections occur in the clouds, which make the sun appear elsewhere than it really is. Further, because of such reflections or refractions, there sometimes appear to be two other [suns] on either side of the true sun – and these are called “mock suns” …

Oresme gives a sprinkling of qualitative observations throughout the *De visione*, and encourages his readers to use experientia (i.e., experience or experiment) to confirm his views. Nevertheless, while some of these experientiae might depend on actual observations, others are more an appeal to common wisdom, or may merely be thought experiments. Thus, Oresme’s *De visione stellarum* is a fully scholastic treatise, relying far more upon reasoned argument than on observational evidence to achieve its ends.

Oresme builds his disputation on a single question: *Utrum stelle videantur ubi sunt.* “Are the Stars [Truly] Where They Appear To Be?” He answers that they are not. Why they are not may be understood in three ways, he says. Some stars appear to be the same distance from us, even though they are not. The reason for this is self-evident, he says, and he will not explore it in the *De visione*. Other stars appear where they are not, though the light ray from them is straight (i.e., undistorted). Still other stars appear where they are not when the light ray from them is “bent” by reflection or refraction. The *De visione* is divided into two unequal parts that treat the second and third cases; these I have labeled Book i and ii. The shorter Book i answers the second case, the longer Book ii answers the third.

---

I have not had an opportunity to examine this passage myself. Babbitt also notes this passage and cites its appearance in an article by Bulliot. Babbitt, *Oresme’s “Livre de Politiques,”* p. 2, n. 10: “Oresme does not mention Buridan, but Buridan speaks in his *Quaestiones super tres libros Metheorum* of an observation made to him by ‘Reverendus Nicholaus Oresme’ (see Jean Bulliot, ‘Jean Buridan et la mouvement de la terre,’ *Revue de Philosophie* 25 [1914]:12).”

4 Oresme, *De visione stellarum*, Bk. ii, cap. 2, 204:1–5: “Ymo, in aerem, et quandoque fuerit tales refractiones vel reflexiones in nubibus que faciunt solem apparere alibi quam sit. Et adhuc per verum solem quandoque appareat quod sint, duo ali propter huiusmodi reflexiones aut fractiones, et illi vocantur paralleli …”

5 In *De visione stellarum*, Bk. i, 110:21–22, Oresme urges the “experimentator” to busy himself in observing comets. Book ii is filled with references to “experience” or “experiment” teaching the conclusions that could not be gained otherwise. Conclusion 6 in Book ii has almost every paragraph call for an experientia. *De visione stellarum*, Bk. ii, cap. 1, 140:7–146:12.

6 *De visione stellarum*, Bk. i, 80:3.