

An unknown astronomical work on planetary theory from the Renaissance: Giulio Cesare Luchini's *Delle revolutioni delle sfere celesti libri IX* (ca. 1581)

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Abstract

This paper discusses a Renaissance astronomical manuscript which is preserved in the Biblioteca Antoniana in Padua, and titled *Delle revolutioni delle sfere celesti libri IX* by Giulio Cesare Luchini of Bologna. Despite its scientific merit and the reference to Copernicus in its title, this manuscript has gone largely unnoticed by historians. Luchini's work, which was completed around 1581, offers a comprehensive treatise on mathematical astronomy and serves as an early example of the vernacular reception of Copernicus in Italy. Unlike other vernacular accounts, Luchini's manuscript avoids embracing the physical reality of heliocentrism, focusing instead on the geometrical and computational aspects of Copernican models while maintaining a geocentric worldview which is consistent with Aristotelian philosophy. The manuscript also explores astrological applications, reflecting the practical dimension of the astronomy of that time. Luchini's explicit adaptation of Copernicus's reciprocation mechanism, which is also known as the Ṭūsī couple, highlights the complex and independent nature of diagrammatic representation and conceptual adherence in Renaissance astronomy. Our study posits Luchini's appropriation of Copernicus's reciprocation construct in the context of modern discussions on the origin and transmission of this geometrical tool for modeling planetary motions.

Keywords

Copernicus, Giulio Cesare Luchini, planetary theory, Renaissance astronomy, Ṭūsī couple

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