

12 Concluding Remarks

In the first half of the seventeenth century, the international community of Jesuit mathematicians active at the Lisbon College of Santo Antão came to terms with the planetary system of Tycho Brahe. This geo-heliocentric rearrangement accounted for the astronomical novelties of the late sixteenth and early seventeenth centuries while simultaneously retaining the principle of a stationary Earth intact, itself a cornerstone of the traditional cosmology and, above all, of the prevailing literal understanding of the *Bible*.

However, the adherence to the Tyconic system was not without some resistance.

Initially, the mathematics teachers of the Class on the Sphere tried to reformulate Christoph Clavius's geocentric system, a planetary system inherited from the Ptolemaic tradition that made its way to Lisbon by the hand of João Delgado, a Portuguese Jesuit who studied at the celebrated mathematics academy run by Clavius at the Collegio Romano. Nevertheless, as Clavius himself recognised, the telescopic observations of 1610 and 1611 rendered the traditional Ptolemaic system untenable. Following Clavius's plea to rearrange the celestial orbs in such a way that these new phenomena might be saved, the Italian Giovanni Paolo Lembo, who came from Rome to teach in Lisbon in 1615-17, set forth a geo-heliocentric system of Capellan inspiration. This system, alternative to that of Tycho, retained intact the foundations of Clavius's Aristotelian-Ptolemaic worldview, namely the idea that the celestial region was divided into a dozen of solid orbs and made up of a purer and incorruptible matter.

By 1620, upon the arrival of the German Johann Gall in Lisbon, the foreign astronomers who taught at the Class on the Sphere moved resolutely towards the system of Tycho Brahe. They all lectured and argued in favour of the Tychonic geo-heliocentric system. Nevertheless, there was a major caveat in this system from the viewpoint of the confessional divides of the time: it had been put forward by a Lutheran astronomer. In a context in which the Counter-Reformation was gaining momentum and in which any criticism of the Aristotelian theoretical framework was perceived as an attack on Catholicism, the integration of the 'impious' Tycho Brahe into the pantheon of Jesuit authorities emerged as rather problematic. Nevertheless, as this analysis of Tycho's integration process among the professors of the College of Santo Antão demonstrates, it did prove possible to convert Tycho into a 'Catholic' *auctoritas*.

Besides purging Tycho's Brahe's works of any Protestant overtones, the Jesuit professors in Lisbon initially strove to confine his influence to the realm of mathematics. As Gall argued, Tycho Brahe exceeded in the domain of mathematical astronomy, but cosmology did not concern him, nor did the mathematicians, but rather the philosophers. Tycho's ideas on celestial fluidity and other issues were thus not to be considered. Accordingly, Jesuit mathematicians, such as Gall, initially reinforced the traditional distinction between mathematics and natural philosophy.

From the late 1620s onwards, when Jesuit astronomers became increasingly involved in the physical discussion of the structure and composition of the cosmos, they made recourse to Tychonic ideas on topics such as celestial matter and fluidity. This was particularly the case of the Italian Cristoforo Borri, later followed by the English Ignace Stafford and John Rishton and the Irish Simon Fallon. Nevertheless, these Jesuits still explicitly avoided crediting Tycho Brahe and his correspondents with these new notions. Despite availing themselves of the cosmological ideas originated in Tycho's milieu, Santo Antão's professors strove to ascribe those cosmological views to the early Church Fathers. In doing so, they tried not only to match Aristotle in authority but also to be consistent with the Counter-Reformation guidelines. The guidelines issued by the Council of Trent recommended, among other matters, emphasising the role of the Church Fathers in the interpretation of philosophical and theological subtleties of the *Bible*. Those interpretations, together with the literalistic understanding of the *Bible* and the ecclesiastic orders, prevented the Jesuit mathematicians active in Lisbon from sincerely adhering to the heliocentric system of Copernicus, even after Rishton's demonstration that this system was plausible from the mathematical and physical points of view.

It was against this complex confessional background that the Santo Antão mathematicians adopted the geo-heliocentric system put forward by Tycho Brahe. Furthermore, they explicitly conceived it as a 'compromise system', a solution that accounted for the Galilean telescopic observations while simultaneously avoiding the biblical 'inconveniences' of Copernicanism. In doing so, they paved the way for the entrance of Tycho Brahe into the restricted selection of Jesuit authorities. Not only the mathematicians but also the Santo Antão professors of philosophy relied heavily on the Dane's notions. Nevertheless, since these Jesuits did not acknowledge the Lutheran astronomer's authorship of the cosmological ideas, they never came to grant Tycho Brahe the full status of an *auctoritas*. In an age of deep confessionalisation, philosophy *apparently* remained in the realm of Catholic orthodoxy.