

learn intriguing details and insights about numerous key individuals – including the astrophysicists Donald Menzel, J. Allen Hynek, and Cecilia Payne-Gaposchkin – it is Whipple’s life story that provides this book’s narrative framework. Whipple, as DeVorkin convincingly argues, was “one of an astonishingly small number of visionary figures” who found ways to take full advantage of the new worlds of postwar patronage to “pursue problems in astrophysics, geophysics and meteorology on scales unprecedented in astronomical history” (pp. 249, 288).

In telling this rich, complicated story, DeVorkin – utilizing both archival evidence and oral interviews – is at his best in describing institutional challenges that confronted scientists and administrators seeking to build a new kind of institution. In part, they confronted acute growing pains: the satellite tracking programme alone grew from 37 to more than 100 people soon after Sputnik’s launch. But he focuses even more on the challenge of doing science in this new era. Who should control the data from orbiting space telescopes – experimenters, or NASA itself? Did the success of new missions depend on whether cutting-edge science resulted, or simply whether the spacecraft worked as designed? Research programmes and scientific controversies also take flight in this narrative – the extended debate over efforts to measure the solar constant, finally resolved by Mariner 6 and 7 data, is particularly well-covered – but DeVorkin remains particularly attentive to the institutional and individual jockeying required to build the Harvard-Smithsonian Center for Astrophysics.

Perhaps because he has written so widely on the history of recent astronomy, DeVorkin sometimes assumes that readers will understand terms that may not be familiar: the Pentagon’s Research and Development Board is not defined, nor is the solar constant. Some chapters end abruptly, without the benefit of DeVorkin’s insights into how the vital story he tells here fits into larger contexts. But this book constitutes the deepest dive to date into a crucial institution and offers a roadmap for understanding the ecology and practices of astronomical institutions in the late twentieth century and beyond.

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1616 is before 1633

Copernicus Banned: The Entangled Matter of the Anti-Copernican Decree of 1616. Natacha Fabbri and Federica Favino (Leo S. Olschki Editore, Florence, 2018). Pp. xxv + 252. €32. ISBN 9788822265845 (pbk).

The year 2016 marked the 400th anniversary of the Catholic Church’s prohibition of Copernicus’s *De Revolutionibus* (1543) and condemnation of the idea of a moving earth as false and contrary to Scripture. Some institutions and scholars marked the occurrence with conferences, exhibitions, and publications. The present volume is one such example.

Usually, the anti-Copernican ban of 1616 is studied from the point of view of the Inquisition's trial and condemnation of Galileo in 1633; such an approach is certainly justified and fruitful given the epoch-making, universal, and perennial relevance and interest of the Galileo Affair. However, as the editors of this volume state in the Introduction, the Copernican ban can and should also be studied in a more autonomous, nuanced, and complex manner. This is not to deny that Galileo played an important role in the 1616 ban *per se*, but it is to stress that there were other persons and other issues worth studying if we want to acquire better knowledge of what happened, why it happened, and what the consequences were.

From this viewpoint, this volume is welcome and valuable. In what follows, given space constraints, I shall summarize the more important and interesting contributions; for the others, I shall merely list authors and titles, which fortunately happen to be descriptive.

Roberto Bondi examines the connection between the Copernican ban and the prohibition of the works of Bernardino Telesio, such as his *De rerum natura* (published in 1586 and banned in 1593). Bondi discusses the similarities between Telesio and Galileo, as seen both by their critics and by their supporters; similarities included anti-Aristotelianism and the rejection of the earth–heaven dichotomy. Bondi claims that their similarities played an important role in the Copernican ban, perhaps more important than Galileo's own defence of Copernicanism.

Steven Broecke deals with the relationship between Copernicanism and astrology, focusing on the works of Jean-Baptiste Morin (1586–1656). Morin thought that Copernicanism and astrology were incompatible, and this incompatibility enabled him to criticize Copernicanism and defend astrology. The interesting and important point in Morin's anti-Copernican and pro-astrological arguments is his conception of astrology, for him a discipline that mixes physical science, metaphysical philosophy, and theology. If this mixture strikes some of us as unholy or nonsensical, there is no denying its interest and originality.

Natacha Fabbri explores a group of anti-Copernican objections that involved religious beliefs: that the earth is located in the place where all the dregs and excrements of the universe have collected; that hell is located at the centre of this collection of refuse; and that this place is as far as possible from the outermost empyrean heaven where the angels and blessed reside. Clearly, these beliefs were incompatible with Copernicanism, which made the earth a heavenly body located in the third heaven. These objections were advanced more or less seriously by many anti-Copernicans and criticized more or less dismissively by Copernicans.

Luigi Guerrini investigates the discussions about the 1604 nova, hosted in 1604–1606 by the archbishop of Florence, Alessandro Marzimedici. In what strikes me as an important conclusion, Guerrini finds that the discussants included not only religious-minded traditionalists but also secular-minded Aristotelians and Copernican-oriented anti-Aristotelians; the archbishop sided with the first group, but he displayed a tolerant and moderate attitude towards others.

Franco Motta focuses on a significant aspect of the context of the Copernican ban: the similarities between two controversies. One was the question of the incompatibility between Copernicanism and Scripture, and more generally of the relationship between

ecclesiastic authority and natural-philosophical investigation. The other controversy involved the problem of the relationship between Church and State, which at that time was raging between the papacy and such political authorities as King James I in England, Henry IV in France, Holy Roman Emperor Rudolf II, and the Republic of Venice. Such a political background sheds light on many aspects of the Copernican ban, especially on the behaviour of Cardinal Robert Bellarmine, who was a protagonist of both controversies. Motta deserves credit for focusing on this analogy and for elaborating some of the interconnections.

Rienk Vermij studies the problem of the relationship between Copernicanism and Scripture in the Netherlands and argues that by and large the issue was very subdued, labelling it a “non-debate.” Vermij discusses the views of pro-Copernican thinkers such as Simon Stevin, Isaac Beeckman, and Philips Lansbergen and of anti-Copernicans such as Paullus Meruma, Ubbo Emmius, and Nicolaus Mulerius. Of special interest is Lansbergen’s 1629 book, written in the vernacular and addressed to laypersons: *Considerations on the Diurnal and Annual Motion of the Earth, as Well as on the True Image of the Visible Heaven*. Here, a further project crying out for investigation would be a comparison and contrast of this book and Galileo’s *Dialogue*.

The volume also contains the following essays: Federica Favino, “Alchemical Implications of the 1616 *Affaire*. On the Parish Priest Attavanti, the Knight Ridolfi and the Cardinal Orsini”; Édouard Mehl, “Kepler’s Second Copernican Campaign: The Search for an Annual Stellar Parallax After the Roman Decree (1616)”; and Giovanni Pizzorusso, “Francesco Ingoli: Knowledge and Curial Service in 17th Century Rome.”

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A Castilian Translation of Copernicus’ *De revolutionibus orbium coelestium*

Ydea astronomica de la fabrica del mundo y movimiento de los cuerpos celestiales (Traducción de “De revolutionibus I–III” de Nicolás Copérnico). Juan Cedillo, Miguel Ángel Granada and Félix Gómez Crespo (Edicions de la Universitat de Barcelona, Barcelona, 2019). Pp. 482. €30. ISBN 9788491681649.

In 1991, Mariano Esteban and Félix Gómez identified a partial translation of Copernicus’ masterpiece in a seventeenth-century manuscript preserved in Madrid, Biblioteca Nacional, MS 9091.¹ Although partial, this is the first translation of *De revolutionibus* into Castilian. The translator, Juan Cedillo Díaz (Toledo, c. 1565–Madrid, 1625), a graduate from the University of Salamanca, became the most relevant astronomer at the court of King Felipe III (reigned 1598–1621) for he was professor of mathematics at the Royal Academy of Mathematics in Madrid since 1596 and in 1611 was appointed