damental en el galenismo. Nicoletta Palmieri hace lo propio con la ciencia del pulso, género entre la teoría académica y la práctica clínica. Mireille Ausécache nos presenta la poesía médica como instrumento mnemotécnico. Jon Arrizabalaga trata de los géneros médicos en la primera imprenta. Y Joël Coste, de la evolución de los géneros literarios médicos entre los siglos XVI y XIX, concretada en las *Observationes*, o estudios de casos, con un elenco de 52 repertorios de casos particulares.

Si bien la inmensa variedad de los géneros médicos no puede ser objeto de un estudio exhaustivo en un único volumen, lo cierto es que este libro consigue profundizar magistralmente en algunos de ellos, sin duda porque los autores de los trabajos son grandes conocedores. El resultado es un volumen extraordinariamente rico y sugerente que permite poner de relieve —y en un cierto orden— un mundo textual complejo y variadísimo, que es evidencia del valor que tuvo la medicina para sociedades como la medieval y la moderna. ∎

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Víctor Navarro Brotons. Jerónimo Muñoz. Matemáticas, cosmología y humanismo en la época del Renacimiento. Valencia: PUV; 2019, 324 p. ISBN 978-84-9134-439-1. 20 €

The Valencian Jerónimo Muñoz (d. 1591) was sixteenth-century Spain's leading astronomer. Not only was he a rigorous teacher, a curious observer, and an accomplished mathematician, he also thought deeply about how celestial phenomena he witnessed challenged two millennia worth of speculations about the nature of the heavens. As this biography shows decisively, Muñoz was a leading exemplar of 'scientific humanism', bringing together many disciplines that made up the study of nature in the Renaissance: mathematics, astronomy, astrology, geography, cartography and natural philosophy. As a professor of Hebrew in his native Valencia and later at the Salamanca, he understood that the biblical narrative was an important component of the astronomical tradition. This book is a synthesis of over forty years of exquisite historical research and publications on Muñoz's life and work by renowned professor and historian of science, Víctor Navarro Brotons.

The book is divided into six chapters and includes four appendices of selected translations from the Latin of Muñoz's most important works, particularly as they relate to the astronomer's more unorthodox cosmological theories. The first chapter is a brief biographical profile highlighting his education in Spain as both mathematician and Hebraist, and also his later studies with Oronce Finé in Paris and Gemma Frisius in Louvain in astronomical instrumentation and cartography. By 1565, Muñoz was teaching mathematics and Hebrew at the University of Valencia, later taking a prestigious appointment at Salamanca in 1578. Muñoz only published four books. Two were destined for pedagogy: a primer on the mathematical principles of astronomy (1566) and a Hebrew grammar (1585). The other two were astronomical: the most important on the nova of 1572 and another on the lunar eclipse of 1577. The brief book on the nova, *Libro del nuevo cometa* (1573), earned him fame throughout Europe and was often cited in the astronomical debates concerning the «new star». Yet, as Navarro explains, Muñoz felt slighted by his book's reception at the Spanish court and this made him keep his more ambitious projects out of print. Luckily, two important works survived as autograph copies: a commentary on the second book of Pliny's *Natural History* and an extensive, annotated translation of Theon of Alexandria's commentary on Ptolemy's *Almagest*. The rest of his works seem to have circulated in Spain and Europe as student copies of textbooks written as part of his teaching duties. The book's second chapter explores Muñoz's pedagogy in detail and is an excellent introduction to mathematics and astronomy curricula at early modern universities. An important part of this curricula—no doubt driven by Spain's geographical expansion—was cosmography and cartography. Muñoz drew a map of Valencia that found its way to Ortelius's *Theatrum orbis terrarum* (1584/85). Navarro's detailed study of this map (prepared in conjunction with Vicente Salavert) clearly shows that Muñoz carried out the topographical measurements himself.

Chapters 3 and 4 turn to Muñoz's astronomy and natural philosophy. Muñoz's observational and theoretical work tackled some of the more pressing cosmological ideas of the time: the existence of crystalline celestial spheres, the material composition of the heavens, the order of the planets, and of course, the Copernican theory. Navarro uses the two commentaries cited above and Muñoz's extensive annotations to outline the Valencian astronomer's unorthodox cosmological ideas. Muñoz, writing in the humanistic tradition, included extensive surveys of ancient and contemporary cosmological ideas in his annotations, which Navarro explains and situates within sixteenth-century astronomical debates. While Muñoz was intimately familiar with *De*

revolutionibus, even reworking some to Copernicus's proofs and correcting some computational errors, he remained unconvinced by the Polish astronomer's claim concerning the movement of the earth and heliocentrism. Instead, he was convinced that celestial crystalline spheres were fiction and that the heavens were corruptible and filled with an airy medium that gradually rarefied toward the edge of the cosmos. The planets moved around an immobile earth at the center of the cosmos, «as fish in the sea or birds through the air that surrounds the earth» (p. 176). Furthermore, the appearance of planetary movements could be saved by imagining them rotating in spirals from east to west. When this unorthodox astronomer observed the nova of 1572, he was willing to let 'natural reasons,' rather than prevailing Aristotelian notions determine how he interpreted the phenomenon. Muñoz's observations indicated that the new star did not have parallax, leading to conclude that it was, in fact, a comet but celestial in origin and nature and not, as was the received knowledge about comets, a terrestrial exhalation. As Navarro explains, Muñoz was committed to putting forth a naturalistic explanation, rather than labeling it a miracle as many of his contemporaries did (p. 136).

This book should become essential reading for anyone interested in early modern astronomy and related fields. It is also a fantastic introduction to the state and status of the mathematical and astronomical disciplines in sixteenth-century Spain and how these were taught at universities. Each chapter is nicely contextualized, whether thematically or by providing brief biographies highlighting the significance of Muñoz's sources and disciples. While some historical material is repeated in multiple chapters—an unavoidable result of the book's genesis as a synthesis of works published elsewhere—this actually helps the chapters stand alone well. The selections in the appendices highlight Muñoz's more novel ideas and makes these primary sources easily accessible to historians today. Victor Navarro's astronomical expertise and technical analysis of the Muñoz's work —increasingly rare in histories of science today— shows the added depth this type of expertise can bring to historical studies. ▮

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