

them in her castle gardens—that secured her reputation.

Anna of Saxony, on the other hand, was married for thirty years to the powerful Elector August of Saxony and was a member of the upper echelons of German nobility/royalty. In contrast to Dorothea—for whom she acted as a patron and whom she provided with both money and ingredients for her medical practice—Anna of Saxony's medical interests were not driven primarily by a charitable imperative but, rather, by what Rankin defines as the models of the “good Lutheran mistress of the house and the noble empiric” (p. 20). Like her husband August and a number of contemporary noblemen and princes, Anna was interested in performing hands-on experiments in order to improve her medical knowledge and recipes. Rankin acknowledges that to a large extent Anna of Saxony reached her extremely influential position as a recognized medical expert only because of her social position as a Danish princess married to one of the most influential German Electors.

Finally, the last chapter of this section deals with Duchess Elisabeth of Rochlitz, another minor German noblewoman who had medical interests but is included here in her capacity as a patient. This chapter, however, is the least satisfactory of what is otherwise an excellent volume, well written and well argued, even if the structure of the book, starting with the general and then moving to the specific case studies, at times become somewhat repetitive. Rankin's conclusion, that the medical and pharmaceutical interests of princesses and noblewomen should be considered as experimental parallels to the focus of princes on alchemy and astronomy, and that these women's interests should be seen as part of “the multifaceted world of early modern science” (p. 22) situated within court culture, rather than as the efforts of amateurs dabbling in healing, is well argued and convincing.

OLE PETER GRELL

■ Early Modern (Seventeenth and Eighteenth Centuries)

Massimo Bucciantini; Michele Camerota; Franco Giudice. *Il telescopio di Galileo: Una storia europea.* xxvii + 317 pp., illus., bibl., index. Turin: Giulio Einaudi Editore, 2012. €25 (paper).

The story told in this book begins in September 1608, when Hans Lipperhey traveled from Middelburg to The Hague in order to show Maurice, Prince of Orange, his new invention, the tele-

scope. The story ends in Beijing in 1614, when the Jesuit Manuel Dias, Jr., finished his *Tian wen lüe*, a compendium of practical astronomy relocated by means of calculations and observational results concerning Chinese localities in which the fundamentals of Western practical astronomy are rendered in Chinese. The last page of this treatise contains the latest news of the time, which was spread by the publication of Galileo's *Sidereus nuncius*.

The short temporal span of this volume is more than compensated for by its spatial expansiveness. The book reconstructs the early history of the telescope through analysis of the cultural and scientific impact of the instrument in many relevant centers. It literally follows the telescope from the Netherlands to Venice, Bologna, Prague, Great Britain, France, Milan, Florence, Rome, Portugal, India, and, finally, China.

The book analyzes in great detail the moment when the telescope became an astronomical instrument and the profound impression caused by the publication of Galileo's *Sidereus nuncius*, taking into consideration an enormous number of sources of various sorts, some of them hitherto unknown. The geographical perspective adopted by the authors, however, reveals itself to be particularly efficient in showing the many different dimensions of scientific results and, especially, how these cannot be separated from each other. The authors convincingly argue, for instance, that the very early emergence and establishment of the use of the telescope was not closely linked to any theoretical aspect and that the technical improvements of the instrument can be interpreted as the result of collective work rather than the efforts of a single person. But the “simultaneous history writing” offers more than this. It shows all the political and cultural aspects and implications that shaped the early history of the instrument: Paolo Sarpi's and thus the Venetian political failure caused by Galileo's decision to bring his astronomical discoveries into the domain of the court of Florence; the fundamental political uncertainty caused by such discoveries because of their impact on astrology and, therefore, their potential power to falsify all preceding astrological predictions; and, finally, the emergence of the cultural climate that connected Galileo's discoveries and his campaign in favor of the Copernican cosmological system with other more suggestive ideas, such as the one concerning the infinity of worlds and the renaissance of atomistic doctrines. The roles of Johannes Kepler, Giordano Bruno, and Tommaso Campanella, but also the role of the cultural circle of Northumberland and of that around Borromeo, are considered in the back-

ground of the process that led to the formation of a theological and philosophical opposition to the cosmological interpretation Galileo wanted to assign to his discoveries. *En passant*, an impressive reconstruction of the astronomical work of Thomas Harriot—"the English Galileo"—is offered by showing that, although he had been the first to accomplish relevant astronomical observations, he finally was able to interpret what had been seen once he became aware of Galileo's interpretative physical framework as expressed in the *Sidereus nuncius*.

The epilogue suggests political reflections that go beyond purely historical considerations. It is shown how the advent of the telescope was also perceived as the appearance of an instrument that allowed everyone to discover and see the "secrets of nature," without intermediaries and standard philosophical training. This last chapter, resounding with Brechtian echoes, invites readers to conclude that the diffusion of the telescope was a fundamental agent in expanding knowledge throughout society, an instrument of participation. Interestingly, this is accomplished by showing the preoccupation of the time with concerns about potential destruction of the social hierarchy owing to the diffusion of the telescope. Readers who are acquainted with the early modern period cannot but recognize a parallel with the famous objections of Ludovico Ariosto to portable firearms: instruments that allow everyone from the lower strata of society to kill anyone belonging to higher strata.

Il telescopio di Galileo transforms the early history of the telescope into a history of a dynamic and quickly expanding network constituted of travelers, letters, artifacts, pieces of information, protocols of meetings, and publications. For this reason, and thanks to its accessible and charming narrative, the book can and should be read from cover to cover.

MATTEO VALLERIANI

Sean Cocco. *Watching Vesuvius: A History of Science and Culture in Early Modern Italy.* xi+322 pp., illus., bibl., index. Chicago: University of Chicago Press, 2013. \$54, £29 (cloth).

In 1725, James Jurin answered the request of the Neapolitan physician Nicola Cirillo for scientific instruments to help with the meteorological observations the Royal Society had asked Cirillo to make. Quite dismissively, Jurin pointed to Vesuvius as the instrument Cirillo was seeking, telling him to consider the volcano as his "unique new Barometer" (*The Correspondence*

of James Jurin, 1684–1750, ed. A. A. Rusnock [Rodopi, 1996], p. 149). If this use of the volcano might seem novel, the scientific importance of Vesuvius was a commonplace, as it had been for about a century. Despite an ever-increasing bulk of literature on the birth of geology, awareness of the role of Vesuvian eruptions, especially the one of 1631, in reshaping the knowledge of the earth and in fostering the origins of earth sciences is now rather lost. It is one of the merits of *Watching Vesuvius* that it overcomes this neglect.

The fascinating story the book deals with begins in the sixteenth century, when the dormant volcano was not yet an integral part of the landscape of "Napoli gentile," the city whose beauty, mild weather, and fertile soil (itself a consequence of previous eruptions) were celebrated by natives and foreigners alike. A view by Joris Hoefnagel shows Vesuvius as the backdrop of an idyllic scene of sea and hills; the Phlegraean Fields might have shown what the burning underlying reality was, but hints went unnoticed (Ch. 1). The idyll ended abruptly in December 1631, when a catastrophic eruption killed thousands, displaced almost as many, and turned Naples into a Dantean inferno. Sean Cocco well captures the mixture of sheer terror, religious interpretations, civil unrest, and learned discourse (in the form of one of the richest outputs of printed matter in early modern Italy) the eruption produced (Ch. 2). The causes and the *historia* of the event thus became the object of discussion of natural philosophers in the fields—not immediately familiar to the modern scientific reader—of *meteora*e as well as chronology. Pietro Castelli's booklet *Incendio del Monte Vesuvio* (1632) is deservedly one of the focuses of Cocco's analysis, but it is only one of many such works he takes into account (Ch. 3). In the wake of the anti-Spanish revolt of 1647, the volcano also assumed (diverging) roles at the core of political metaphors and discourses (Ch. 4). Vesuvius was not left in isolation, in that it was gradually inserted in a supposed "net" of volcanoes on a global scale: Athanasius Kircher was instrumental in fostering the idea of a subterranean connection among the mountains of fire—which was in fact extended to the heavenly bodies, where volcanoes were first detected at about the same time. In 1669 Giovanni Alfonso Borelli published the *Historiaincendii Aetnei*, one of the founding works of the earth sciences in Italy (Ch. 5). The history of subsequent interpretations of Vesuvius and other volcanoes is drafted in Chapters 6 and 7, with the mention of a number of works from the late seventeenth to the eighteenth centuries, some of