

Riccioli Revisited A New Analysis of Giovanni Battista Riccioli's New Almagest

Review of: Christopher M. Graney, *Setting Aside All Authority. Giovanni Battista Riccioli and the Science against Copernicus in the Age of Galileo*, University of Notre Dame Press, 2015, 270 p., ill., ISBN: 9780268029883, \$29.00.

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Last December I gave a guest lecture about Galileo's telescope and his discoveries, and briefly referred to the mixed responses they received throughout Europe. One of the students then raised his hand and asked, incredulously: 'But how could they *not* believe Galileo, when they could just *see that he was right* when they looked through the telescope?'. It was, of course, a good question, and one that I could not answer in full. I was therefore happy to discover, in the acknowledgements to Christopher M. Graney's *Setting Aside All Authority: Giovanni Battista Riccioli and the Science against Copernicus in the Age of Galileo*, that Professor Graney had been asked exactly the same thing during one of his classes: how, asked the student, could people look at the evidence a telescope provided, yet not accept the Copernican system? Or, as another of his students phrased it: 'how can I look at the sky and see that it is blue, but accept some guy telling me to believe it to be pink, because that is what is in the Bible?'.

That is the question Graney sets out to answer in this monograph study. He makes it clear that he wishes to avoid stereotypes about the authority of the Church, and to look at the scientific arguments offered instead: what was known and certain in the age of Galileo, and which conclusions could be drawn from that information? Graney answers these questions by focusing on Giovanni Battista Riccioli's (1598-1671) *New Almagest (Almagestum Novum, 1651)*, a two-volume work of over fifteen hundred pages. In book 9 of this work, Riccioli discusses 49 arguments for and 77 against the Copernican worldview, considering reasoning and intrinsic arguments alone, 'with every authority set aside'. Hence the title, which also applies to Graney's own intention: to objectively discuss the arguments put forward by Riccioli and his contemporaries, without taking into account that Copernicus and Galileo were, ultimately, right.

Granted, in retrospect, Copernicus and Galileo were right, and Riccioli was wrong. But, as Graney demonstrates, at the time of writing and *in light of what was known then*, Riccioli's conclusion that the only worldview that could be supported was Tycho Brahe's was not unfounded. Furthermore, Graney shows that the various accusations hurled at Riccioli over time were largely false. To name a few: that he put forward 'marvelously absurd' arguments to deny the Earth's movement; that theological arguments were decisive in his acceptance of the immobility of the earth;

that he had long realized the Copernican hypothesis was true yet defended the Ptolemaic model because his religion obliged him to; and that he had no real arguments for the geocentric system except for the authority of the Bible and the Church. Besides refuting these claims, Graney draws our attention to the fact that some pro-Copernicans were using theological arguments to refute Brahe's objections to the Copernican system, thus urging us to reconsider the all too rigid division of science (and heliocentrism) and religion (and geocentrism).

Amidst the often triumphalist history writing depicting Galileo as the father of modern science, another example of the more nuanced perspective on the science vs. religion debate is very welcome. Graney abandons the winner-loser dichotomy of which Riccioli has become a victim as much as possible, and includes the lesser heroes of the scientific revolution in this work as well. By discussing their works in an accessible manner, Graney creates a more nuanced view of the scientific revolution, while reaching out to a broader public at the same time. Important examples in this regard are the two appendices included in the volume: these consist of English translations (by Graney and his wife Christina) of Latin texts by Francesco Ingoli and Riccioli. Both appendices also include a short technical discussion. By making these texts, which were previously reserved for a rather specialized readership, available to a larger public, Graney enables the development of further scholarship into these important texts.

Finally, something should be said about the book's layout. Apart from the appendices, it includes notes and references, a succinct bibliography, an index and, most importantly, many illustrations. As they present useful insights into the sometimes complex and difficult matter Graney is dealing with, these are especially welcome – and very much in line with Graney's attempt to make this complex matter accessible to a broader public.

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