Copernicus: Platonist Astronomer-Philosopher. Cosmic Order, the Movement of the Earth, and the Scientific Revolution by Matjaž Vesel (translated from Slovene by Manca Gašperšič)

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In this monograph Matiaž Vesel tells a fascinating story. Nicolaus Copernicus (1473–1543) published a highly technical treatise on astronomy in 1543 known in Latin as *De revolutionibus* (*On Revolutions*), the same year in which he died. Copernicus' book described a system of astronomy in which the Sun was imagined to be at rest at the center of the cosmos while the Earth was boldly set in motion round it. Vesel asks himself such 'simple' questions such as Why did Copernicus assert that 'the Sun is at rest in the center while the Earth moves' [13]? Why 'did he think that astronomy was in need of reform' [13]? More ambitiously, Vesel asks one more, final question: 'What does Copernicus's assertion mean for the history of human, particularly scientific and philosophical, thought?' [13].

It would be impossible to do justice to the complexity Vesel's story if one wanted to summarize his answers to the above questions. So I will leave the pleasure of tasting the infinite nuances of Vesel's musings to the readers of his book. I will content myself with reporting sparse impressions that I have gleaned while exploring *Copernicus: Platonist Astronomer-Philosopher*.

As the title chosen by Vesel indicates, the theme of his book is Copernicus' Platonism. This is strongly emphasized by Vesel, who claims that

> Copernicus's Platonism explains *all of the fundamental aspects* of his project. His Platonism brings unity and coherence to his work and links into a consistent philosophical stance seemingly unrelated issues, such as the equant problem and the problem of the order of the planetary spheres. [20]

So I first set out to find out how Platonism figured, for instance, in one of the problems that Copernicus discusses, one which has attracted the interest of

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historians and philosophers of science including myself. It is the problem of the physical consequences that would have to be expected if the Earth rotates round the Sun and also around its polar axis. Why do heavy objects here on Earth not fly upwards, as we see happening in sling-like and other rotating devices? Why are houses and trees and people not extruded from the surface of the spinning Earth? Vesel engages in a thorough historical analysis of earlier theories, collecting all the arguments and counter-arguments that might have been at Copernicus' disposal [155 ff.]. However, this tortuous contextual reconstruction does not seem to offer a convergent, progressive movement towards answering the simple question posed by the guiding idea of the book, that is, the hypothesis that Platonism was the prime mover of Copernicus' reformist project in astronomy. But this is perhaps, as I hasten to point out, the strength of this book.

At this point, it dawned on me that the issue with the structure of the book is not so much the difficulty of finding an orientation in the wealth of historical details marshaled by Vesel, for the narrative is always clear and cogent. The issue is indeed the category itself of Platonism, which the book lays open for further questioning. What does Vesel mean by 'Platonism' and can it be neatly defined in the context of European culture of the16th century? This is the question that Vesel's learned book finally pushed me to ask myself and to which I found no definitive answer. Vesel thinks that it is Copernicus' Platonist theory of gravity that explains his treatment of the physical objections against the motions of the Earth. 'Copernicus' theory of gravity, regardless of which author was his immediate source—Ficino, Plotinus, Plutarch or somebody else—is evidently Platonist' [204].

But Vesel also emphasizes that Copernicus' physical arguments in favor of the Earth's rotation serve only one purpose: to bring the theory of motion in conformity with his cosmological-astronomical principles, that is, with the *harmonia* and *symmetria* of the world. Or, if we look at it from another angle: when addressing the question whether the Earth moves, it is not physical arguments 'against' or in 'favor' that are crucial for Copernicus but the mathematical cosmological reason, that is, the harmony of the universe. His central argument for the Earth's motion is, therefore, the firm *symmetria* of the universe, that is, the commensurability of his parts, which can be understood by taking into account the various motions of the Earth [205].

The most important piece of evidence for the thesis of the book, concludes Vesel, is the 'theoretical, philosophical concordance between Plato and Copernicus' [321]. This theoretical and philosophical concordance is then summarized in the principle of the harmony of the universe, and the task that Copernicus the Platonist is astronomer set himself was the restoration of a system of the universe in which all parts fall into place so as to be commensurate to one another. This commensurability is not an object of sensory perception but rather a vision of the mind. The senses show us that the Earth is motionless [388]. The mind harmonizes instead of measuring. Then, it seems to me, the role of Copernicus in the scientific revolution, the theme discussed in the last pages of the book, needs to be reconsidered. Vesel suggests that

> Copernicus contributed to the Scientific Revolution not only by spurring certain developments but…also by triggering a shift towards the horizon of modern scientific thought…he demonstrated that in order to discover the truth about the natural world, a scientist must very seriously reflect upon what sensory appearances tell him. [391]

My thought is that if the Platonism which Vesel discerns in Copernicus is the principle of the harmony of the universe, a principle that is ultimately a structure of mind, then this Platonism is itself not in harmony with the horizon of modern scientific thought unless the horizon is restricted to the 17th century. The trajectory of European science over the last four centuries has been a movement away from that ideal. For the mechanism and often crass materialism that define science nowadays are worlds apart from the cosmological harmonies of Plato and Copernicus.