Preface

Most histories of astronomy grant little more than a single page to the discovery of the first four asteroids – discoveries that defined a new era in astronomy. The five books in this historical series are comprised of more than 1800 pages. It is perhaps appropriate to recall the words of Dr. Johnson, who remarked of Milton’s *Paradise Lost* that “None ever wished it longer than it is.”

The asteroid Vesta, discovered by Wilhelm Olbers in 1807, was greeted with some disdain. One author called Vesta a “ruined and desolate planet,” but it made Olbers the most celebrated astronomer in Europe with not one but two planetary discoveries to his credit – an amazing feat for a man who was a medical doctor by profession. The methodology he used to discover Vesta after a five-year search is described here in his own words.

Each of the four asteroids – Ceres, Pallas, Juno, and Vesta – made its own unique contribution to the study of the Solar System, but together they posed a problem. Could the origin of the asteroids be traced to the explosion of a primordial planet or a cometary impact that broke it apart? That was a key *quaestio vexata* posed by Olbers that plagued early nineteenth-century researchers, and one that is explored throughout this book. An entire chapter is devoted to the work of the Swede Lars Regnér, who rejected the hypothesis, and another is devoted to the Scotsman David Brewster (pictured on the front cover) who supported it.

A major element of this book is a study of the Romantic Movement. As an historian of science Charles Coulston Gillispie (1960) noted, “Romanticism began as a moral revolt against physics...It always wants more out of nature than science finds there.” This demand of Romantic science, specifically in terms of asteroid research, has never before been explored. Its most astonishing expression was the belief promoted by Gotthilf Schubert and Johann Schroeter that Vesta is a self-luminous object, a topic studied here in terms of art historical analysis. The link between meteorites and asteroids is also examined in depth, revealing a synergy between Ernst Chladni, Romantic symbolism, and the music of the spheres.
The divide between hard science and Romantic science can be explored by their differing approaches to illusion. For Johann Schroeter, an optical illusion is a key factor in his disagreement with William Herschel over their wildly differing diameter measurements of the asteroids, as explained in Chapter 10. The essence of Romantic discovery can be captured in the reading of an illusion that becomes a notable element examined in Chapter 2. It was written May 3, 1802, just 5 weeks after the discovery of Pallas, and is thus a contemporaneous example of the Romantic spirit. The author is Friedrich Daniel Ernst Schleiermacher (1768-1834), German philosopher and later professor at the universities of Halle and Berlin. Here he writes to Eleonore Grunow during a visit to Gnadenfrei, a town now in southwest Poland.

The sun was about to set..., and I sat down under a birch, rustled by the evening wind, to watch this beautiful spectacle. When the lower edge of the disk had almost touched the ridge of the mountains, all the glare disappeared, and unhindered I could see the splendid fireball clearly outlined. Thus it set, quietly and calmly. I thought about the illusion, and then believed myself able to see the earth rotating and to hear the rush of the mountains, which little by little darkened and flowed together. (quoted in Blackwell, 1982: 239)

The illustrations in this and the other books of the series include nearly every person who actually observed the four asteroids in the early- and mid-nineteenth century – a very select group of just a few dozen men and one woman who changed astronomy forever. All the important scientific papers they wrote about Vesta are presented here.

Revealing a multi-nodal network in the long-distance intellectual community known as the Republic of Letters, some 850 asteroid-related letters between the astronomers of the early nineteenth century are comprehensively listed for the first time; most have been published in this series, which collectively is a tribute to the devoted astronomers, mathematicians, and philosophers who labored for many thousands of hours, two centuries ago, to establish the science of asteroid studies.

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Reference

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