HISTORY OF SCIENCE

KEPLER'S PHYSICAL ASTRONOMY

• BRUCE STEPHENSON •

From Hipparchus and Ptolemy in the ancient world through Copernicus and Brahe in the sixteenth century, astronomers used geometrical models to give a kinematic account of the movements of the sun, moon, and planets. Johannes Kepler revolutionized this most ancient of sciences by being the first to understand astronomy as a part of physics. By closely and clearly analyzing the texts of Kepler's great astronomical works, in particular the *Astronomia nova* of 1609, Bruce Stephenson demonstrates the importance of Kepler's physical principles—principles now known to be "incorrect"—in the creation of his first two laws of planetary motion.

"'To explore and explain the development of Kepler's planetary theory, and of the physical hypotheses integral to that theory, more faithfully than has yet been done'—is [Stephenson's] expressed aim in this book. He has achieved it in a way unlikely to be surpassed; a more lucid and thorough account is scarcely imaginable. A good deal that was previously murky is here made clear. For an understanding of Keplerian endeavor 'from the inside,' Stephenson's book is undoubtedly the best guide now available." —CURTIS WILSON, *Centaurus*

"Stephenson's analysis is a landmark contribution to Keplerian studies and one that must not be missed by any historian or astronomer who seeks an understanding of the genesis of Kepler's laws." —OWEN GINGERICH, *Isis*

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Cover Illustration: Frontispiece from Johannes Kepler's *Tabulae Rudolphinae* (Ulm, 1727). Courtesy of the Department of Rare Books and Special Collections, Princeton University Libraries.

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