early books and their unexpected peregrinations from generation to generation. And some chapters focus on the relationships between people and rare books as expensive collectibles. I found the latter particularly intriguing. Gingerich's deep knowledge of that particular group of books is intimate: He knows them as individuals, and he recounts several stories of thefts, thwarted sales of stolen copies, and unfinished investigations.

The Book Nobody Read, whose title is an ironic reference to the opinion of novelist Arthur Koestler on *De Rev*, is also a window into the evolution of the historical understanding in recent years of the Copernican revolution. Gingerich describes how he and other historians, notably Edward Rosen and Robert Westman, sometimes debated, sometimes competed, and ultimately collaborated to better understand the reception of the Copernican theory. The insight that Gingerich offers into the formation of current historical views of the subject was a source of mild frustration for me, because the focus on the book as object is so intense that readers might not appreciate the intellectual history behind it. Also, the highly idiosyncratic account Gingerich provides creates its own questions: I kept wondering how Westman, who was simultaneously working on editions of *De Rev*, would tell the story of unraveling the families of annotations in *De Rev*.

Although the book's shortcomings are mostly irritants, the worst is the nearly constant stream of digressive footnotes. Many, perhaps most, of the footnotes are worth reading, but Gingerich should have found a place for them in the main text, where the mere act of reading them would not have interrupted the flow of the writing.

Despite my impatience with stumbling over the footnotes, the book is still well worth reading. Gingerich does an admirable job of treating many technical points in the history of astronomy. He explains fascinating details of early modern printing and book production that provide the clues to unmask fakes and to distinguish pristine copies from genuine, "sophisticated" ones. His narrative wanders into Johannes Kepler's calculation foibles, Tycho Brahe's legal troubles, and Galileo's lunar drawings, among other digressions, but the story always finds its way back to the relationships of the original, surviving copies of *De Rev*. Gingerich also brings in Latin paleography and early modern typography, both of which offer insight into the creation of *De Rev*.

With that said, the book's tone is rarely didactic and sometimes very clever; it allows the historical figures themselves to come forth in the story. I particularly enjoyed glimpses of Andreas Osiander, the Lutheran pastor of Nuremberg who, without Coperincus's knowledge, inserted the notorious "Preface to the Reader" in *De Rev*. That preface left unwary readers with the impression that Copernicus himself was proposing something well short of a dramatic shift in cosmological thinking. Osiander emerges from the shadows here and there in Gingerich's book, guilty of provoking confusion among readers of *De Rev*

Overall, I enjoyed *The Book Nobody Read* and learned a lot. More books by historians of science should be like it.

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Advanced Astrophysics

Neb Duric
Cambridge U. Press, New York, 2004. $110.00, $65.00 paper (296 pp.). ISBN 0-521-81967-9, ISBN 0-521-52571-3 paper

Astronomy Methods: A Physical Approach to Astronomical Observations

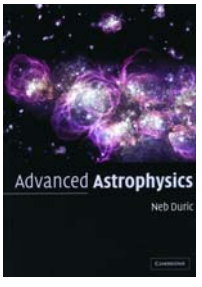
Hale Bradt
Cambridge U. Press, New York, 2004. $120.00, $65.00 paper (433 pp.). ISBN 0-521-36440-X, ISBN 0-521-53551-4 paper

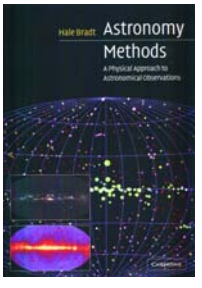
In the past decade, astronomy and astrophysics have undergone developments of fundamental significance. The increased activity in astrophysics and the field's strong coupling with other areas of physics have led to the subject's rising popularity in recent years. This growing interest has resulted in a proliferation of books dealing with theoretical astrophysics at different levels for different kinds of audiences. Neb Duric, once a longtime faculty member at the University of New Mexico's physics and astronomy department before recently moving to Wayne State University's medical school in Michigan, adds to this increasing collection with his latest book, *Advanced Astrophysics*.

Because astronomy is a field of science driven by observations, one of the main objectives of astronomy instructors is to acquaint students with the techniques behind astronomical observations. That is done routinely in good graduate schools, and one would have thought the market would be flooded with books on observational astronomy. Surprisingly, that is not the case. *Astronomy Methods: A Physical Approach to Astronomical Observations* by Hale Bradt, a professor emeritus in MIT's physics department, is a wonderful welcome to a field in desperate need of more textbooks covering the subject.

Advanced Astrophysics claims to cover the field in a short span of about 290 pages. I personally believe such a task is impossible if one aims for complete coverage of the subject at a reasonable level. Yet Duric has bravely attempted the impossible, and the result is rather disappointing: If readers do not know the subject, they will find the discussions inadequate; if they are fairly familiar with the subject, they will find the discussions to be of little value.

The problem is further aggravated by the author's experimenting with a somewhat unconventional structuring of the chapters.





His idea, as emphasized in the preface, is to start with a physics topic and describe applications of that topic in different areas of astronomy and astrophysics. Thus, part 1 of the book treats cosmic expansion and large-scale structure as a part of classical mechanics. The thermal history of the universe comes later in part 2 after statistical mechanics has been introduced. It became obvious to me that Duric's approach leads to a very fragmented view of physics and, to a lesser extent, astrophysics. I was amused to see that a section in part 2 deals with barrier penetration in quantum mechanics while, much later in the book, part 4 is titled "Quantum Mechanics." Stellar structure is also discussed in part 2, while radiation from accelerated charges and radiative processes are mentioned later, in part 3 and beyond. A better reordering of the topics would be to cover the necessary physics background first and then apply the physics to astrophysical phenomena.

Another shortcoming of the book is that it has no exercises for students to test their understanding. The lack of exercise problems can be a major setback for students. I also did not find