

readings, are wonderfully and accurately predicted by quantum mechanics, but where the true nature of the reality described by the theory is so problematic that many physicists actually deny the existence of any reality on the microscopic level. His discussion in this connection of the Einstein-Bohr "debate" about the completeness of the quantum description of reality is better than that found in much of the physics literature. He hits the nail on the head when he writes, "The EPR [Einstein-Podolsky-Rosen] arguments failed by and large to sway supporters of the Copenhagen Interpretation, but this is perhaps due more to the obscurity of the Copenhagen response than to any compelling counterargument it brought to light."

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Modelling Molecular Structures

Alan Hindcliff
Wiley, New York, 1996. 256 pp.
\$29.95 pb ISBN 0-471-95923-5

The approach, the contents and the level of Alan Hindcliff's *Modelling Molecular Structures* are admirable. There are many beginning texts on the electronic structure of atoms and simple molecules and many introductory texts on quantum mechanics. Hindcliff's book approaches those aspects of molecular electronic structure necessary for working chemists, chemical engineers and materials scientists, and it does so in an informal, breezy, attractive fashion.

The intuitive, relaxed style of the book is refreshing, and the choice of topics is a fascinating one. In addition to standard electronic-structure ideas (hydrogen molecule ion, hydrogen molecule, self-consistent fields, electron correlation, density-functional methods, potential-energy surfaces), there are applications to molecular mechanics and molecular modeling as well as a program disk containing simple electronic structure methods and sample calculations.

I know of no other text with precisely this set of topics and with this simplicity and directness of approach. But there is a very serious, possibly destructive drawback: the book is full of errors. There are typographical errors as well as errors of definition and concept. The proofreading and copyediting were either not done at all, or done in an extremely sloppy way. For a teaching text, this is a disastrous situation; those who have been through

this material before can still profit substantially from the current text, but for first-time readers or students, I believe that the errors are simply too abundant and too misleading. For example, in chapter 2, the helium atom is given a ten-electron configuration, the exchange integral is defined incorrectly, and the dissociation of the hydrogen molecule in the simplest molecular orbital approximation is presented incorrectly.

A second, corrected edition of this book would be an excellent teaching and learning text. The choice of material, the exposition and the approach are unique and valuable.

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Blind Watchers of the Sky: The People and Ideas that Shaped Our View of the Universe

Rocky Kolb
Addison-Wesley, Reading, Mass., 1996. 338 pp. \$25.00 hc
ISBN 0-201-48992-9

The fascination of cosmology long ago lured Fermilab's Rocky Kolb from his home in particle physics. One might then have expected his first book to be about the remarkable wedding, some might say shotgun marriage, of astronomy and particle physics in the quest for the ultimate laws of nature and the expression of those laws in the first femtosecond of the Big Bang. But Kolb is determined, in *Blind Watchers of the Sky*, to tell us about another of his passions—the scientific process, which is, in his view, not the method per se but rather the very human sequence of discovery and comprehension of the way our universe is put together. And his subject is not so much the modern descriptions of the physical universe, but rather those of the icons of historical astronomy: Galileo Galilei, Tycho Brahe, Johannes Kepler, Nikolaus Copernicus, Isaac Newton, William Herschel and Edwin Hubble, and of their heroic and sometimes failing struggles to make sense of what they observed.

The book's best feature is its attempt to bring these great scientists to life, to tell us enough about their lives and times so that we can better understand their view of the universe. The personal profiles are well researched and contain relevant material, not gratuitous gossip. And Kolb has many slants and opinions to share on their lives.

He concludes, for example, that Ke-

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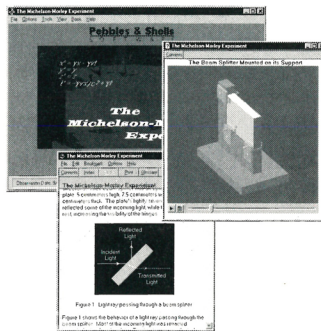
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