long-wavelength low-frequency aspects of the former, with particular attention to experimental results. In a long concluding chapter, the hydrodynamic viewpoint is extended to the high-frequency short-wavelength microscopic domain via a nicely graded conceptual and analytic sequence.

From a larger point of view, the literature coverage in this text is impressive. Although some minor rivulets are omitted, the main streams of current research are explored in depth. The reader is led by the hand, important concepts being repeated as necessary. There are some overly glib statements and derivations, but not many. In a work of this type, the authors must decide upon what sort of critical attitude to adopt, and the one chosen here is scrupulous impartiality. This even-handedness results in a somewhat grey tone, with few bright highlights. The net effect is that the work is not to be read as a novel, but is rather to be studied in segments, or referred to as an in-depth entree to the literature. I will value it as such.

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Galileo and the Art of Reasoning: Rhetorical Foundations of Logic and Scientific Method

M. A. Finocchiaro
498 pp. Reidel, Dordrecht, Holland, 1980.
$42.00 cloth, $21.00 paper

This book is not recommended for those who wish to find out about the content, history or success of Galileo's famous *Dialogue Concerning Two Chief World Systems*. While the book does deal almost exclusively with this famous work, the author's intention is to explain Galileo's rhetorical style, which he does by summarizing the *Dialogue's* structure and then by drawing many long conclusions from this simple summary. The conclusions, which form the bulk of this lengthy work, dispute the claims of other authors who have written about Galileo.

Though Finocchiaro exhibits much erudition in the scope of his references and demonstrates novel relationships of other work to Galileo's (for example, Croce and Ortega), it is not clear exactly what emerges from the 450 pages of his book. Certainly the general thrust is right. Galileo did develop, consciously, a style of writing that was rhetorically effective. It is equally true that Galileo is remembered in literature classes in Italy as a stylist (most for his work *Il Sagiatore* though, not for the *Dialogue*), as well as in history of science and philosophy courses. What is probably not true is that Galileo shared

Finocchiaro's concern for methodology. Galileo never developed a well worked out, coherent view of the nature of science or the nature of scientific investigation. Because the work is fecund—most often because of its very loose character—many people can find different messages in Galileo's work. Finocchiaro's attempt to put Galileo in order, while well meaning and often insightful, is doomed to failure.

Still the book is worthwhile reading for Galileo scholars because it does develop some interesting criticisms of traditional interpretations. It will not be of much use to the casual reader who just wants a good read about Galileo.

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Theory and Applications of Stochastic Differential Equations

Z. Schuss
321 pp. Wiley, New York, 1980. $25.95

Many of us need to know more about stochastic differential equations but are unprepared or unmotivated to read a lot of probability and measure theory to do so. With a good background in classical mathematical analysis and an intuitive understanding of singular perturbations and other asymptotic methods, Zeev Schuss demonstrates by example that one can actually contribute significantly to the development and application of the subject. Furthermore, by emphasizing and motivating this study through an intuitive presentation of a wide variety of physical applications, he has written a book that will appeal to a wide audience of scientists who are not willing to undertake the traditional path to learning the material. The book is, indeed, largely developed along lines suggested by recent work of Schuss and collaborating applied mathematicians and engineers, and it reveals the adventure in their discoveries and the enthusiasm generated from knowing and appreciating the significance of their applications. More definitive and more polished presentations of the mathematics involved will certainly appear. Those interested in probability and those more theoretically inclined toward pure mathematics may have complaints concerning rigor or the omission of some favored topics. Experts on asymptotics may also fuss that certain favorite references aren't cited, and applied physicists and theoretical chemists may not find the description of their special subject to be sufficiently complete. Altogether, however, Schuss very ably shows the importance of doing calculations, of generating a formalism, and of trying such a devel-