One of the most striking aspects of this volume is its clarity. I think this may rank as one of the most readable science books I have ever come across. The author writes in a friendly, informal style, and the text accompanying equations actually explains their physical meaning, instead of stringing together a purely formal exposition of the mathematics. This stress on physical content makes it possible to get an intuitive feel for many of the topics, even when the discussion is on a fairly general level.

I was particularly pleased to note that the book starts out with a detailed explanation of the fundamental equations of hydrodynamics and magnetohydrodynamics. Unlike many derivations, this one stresses the physical meaning of the various approximations involved and shows how transport effects (such as viscosity and conductivity) arise in a natural way from general considerations.

One of the most difficult issues the author of a work such as this has to face is how to incorporate astronomical observations. Any attempt to apply this kind of theoretical discussion to models of real astronomical phenomena has to include enough details to make it clear to the student that the models are not completely arbitrary. On the other hand, the lines of reasoning that connect the models to the observations are frequently long, and occasionally tenuous. There may be no way to do complete justice to real examples without completely sacrificing brevity, but this book comes very close. When some painful choice presented itself, the author did not hesitate to leave out the finer observational points in order to produce a manageable discussion. I found myself applauding his resolve, even while regretting some of the excisions.

Given the changing nature of conventional wisdom concerning many astrophysical topics, it is difficult to avoid including dated information in a book like this, and indeed there are a few spots where the discussion is slightly misleading. For example, the discussion of the snowplow phase of supernovae shocks manages to avoid any mention of the important role played by the thin, uncooled gas left behind the shock. This point may loom disproportionately large in my mind, but I suspect that similar minor reservations will occur to most expert readers. On other points, the level of disagreement between experts is such that no introductory text could be expected to provide a thorough introduction. The few pages devoted to accretion disk theory manage to avoid making any objectionable statements, but the interested student will have to go elsewhere to learn about the intense controversies surrounding this topic. Fortunately the references included provide adequate guidance for further study.

The book concludes with a brief list of problems and questions that will lead the student into the depths of the field. Some of the questions could serve as homework in a course based on this book. Others will be a lot of fun for the ambitious reader and a terror to the rest.

This volume makes an excellent text for beginning graduate students or advanced undergraduates, and as such it fills an important need. I should add that it is less useful as a reference for an active researcher in this field, but only a much longer (and less readable) book could have combined both roles.

Ethan Vishniac
Department of Astronomy,
University of Texas,
Austin, TX 78712

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