ment containing unique primary data on a disease that although still common is rarely studied. The document belongs on the bookshelf of every scientist and physician interested in nutrition. Should we not wait, however, until its senior authors are recognized on the cover and title page before purchasing it?

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Stellar Rotation

Theory of Rotating Stars. JEAN-LOUIS TASSOUL. Princeton University Press, Princeton, N.J., 1979. xvi, 508 pp., illus. Cloth, $40; paper, $15. Princeton Series in Astrophysics.

Soon after the foundation of the theory of gravity, Newton as well as Huygens realized that the earth should be flattened near its poles as a consequence of rotation. This flattening, which was indeed measured in the first half of the 18th century, gave rise to the brilliant work of Clairaut and Maclaurin on the shapes of rotating gravitating fluid bodies—later on perfected by Laplace, Legendre, Poisson, Jacobi, and others. The theory of rotating stars finds a solid foundation in these works and forms one of the most beautiful applications of classical mechanics and mathematical physics in modern astrophysics.

It was not until our century that the great importance of rotation for the structure, shape, and evolution of celestial bodies of all kinds, ranging from planets to stars and galaxies, was fully realized. To paraphrase Kip Thorne's words about the role of gravity, one might say that "rotation plays the role of midwife as well as undertaker in the universe." At the birth of stars the large excess of angular momentum of interstellar clouds causes contracting clouds to become rotationally unstable and to fragment, in a way still poorly understood, to form double and multiple systems of stars, which by far outnumber the single stars (if any such stars exist at all). The very existence of the planetary system and its harmonic structure are nowadays believed to be a direct consequence of the large excess of angular momentum in the nebula from which the solar system condensed. At the end of the life of a star a few times more massive than the sun, angular momentum conservation causes its collapsing core to become an extremely rapidly rotating neutron star, spinning some 30 or more times a second around its axis, like the Crab pulsar, and emitting some hundred thousand times the energy flux of the sun purely by the dissipation of rotational energy.

It is surprising to realize that, apart from a symposium volume published some ten years ago, there has been no book devoted to the subject of stellar rotation. Tassoul's monograph fills this gap. Although, as the title shows, the book is largely theoretical, it begins with a clear and up-to-date review of the available observations, with a complete list of references. Similarly, in the subsequent theoretical chapters, where possible full attention is given to the comparison of theory with the observations. This makes the book valuable for observers and theoreticians alike and also makes it very well suited as a basis for a graduate or advanced undergraduate course on the subject.

The theoretical part of the book leads from the basic hydrodynamical equations for rotating fluid bodies and the techniques for solving them to the most advanced aspects of the subject, such as fission theories and the formation of binaries. It covers the theories concerning meridional circulation, differential rotation, the effects of rotation on the positions of stars in the Hertzsprung-Russell diagram and on stellar evolution, oscillations and stability of rotating stars, rotation of white dwarfs and neutron stars, and the effects of rotation and tidal interaction in close binaries and dynamo theories for the generation of stellar magnetic fields. Each chapter is followed by a list of key references. Author and subject indexes together with five appendixes complete the book. The appendixes list basic constants and equations and tabulate functions that are useful to have at hand, such as the shapes of Maclaurin spheroids and Jacobi ellipsoids.

The clarity of the presentation—even of the most complicated topics—demonstrates the didactic skills of the author as well as his love for the subject, a love that he knows how to convey to his readers. I expect this beautiful book to become a classic, useful for many generations to come. Apart from astronomers and astrophysicists, planetary scientists, meteorologists, and geophysicists will find here much of interest to them, notably in the chapters on differential rotation, tidal interaction, dynamo theories, and basic hydrodynamics.

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