
Fundamentals of Celestial Mechanics. *J. M. A. Danby.* Macmillan Company, New York. 1962. 348 p. 73 line drawings. \$8.50.

This book gives a thorough discussion of the fundamentals of celestial mechanics based on Newton's theory. After a brief introduction to astronomical quantities, vector analysis, and mechanics, the author develops the theory of central orbits, including modifications caused by the relativity theory.

The two-body problem and the determination of orbits from observations are treated concisely and thoroughly. The second part of the book is concerned with the three- and many-body problems as well as numerical and analytical methods of perturbations. These are applied to elementary solutions for the precession nutation and physical libration of the Moon, and the figures of equilibrium of rotating and tidally distorted fluid masses.

Included in the book are methods for numerical calculations, properties of conics, and numerical tables listing physical properties of the planetary system. The potential of solid bodies is also considered, since this causes important perturbations. A large collection of well chosen problems and a selected bibliography round out the work.

The book fills an important need in the treatment of celestial mechanics and one can only regret that its size prevents a more detailed account. It is adequate for a one- or two-semester course in celestial mechanics, but some of the topics covered should be included in every course in elementary mechanics.

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