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PHYSICS OF THE SOLAR SYSTEM

Dynamics and Evolution, Space Physics, and Spacetime Structure

Bruno Bertotti, Paolo Farinella and David Vokroulhlický

This volume covers most areas in the physics of the solar system, with special emphasis on gravitation dynamics; its gist is the rational, in particular mathematical, understanding of the main processes at work. Special stress is given to the variety of objects in the planetary system and their long-term evolution.

Physics of the Solar System is based on the earlier work by B. Bertotti and P. Farinella "*Physics of the Earth and the Solar System*" (Kluwer, 1990), which has been completely revised and updated, and more focussed on the solar system. It generally attains a higher level than the previous version.

The unique character of this book is its breadth and depth, which aims at bringing the reader to the threshold of original research; however, special chapter and introductory sections are included for the benefit of the beginner.

This volume is generally suitable for post-graduate students and researchers in physics, especially in the field related to the solar system. A large amount of figures and diagrams is included, often compiled with real data.

"Physics of the Solar System" , the new text by Bertotti, Farinella and Vokrouhlický, succinctly and clearly treats the broad span of topics needed to understand the solar system's structure, formation and operation. The authors show an impressive command of a wide variety of subjects, ranging from celestial mechanics through magnetospheric physics, and on to a description of the workings of spacecraft themselves. The text contains numerous examples, not only from the historical background but also for space-age applications, including many figures from the original research literature. Each chapter ends with a useful survey of relevant texts and papers as well as an interesting collection of problems. The book is a major achievement that should attract a wide readership". Joseph A. Burns, I. P. Church Professor of Engineering and Astronomy, Cornell University, Ithaca, New York.

"This book delivers what its title promises. It addresses the fundamental characteristics of the solar system from a physicist's perspective, showing the diverse waysin which physics governs what is observed in, on, and among the planets. It is both encyclopaedic in its coverage and up-to-date in including the most recent advances in understanding and current issues of study". Richard Greenberg, Professor of Planetary Sciences, University of Arizona, Tucson, Arizona.

"This encyclopedic book is a mine of information on the Solar System that goes well beyond the usual dynamical aspects. The authors have succeeded in compromising broadness with depth, and clarity with completeness. This second edition is very up-to-date on all the hot topics of modern research. This book is therefore particularly recommendable to students and researchers that seek a multidisciplinary approach to Solar System science. I wish that I had it when I was a student myself."
Alessandro Morbidelli, Observatoire de Cote d'Azur, Nice.

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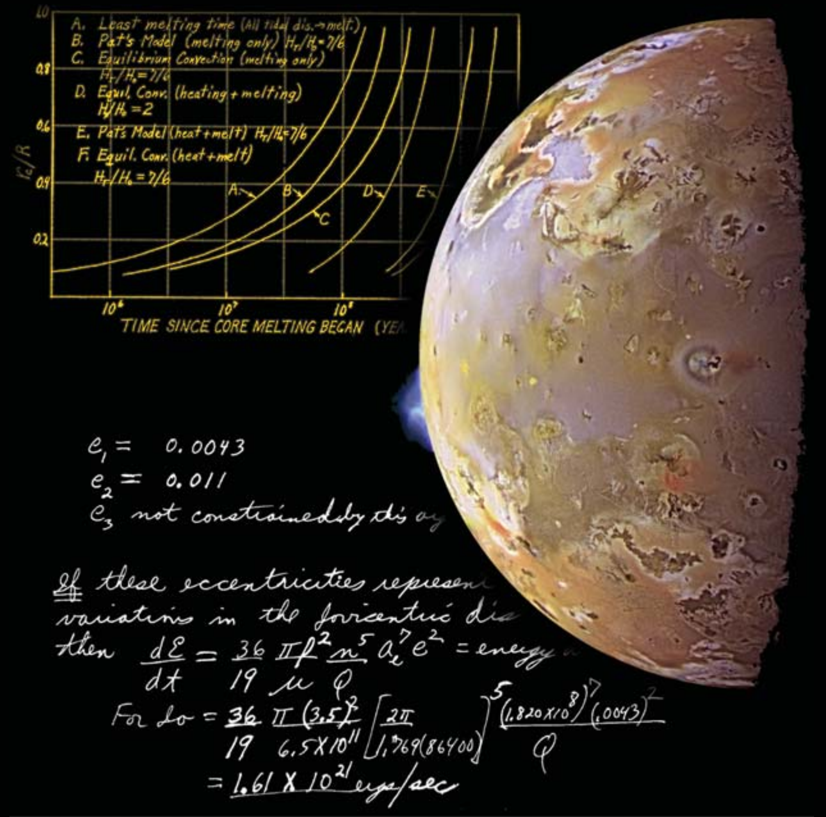

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