ASTRONOMY

GALACTIC ASTRONOMY

James Binney and Michael Merrifield

This is the definitive treatment of the phenomenology of galaxies—a clear and comprehensive volume that takes full account of the extraordinary recent advances in the field. The book supersedes the classic text *Galactic Astronomy* that James Binney wrote with Dimitri Mihalas, and it complements *Galactic Dynamics* by Binney and Scott Tremaine. It will be invaluable to researchers and is accessible to any student who has a background in undergraduate physics.

The book draws on observations both of our own galaxy, the Milky Way, and of external galaxies. The two sources are complementary, since the former tends to be highly detailed but difficult to interpret, while the latter is typically poorer in quality but conceptually simpler to understand. Binney and Merrifield introduce all astronomical concepts necessary to understand the properties of galaxies, including coordinate systems, magnitudes and colors, the phenomenology of stars, the theory of stellar and chemical evolution, and the measurement of astronomical distances. The book's core covers the phenomenology of external galaxies, star clusters in the Milky Way, the interstellar media of external galaxies, gas in the Milky Way, the structure and kinematics of the stellar components of the Milky Way, and the kinematics of external galaxies.

Throughout, the book emphasizes the observational basis for current understanding of galactic astronomy, with references to the original literature. Offering both new information and a comprehensive view of its subject, it will be an indispensable source for professionals, as well as for graduate students and advanced undergraduates.

James Binney is Professor of Physics and a Fellow of Merton College, University of Oxford. His books include *Galactic Dynamics* (Princeton), which he coauthored with Scott Tremaine. Michael Merrifield is University Lecturer in Astronomy at the University of Southampton.

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