

## **Unsolved Problems in Astrophysics**

PRINCETON SERIES IN ASTROPHYSICS

*Edited by Jeremiah P. Ostriker and David N. Spergel*

*Theory of Rotating Stars, by Jean-Louis Tassoul*

*Theory of Stellar Pulsation, by John P. Cox*

*Galactic Dynamics, by James Binney and Scott Tremaine*

*Dynamical Evolution of Globular Clusters, by Lyman Spitzer, Jr.*

*Supernovae and Nucleosynthesis: An Investigation of the History of Matter,  
from the Big Bang to the Present, by David Arnett*

*Unsolved Problems in Astrophysics, edited by John N. Bahcall  
and Jeremiah P. Ostriker*

*Active Galactic Nuclei: From the Central Black Hole to the  
Galactic Environment, by Julian H. Krolik*

John N. Bahcall  
and  
Jeremiah P. Ostriker, Editors

# **UNSOLVED PROBLEMS IN ASTROPHYSICS**



PRINCETON UNIVERSITY PRESS  
Princeton, New Jersey

Copyright © 1997 by Princeton University Press  
Published by Princeton University Press, 41 William Street,  
Princeton, New Jersey 08540  
In the United Kingdom: Princeton University Press,  
Chichester, West Sussex  
All Rights Reserved

ISBN 0-691-01607-0 (cl)  
ISBN 0-691-01606-2 (pa)

The publisher would like to acknowledge the editors of this volume for  
providing the camera-ready copy from which this book was printed

Princeton University Press books are printed on acid-free paper and meet the  
guidelines for permanence and durability of the Committee on Production  
Guidelines for Book Longevity of the Council on Library Resources

<http://pup.princeton.edu>

Printed in the United States of America

5 7 9 10 8 6 4