Black Holes, Gravitational Waves and Cosmology: An Introduction to Current Research

MARTIN REES

REMO RUFFINI

JOHN ARCHIBALD WHEELER

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MARTIN REES
Institute of Astronomy
Cambridge, England

REMO RUFFINI

and

JOHN ARCHIBALD WHEELER
Joseph Henry Laboratories
Princeton University, U.S.A.

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Preface

THIS BOOK is intended as an introduction to the rapidly developing field of relativistic astrophysics and cosmology. Our aim is to introduce the basic concepts on a level comprehensible to beginning graduate students and to summarize relevant observations. We do not claim to survey the field in the same detail and depth as, for example, Zel'dovich and Novikov, *Relativistic Astrophysics* (University of Chicago Press, Vol. 1, 1971; Vol. 2 in press); Weinberg, *Gravitation and Cosmology* (Wiley, New York, 1972), Hawking and Ellis, *The Large-scale Structure of Spacetime* (Cambridge University Press, 1973), or Misner, Thorne and Wheeler, *Gravitation* (Freeman, San Francisco, 1973). The reader is referred to these treatises for more extensive discussion of topics which are only touched on here.

Since the early chapters were written†, there have been important new developments in the theory of black holes and gravitational radiation as well as on the observational front, especially in X-ray astronomy. We have therefore added an appendix which reprints some important recent papers.

† Chapters 1–10 are based on a report ,"Relativistic cosmology and space platforms" by R. Ruffini and J. A. Wheeler, a chapter in A. F. Moore and V. Hardy, eds., *The Significance of Space Research for Fundamental Physics*, European Space Research Organization (ESRO) book No. SP-52, Paris, 1971, as updated for the present book.

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M. R., R. R., and J. A. W.

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