

# Lecture Notes in Physics

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## Gravitational Radiation, Collapsed Objects and Exact Solutions

Proceedings of the Einstein Centenary  
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**Editor**

Cyril Edwards  
Physics Department  
University of Western Australia  
Nedlands  
Western Australia 6009

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## PREFACE

The material of this volume results from a set of lectures given at the Einstein Centenary Summer School held in Perth, Western Australia during January, 1979. The School was arranged with the purpose of bringing together scientists who, in the pursuit of their normal activities, have only infrequent opportunity to share perspectives ... the theoretical physicists and mathematicians concerned primarily with the predictions of Einstein's General Relativity in the context of collapsed or collapsing stellar objects ... the astronomers and astrophysicists expert not only in the retrieval of information from these collapsing systems, but also in its incorporation into physical models ... and finally, experimental physicists intent at present chiefly on the forbidding task of constructing their gravitational wave detectors, but who hope ultimately to make a significant contribution to our understanding of the process of gravitational collapse. This diversity of experience, contrasting, as it did, the underlying unity of interest of these three groups, proved to be an essential ingredient in the success of the School.

The School was conceived as a joint venture between the University of Western Australia and the University of Rome, and owes much to the enthusiasm of R. Ruffini. His lectures to the School, which were of a general nature, are not however reproduced here. Some of the ideas hinted at during these lectures, and pursued in subsequent research, are scheduled for publication in *Physics Letters* (with Ferreira and Stella), and in *Lettere al Nuovo Cimento* (with Stella and Wilson). With this exception, all of the lectures given at the meeting are represented in this volume, either in the form of single articles covering two or three lectures, or in a one-to-one correspondence. Where several authors are involved, the one responsible for presenting the work at the School is indicated by an asterisk. Since the original manuscripts have all been re-typed, I must accept responsibility for any errors in transcription which may have crept in.

Finally I wish to express my gratitude to Sue, Sharon and Polly for their invaluable help, first with the trying tasks of raising funds for the School, and later for typing these lectures.

Cyril Edwards

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Cyril Edwards  
Secretary of the School

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\*Denotes lecturer