

## EDITORS' FOREWORD

The discovery of the pulsar in the Crab Nebula at once solved the mystery of the source of energy in the Nebula and stimulated interest in a whole new range of problems. The physical state of superdense stars, the electrodynamics of the medium round them, the pulsar radio emission, the transfer of energy into the surrounding nebula, all these represent new and exciting astrophysics. At the same time the Crab Nebula and its pulsar seem to provide a key to the mysteries of the other pulsars, whose origin and evolution were hard to understand before the clear association with remnants of supernovae. Both lines of thought led to the suggestion of an IAU Symposium on the Crab Nebula, in which the pulsar would clearly play the leading role.

A number of review papers were invited to begin each session and to cover the range of topics appropriate to the subject of study. Participants were also invited to submit papers of their own choice for inclusion in the programme. The papers submitted on the observational side ranged over the radio, infrared, optical, X-ray and  $\gamma$ -ray disciplines and theoretical papers covered the properties of the nebula and the pulsar. An attempt was made to classify the Crab Nebula amongst the variety of supernova remnants now known and to compare the Crab pulsar with the other pulsars.

The material in these Proceedings, like the Symposium, is divided into 8 sections each containing papers in a related field. Within each section the papers follow approximately the sequence in which they were presented at the Symposium; we have made some changes of order to bring together all those papers on a closely related topic. This, we hope will make the Proceedings more readable.

Several speakers did not submit manuscripts of their contributions. It was felt that the flavour of the Symposium, including the free discussion, could best be preserved if some note was made of the material of these talks. Short abstracts of the contributions have been prepared from a tape recording of the Symposium.

Contributors to the discussion after each paper or group of papers made a summary of their remarks which have been included in the Proceedings. Again in cases where no written summary was provided we made a version from the tape recording.

We wish to express our thanks to the session discussion secretaries, Dr. R. W. Clarke, Mr. D. A. Graham, Mr. G. C. Hunt, Drs. B. M. Lewis and P. Thomasson, for their help in collating the discussion contributions of the 8 sessions. Messrs. I. Morison, A. C. Pickwick and D. C. Wood made the successful tape recording of the symposium.

The organizers were sorry to learn on the first day of the Symposium that Professor Ginsberg, who was to introduce the final session, was unable to attend. One of us agreed at the last moment to give this introductory lecture.

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