ORIGIN OF COSMIC RAYS

Edited by G. SETTI, G. SPADA, and A. W. WOLFENDALE
For several decades cosmic ray research has concentrated on the nuclear physical aspects of the particle beam and many important discoveries were made, notably the identification of the positron, the muon, the pion and the strange particles. More recently, however, emphasis has shifted to the astrophysical aspect both with regard to the origin of the radiation and to its relation with the other radiation fields.

These collected papers are the outcome of a symposium planned to bring together workers in all the various astronomical fields - from Radio, through Optical to Gamma Rays - with Cosmic Ray physicists and to fully explore the various interrelations.

Virtually all the papers presented are reproduced here and additional short papers and resumés have also been included so that this volume represents the most up-to-date contribution available in book form.
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ORIGIN OF COSMIC RAYS

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The cosmic radiation was discovered by Hess in 1912 but its origin is still the subject of much controversy and considerable study. For several decades most workers in the cosmic ray field were interested in the Nuclear Physical aspect of the particle beam and many important discoveries were made, notably the identification of the positron, the muon, the pion and the strange particles. More recently however, emphasis has changed to the Astrophysical aspect both with regard to the origin of the radiation and to its relation with the other radiation fields.

Mindful of the increasing importance of the Astrophysical facets of the subject the Cosmic Ray Commission of IUPAP approached the High Energy Astrophysics Commission of the IAU with the suggestion of a joint Symposium on Cosmic Ray Origin. The plan was to bring together workers in all the various astronomical fields - from Radio, through Optical to Gamma Rays - with Cosmic Ray physicists and to fully explore the various interrelations. The approach was received with enthusiasm and this book contains the proceedings of the ensuing Symposium, (styled IUPAP/IAU Symposium No. 94) which was held in Bologna from 11th - 14th June 1980. Virtually all the papers presented are reproduced here.

The Scientific Organizing Committee chose the invited speakers whose papers formed the major scientific component of the meeting. Additional short contributed papers were also called for and very brief 2-page resumés (which have not been refereed) are given in the proceedings.

The Symposium was sponsored by IAU, IUPAP and the National Research Council of Italy and to these bodies the organisers express their grateful thanks. The organisers are also very indebted to the Mayor of Bologna for the warm reception offered to the participants and for permission to use the "Stabat Mater" Aula for the opening session of the Symposium. The organizers wish to express their gratitude to the secretarial staff, especially to Miss Pia Tamborrino, of the TE.S.R.E. Institute for their invaluable help offered in the organization of the meeting.
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