

## TOPICS IN INTERSTELLAR MATTER

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SIXTEENTH GENERAL ASSEMBLY OF IAU, GRENOBLE, AUGUST 1976

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## FOREWORD

Interstellar matter is one of the most active fields of research in present-day astronomy. Observational information spans the full electromagnetic spectrum from gamma rays through rocket-ultraviolet, optical, infrared and millimeter to long radio waves. Results of research in physical chemistry find as much application as mathematical methods. Interstellar matter plays a leading role in studies of our Galaxy and of external galaxies, and contributes increasingly to stellar astronomy.

At the 16th General Assembly of the International Astronomical Union, held in August 1976 in Grenoble, France, the many new developments in this vast field were surveyed in a number of sessions of Commission 34 (Interstellar Matter), mostly jointly with other Commissions of the Union. Separate sessions were devoted to: The hot interstellar gas phase, Interaction of stars and interstellar medium, Interstellar molecules and dust, The large-scale distribution of interstellar matter in the Galaxy, and Interstellar matter in external galaxies. Twenty-four invited review papers were presented and discussed in these sessions.

The quality and success of these topical reviews made it seem desirable to make them available to a wider audience. Professor Edith Müller, the new General Secretary of the IAU, enthusiastically supported the idea. Most importantly, the reviewers - who had originally been promised that an oral paper was the only requirement - agreed to prepare written versions. I am grateful to Mrs. Müller, to the authors, and to Reidel Publishing for their collaboration in the preparation of this book.

I further wish to thank the Organizing Committee of Commission 34 (Drs. J.E. Baldwin, F.D. Kahn, G.S. Khromov, B. Lynds, T.K. Menon, D.C. Morton, M. Peimbert and B.J. Robinson) and especially its Vice-President, Dr. George B. Field, for their share in the preparation of the meetings. Equally, I am grateful to the (Vice-)Presidents of Commissions 28, 33, 40 and 44: E.B. Holmberg, L. Perek and F.J. Kerr, N. Parijskij and A.D. Code for their cooperation. Special thanks go to Dr. E.B. Jenkins, who organized the Hot-Gas session and edited its Proceedings. Important suggestions also came from several commission members, especially Dr. W.B. Burton.

The sessions were prepared while I was on leave from Groningen at the Division of Radiophysics, CSIRO, Sydney in 1975/76. I wish to thank Drs. J.P. Wild and B.J. Robinson for their hospitality, and the office staff for their efficient help. Mrs. Joan Jones, in particular, through her tireless efforts at most improbable hours, ensured the timely preparation of the meetings.

Finally, and above all, I wish to thank the Groningen secretaries, Joke Nunnink, Ina Cameron and Roelie Olde, for their dedicated help. They retyped almost half of the manuscripts, and made them really "camera-ready". The final shape of the book is very largely their making.

Hugo van Woerden  
Editor