

PREFACE

The scientific meetings of the IAU are the IAU Symposia, IAU Colloquia, Regional Meetings in Astronomy held under the auspices of the IAU, the Commission Meetings, which may be Joint Meetings of Commissions, and IAU Joint Discussions. This variety means that almost any demand for a meeting can be provided for by the IAU structure, provided it is international in character, whatever may be the preferences of the proposers. The IAU General Assemblies include Commission Meetings and Joint Discussions arranged by Commissions, together with the Invited Discourses, and it is these meetings that feature in this volume. The administrative work of the General Assembly is reported in the Transactions of the IAU and the Proceedings of the IAU Symposia, held in the host country or neighbouring countries during the year of a General Assembly, appear in the IAU Symposium Volume series. IAU Colloquium volumes are published separately.

The Invited Discourses are a popular feature of the IAU General Assemblies and each of the three discourses presented at the XVIIth General Assembly in Montreal in 1979 appear in this volume. 1979 was the Centenary Year of the birth of Albert Einstein and the occasion was marked, for the IAU, by a discourse of great distinction from Professor S. Chandrasekhar of the University of Chicago, whose contributions to astrophysics themselves cover fully a half-century.

The Invited Discourse by G. Herzberg of the National Research Council of Canada, a Nobel Prizewinner, was equally notable as an IAU occasion. The younger, or middling-young, generation of astronomers of distinction, to whom our science owes so much, was represented in the discourse by B. Paczynski of the University of Warsaw in Poland.

The three authors of the discourses, all of whom are members of the IAU, are joined in this volume by a selected paper by a recent past President of the Union on the role of space astronomy in the development of our science.

There were eight Joint Discussions at the Montreal General Assembly and papers from seven of them are reproduced in this volume. The second Joint Discussion, "Exploration of the Solar System", with Chairman T.C. Owen, depended very much on visual material, including the cinematographic representation of the motions of Jupiter's atmosphere, that it was thought inappropriate to include an inadequate presentation of these spectacular results.

It may seem contradictory that, for the most part, the Joint Discussions appear without any report of the oral 'discussion'. The

reason is that Joint Discussions are primarily occasions when invited papers are prepared for a moderately wide audience and the free discussion is often too diffuse or extensive for reproduction and the formalities needed for reporting it are not generally followed.

Finally, there are some notable contributions, very few among many others, selected from three Joint Commission Meetings, that have been specially prepared for publication by the respective Chairmen.

I am grateful to all those who assisted in the preparation of the camera-ready copy and for the prompt and courteous response to my requests, in spite of certain delays caused by the substantial changes in the IAU Secretariat that came immediately after the Montreal General Assembly.

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