

## PREFACE

Our knowledge of the distribution and properties of the small solid particles within the solar system continues to improve rapidly. Much of the progress is due to observations from spacecraft which offer completely new locations from which to view phenomena such as the zodiacal light. In combination with ground-based observations and improved theoretical models, a picture now emerges with a clarity unattainable even a few years ago.

The need for a survey of the situation was recognized in 1976 and, at meetings of COSPAR and the International Astronomical Union in that year, planning began for a symposium to be held in 1979 at a time and place convenient for those attending the IAU General Assembly in Montreal. The result was IAU Symposium No. 90, "Solid Particles in the Solar System", held at the University of Ottawa, from August 27 to 30, 1979.

This volume includes eleven invited papers intended to survey particular areas of the overall subject and numerous contributed papers providing more detail on specific problems. We hope the combination will prove valuable to both the general reader interested in the current picture of the particles in interplanetary space and also to the specialist involved in research in the field.

It has been impossible to group the papers of this Symposium into clearly delineated categories. The first two sections, Zodiacal Light, and Meteors, are so grouped and titled only because these are the historical observational categorizations of two methods of studying the solid particles of the solar system. Conclusions concerning such aspects as the size- and spatial-distributions of particles are not really of a different genre than conclusions derived from particle detectors on space missions. The next section provides a more general outlook on the sources, and the evolution and dynamics of the dust complex. A number of papers dealing with the role of comets have been grouped together. Section 4, on more specific physical properties of particles includes several laboratory studies. The only clearly defined group is found in Section 5 which treats particles directly associated with planets - particularly planetary rings.

The editors have not abdicated their responsibility to summarize the Symposium, but rather have prevailed upon Peter Millman to write his impressions, a paper which may be found at the end of the volume.

We admire the excellent command of English of many of our foreign attendees. However, the typescripts provided by them frequently required corrections. The editors have attempted to attain a reasonable compromise between high standards of language and layout, and the added delays which excessive retyping would involve. In fact, the amount of retyping greatly exceeded our expectations, and we thank the Publisher for accommodating our frequent demands for rush shipments of more camera-ready pages.

Since both editors were also on the Local Organizing Committee, they take this opportunity to acknowledge the Committee's indebtedness to the staff of the Herzberg Institute of Astrophysics for their support and assistance in the planning and operation of the Symposium. In particular we thank Mlle Annie Claude who very ably looked after the myriad details of the conference. The editors are also indebted to her for assisting with the preparation of this volume. Much of the typing and retyping was done by Mrs. H. Lataif and Mrs. V. Powell. We never ceased to be amazed at their ability to match the type font of any paper we presented for corrections.

Ian Halliday  
Bruce McIntosh