

INTRODUCTION

IAU Symposium No. 33 was the first symposium devoted to the problems of meteor astronomy which was sponsored by the International Astronomical Union. It was organized by IAU Commission No. 22, on Meteors and Meteorites. The Organizing Committee of this commission, under the chairmanship of P. M. Millman, agreed at its meeting in August 1965 in Cambridge, Mass., to propose to the IAU Executive Committee the holding of a meteor symposium shortly after the XIIIth General Assembly of the IAU. Other commissions of associated interest, notably Nos. 7 (Celestial Mechanics), 15 (Physical Study of Comets), 20 (Positions and Motions of Minor Planets, Comets and Satellites) and 21 (Light of the Night-Sky) were consulted at this early stage of the preparations. After the approval of the symposium by the Executive Committee, the organizing committee of the symposium was appointed, consisting of Z. Ceplecha, A. F. Cook, Ľ. Kresák (chairman), B. Ju. Levin and P. M. Millman. In October 1966 a joint meeting of the organizing committee of the symposium and the local organizing committee convened at Smolenice Castle in Czechoslovakia. The participants at this joint meeting agreed on the general outline of the symposium program, a preliminary list of participants to be invited, the speakers for the invited survey papers, the time schedule and the locality.

The recent progress of meteor astronomy, in particular the wide variety of modern observing techniques and the close connection of the subject with other problems of space research, made it impossible to cover the entire field of meteor astronomy in one meeting. Fortunately, a number of other symposia under organization at the same time (IAU Colloquium on the Zodiacal Light and the Interplanetary Medium in Honolulu, the COSPAR Panel on the Collection and Analysis of Cosmic Dust in London, and the UNESCO Symposium on Meteorites in Vienna) enabled us to omit some of the boundary areas of meteor astronomy and to concentrate on the central problems of meteor physics and dynamics. It was felt reasonable not to extend the topics of the symposium too broadly, and to leave ample time for discussion of the subjects which are of fundamental interest and require international cooperation. These were (1) the interpretation of the wealth of new observational evidence obtained by optical and radio methods from the ground, and by impact measurements on rockets, artificial satellites and cosmic probes in the upper air and space; (2) the development of the theory of meteor phenomena, with particular regard to the composition and structure of meteoroids; and (3) the investigation of the distribution of meteor orbits in the solar system, and the origin and evolution of meteors and meteor streams.

Sixty-six participants, the list of which follows this introduction, attended the sym-

posium. The following countries were represented: Australia, Canada, Czechoslovakia, France, German Democratic Republic, German Federal Republic, Italy, Japan, Sweden, United Kingdom, U.S.A., and U.S.S.R. The program consisted of 9 invited survey papers and 39 contributed papers, presented at 8 half-day sessions; all of these are published in this volume. On the last day two round-table discussions, one on meteor physics and the other on meteor dynamics, were held; abridged records, containing the essentials of these discussions, are printed on pp. 509–525.

A successful organization of the symposium would have been impossible without the cooperation of a number of institutions and organizations. The International Astronomical Union provided travel grants for 8 participants. Most of the local expenses were covered by the grants allocated by the Presidium of the Czechoslovak Academy of Sciences, the President of the Slovak Academy of Sciences, and the National Committee of the Poprad District. The Astronomical Institute of the Czechoslovak Academy of Sciences in Prague took care of the travel and accommodation arrangements and provided some technical equipment; the Astronomical Institute of the Slovak Academy of Sciences at Tatranská Lomnica organized the excursions to the mountain observatories at Skalnaté Pleso and Lomnický Štít; and the Interplanetary Matter Department of this Institute in Bratislava looked after the organization agenda.

We are greatly indebted to all these organizations and to all collaborators who contributed to the smooth running of the symposium. Our warm thanks are due to Dr. B. A. McIntosh, Mrs. L. Ďurkovičová, Mrs. L. Smíšková and Dr. V. Porubčan for a great deal of work on the manuscript of this volume and to Dr. C. de Jager for his most helpful cooperation in organizing the publication. It is also a pleasure to express our gratitude to the officials and staff of D. Reidel Publishing Company, for the excellent care they have taken in printing this book.

THE EDITORS