

PREFACE

IAU Symposium Number 52 on Interstellar Dust and Related Topics was held at Albany, N.Y., on the campus of the State University of New York at Albany from May 29 to June 2, 1972. The members of the Organizing Committee were:

Dr A. D. Code, University of Wisconsin, Madison, Wis., U.S.A.

Dr B. D. Donn, Goddard Space Flight Center, Greenbelt, Md., U.S.A.

Dr A. Elvius, Stockholm Observatory, Saltsjöbaden, Sweden.

Dr T. Gehrels, Lunar and Planetary Laboratory, University of Arizona, Tucson, Ariz., U.S.A.

Dr J. M. Greenberg (Chairman), State University of New York at Albany, Albany, N.Y., U.S.A.

Dr H. C. van de Hulst, Sterrewacht, Leiden, Holland.

Dr S. B. Pikel'ner, Sternberg Astronomical Institute, Moscow, U.S.S.R.

Dr E. E. Salpeter, Cornell University, Ithaca, N.Y., U.S.A.

Dr B. E. Turner, National Radio Astronomy Observatory, Charlottesville, Va., U.S.A.

The suggestion was first made in 1971 that a symposium on interstellar grains would be timely. The response to the first preliminary announcement, which was sent out on November 29, 1971, was well beyond our expectations. The meeting was locally sponsored by the State University and by Dudley Observatory. The National Aeronautics and Space Administration and the National Science Foundation contributed along with the IAU. There were 158 participants of whom 49 were from 15 countries outside the United States. A total of 92 papers were presented.

An important feature of the meeting was the attendance by a sizable number of physicists, chemists, and geologists. The principal topics discussed were: (1) extinction and polarization, (2) diffuse interstellar features, (3) dust around and in close association with stars, (4) reflection nebulae and other aspects of dust scattering properties, (5) alignment mechanisms, (6) dust and gas, (7) distribution of molecules and processes of molecule formation, (8) radiation effects on dust, (9) physical and chemical interactions of dust with the ambient medium – dust formation and destruction, (10) gas and dust in H II regions. There was a clearly indicated need for additional data from laboratory and theoretical studies of the chemical, physical, and optical properties of potentially important dust materials. Identification of both silicate and ice in grains was inferred from infrared absorption data. In general the value of the infrared as well as the ultraviolet observations was amply demonstrated. New techniques in polarimetry appear to be providing important grain optics criteria. The physical and chemical activities of the dust grains in the interstellar medium and

their interactions in association with stars dominated in interest over the more classic passive properties of dust.

One of the principal purposes for holding a symposium is to provide the opportunity for active workers in a field to confront one another with their ideas and most current results. This usually plays an important role in channeling the research efforts into the most challenging and fruitful direction. During the course of the symposium there were numerous active discussions. Unfortunately, there were no recording capabilities in the lecture hall and consequently our permanent records were somewhat limited. We are grateful to those conscientious participants who provided us with written statements of their questions and comments. These have been placed at the end of the volume and after some editing, for the purposes of continuity, have been generally ordered according to the Section (Part) in which they originated. The papers themselves have been somewhat reordered from their original sequence of presentation so that the material can be more naturally divided into chapters.

We were very grateful for the invaluable assistance of Mrs Pat Rudd in organizing and handling the local arrangements. Ample assistance was provided by the graduate students and Mrs Betty Sterrett, Secretary of the Department of Astronomy and Space Science, during the course of the meeting. Early on we had been helped out by Mrs Chris Bain at Dudley Observatory. Finally, and this is not at all to be considered pro forma, recognition is due Mrs Naomi Greenberg who played such a creative role in providing for the personal comfort of the participants.

J. MAYO GREENBERG