

## PREFACE

IAU Colloquium 19 on "Stellar Chromospheres" was a natural extension of its predecessor "Spectrum Formation in Stars with Steady State Extended Atmospheres," held during April, 1969, in Munich, Germany. The present colloquium was co-sponsored by Commissions 36 and 29 of the International Astronomical Union. The official organizing committee comprised Y. Fujita, J. C. Pecker, F. Praderie, R. N. Thomas, and A. Underhill, with Underhill chairing a local, east coast organizing committee consisting of, besides herself, E. Avrett, S. Heap, S. Jordan, and D. Leckrone. The Colloquium honored Professor Cecilia Payne-Gaposhkin of the Smithsonian Astrophysical Observatory for her many outstanding contributions to astronomy. The aim of the organizers was to bring together experts on the complex radiative, hydrodynamical, and observational problems which the outer layers of stars provide, in the hope of clarifying both our present knowledge as well as where to go in the future. It is hoped that, to this end, these Proceedings will be helpful for students entering the field as well as research workers who were unable to attend.

There were no contributed papers other than the eight summary papers listed in the Contents. However, we would like to acknowledge, with our appreciation, the many participants who carefully edited their remarks and returned to us finished manuscripts complete with bibliographies, etc. We have attempted to retain the spirit and format of these manuscripts where they appear, while always being guided by the need to preserve the open, informal atmosphere of the discussions which did, in fact, prevail during the Colloquium. The final responsibility for editing is ours and, if minor changes have confused or obscured meaning, we offer the authors our apologies.

Several organizations participated in sponsoring, planning, financing, and running the Colloquium. In addition to official sponsorship by the IAU, the Goddard Space Flight Center and the Smithsonian Astrophysical Observatory were co-hosts, Goddard providing the site and direct support and the Smithsonian providing assistance in planning and a grant to defray expenses. Additional financial support was provided by a National Science Foundation Grant, and the cost of publishing the Proceedings was borne by Goddard.

Finally, it might be appropriate to point out a few salient features of the Colloquium which will certainly have bearing on future developments. The entire question of what, exactly, constitutes a chromosphere, both

conceptually, in definition, and in physical actuality, as inferred from spectral diagnostics, was discussed avidly and ardently during the sessions. The final summary and the subsequent discussion illustrate how varied are the experiences and opinions of two highly respected experts in this area. In general, the difficulties, both theoretical and observational, of studying chromospheres *in detail* still leave open many important questions which await not only improved research techniques, but improved communications between the researchers. We hope these Proceedings will serve that function for all concerned.

The Editors  
Greenbelt, Sept. 18, 1972