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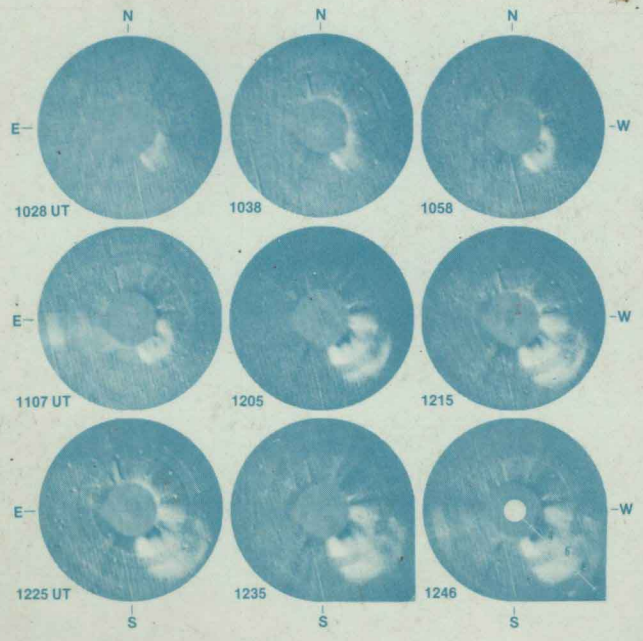
SOLAR AND INTERPLANETARY DYNAMICS

Edited by MURRAY DRYER and EINAR TANDBERG-HANSSEN



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SOLAR AND INTERPLANETARY DYNAMICS

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PREFACE

Informal discussions in 1977 among a number of scientists associated with solar and interplanetary physics revealed a need for a dialogue between the two often-divergent groups. It was clear that the latter group was dependent essentially on the sun for its *raison d'etre*. On the other hand it was also clear that the former group could benefit in its search for insight vis-à-vis solar activity by looking beyond the shell of the inner corona. Needless to add that the combined solar/interplanetary topic is relevant to astrophysics when one considers stellar winds and binary star flows. It was felt, therefore, that a symposium was essential to bring together, for the first time, leading solar and interplanetary physicists from the international community to discuss and record herein their own research. The fundamental physical processes underlying our own capricious star's activity can be understood only by the coupling of solar and interplanetary topics in an intimate observational and theoretical structure. This book, intended for active research scientists and advanced graduate students, is an important step in this direction. The background of solar and interplanetary dynamics is provided in Part I (The Life History of Coronal Structures and Fields) and Part II (Coronal and Interplanetary Responses to Long Time Scale Phenomena). The crescendo, so to speak, comes in Part III (Solar Transient Phenomena Affecting the Corona and Interplanetary Medium: Dynamics Deduced from Observations), followed by Part IV which extends this subject to include Theoretical Considerations. This theme is re-examined for short-time-scales in Part V (Coronal and Interplanetary Responses to Short Time Scale Phenomena: Observations) and, again, in Part VI from the viewpoint of Theoretical Considerations. Finally, Part VII considers Future Directions followed by a Summary of the Symposium by Professor M. Kuperus.

As noted above, then, it was in 1977 when we proposed a symposium on this topic to IAU with the support of Commissions 10, 12 and 49. The proposal was accepted, and Symposium 91 on Solar and Interplanetary Dynamics was formally announced together with the co-sponsorship of SCOSTEP and COSPAR. It was held on the grounds of Harvard University in Cambridge, Massachusetts, U.S.A., from August 27-31, 1979. The Scientific Organizing Committee consisted of E. Tandberg-Hanssen and M. Dryer (Co-Chairmen), V. Bumba, A. Hewish, Y. Nakagawa, R. W. Noyes, D. E. Page, J. Rösch, D. M. Rust, M. J. Rycroft, S. F. Smerd (deceased 1978 December 21), S. I. Syrovatskii, and K. Tanaka. At this writing,

M. Dryer and E. Tandberg-Hanssen (eds.), Solar and Interplanetary Dynamics, xiii-xiv.

we were again grieved to learn of Professor Syrovatskii's death on 1979 September 26. Several of his last scientific papers, including an invited one, are included in this volume.

The Local Organizing Committee was represented by D. M. Rust (Chairman), A. S. Krieger, R. W. Noyes, A. J. Lazarus and K. R. Lang. The brisk, yet relaxed, pace of the meeting was due in large measure to the Session Chairmen, including R. W. Noyes, V. Bumba, S. W. Kahler, Y. Nakagawa, K. Tanaka, A. Benz, and U. Anzer, to whom we owe our thanks. We are also obliged to the 133 participants from 23 countries for contributing the discussion, most of which we hope has been faithfully recorded. We also thank E. O'Neill, S. Kahler, D. F. Webb, and R. F. Willson, Jr. for their assistance in keeping the Symposium arrangements and the discussion record in good order. Finally, we are indebted to C. Holladay for the inevitable re-typing of some manuscripts and her close attention to preparation of the discussion; to C. L. Brown for the preparation of the Index; to the National Aeronautics and Space Administration for some financial support; and to Harvard University and American Science and Engineering, Inc., for their logistical support.

M. Dryer
E. Tandberg-Hanssen

1980 January
Boulder, Colorado

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