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最新刊

RECENT ADVANCES IN THE UNDERSTANDING OF SOLAR FLARES

Proceedings of the U.S.-Japan Seminar held at Komaba, Tokyo, 5-8 October 1982

edited by
S. R. KANE, Y. UCHIDA, K. TANAKA, H. S. HUDSON
Tokyo Astronomical Observatory, Mitaka

480 pp.
Cloth ¥25,200 ISBN 90-277-1665-X
August 1983, D. Reidel Publishing Company

The principal aim of the meeting reported here was to obtain the most up-to-date physical picture possible of solar flares by bringing together results from the recent observations by the Solar Maximum Mission (SMM) and HINOTORI satellites, together with other satellite data and ground-based data at both optical and radio wavelength. These data cover the recent maximum of the solar activity cycle. Subject areas dealt with include: characteristics of the instruments on board satellites; energy transport in flares; the formation process of the hot plasma which is created in the corona by flares; the behaviour of high-energy particles through observations by microwave interferometry and the imaging observations of hard X-ray sources by SMM and HINOTORI. Some highlights include discussions of the discovery of hard X-ray sources in the high corona, which was not expected from the generally accepted picture in which energetic electrons bombard the chromosphere; the occurrence of a very wide spectrum of highly ionized iron ions already existing before the start of the impulsive hard X-ray emission; the discovery of iron K-alpha radiation coinciding with the hard X-ray emission.

EARLY EVOLUTION OF THE UNIVERSE AND ITS PRESENT STRUCTURE

Symposium no. 104 held in Kolymbari, Crete, August 30-September 2, 1982

edited by
G. O. ABELL
University of California, Los Angeles, USA

G. CHINCARINI
University of Oklahoma, Norman, USA and European Southern Observatory, Garching bei München, FRG

PUBLICATIONS OF THE INTERNATIONAL ASTRONOMICAL UNION, PROCEEDINGS OF SYMPOSIA 104

564 pp., illus. ¥19,200 ISBN 90-277-1653-6
Cloth ¥10,200 ISBN 90-277-1662-5
Paper 1983, D. Reidel Publishing Company

In the area of cosmology there have recently been dramatic advances, both on the observational and theoretical fronts. Modern high-efficiency detectors have made possible extensive magnitude-limited redshift surveys, which have permitted observational cosmologists to construct three-dimensional maps of large regions of space. What seems to emerge is a distribution of matter in extensive, flat, but filamentary, and possibly interconnected superclusters, serving as interstices between vast voids in space. Meanwhile, theoretical ideas that were highly speculative a few years ago have begun to be taken seriously as possibly describing conditions in the very early universe. And brand new ideas, such as that of the inflationary universe, hold promise for solving outstanding observational, theoretical, and philosophical problems in cosmology. A new look at grand unified theories and concepts of supersymmetry have brought observational and theoretical cosmologists to a common meeting ground with modern particle physicists.

PHYSICS OF METEORIC PHENOMENA

by
V. A. BRONSHTEIN
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Translated from the Russian by UAT Ltd

GEOPHYSICS AND ASTROPHYSICS MONOGRAPHS

372 pp., illus. ¥22,200 ISBN 90-277-1654-4
October 1983, D. Reidel Publishing Company

This monograph deals with the complex physical events accompanying the entry into our atmosphere of meteor bodies or meteoroids. These small objects (in the range of 10^{-12} to 10^{12} grams), interacting with air molecules, produce a 'shooting star' or a meteor. Along the path of the meteor an ionized column of gases is formed, which reflects radio waves and is observable by radar. The meteoroid's atoms, which evaporate from its surface during intense heating, will radiate, and subsequent spectral observations of bright meteors provide very interesting information about the chemical composition and physical condition found in the meteoroid's environment. The topics discussed here are of interest not only to those involved in meteor astronomy, but also have a bearing on the fields of space sciences, where the problem of the re-entry of spacecraft is of crucial importance. This book is the first monograph on the subject published in the world scientific literature since 1958. It contains all recent results obtained in the area of meteor physics, including original studies by the author.

SURVEYS OF THE SOUTHERN GALAXY

Proceedings of a Workshop held at the Leiden Observatory, The Netherlands, August 4-6, 1982

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Sterrewacht Leiden, The Netherlands

F. P. ISRAEL
Space Science Department, ESTEC, European Space Agency, Noordwijk, The Netherlands

ASTROPHYSICS AND SPACE SCIENCE LIBRARY 105

xiv + 310 pp.
Cloth ¥13,800 ISBN 90-277-1651-X
1983, D. Reidel Publishing Company

Problems associated with a general scarcity of observations of the southern sky have persisted since the present era of galactic research began some 60 years ago. During the past few years substantial gains have been made in securing fundamental data on the southern sky. Interpretations based on combined southern and northern surveys are beginning to result in balanced descriptions of galactic morphology. These matters were discussed at a Workshop held at the Leiden Observatory, August 4-6, 1982, attended by some 60 astronomers from nine countries. In an appendix to the proceedings and printed in large format are included some maps based on combined northern and southern data from standard reference surveys. Among the maps are comparable maps of the HI and CO distribution in the first and fourth galactic quadrants, sky maps of the y-ray emission over selected energy ranges, HI integrated emission over selected velocity ranges, and radio continuum flux at 408 MHz. Also included is a map of the HI surface density in M31, made with linear resolution comparable to that of the standard single-dish surveys of our own galaxy.

SUPERNOVA REMNANTS AND THEIR X-RAY EMISSION

Symposium no. 101 held in Venice, Italy, 30 August-2 September 1982

edited by
JOHN DANZIGER
European Southern Observatory, Garching bei München, FRG

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Center for Astrophysics, Cambridge, Massachusetts, USA

PUBLICATIONS OF THE INTERNATIONAL ASTRONOMICAL UNION, PROCEEDINGS OF SYMPOSIA 101

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Paper 1983, D. Reidel Publishing Company

The main thrust of the Symposium reported here was the presentation for a variety of SNR's of X-ray images and high resolution spectra obtained from the Einstein Observatory. In addition, radio and theoretical results were presented. The major topics discussed include: young SNR's, their structure, mass and interaction with the interstellar medium; middle-aged SNR's with emphasis on objects with center filled morphologies as seen in radio and X-ray; older SNR's and their effect upon the interstellar medium; compact objects associated with SNR's; and pulsars and SNR's in other galaxies. Among the new results presented is observational evidence for the presence of a reverse shock, enhanced elemental abundances, and non-equilibrium ionization in young SNR's. Activity from a neutron star is shown to play an important role or be otherwise present in a number of remnants, and X-ray, optical and radio results pertaining to SNR's in the Magellanic Clouds are included.

DYNAMICAL TRAPPING AND EVOLUTION IN THE SOLAR SYSTEM

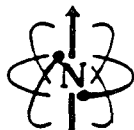
Proceedings of the 74th Colloquium of the International Astronomical Union held in Gerakini, Vhaikidiki, Greece, 30 August-2 September, 1982

edited by
VASSILIS V. MARKELLOS
University of Patras, Greece
YOSHIIHIDE KOZAI
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ASTROPHYSICS AND SPACE SCIENCE LIBRARY 106

440 pp. ¥17,400 ISBN 90-277-1650-1
Cloth 1983, D. Reidel Publishing Company

A significant contribution to our understanding of the aspects of dynamical trapping in the solar system's dynamical evolution and related topics, this book contains 42 papers delivered at IAU Colloquium No. 74, held in Greece, August/September 1982. The volume is divided into six main sections: Satellites and Planets, Comets and Meteor Streams, Asteroids, Periodic Orbits, Trapped Motion in the Three-Body Problem, and Miscellaneous Dynamics.



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