

ASTROPHYSICS AND SPACE SCIENCE PROCEEDINGS

Natchimuthukonar Gopalswamy
S. Sirajul Hasan
Ashok Ambastha
Editors

Heliophysical Processes

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Heliophysical Processes

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Preface

The first Asia-Pacific Regional School of the International Heliophysical Year (IHY) 2007 program was held at the historic Kodaikanal Observatory of the Indian Institute of Astrophysics during December 10–22, 2007. The School was cosponsored by the IHY program, the Indian Institute of Astrophysics (Bangalore, India), and the Asian Office of Aerospace Research (Air Force Office of Scientific Research, United States). Selected lectures, presented at the IHY School, form the basis of the chapters included in this volume.

The IHY 2007 program marked the fiftieth anniversary of the International Geophysical Year (IGY, 1957–1958). The IHY activities specifically recognized the vast extent of space explored by humankind today, compared to only the geospace probed during the IGY. The IHY program ran from 2007 to 2009, and engaged in scientific investigations involving global cooperation, deployment of small instruments in developing countries in collaboration with the United Nations, public outreach to communicate the beauty, relevance and significance of space science to the general public and students, and the preservation of history related to the IGY program. This IHY School held at Kodaikanal is one of the activities planned as part of public outreach.

The School offered an intensive two week course in topics related to heliophysics, aimed primarily at graduate and post-doctoral research students, and covered a broad range of physical processes in heliospace, extending from the center of the Sun to the edge of the solar system. Students learned how the Sun influences the heliosphere through its electromagnetic and mass emissions. These Schools provide an introduction to heliophysics for students who normally do not have an opportunity to take such a course at their home institution. The IHY School in Kodaikanal was attended by about 40 students, mostly from India but there were also a few students from the Republic of Korea, Sri Lanka, and Nigeria. The School organized 40 one-h lectures by 26 lecturers. There were also laboratory sessions in using data bases and observing techniques at different wavelengths. The School was directed by N. Gopalswamy, A. Ambastha, and R. Ramesh. The editors thank R. Ramesh (the coordinator of the IHY School), K. E. Rangarajan (the convener of Kodaikanal schools) and K. Sundararaman (Scientist-in-charge of the Kodaikanal Observatory) for their tireless efforts in running the school smoothly.

The editors take this opportunity to thank Dr. Pertti Mäkelä for his valuable assistance in preparing this volume. We also thank the following reviewers who assisted in improving the chapters: T. Zurbuchen, A. Vinas, B. Vrsnak, V. Jordanova, M. Dikpati, P. Mäkelä, K. R. Sivaraman, G. S. Lakhina, Shyam Lal, P. K. Manoharan, Nandita Srivastava and Harish Chandra. Finally, we appreciate the support provided by R. Ponnappan and J. Moses (AFOSR) and M. Guhathakurta (NASA) in running the IHY School and bringing out this volume.

Greenbelt, Maryland, USA,
Bangalore, India,
Udaipur, India,
October 2009

Natchimuthukonar Gopalswamy
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Ashok Ambastha

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