

## P R E F A C E

With the publication of Highlights Vol 6, the International Astronomical Union continues a tradition dating from 1967. At that time, it was decided to publish in a separate volume some of the most prominent presentations given at the XIIIth General Assembly, held in Prague, Czechoslovakia. This innovation was well received and since then the Highlights' volumes provide, once every three years, a many-faceted reflection of current astronomical research, written by foremost specialists.

Many hundred talks were delivered at the time of the XVIIIth IAU General Assembly in Patras, Greece, 17-26 August 1982; this book brings together about 100 of these. Four Invited Discourses were given by distinguished scientists, setting out with "Astronomy in Ancient Greece" (M.A. Hoskin), discussing "The Origin and Early History of the Sun and the Planetary System" (G.A. Herbig), summarizing the latest ideas in "Modern Cosmology" (Ya. B. Zeldovich), and highlighting "Recent Research on Solar Flares" (C. de Jager). They were held in the Ancient Odeon of the City of Patras under a starry Mediterranean sky: indeed a unique occasion in IAU history!

Together with these four talks, the present volume contains the proceedings of six Joint Discussions, i.e. "Mini-Symposia" arranged by several commissions and each lasting an entire day. They center on broad subjects of great actuality and review, in a compact way, the status of research in a particular field of astronomy. One Joint Discussion, "Exploration of the Solar System" (Chairman: G.E. Hunt) was much based on visual material and, in agreement with the organizers, it was decided not to include it here.

Of the many Joint Commission Meetings held in Patras, seven have been selected for inclusion in this volume. They are, in most cases, concerned with more specialized subjects than are the Joint Discussions, but they similarly summarize the latest information within the given subject.

The Invited Discourses were arranged by the IAU Executive Committee, and the Joint Discussions and Joint Commission Meetings by the respective Chairmen. The overall responsibility was carried by the IAU General Secretary (1979-82), Professor P.A. Wayman.

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*Richard M. West (ed.), Highlights of Astronomy, Vol. 6, vii-viii.*  
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Even the casual reader cannot fail to notice the somewhat uneven presentation of the contributions to this volume, in particular what concerns the style. A closer scrutiny will also reveal that whereas the English language is certainly the preferred vehicle for communication in astronomy, it is not the mother tongue of all contributors. However, while editing this volume I have felt that it would be more important to assure a speedy publication than to attempt to achieve a high degree of uniformity, which would anyhow be extremely difficult with more than 100 contributing authors. When published, this book should still be a tool for active research, not a museum piece.

I am grateful to the organizers and editors of the individual sections for having produced their parts within the allotted time, and with a high degree of professionalism. A special word of thanks goes to my collaborators at the European Southern Observatory, Mrs. E. Völk, Mr. C. Madsen, and Mr. J. Leclercqz, for technical assistance.

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4 December 1982