

PREFACE

This volume contains the invited review papers and oral presentations of the IAU 181 Symposium *Sounding Solar and Stellar Interiors*, held at Nice from September 30 to October 3, 1996. The posters presented at this Symposium are published in a separate issue.¹

Since the successful launching of the Solar Heliospheric Observatory satellite SoHO on December 2, 1995, and after many years of widespread effort in the fields of helio- and astero-seismology, it seemed appropriate to hold a symposium devoted to the implications of seismology for the internal structure of the Sun and stars. The aim was to present to the whole community the new results in helioseismology obtained by space experiments as well as by already existing networks, and the theoretical advances in the fields of internal structure and physics of the Sun.

This goal has been fully achieved: after only 6 months of SoHO operation, the quality of available data has been significantly improved, new techniques like time-distance analysis (or telechronoseismology, as suggested by D. Gough) have been proposed, and physical mechanisms envisioned to explain the remaining discrepancies between the observed Sun and the 'standard' models.

At the same time, new results concerning seismological studies of different types of stars have been available, and several projects, at different levels of development, required the attention of the community. Although still in its infancy, as compared to helioseismology, asteroseismology demonstrates a reinforced activity. The symposium dealt with the theoretical interpretation of the already existing observations and the implication of the expected results of the future projects in our knowledge of stellar evolution. During the meeting was presented the space project COROT, which will represent a unique opportunity to sound the stellar interiors by providing almost continuous data of high quality.

This meeting was devoted to the memory of Philippe Delache, who passed away in October 1994 and who contributed actively to the development of both helio and asteroseismology. During the meeting, a session was dedicated to recent advances in those topics which especially interested Philippe during his lifetime. The contributions showed that most of these topics remained of major importance at present, like for instance the search

¹The poster volume is published by the *Observatoire de la Côte d'Azur* and the *Université de Nice* and can be purchased by sending an e-mail to poster-IAU181@irisalfa.unice.fr

for gravity modes, the long-term variations of the Sun, and the jovian seismology.

The large assistance, including a lot of young researchers, as well as the high quality of the oral presentations and posters, contributed to make this Symposium a real scientific success. The new theoretical ideas and the observational results presented have shown the importance and the maturity of the rather young field of helio- and asteroseismology for astrophysics in particular and physics in general.

The Organising Committee is glad to acknowledge for their moral and financial support the International Astronomical Union, the EEC network ANTENA, the *Centre National de Recherche Scientifique*, the *Centre National d'Etudes Spatiales*, the European Space Agency, the *Ministère de l'Education Nationale*, the *Ministère des Affaires Etrangères*, the *Région Alpes Provence Côte d'Azur*, the *Conseil Général des Alpes Maritimes*, the *Mairie de Nice*, the *Observatoire de la Côte d'Azur*.

The Scientific Organising Committee, chaired by R. Bonnet (ESA, France) was composed of C. Chiuderi (Florence, Italy), G. Debouzy (CNES, France), S. Frandsen (Aarhus, Denmark), C. Fröhlich (Davos, Switzerland), A. Gabriel (Paris, France), D. Gough (Cambridge, UK), J. Leibacher (Tucson, USA), J.C. Pecker (Paris, France), T. Roca Cortés (La Laguna, Spain), E. Schatzman (Meudon, France), P. Scherrer (Stanford, USA), S. Vorontsov (London, UK). We are very grateful to them for suggestions and active participation.

The Local Organising Committee was composed of A. Baglin (Meudon), F. Bely Dubau (Nice), N. Berruyer (Nice), V. Cheron (Nice), R. Feldman (Nice), E. Fossat (Nice), F. Laclare (Nice), D. Mekarnia (Nice), J. Pacheco (Nice), J. Provost (Nice), F.X. Schmider (Nice), G. Vauclair (Toulouse), J.P. Zahn (Meudon). It was chaired by Gabrielle Berthomieu, whose major responsibility insured the success of the Symposium.

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The editors
Janine Provost and François-Xavier Schmider