

# PROCEEDINGS OF IAU SYMPOSIUM NO. 151

## Evolutionary Processes in Interacting Binary Stars

### PREFACE

IAU Symposium No. 151, *Evolutionary Processes in Interacting Binary Stars*, is dedicated to Jorge Sahade, who has served as President of IAU Commission 42 (Close Binary Stars) and a Vice President and later President of the International Astronomical Union. Jorge Sahade's research in the field of close binary stars spans half a century and has produced significant contributions with commensurate advances in understanding to virtually every area of the study of close binary systems. During this time the field of close binary astrophysics has seen a phenomenal growth both in terms of research and the number of active workers, with over four hundred astronomers currently being active members of Commission 42. We feel it is quite appropriate to recognize and to celebrate the life and the work of Jorge Sahade at this juncture, although his scientific contributions to our discipline will certainly continue for a long time to come.

The field of close binary stars has experienced a series of revolutionary changes, as have most fields of astrophysics, as a result of the introduction of new observational and computational tools and techniques. In light of this, the primary aim of this symposium was to review and evaluate our current understanding of the evolutionary processes in wide variety of interacting binary stars from their births to their deaths. This is the first IAU sponsored symposium on the comprehensive subject of interacting binary stars in general since a similar IAU Colloquium in Toronto in 1979. However, the scope of the present symposium was more universal than that of previous meetings on this subject, including, for example, extensive discussions of binary systems in the galactic halo and the Magellanic Clouds. This broader scope reflects the significant advances made in the binary star astrophysics since 1979. Most notably, the availability of new and improved data from ground, thanks to the recent technological advances; observations from orbiting satellite observatories in space, such as the *International Ultraviolet Explorer*, *Einstein*, and *EXOSAT* observatories; and significant advances in theoretical modelling largely due to the greater availability of high-powered computers. Current astronomical observations of close binary systems cover the entire electromagnetic spectrum from the  $\gamma$ -ray and X-ray region, through the ultraviolet and optical and into the infrared and radio spectral regions. At the same time, modern computers have made it possible to calculate models of binary stars and their evolutionary processes with increasing realism, although the current state of our understanding of the formation and evolution of binary systems is still incomplete.

We are pleased that many of the leading astronomers, representing virtually every sub-field in close binary star astrophysics took part in this conference. From the

gracious comments we received from a number of the participants we feel that this symposium has contributed materially toward a greater understanding of the evolutionary processes in interacting binary stars.

We would like to thank the members of the Scientific Organizing Committee for their valuable contributions to the success of this symposium. Finally, it gives us pleasure to acknowledge the friendly, dedicated work of the Local Organizing Committee that made this meeting a success as well as such an enjoyable experience.

Yoji Kondo

Roberto Sistero

Ronald S. Polidan

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