

## FOREWORD

This is the third volume of the series entitled “Lecture Notes and Essays in Astrophysics”, a biannual publication started in 2004 and intending to offer to the specialized community a leading collection of the Spanish Astrophysics research advances, on the basis of a selected sample of lectures presented during the Astrophysics Simposia at the biannual meetings of the Royal Spanish Physical Society (RSEF). In particular, this volume contains the invited reviews (lecture notes) and a selection of the contributions (essays) to the III Astrophysics Symposium that took place at the Science Faculty of the University of Granada during the XXXI Scientific meeting of the RSEF, in September 2007.

The book highlights some important contributions of Spanish astrophysicists to Planetology, Solar and Stellar Physics, Extragalactic Astronomy, Cosmology and astronomical instrumentation. After decades without a dedicated mission, Venus is again in fashion. On the one hand, Ricardo Hueso and collaborators, and on the other Miguel Ángel López-Valverde, review ESA Venus Express contribution to the understanding of the atmosphere of the neighbouring planet.

Carme Jordi describes in a comprehensive essay the main observational calibration techniques and methods for the determination of mass, radius, temperature, chemical composition and luminosity of a star. Dying stars are fundamental to understand the nature of dark energy, probably the most fundamental problem in Physics today. Type Ia supernovae have played a fundamental role showing the acceleration of the expansion rate of the Universe a decade ago. Inma Domínguez and collaborators go into detail on how the knowledge of the fundamental physics of thermonuclear supernovae explosions condition their role as astrophysical candles.

The influence of galactic environments in galaxy activity and the properties of magnetic fields in galaxies are reviewed, respectively, by Isabel Márquez and Eduardo Battaner. First light of the Gran Telescopio Canarias (GTC) is the subject of the review by Francisco Sánchez, encourager of such an endeavour which is today a reality. Robotic astronomy is not the future but a fact materialised for several telescopes worldwide, some of them in Spain. Alberto Castro-Tirado describes some of these instruments and their role in the detection and following up of GRBs. And more.

On behalf of the Astrophysics Group of the RSEF, as in previous volumes, it is the hope of the Editors that this book stimulate the interest for Astronomy, even more being 2009 the International Year of Astronomy.

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