Reading the book of globular clusters with the lens of stellar evolution

In Honour of Franca D'Antona

Monte Porzio Catone, November 26-28, 2012

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FOREWORD

In recent years considerable progress in the areas of high–resolution photometry and multi–object spectroscopy has brought new light on stars in Globular Clusters. Observations raised many issues concerning the formation and evolution of Globular Clusters, as they clearly revealed the presence of multiple stellar populations in these objects. This has challenged the traditional paradigm that these structures are formed by a coeval stellar population that is homogeneous in chemical composition. While our understanding of the complexity of the stellar populations in Globular Clusters is evolving, their formation mode, as well as the nature of the possible stellar polluters of the intra–cluster medium, is still largely debated.

The conference *”Reading the Book of Globular Clusters with the Lens of Stellar Evolution”*, held at the Observatory of Rome in November 2012, was the occasion to present state-of-the-art observations, and to allow detailed and lively discussions on the various theories focused on the formation scenarios proposed so far by different research groups. The role of Globular Clusters as stellar laboratories, and the influence of their properties on the presence of compact objects, were also among the topics of the meeting.

There were a total of 45 oral presentations and 30 posters. It is a pleasure to thank all the participants for the high–quality standard of their contributions, as well as Franca D’Antona and Achim Weiss for organizing the final discussion. The conference was also an opportunity to acknowledge the high–quality scientific activity of young researchers and students working in the field. In particular, the sponsorship by the Rome Observatory and the Vatican Observatory allowed the organizers and a jury headed by Father Funes, and composed of Prof. Corinne Charbonnel (Geneva Observatory) and Dr. Paolo Ventura (Rome Observatory), to award Prizes to an undergraduate student and a young postdoc for praiseworthy contributions to the domain: Prof. Fabrizio Fiore (director of Rome Observatory) delivered the Prize to Dr. Anna Fabiola Marino, in acknowledgment of her studies on the variation of s–process elements in Globular Cluster stars, and Father David Brown (Vatican Observatory) delivered the Prize to Nikolay Kacharov for his study on M75.

The organizers are particularly indebted to Prof. Emanuele Giallongo and Prof. Fabrizio Fiore, directors of the Observatory of Rome, for their efforts in the early organizational phases of the conference and during the event, and for the logistical and financial support. We also acknowledge the support of Prof. Pietro Ubertini, director of the the Institute for Astrophysics and Planetology Science, and Father Jorge Funes, director of the Vatican Observatory. We are particularly grateful to Dr. Giuliana Giobbi, of the Rome Observatory, for the enthusiasm and the efficiency with which she organized the entire event.

The conference was in honor of Franca D’Antona who retired from scientific activity in December 2012. Franca has been, and still is, one of the leading astronomers in the field of the evolution of stars and stellar systems. Her outstanding scientific production encompasses all the main topics of the conference; convection in stellar interiors, structure and evolution of compact objects, properties of binary systems. Her work, which generally was highly original, stimulated a large and active debate within the scientific community. Franca is one of the main protagonists of the scientific discussion aimed at understanding the manner in which Globular Clusters formed and evolved. Several years ago she proposed one of the most popular scenarios for the formation of multiple stellar populations.

Those that had the chance of knowing Franca can appreciate not only her brilliant approach to scientific research, and the enthusiasm shown when sharing her ideas with collaborators, but also her extraordinary generosity allowing colleagues and students to find in Franca a reference point, always available to provide any kind of support. For all these reasons, and many more, Franca D'Antona is one of the most outstanding italian scientists.

P. Ventura, C. Charbonnel, M. Castellani, and M. Di Criscienzo

Fig. 1. Franca D'Antona

Fig. 2. Franca D'Antona and Paolo Ventura

Fig. 3. Carla Maceroni

Fig. 4. Achim Weiss

Fig. 5. Paolo Ventura, Andres Yague-Lopez, Marcella Di Criscienzo and Roberta Carini

Fig. 6. Prof. Fabrizio Fiore, director of the Rome observatory, delivering the Globular Cluster Prize for young astronomer to Anna Fabiola Marino

Fig. 7. Raffaele Gratton and Enrico Vesperini

Fig. 8. Corinne Charbonnel and Alvio Renzini

Fig. 9. Father David Brown delivering the Globular Cluster Prize for students to Nikolay Kacharov