

# Preface: Special Session 1

## Origin and Complexity of Massive Star Clusters

In the last few years, numerous observational studies have provided us with strong evidence that star clusters host multiple stellar generations and subverted the standard view according to which these systems were the prototype of 'simple stellar populations'.

These findings have raised a number of fundamental questions concerning the origin and evolution of star clusters, the nature of the first generation of stars which must have provided the gas for the formation of subsequent stellar generations, the link between star clusters and other massive stellar systems (such as nuclear star clusters and dwarf galaxies), and the relationship between star clusters and field stellar populations.

The expertise of observational and theoretical researchers working on stellar evolution, nuclear astrophysics, hydrodynamics, stellar dynamics, high precision astrometric, photometric, and spectroscopic observations of Galactic and extragalactic globular clusters, massive young star clusters in external galaxies, nucleated galaxies and dwarf galaxies are absolutely crucial in any attempt to make progress towards an answer to these complex questions.

This Special Session addressed these issues and, by bringing together scientists spanning a broad range of expertise, allowed the exchange of ideas among scientists working in different fields which do not often overlap and who do not usually communicate with each other. The excellent oral and poster presentations allowed the numerous participants to have a global view of all these topics and to better appreciate the network of constraints and implications coming from observations and theoretical studies of these issues.

There was a lot of interest in this Special Session and all the sessions were well attended. We would like to thank the IAU for supporting this Special Session and all the members of the Scientific Organizing Committee (A. Aparicio, B. Barbuy, K. Bekki, T. Boeker, C. Charbonnel, C. Clarke, F. D'Antona, L. Deng, B. Elmegreen, R. Gratton, Y.W. Lee, S. Majewski, G. Piotto (co-Chair), E. Tolstoy, E. Vesperini (co-Chair), H. Zinnecker).

*Giampaolo Piotto and Enrico Vesperini, co-chairs SOC*