

COMMISSION 37

STAR CLUSTERS AND ASSOCIATIONS

(STAR CLUSTERS AND ASSOCIATIONS)

PRESIDENT
VICE-PRESIDENT
PAST PRESIDENT
ORGANIZING COMMITTEE

Bruce Elmegreen
Giovanni Carraro
Despina Hatzidimitriou
Richard de Grijs, Dante Minniti,
Charles Lada, Gary Da Costa,
Monica Tosi, Licai Deng,
Young-Wook Lee,
Ata Sarajedini

PROCEEDINGS OF THE BUSINESS SESSION, 11 August 2009

1. Introduction

The business session for Commission 37 was held on 11 August 2009 at the IAU General Assembly in Rio de Janeiro. The meeting was attended by about a dozen members of our Commission, including President Elmegreen, VP Carraro and several committee members. We introduced ourselves and then went through a powerpoint presentation first prepared by outgoing President Hatzidimitriou and revised by incoming President Elmegreen. The contents of the powerpoint presentation are given in this summary.

In what follows, we list past, present and future meetings, publications statistics and important surveys, reviews, and databases about clusters, and then we discuss the procedure for the election of new commission officers.

2. Past Meetings

- Chemical Evolution of Dwarf Galaxies and Stellar Clusters, MPA/ESO/USM/MPE 2008 Joint Astronomy Conference, July 21-25, 2008, Garching (Germany)
- Low-Metallicity Star Formation: From the First Stars to Dwarf Galaxies, IAU Symposium 255, June 16-20, 2008, Rapallo, Liguria (Italy)
- The Galaxy Disk in Cosmological Context, IAU 254 Symposium, June 9-13 2008, Copenhagen (Denmark)
- Nuclear Star Clusters across the Hubble Sequence, February 25-27, 2008, MPI for Astronomy, Heidelberg (Germany)
- Modeling Dense Stellar Systems (MODEST)-8 meeting, December 5-8, 2007, Bonn/Bad Honnef (Germany)
- Young massive star clusters. Initial conditions and environments, September 11-14 2007, Granada (Spain)
- Dynamical Evolution of Dense Stellar Systems, IAU Symposium 246, September 5-9, 2007, Capri (Italy)
- 12 Questions on Star and Massive Star Cluster Formation, ESO workshop, July 3-6, 2007, Garching (Germany)
- Milky Way Halo Conference, 29 May - 2 June 2007, Bonn (Germany)
- Structure formation in the Universe, 27 May - 1 June, 2007, Chamonix (France)
- Galactic & Stellar Dynamics in the Era of High Resolution Surveys, March 16-18, 2007, Strasbourg (France)

- The Dynamics of Star Clusters and Star Cluster Systems, 6-8 November, 2006, Sheffield (UK)
- Modeling Dense Stellar Systems MODEST-7 meeting, IAU GA, 17 - 23 August, 2006, Prague (Czech R.)
- IAU Symposium No. 235, Evolution of Galaxies across the Hubble Time, 14 - 17 August 2006, Prague (Czech R.)
- IAU Symposium No. 237, Triggered Star Formation in a turbulent ISM, 14-18 August, 2006, Prague (Czech R.)
- International School on Galactic and Cosmological N-Body Simulations, July 23 - August 5, 2006, Tonantzintla - Puebla (Mexico).
- Cambridge N-body School, July 30 - August 11, 2006, Cambridge (UK)
- Mass Loss from Stars and the Evolution of Stellar Clusters Workshop, May 29-June 1, 2006, Lunteren (The Netherlands)

3. Meetings at the IAU General Assembly

- Star Clusters: Basic Galactic Building Blocks throughout Time and Space, IAU Symposium 266, 10-14 August 2009, Rio de Janeiro
- Chemical Abundances in the Universe – from stars to planets, IAU Symposium 265, 10-14 August 2009, Rio de Janeiro
- Stellar Populations – Planning for the next decade, IAU Symposium 262, 3-7 August 2009, Rio de Janeiro

4. Upcoming Meetings

- From Stars to Galaxies: Connecting our understanding of star and galaxy formation. *Date:* Wednesday, 7 April 2010 - Saturday, 10 April 2010. *Location:* Gainesville, Florida, USA
- IAU Symposium 270: Computational Star Formation. *Date:* Monday, 31 May 2010 - Friday, 4 June 2010. *Location:* Barcelona, Spain
- EPoS 2010 The Early Phase of Star Formation. *Date:* Monday, 14 June 2010 - Friday, 18 June 2010. *Location:* MPG Conference Center Ringberg Castle, Germany
- The Multi-Wavelength View of Hot, Massive Stars (39th Lige International Astrophysical Colloquium). *Date:* Monday, 5 July 2010 - Friday, 9 July 2010. *Location:* Lige, Belgium
- MODEST10, August 29-Sept 3, 2010, Beijing, China
- Great Barriers in High Mass Star Formation. *Date:* Monday, 13 September 2010 - Friday, 17 September 2010. *Location:* Townsville, North Queensland, Australia
- Guillermo Haro Workshop, G. Tenorio-Tagle. *Location:* Puebla Mexico

5. Publications

The topic of star clusters and associations continues to be one of the most widely followed in all of astronomy. It spans the range of interest from stellar properties, to stellar clusters, to star formation and evolution, with considerable overlap in other commissions.

Publications in Refereed Journals in the period from January 2006 to September 2008 tally as follows:

- Globular Clusters: 420 papers (by the Fall of 2008, more than 3100 citations)
 - Open Clusters: 270 papers (more than 665 citations)
 - Stellar Associations: 30 papers (more than 140 citations)
- Some of the **issues** addressed in these publications are:
- the formation and dynamical evolution of star clusters
 - stellar evolution and ages
 - star clusters as tracers of stellar populations
 - studies of specific types of objects within clusters
 - nuclear clusters
 - extragalactic cluster systems

The authors utilize observations covering an increasing portion of the electromagnetic spectrum, ranging from X-rays to the far-infrared, as well as advanced N-body simulations.

Reviews related to star clusters that appeared in the bibliography from 2006 to September 2008 are:

- A review on the use of globular cluster systems as tracers of galaxy formation and assembly, by Jean P. Brodie and Jay Strader, *Annual Reviews of Astronomy and Astrophysics*, Vol. 44, Issue 1, pp.193-267 (2006)
- A review on the Evolution of Star Clusters was published by Richard de Grijs and Genevieve Parmentier in the *Chinese Journal of Astronomy and Astrophysics*, Vol. 7, p 155 (2007)
- Additional reviews regarding a variety of aspects of star cluster research have also appeared in the proceedings of the conferences and meetings mentioned earlier

6. DataBases

Several new cluster **catalogues** have been published:

- M33: Sarajedini, Ata and Mancone, Conor L. 2007, *AJ*, 134, 447
- ACS survey of Milky Way globulars: Jay Anderson *et al.*, 2008, *AJ*, 135, 2055
- M31: Sang Chul Kim *et al.* 2007, *AJ*, 134, 706

Recent **databases** on clusters are:

- Data on Open Clusters in the Milky Way and the Magellanic Clouds can be found in the WEBDA site (<http://www.univie.ac.at/webda/>), which was originally developed by Jean-Claude Mermilliod from the Laboratory of Astrophysics of the EPFL (Switzerland) and is now maintained and updated by Ernst Paunzen from the Institute of Astronomy of the University of Vienna (Austria).
- Data on Galactic Globular Clusters can be found in the “Catalog of parameters for Milky Way globular clusters” by W.E. Harris (<http://www.physics.mcmaster.ca/Globular>), as well as in “The Galactic Globular Clusters Database” at Astronomical Observatory of Rome (INAF-OAR: <http://venus.mporzio.astro.it/marco/gc/>).
- A Catalogue of Variable Stars in Globular Clusters developed and maintained by Christine Clement can be found in <http://www.astro.utoronto.ca/clement/>.

7. Ballot Procedure for Election of New Officers

An election of new officers was held in March and April 2009 by the outgoing president, vice president, and organizing committee.

Balloting was carried out for the first time. A call for nominations was sent by email. A list of Commission 37 members who were nominated and who accepted the nomination was then put to the vote. The voting took place via email. 82 members of the commission voted. The votes were counted by D. Hatzidimitriou (P) and C. Lada (VP). Not everyone in the Commission could be contacted as 20% of the members had obsolete e-mail addresses.

Several issues came up during the election. The nominating procedure and election were done by email and so the votes were not anonymous. The collation of votes took a lot of housekeeping work. We recommend using a centrally controlled (e.g., IAU Secretariat) user-friendly and secure web site. This would be simpler to manage, ensure anonymity for the voting process, and would be uniform across all commissions.

A number of current organizing committee members were kept in the OC at this time in order to maintain continuity. We expect to replace the longer-term members of the OC in 2012.

Several people who were nominated were not commission members. We will try to get people who are active in stellar cluster research to become members. Perhaps we will prepare a formal letter of invitation by the OC president every three years.

We attempted to maintain a balance in the Organising Committee with respect to theory versus observations, gender and geographical location. This was difficult to achieve by the nomination and voting procedure that was followed. For example, only two women were placed on the ballot. A few others that were nominated either did not accept or were not members of the commission. In any case, none of the women on the ballot were voted in. We should make a concerted effort to nominate more women in the future.

We would have found it useful to have a list of previous members of the Organizing Committee, including previous presidents and vice-presidents. This list could be on the IAU website. Such a list is important because IAU rules do not allow people to serve for more than one term for president and vice-president, or a maximum of two terms for OC members.

We will be attempting to upgrade our Commission web site. We would like to include an updated list of members of the Commission, and a list of former Organizing Committee members, Presidents and Vice-Presidents. We also want updated links to websites of conferences endorsed by the Commission. We should also create a site that is accessible to the Organizing Committee only, to facilitate OC business management (e.g. evaluation of conference proposals). In addition, we want to create a secure site for voting and nominations that all commission members can access.

8. Closing Remarks

Our discussion at the meeting centered on improving communication between members. This includes getting a more complete list of email addresses, and regularly sending out notices of meetings, reviews, databases, and other material of interest to Commission 37 members. We note that the email newsletter, SCYON (edited by H. Baumgardt, E. Paunzen and P. Kroupa), is very successful at spreading important information and research news.

We handed out questionnaires at the Symposium “Star Clusters: Basic Galactic Building Blocks throughout Time and Space, IAU Symposium 266” to get contact information from as many people as possible who were present at the meeting. VP Carraro is collating these and will work toward updating our Commission 37 web page.

Bruce G. Elmegreen
President of the Commission