

1399 by Tom Richtler and his group), as well as on the chemistry of the old clusters (e.g. Puzia et al.). A number of studies also reported on large intermediate age populations of globular clusters in early-type galaxies, detected both by a combination of optical and near-infrared photometry as well as by spectroscopy (e.g. Hempel et al., Goudfrooij et al.). Interestingly, the globular clusters in dwarf galaxies look “almost but not quite unlike” their counterparts in giant galaxies as Jennifer Lotz showed us. Despite the similarity, populations in dwarfs can extend to very low metallicity.

Interestingly (even if not unexpectedly), globular clusters are found in large numbers in the intergalactic medium of galaxy clusters. Michael Hilker and collaborators show clear evidence for globular clusters floating through the Hydra I and Centaurus galaxy clusters.

Finally, globular clusters, as the oldest objects known in the sky, are now being put in a cosmological context. Mike Beasley investigated the constraints that they put on semi-analytic models in the hierarchical clustering scenario of galaxy formation. Michael Santos presented a model in which the

old metal-poor globular clusters formed prior to re-ionization.

Clearly, extragalactic globular clusters currently dominate the study of stellar populations in nearby galaxies. Their properties set hard constraints on galaxy formation and evolution models, but also shed new light on the star formation history of the universe. This research area will clearly produce a number of astonishing results in the next 5 years.

The organizers would like to warmly thank Christina Stoffer who perfectly controlled the logistics of the conference, as well as Pam Bristow for helping in the proceedings editing.

## The VLTI: Challenges for the Future

### WORKSHOP AT JENAM 2002 IN PORTO

A. GLINDEMANN, ESO

On the verge of becoming a major science facility, the VLTI was the subject of one of the workshops at this year's Joint European and National Astronomical Meeting in Porto (Portugal) in September. The two and a half day workshop had the aim of introducing interferometry and the VLTI to the non-expert. About 65 participants, many of them young and from outside the interferometric community (the two essentials for success) showed the large interest in interferometry.

After an introduction to interferometry, to the VLTI and its instruments, and to the two other large interferometers –

the Keck Interferometer and the Large Binocular Telescope – on the first day, the second day was devoted to science. In 16 presentations, stellar astrophysics was addressed including accretion disks and outflows of young stellar objects, surface structure and circumstellar envelopes of Mira stars, diameter of Cepheids, and mass loss of Wolf-Rayet stars. The possibilities of observing nuclear regions of AGNs with the VLTI were also explored. The emphasis of the presentations was on the possibilities with the VLTI. Some of the presentations contained results of interferometric observations with smaller interferometers. The report on

Mira was based on new observations done with the VLTI and made public through the regular VLTI releases.

On the last day, the discussion on the future of the VLTI and on projects for second-generation instrumentation concluded the workshop.

This workshop was a success in attracting the non-interferometrists in the astronomical community and in summing up the scientific topics to be tackled in the near future. It became evident that it is now important to finally make the observations and produce the results that have been discussed over the last years.

## Summary of a Meeting on Science Operations with ALMA, held on Friday, 8 November 2002

P. SHAVER (ESO) and E. VAN DISHOECK (Leiden)

With the recent approvals by the ESO Council and the US National Science Board for the construction of the Atacama Large Millimeter Array (ALMA), it was thought timely to update the European astronomical community on the project and to solicit input on the plans for science operations and user support. To this end, a one-day meeting was held at ESO Headquarters in Garching on Friday, 8 November. It was very well attended; the auditorium was filled to capacity with some 100 participants from all over Europe.

The meeting began with an overview of the project and its current status by S. Guilloteau. Three very stimulating talks reviewed some of the major science drivers for ALMA: the high-redshift

Universe (S. Lilly), star and planet formation (A. Natta), and late-type stars (H. Olofsson).

The meeting then moved on to consider operations: concepts and plans for the operations phase were outlined by E. van Dishoeck, D. Silva talked about the relevant operational lessons from the VLT, and R. Lucas discussed the ALMA data reduction software and observing tools. After lunch P. Cox discussed the coordination of the European astronomical community and preparation for ALMA, including the opportunities within the EU Framework 6 programme. The discussion session then started with seven short contributions on a variety of topics, which led on to a very stimulating and useful open dis-

ussion chaired by J. Richer and E. van Dishoeck. Topics of discussion included the role and nature of a possible European Regional Support Centre (RSC) which could assist users in the observation preparation and data analysis processes, and ideas and priorities concerning software, receiver bands, surveys, future enhancements, and preparation for ALMA science. In view of the success of this meeting, there will probably be more such meetings for the community as the project evolves.

The viewgraphs from the invited talks given at the meeting are posted on the ALMA website, <http://www.eso.org/projects/alma/doclib/talks/>, where more details on the ALMA project can also be found.