Some Reflections on the SPIE 2012 Symposium on Astronomical Telescopes + Instrumentation

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Compiled from contributions*

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A very brief summary of the 2012 SPIE Symposium on Astronomical Telescopes + Instrumentation, held in July in Amsterdam, is presented from the viewpoint of ESO contributions.

The 2012 SPIE meeting on Astronomical Telescopes + Instrumentation (1–6 July 2012)[1] was even larger than the last meeting in 2010 in San Diego (see Casali, 2010) with around 2300 attendees. It is thus almost impossible to present a comprehensive overview of such a huge meeting consisting of 12 separate conferences, as well as courses and exhibitions. Instead a few reflections collected from some of the ESO participants are presented.

Not surprisingly ESO staff played a strong role in the meeting with more than 100 attending, many involved in the programme committees and a number chairing. Mark Casali was Symposium co-chair and four of the conferences had ESO chairs — Françoise Delplanke for the Optical and Infrared Interferometry III conference, Suzanne Ramsay for Ground-based and Airbourne Instrumentation for Astronomy IV, Enrico Marchetti for Adaptive Optics Systems III and Fernando Comeron for Observatory Operations: Strategies, Processes and Systems IV. In addition, the speaker at the conference dinner was Jason Spyromillio, who talked on how big telescopes can also make big trouble (for engineers at least). One of the plenary speakers was also Thijs de Graauw from the Joint ALMA Observatory.

The conference on Observatory Operations is closest to ESO's core task of running a ground-based observatory. This year time domain astronomy had an increased emphasis, motivated by the growing numbers of robotic telescopes and networks producing enormous amounts of data on a nightly basis, and mainly geared towards the identification of various types of transients. In the current context of global financial difficulties, maintaining the excellence of operations and of support to the community in an environment of increasingly tight resources was a common underlying theme. The measurement of scientific effectiveness of facilities through bibliometrics and their importance as a part of the observatory operations chain is viewed as increasingly important at observatories, including La Silla Paranal.

The Ground-based and Airbourne Instrumentation for Astronomy conference featured VLT instruments heavily, including overviews of the ESO instrumentation programme. Separate presentations of instruments under construction such as KMOS, MUSE and SPHERE, those in plan, such as ERIS, ESPRESSO, MOONS and 4MOS, and current instruments undergoing upgrade, such as VISIR and CRIRES, were given. There were extensive poster sessions on multi-object instruments and planet finders. The instrument programmes for the three Extra Large Telescopes (European Extremely Large Telescope [E-ELT], Giant Magellan Telescope [GMT] and Thirty Meter Telescope [TMT]) were presented as well as several of the individual instrument concepts for the E-ELT.

The Adaptive Optics Systems conference, not surprisingly, was very heavily attended with more than 260 contributions. The most exciting results are coming from the multi-conjugate adaptive optics (MCAO) systems demonstrating exceptional image sharpness over fields up to 80 arcseconds. The VLT Adaptive Optics Facility (AOF) is currently the most complex system under development and was well represented. The realms of astronomical science where AO makes the greatest mark from Solar System science to extragalactic were presented, not forgetting the Galactic Centre. The plans for AO for the three ELTs were featured and a new development of MCAO for ELTs using natural guide stars was outlined.

The conference on Optical and Infrared Interferometry strongly featured the existing VLTI instruments among those of the other ground-based interferometry facilities and their critical subsystems. There were also presentations of the VLTI visitor instrument Pionier and the two second generation VLTI instruments GRAVITY and MATISSE. While space interferometry featured less strongly than in previous years, sparse aperture masking showed an impressive boost in capabilities and science results. Future prospects for interferometric facilities and data reduction software were intensively discussed (during almost a full day) and the, now regular, award of the prize in the Interferometric Imaging Beauty Contest was presented.

Given the important role of the SPIE Astronomical Telescopes + Instrumentation meetings in presenting so many aspects of ESO's core activities and to give those who could not attend a flavour of some of the ESO presentations, an informal poster session was organised at ESO Headquarters on 17 July (see Figure on p. 46). Twenty-four posters were shown and the presenters were available for discussion. The topics covered all ESO activities from detectors, laser systems, adaptive optics, fibres, instrument and E-ELT component designs, instrument software control, to operating performance monitoring and bibliometrics. The poster session was well attended and appreciated by those who did not attend the meeting, and by a few who were at the SPIE meeting, but might understandably have missed something.

The next SPIE meeting will be held in Montreal, Canada in 2014.

* Contributions from Fernando Comeron, Françoise Delplancke, Enrico Marchetti and Suzanne Ramsay.

References

Casali, M. 2010, The Messenger, 141, 40

Links

[1] SPIE 2012Astronomical Telescopes + Instrumentation: http://www.spie.org/x13662.xml