

discovery of the planetary system around TRAPPIST-1, were a source of discussion.

The role of the environment needs to be established before extrapolating star formation to different regions, such as galactic centres, spiral arms, and massive complexes compared to smaller clouds. Open questions remain about observed environmental differences; it remains unclear whether these differences are significant or simply due to our lack of understanding of the star formation process. Progress has been made with constraining radiative feedback and dynamical effects in star formation, but we still lack an understanding of the global implications. Despite much debate and healthy discussion, the main question that prompted the conference still remains unanswered: “What constitutes a prototypical low-mass star-forming region from cluster to core scales?”

#### Post-conference survey

Following the conference, we conducted an online survey to evaluate the success of the conference and identify areas for improvement. The results are summarised in a report which is available as a resource for organisers of future ESO workshops<sup>3</sup>. The results of the survey indicate that the participants found the poster flash talks and discussion sessions useful and offered several suggestions on how to improve their impact.



Figure 2. A photo taken during the tour of ALMA antennae at Chajnantor, at an altitude of 5000 metres.

#### Social

The conference dinner included an excursion to the beautiful Roan Jasé Astronomical Observatory in the Cajón del Maipo, about an hour outside Santiago. Our hosts Manuela and Leopoldo treated the astronomers to a traditional Chilean family-style barbecue, bilingual presentations about astronomy from the perspective of the indigenous Mapuche culture, and stargazing using small telescopes. Following the conference, some participants travelled to San Pedro de Atacama and the ALMA Observatory (Figure 2), hosted by star-formation enthusiast Al Wootten (NRAO).

#### Acknowledgements

We would like to thank the SOC and LOC, in particular María Eugenia Gómez and Paulina Jirón for their support in organising the conference. Additionally, we thank the IT support and facilities team who made the daily operations of the conference possible. Special efforts were made to accommodate travel costs and registration for students and post-doctoral researchers, and we thank ESO and NRAO for providing the necessary funding.

#### Links

<sup>1</sup> Conference website: <http://www.eso.org/sci/meetings/2017/star-formation2017.html>

<sup>2</sup> Zenodo: <https://zenodo.org/>

<sup>3</sup> Conference report based on the participants survey: [http://www.eso.org/sci/meetings/2017/StarFormation2017/Report\\_SF2017.pdf](http://www.eso.org/sci/meetings/2017/StarFormation2017/Report_SF2017.pdf)

Report on the EWASS Workshop

DOI: 10.18727/0722-6691/5042

## EWASS 2017 Special Session SS18: The ELT Project Status and Plans for Early Science

held at Charles University, Prague, Czech Republic, 29 June 2017

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A special session was organised at the 2017 European Week of Astronomy and Space Science (EWASS 2017) this summer. The twin aims of highlighting progress on the ELT Programme to the whole European community and of engaging early-stage researchers

in this exciting project were met. A lively programme of talks was presented to a packed room.

### Session summary

EWASS 2017 took place in Prague from 26 to 30 June 2017. One of the parallel sessions was Session 18: “The European ELT Project Status and Plans for Early Science”. This afternoon session was organised jointly by the four authors of this report. The session attracted a sizeable audience, turning into a “standing room only” event for late-arriving attendees.

The main goal of the session was to highlight recent progress on this exciting and important project to the wider astronomical community in Europe. Since previous EWASS (and formerly JENAM) sessions in 2012 and 2008, the Extremely Large Telescope (ELT) programme has been approved and is now well into its construction phase. Many key contracts are already in place, including agreements to build the first set of instruments. The “First Stone” ceremony took place shortly before this meeting (see de Zeeuw et al., 2017). A particularly strong motivation for this session was to engage with early-stage researchers from across the whole of Europe, since the ELT will be the premier facility available to them as they move into their mid-careers. The session aimed to strengthen their knowledge of the ELT programme and to harness their ideas and expertise. The organisers

also wanted to interest the community in undertaking the comprehensive end-to-end simulations of ELT observations, which will be essential to predict how this facility will meet the ESO community’s scientific objectives.

The session started with an invited talk from the ELT Programme Scientist, Michele Cirasuolo. He provided an overview of the science cases, instrument concepts<sup>1</sup> and programme status. The rest of the session was given over to contributed talks. As anticipated, the scope of the speakers’ scientific goals was broad, ranging from Leen Decin’s talk on detailed dust chemistry in stellar winds with METIS (the Mid-infrared ELT Imager and Spectrograph) to Karen Disseau’s studies of the high-redshift Universe with the multi-object spectrograph, MOSAIC. Observations of massive stars and stellar populations were discussed by Artemio Herrero and Oscar Gonzalez respectively, while Kieran Leschinski used simulations to demonstrate the potential for determining variations in the stellar initial mass function using the Multi-AO Imaging CAmera for Deep Observations, MICADO, fed by the adaptive optics Multi-conjugate Adaptive Optics RelaY module, MAORY.

Simulations of observations with HARMONI, the High Angular Resolution Monolithic Optical and Near-infrared Integral field spectrograph (by Mark Richardson) and METIS (by Michael Mach) showed how each of these instruments would advance our understanding

of galaxies. Two speakers presented the future of observations at high spectral resolving power, with Nicoletta Sanna talking about the plans for the ELT’s high-resolution spectrograph, HIRES, and Giuseppe Bono (standing in for Davide Magurno) showing the results from WINERED, a warm near-infrared high-resolution spectrograph that is currently a visitor instrument on the New Technology Telescope (NTT).

Quite apart from the scientific goals of researchers participating in the session, two nice talks highlighted the future of software and hardware with the new generation of instruments: Rainer Köhler gave a flavour of the ongoing work on the METIS data pipeline; and Robert Harris talked about a novel 3D printing technique for manufacturing microlenses for fibre spectrographs.

### Acknowledgements

The organisers of this session would like to thank all the presenters for their contributions. We are also very grateful to the organisers of EWASS 2017 for the opportunity to meet together in Prague to share this exciting vision of the future with the ELT.

### References

de Zeeuw, T., Comerón, F. & Tamai, R. 2017, *The Messenger*, 168, 2

### Links

<sup>1</sup> For details of the ELT instruments currently in development, see the links at <http://www.eso.org/public/teles-instr/elt/>



Figure 1. An artist’s rendering of the ELT as it will look upon completion in 2024.