

The ESO Users Committee: Giving Users a Voice

Maria-Rosa L. Cioni¹

¹ Leibniz Institute for Astrophysics
Potsdam, Germany

The Users Committee (UC) was introduced at ESO in 1978 and since its first meeting in September of that year it has assisted the Director General and the ESO management in improving the performance of the Organisation, including scientific access, operations and data management facilities, and other services related to the scientific products. The UC is an advisory body that represents European users of both La Silla Paranal observatory, including the Atacama Pathfinder EXperiment (APEX), and the Atacama Large Millimeter/submillimeter Array (ALMA). It is the main channel of communication between the users and ESO. UC members' engagement with specific activities has evolved over time in line with the development of ESO's facilities and the expansion of the ESO community. This article provides information on the composition of the UC and details of its main activities, and highlights topics that have been discussed over the last decade.

Who are we?

The current members of the UC are listed in Table 1, alongside country of representation, host institute and role. Figure 1 shows the UC at its 43rd meeting. The UC represents all ESO users with one representative from each ESO member state, one from Chile for matters related to La Silla Paranal and ALMA, and one from Australia who according to the partnership agreement refers only to matters relating to La Silla Paranal. Users from other countries are welcome to approach the UC chair and co-chair on relevant aspects at any time. UC members are selected by the Director General from three suitable candidates proposed by national authorities (ESO council members and the national Chilean ESO Committee).

The UC is the youngest ESO committee according to the average age of its



Figure 1. Users Committee members visited ESO headquarters in April for the 2019 spring meeting.

members. It is also the committee with the best gender balance, with over 50% female members. It has required many years of supportive activity to reach this level of diversity while ensuring no compromise in the research knowledge and expertise represented within this committee. An important aspect of UC members is their hands-on experience with ESO programmes — from their frequent use of ESO telescopes and instrument facilities, to the services and tools that ESO makes available to the community with the goal of advancing scientific discoveries. Their experience encompasses the use of tools to prepare, obtain and reduce ESO data, the submission of data products to the ESO archive, and the production of written contributions, for example to the *Messenger*, as well as the advertising of scientific results via the ESO press. Furthermore, the research fields of UC members encompass a broad range of scientific topics which closely match those that can be addressed with ESO facilities.

What do we do?

The UC serves as an interface between the ESO users and ESO representatives (for example, the Director General and the heads of different departments) to provide users with an understanding of how ESO facilities are used, how services and support are perceived, and to obtain explanations of what, why and how ESO does what it does (see the UC Rules of

Procedure¹). In practice, the UC collects and distributes information, and advises, discusses and provides recommendations on matters directly related to the users' experience with ESO facilities at different stages – from the acquisition and processing of observational data to the distribution of data products. More details about past matters pertaining to the UC can be found in Wisotzki (2001) and van Loon (2009); here we focus on current issues.

The UC formulates recommendations aimed at improving the users' experience with ESO facilities. These recommendations result from consolidated feedback obtained from users, consultation among UC members and between the UC and ESO representatives. The UC collects feedback from users primarily via an annual poll, presenting the users with a set of questions that probe their experience with ESO facilities. Past experience suggests that users seldom approach UC members directly if not prompted to do so, and even then it is difficult to obtain a large number of responses (only 500 in 2018). On the other hand, if UC members proactively advertise their UC role to colleagues and at events where astronomers are reachable, such as conferences and workshops, the amount of feedback increases. At a time when users receive regular questionnaires about aspects of their work it can be hard to engage with yet another poll. However, the statistical information gleaned from the UC poll is tremendously important in supporting discussions with ESO representatives and acquiring a sound view of

general aspects that are common to many users. A brilliant idea may come from a single individual, but its implementation requires a much larger effort involving many more people.

The UC meets ESO representatives once a year in spring, usually following a meeting of the Scientific Technical Committee (STC). At this meeting, updates on ESO activities are presented and discussed, including the following: statistical information on the use of ESO telescopes with updates on major happenings that have influenced operations over the past year; updates on the development of new instruments and their timescales; progress reports on long-term activities (such as the production and implementation of a new observing tool); and work towards software analysing the data (quality assessment and data reduction tools).

In addition, each year a special topic is addressed, with tailored questions included in the UC poll and invited presentations by a few experienced users at the UC meeting. A list of the special topics addressed over the past decade is given in Table 2. A report describing the results of the UC poll and the minutes of meetings between the UC and ESO representatives are publicly available on the respective UC meetings webpages². Following the spring meeting, the UC formulates a list of recommendations that, once agreed with ESO representatives, are distributed to the users directly by the UC members, and are posted on the website indicated above. Progress on these recommendations is discussed at a mid-term teleconference involving UC members and key ESO staff. While some recommendations may be resolved within six months to a year, others may have a wider impact on ESO operations and the community and require a long-term investment of resources (for example, it took many years to gradually remove the platform dependence for ESO tools).

Highlights of UC recommendations and their current status

Observations

A long-standing item that has figured in most UC reports is the need to improve the process by which observing propos-

als (Phase 1) are prepared and evaluated. For some time ESO has been developing a new tool which is embedded in a complex structure linked to other parts of the observing process (for example, to the exposure time calculator). The UC has monitored the criticisms from users and has often discussed them with ESO representatives to make sure that they are considered in the construction of the new tool. A demo of this tool was first shown at the UC meeting in 2018 while a new web-based tool for the preparation of the observations (Phase 2) was recently released. The latter reflects the feedback from the users who successfully obtained

observing time; first impressions were extremely positive.

Pipelines

Major steps have been taken to develop and improve data reduction tools at ESO. Initially pipelines did not exist, then they were not good enough, now they have improved and the focus has shifted toward improving the documentation (including video tutorials and cookbooks explaining the essential steps), bug reports, sharing algorithms and implementing advanced reduction steps. This is a gradual process that begins again each time a new instrument is

Table 1. Members of the Users Committee in 2019.

Country	Member, Institute
Austria	Wolfgang Kausch, University of Innsbruck
Belgium	Arjen van der Wel, Ghent University
Czech Republic	Michaela Kraus, Czech Academy of Sciences
Denmark	Lisa Bech Christensen, University of Copenhagen
Finland	Rubina Kotak, University of Turku
France	Nicolas Bouché, IRAP
Germany	Maria-Rosa Cioni, Leibniz Institute for Astrophysics Potsdam
Ireland	Rebeca Garcia López, Dublin Institute for Advanced Studies
Italy	Maria Teresa Beiran, INAF – Observatory of Arcetri
The Netherlands	Karina Caputi (Chair), Kapteyn Astronomical Institute
Poland	Łukasz Wyrzykowski, Obserwatorium Astronomiczne UW
Portugal	Nuno Pelxinho, University of Coimbra
Spain	Maria Rosa Zapatero Osorio, Centro de Astrobiología
Sweden	Jouni Kainulainen, Chalmers University of Technology
Switzerland	Miroslava Dessauges, Geneva Observatory
United Kingdom	Danny Steeghs, University of Warwick
Chile	Sebastian Lopez Morales (co-Chair), Universidad de Chile
Australia	Caroline Foster, The University of Sydney

Table 2. List of special topics and invited speakers at the UC meetings.

Year	Special topic	Invited speakers
2010	ALMA operations	Elisabeth Humphreys, Dirk Petry
2011	APEX operations	Marcus Albrecht, Roberto Maiolino
2012	Public surveys data products	Magda Arnaboldi, Jörg Retzlaff
2013	VLTI operations	Pierre Kervella, Claudia Paladini
2014	Observing Tools	Livia Origlia
2015	ESO Archive	Celine Peroux, Chris Wegg
2016	APEX operations	Claudia Cicone, Helmut Dannerbauer
2017	Multi-object spectroscopy	Barbara Lanzoni, Christophe Adami
2018	ALMA support	Frédérique Motte, Cécile Favre
2019	Public surveys	David Sobral, Sara Lucatello

commissioned, but a close collaboration with the community has rendered it smoother and faster. The large number of ESO instruments and observing modes, however, makes it difficult to maintain pipelines across platforms and include external software (for example, the astronomical software collection Scisoft), especially when resources are shared with other tasks. There is also a strong bimodality between the needs of expert and novice users. The UC has supported data reduction workshops and interferometry schools to engage the community with the new facilities. The Very Large Telescope Interferometer (VLTI) Expertise Centres were established last year to assist new users with preparing VLTI proposals, and to provide advanced support for VLTI data reduction and interpretation.

Communication

The ESO ScienceNewsletter has increasingly become the main source of information for users. This is where Calls for Proposals, data releases, upgrades and major changes to ESO tools, as well as workshops, are announced. Together with The Messenger they are used to increase transparency regarding ESO operations, as requested by the UC and the Visiting Committee. For example, several articles resulted from discussions about whether to change the time allocation owing to its possible effects on efficiency in run completion and therefore on the resulting publications (Primas et al., 2014; Sterzik et al., 2015 and 2016); others refer to encouraging observations in visitor mode (Rejkuba et al., 2018).

Software

The UC has played a major role in prioritising the development of ESO software for Mac OS X, for example, to prepare observations and reduce data. We are also witnessing an increasing usage of the Python coding language. Science pipelines for new ESO instruments are written in Python by instrument consortia and have been developed in parallel at ESO, using ESO tools for quality control purposes. The software language and the possible interface between any two given pipelines for the same application keep the community divided and this remains one of the most highly debated topics at the UC meetings.

What has changed?

Nominations for the Observing Programme Committee (OPC)

One recently acquired task of the UC is to provide nominations of astronomers willing to serve on the OPC. On the one hand, this process has become more transparent to the users, who are contacted directly by their country representative, and on the other hand, this is more efficient for ESO because it has resulted in a significant decrease in the rejection rate during recruitment. UC representatives either scout within their community for suitable astronomers or are approached by astronomers themselves who wish to serve on the OPC. It is also possible to indicate an interest in serving on the OPC via the UC poll. The UC members subsequently populate a database of users from which ESO replenishes the OPC on a regular (currently biannually) basis. Since the UC was entrusted with this task in 2016, the OPC composition better reflects ESO users with respect to gender, seniority and nationality whilst ensuring the broad scientific expertise required to judge observing proposals. Recent regulations on data protection are likely to modify this process and allow the users to enter their personal data directly into an OPC candidate database while the UC members will remain their primary point of contact.

ALMA users

ALMA is a partnership of ESO, East Asia and North America, in cooperation with the Republic of Chile. During the last decade, ESO has acquired an increasing fraction of ALMA users beyond the traditional ESO user community. The procedures to obtain and analyse ALMA data have been integrated into the general ESO operations, after an initial period of dedicated activities. The UC has endorsed this transition and has contributed to unifying the users under one ESO umbrella. UC members are chosen to cover the wide expertise of ESO users. Members with millimetre/submillimetre competence were retained within the UC for more than the standard three-year period to deal with specific ALMA aspects and to make sure that the needs of the new community (like that of ALMA within ESO) were properly addressed. The support from ALMA Regional Centre

scientists, the ticketing process, the quality of data products, the feedback on observing proposals, and the archive interface are among aspects that are regularly addressed at UC meetings similarly to those from La Silla Paranal facilities.

Public surveys

Different types of ESO programmes and public surveys gained momentum from the development of the Visible and Infrared Survey Telescope for Astronomy (VISTA), following the UK's joining ESO, and of the Very Large Telescope (VLT) survey telescope. To carry out these programmes ESO users have formed large collaborations, obtained large fractions of telescope time, and are committed to making reduced data products publicly available. On the ESO side, new procedures to prepare the observations and to ingest the data into the archive were also established. Feedback from ESO users involved in public surveys or using data generated from public surveys has been collected and discussed at UC meetings on many occasions, resulting in recommendations, for example to improve the data flow and the associated documentation.

Working groups, boards and reviews

UC members have been involved in specific ESO working groups. For example, the ESO Science Data Management Working Group and the Time Allocation Working Group (see Patat et al., 2018) were established as a result of the ESO 2020 analysis to review the processes involved and to provide suggestions for future implementations. Feedback from both the STC and the UC on the resulting reports was important in planning for changes. The UC agreed with reducing the frequency of calls for proposals to annual calls, coupled with the possibility of a fast-track channel for proposals of limited scope. It also supported the introduction of a filler programme and of a special channel for combined ESO–ALMA programmes. Furthermore, the UC favoured the development of tools for data processing, data mining, data analysis, and data publication to support results obtained from Principal Investigators as well as archive science.

The original reports and the UC feedback are publicly available and were also

distributed to the users by their UC representatives. The UC together with ESO formulated the questionnaire about non-publishing programmes (Patat et al., 2017) and more recently also engaged in the review of the ESO data-flow development plan (Hainaut et al., 2018). UC members had an active role on the board for the review of the European ALMA Regional Centre Network Strategic Plan and are regularly invited to join major review panels, for example the Preliminary Design Review of the Multi-AO Imaging CAmera for Deep Observations (MICADO) and Call for Proposals Readiness Review for the 4-metre Multi-Object Spectroscopic Telescope (4MOST).

Forward look

There are obviously many aspects that can be improved, but there are many day-to-day operations to support, and any change to a running system must be planned and implemented carefully in order to avoid disrupting the ongoing operations. It is then a task for the UC to identify which aspects are more relevant for the users and to inform ESO about them, so that priorities can be adjusted to enhance the scientific productivity. Users who plan and build ESO instruments,

develop pipelines, observe with ESO telescopes, extract data from the ESO archive, or process and publish scientific results are not necessarily the same users. Therefore, they are not always aware of the distribution of ESO resources to support each of these activities, and sometimes issues may arise as a result of misunderstandings or insufficient information. The UC is a crucial means by which the exchange of information takes place.

The UC's primary interest is in providing feedback on current facilities and services, but it can also provide advice on what the users find important. Improvements in the collaboration between the UC and the STC are envisaged, and also with the respective sub-committees (for example, the La Silla Paranal and the European Science Advisory Committee) which focus more on future developments, but would also consider current facilities and their use.

Users are strongly encouraged to engage with their UC representatives to ensure that their voices are heard. All the comments collected by the UC are passed to ESO in a consolidated way; the format of this feedback may deviate from the diverse formats and ways in which inputs are received from the users. Represent-

ing the country in which you work in the UC is a highly valuable experience that I would definitely recommend to you. It enhances your knowledge of ESO activities, and even if you do not need that, it allows you to look at them from a different point of view, taking on board the views of many other users.

Acknowledgements

The author would like to thank the head of the Users Support Department (Marina Rejkuba) and the current chair of the UC (Karina Caputi) for their feedback on an earlier version of this article.

References

- Hainaut, O. R. et al. 2018, *The Messenger*, 171, 8
- Patat, F. 2017, *The Messenger*, 170, 51
- Patat, F. 2018, *The Messenger*, 173, 7
- Primas, F. 2014, *The Messenger*, 158, 8
- Rejkuba, M. et al. 2018, *The Messenger*, 173, 1
- Sterzik, M. et al. 2015, *The Messenger*, 162, 2
- Sterzik, M. et al. 2016, *SPIE*, 9910, 991003
- van Loon, J. 2009, *The Messenger*, 136, 61
- Wisotzki, L. 2001, *The Messenger*, 106, 46

Links

- ¹ The Rules of Procedure for the ESO Users Committee: http://www.eso.org/public/about-eso/committees/uc/docs/RoP_UC_new.pdf
- ² ESO's governing bodies webpage: <https://www.eso.org/public/about-eso/committees.html>

ESO/M. Claro



The VLT telescopes at twilight, the domes are open in preparation for another night of observations.