



ESO/UC-84

**Users' Committee**

**41<sup>st</sup> Meeting**

**Garching, May 9 and 10, 2017**

## Minutes

### UC

<b>Chairperson:</b>	Prof. Maria-Rosa Cioni	Germany (DE)
<b>Vice-chairperson:</b>	Dr. Olivier Absil	Belgium (BE)
<b>UC members:</b>	Dr. Wolfgang Kausch	Austria (AT)
	Dr. Michaela Kraus	Czech Republic (CZ)
	Prof. Lise Bech Christensen	Denmark (DK)
	Dr. Talvikki Hovatta	Finland (FI)
	Dr. Nicolas F. Bouché	France (FR)
	Dr. Maria Teresa Beltran	Italy (IT)
	Prof. Karina I. Caputi (NL)	The Netherlands (NL)
	Dr. Łukasz Wyrzykowski	Poland (PL)
	Dr. David Sobral	Portugal (P)
	Dr. María Rosa Zapatero Osorio	Spain (ES)
	Dr. Sofia Ramstedt	Sweden (SE)
	Dr. Miroslava Dessauges	Switzerland (CH)
	Prof. Stephen Smartt	United Kingdom (UK)
	Prof. Thomas Puzia	Chile (CL)

<b>Invited to Special Session</b>	Dr. Barbara Lanzoni	Italy
	Dr. Christophe Adami	France

<b>On behalf of ESO</b>	Prof. Tim de Zeeuw	ESO Director General
	Andreas Kaufer*	Directorate of Operations / La Silla Paranal Observatory (DOO/LPO)
	Rob Ivison	Directorate for Science (DSC)
	Steffen Mieske	Paranal Science Operations (PSO)
	Michael Sterzik	Data Management and Operations Division (DMO)
	Olivier Hainaut	Data Management and Operations Division (DMO)
	Thomas Bierwirth	Data Management and Operations Division (DMO)
	Marina Rejkuba	User Support Department (USD)
	Martino Romaniello	Back-end Operations Department (BOD)
	Paola Andreani	ESO ALMA Support Centre (EASC)
	Martin Zwaan	ALMA Regional Centre Department (ARC)
	Wolfgang Wild	ESO ALMA Support Centre (EASC)
	Ferdinando Patat	Observing Programme Office (OPO)
	Sandra Castro	Science Operation Software Department (SCS)
	Pascal Ballester	Science Operation Software Department (SCS)
	Bruno Leibundgut	Directorate for Science (DSC)
	Antoine Merand	Directorate for Science (DSC)
	Carlos De Breuck	APEX Operations Group

\*excused

<b>Invited to Special Session</b>	Vincenzo Mainieri	Directorate for Science (DSC)
	Richard Ellis	Directorate for Science (DSC)

<b>Minutes taken by</b>	Annalisa De Cia	ESO Fellow (DSC)
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## 1. CLOSED SESSION

*No meeting minutes are taken for the closed session.*

## 2. OPENING OF THE UC MEETING

The Chair, **Prof. Cioni (DE)**, opens the 41<sup>st</sup> Users' Committee meeting.

### 2.1. Adoption of the Agenda and approval of the minutes

The draft minutes from the 40<sup>th</sup> UC meeting have been approved prior to the mid-term telecon in October 2016. The draft [agenda](#) is adopted.

## 3. UPDATE ON ESO'S PROGRAMME

**Prof. Tim de Zeeuw, Director General of ESO**, presents the highlights and updates on the ESO's programme.

Discussion following the presentation:

**Prof. Smartt (UK)** asks about the CTA operations start timeline. The **Director General** remarks that all funds are not secured yet, meaning that some delay may be expected. Nevertheless, CTA telescopes are simple and can be built quickly. The likely start of operation should be in 3 or 4 years. Mieske (PSO) adds that the official plan is to start with CTA early operations in 2 years, and move on to full operations in 2025.

**Prof. Cioni (DE)** inquires on the future of VLT/I in the ELT era. Leibundgut (DSC) states that ESO is working on this. A report on science priorities of existing instruments was presented to the STC. The **Director General** reminds that there is a lot of information in the ESO Long Term Perspectives Messenger article. A detailed planning is following the outcome from various working groups and the VLTI plans from Antoine Merand.

## 4. REPORT FROM LA SILLA PARANAL OBSERVATORY

**Steffen Mieske (Head of Paranal Science Operations)** presents an update on the La Silla Paranal Observatory ([attachment 1](#)) on behalf of Andreas Kaufer (Director of La Silla Paranal Observatory, LPO).

Discussion:

**Prof. Cioni (DE)** recommends making the technical downtime statistics public. Mieske (PSO) agrees, adding that this could be done for example via the Science Newsletter.

**Dr. Bouché (FR)** asks for the reason behind the decrease in UVES spectral resolution. The **Director General** replies that a gradual and slow optics misalignment was found to correlate with seismic activity. The problem has now been fixed, based on an optics solution found by Bernard Delabre.

## 5. REPORT FROM END-TO-END VLT OPERATIONS

**Michael Sterzik (Head of Data Management and Operations, DMO)** reports on news from end-to-end VLT Operations ([attachment 2](#)).

Discussion:

**Prof. Smartt (UK)** reminds that there is a very large amount of Phase 1 feedback collected from the community and wonders if this is considered for the Phase 1 upgrade. Sterzik (DMO) reassures that this is absolutely the case. ESO is gathering and addressing users' feedback.

## 6. REPORT FROM ALMA OPERATIONS

**Paola Andreani (ESO ALMA Support Centre, EASC)** presents updates on ALMA operations ([attachment 3](#)).

### Discussion:

**Dr. Beltran (IT)** remarks that non-completed A-graded projects are carried over to the next year, but not two. She is interested in statistics on the completion of A-graded projects. Andreani (EASC) replies that the A-rated projects statistics show the completion of 63% for cycle 3 and further 30% of the projects got some data. 80% of the OUS have been completed.

**Prof. Caputi (NL)** asks whether the completion is uniform throughout ALMA modes. Andreani (EASC) confirms that indeed completion is not uniform. For example, the high frequency is more complicated, although now it is becoming more stable. In addition, the weather impacts also need to be considered.

**Prof. Cioni (DE)** asks how many proposals each ALMA assessor evaluates. Andreani (EASC) reports that it is in the range of 80 to 100.

## **7. REPORT FROM THE ALMA REGIONAL CENTRE**

**Martin Zwaan (Head of ALMA Regional Centre, ARC)** reports on news from ARC ([attachment 4](#)).

### Discussion:

**Dr. Bouché (FR)** notices that the presentation focused on imaging and calibration pipelines, but ALMA is a 3D instrument. Does the pipeline produce 3D cubes? Zwaan (ARC) confirms that for ALMA when talking about imaging both continuum imaging and cubes are included.

**Dr. Beltran (IT)** asks about continuum subtraction using a statistical method, especially for cases with so many emission lines that the continuum cannot easily be found. Zwaan (ARC) reassures that the development is ongoing, in particular at the ARC nodes, although it is not part of the pipeline yet.

**Dr. Ramstedt (SE)** would like to see more flexibility in combining data from different configurations. Zwaan (ARC) remarks that a large EU-led effort last year aimed to develop the procedures for this (especially combining ACA and 12m data), but the implementation was delayed by other urgent tasks, such as the data reduction backlog.

**Prof. Caputi (NL)** remarks that helping to solve backlogs problems puts stress on the ARC nodes, and asks how this will be handled on the long run. Zwaan (ARC) answers that the plan is to move this task back to Chile. The ARC nodes have been helping a lot to reduce backlog, but their contributions are on a voluntary basis.

**Dr. Dessauges (CH)** asks whether there is a transparent way to know if pipeline products are ready for science. Zwaan (ARC) reports that in many cases they are ready. The ARC nodes can further help with evaluating this if contacted. This is their role.

**Dr. Hovatta (FI)** wonders if the archive keeps QA2 reductions in case improvements are identified by the ARC node specialists. Zwaan (ARC) reassures that if there was an 'observatory' problem with the data, then it is a QA3 case and the data products are replaced in the archive. If the ARC nodes help with improving data products, by using more careful analysis, or enhanced techniques, then the data products are not replaced.

**Dr. Zapatero Osorio (ES)** asks for clarifications of the plot of submission vs time for proposals and about the backlog data processing times. Zwaan (ARC) confirms first that the proposal submission vs. time refers to the first submission. He then adds that the actual processing time is much shorter than the typical time between data taking and data delivery. The backlog was mostly developing because data products were waiting for some human intervention that was needed prior to the next step in the QA process.

## **8. REPORT FROM DATA MANAGEMENT WORKING GROUP**

**Martino Romaniello (Back-end Operations Department Head, BOD)**, the chair of the Data Management Working Group (WG) summarizes the main conclusions of this WG ([attachment 5](#)).

#### Discussion:

**Prof. Cioni (DE)** would like to know what the next steps for this WG report are. The **Director General** remarks that the recommendations of the WGs are considered by ESO, some are already integrated in the long-term plan, such as for the archive, and some specific actions may follow the UC feedback.

**Prof. Smartt (UK)** recommends focusing on providing high quality trustable data products, rather than analysis tools, which may be best left to individual users. Romaniello (BOD) acknowledges the feedback.

### **9. REPORT FROM THE OBSERVING PROGRAMME OFFICE**

**Ferdinando Patat (OPO) (Head of Observing Programme Office, OPO)**, reports on telescope proposal submission and OPC matters as well as on the recommendations from the Time Allocation Working Group ([attachment 6](#)).

#### Discussion:

**Dr. Kausch (AT)** wonders about the 25% of users who reported to be still working on data and suggests that addition of information in proposals about still pending work on data might mitigate the situation. Patat (OPO) clarifies that ~25% is exactly the fraction that is predicted based on statistical analysis of the delay time for publications and the time considered for the poll of non-publishing PIs (SNPP). The answers reflect the reality and were not “an easy way out” from the poll question. The addition of such information in the proposals was considered, but it may be prone to misuse.

**Dr. Bouché (FR)** asks about the priorities of the WG recommendations and their implementation. Patat (OPO) answers that recommendation are presented roughly in decreasing priority order, and the first two must be taken up together. An evaluation of implementation implications and an implementation plan still need to be prepared. This will largely depend on the feedback by the advisory committees (UC, STC) and will probably lead to a gradual implementation.

**Prof. Caputi (NL)** wonders whether increasing the minimum amount of requested time will effectively produce more publications, or if it would artificially inflate the actual time requested by the user. Patat (OPO) notes that the actual limit has not been set, and reassures that such effects could be mild. Indeed, the science cases will need to be well justified, and such artificial inflation can only vary the requested time by a small amount. As an example, it would be impossible to inflate a few hours of observation to 3 nights.

### **10. REPORT FROM THE UC CHAIR**

**Prof. Cioni (DE)** reports that the users are very happy with the support offered by ESO staff, but not so happy with the OPC/TAC feedback, and have complaints on the software. The principal results from a community survey that yielded 300 replies based on the [UC Report](#) are summarized.

#### Discussion:

Mieske (PSO) asks for clarification about the proprietary time and availability of pipelines. **Prof. Cioni (DE)** emphasises that it takes time for the teams to reduce and analyse their data. For consortia pipeline is not an issue because they can perform high-quality data reduction. With the availability of pipelines other users may be quick in producing the results. Sterzik (DMO) mentions SPHERE in this context, and the standing issues with the pipeline as delivered by the consortium. The **Director General** remarks that when the results are published data should be made public.

### **11. CLOSED SESSION (UC only)**

*No meeting minutes are taken during the closed session.*

## 12. OLD RECOMMENDATIONS

### **UC40.R.01: to extend APEX operations in view of the successful results and efficient organization.**

The support of the UC is appreciated. A proposal to extend ESO's participation in the APEX agreement at an increased level of 32% till the end of 2022 was unanimously supported by STC, leading to a positive Council decision in December 2016. The extension agreement will be formally signed at the APEX Board meeting early May 2017.

### **UC40.R.02: to make the abstracts of accepted proposal publicly available after the proposals are accepted (only 25% of the users replying to the UC poll were against it); this procedure is already in place for ALMA.**

This recommendation was discussed with the Director General and the Director for Science. They are not in favour of proceeding along the line proposed by the UC, because it gives an unfair competitive advantage to non-ESO astronomers with access to fast-turnaround time on e.g. Gemini and Keck. No compelling arguments were provided as to why it is important to anticipate the release of the abstracts, given the above concern.

### **UC40.R.03: to schedule GTO & LP times flexibly to avoid blocking right ascension ranges and targets for contiguous periods of time.**

The Observing Programmes Office will keep this recommendation into account when running the GTO scheduling, trying to optimize the needs of the wider community. At the same time, OPO also acknowledges that Large Programmes do usually come from that same community and rightly have a high priority, which ensures some balance.

Discussion: **Prof. Cioni (DE)** remarks that this touches current situation of users with A-ranked programs that received no data, and asks ESO to continue monitoring the situation.

### **UC40.R.04: to consider penalizing teams with large allocations of time (LP, GTO) that do not deliver on the contract/ agreed terms.**

ESO is considering how best to implement an admin-light method of tracking whether responsibilities are being met by Large Programmes, including GTO Large Programmes, and also Public Surveys. As a last resort, following discussions with the party responsible, a variety of sanctions will be considered by the DG for those that fall short of their responsibilities, including the suspension of a new or an existing ESO observing programme.

Discussion: **Prof. Cioni (DE)** notes that the UC understands that ESO monitors the situation, but it is not clear what penalties may be applied. The UC is generally happy with the current situation. Ivison (DSC) remarks that penalties cannot come from the OPC, and if it should be implemented than it must come from ESO.

### **UC40.R.05: to explore the statistics of how often a significant fraction of time is lost in visitor mode due to technical issues and if possible to compensate for it.**

Those cases are very rare, precise statistics have been presented by Mieske (PSO) ([attachment1](#)). Compensation for major technical losses in visitor mode (~2/3 of the time or more) is assessed on a case by case basis, typically upon request of the visiting astronomer. During the meeting ESO presented more formalised guidelines for such cases.

Discussion: **Prof. Cioni (DE)** insists that a summary will be shared with user community on a regular basis.

### **UC40.R.06: to maintain up-to-date documentation about observing priorities used for service mode observations executions at Paranal.**

Observing priorities for service mode observations executions are described in the Phase 2 Proposal Preparation Tool version 3 (P2PP3) User Manual, which is available from:

<http://www.eso.org/sci/observing/phase2/P2PP3/P2PP3Documentation.html>

### **UC40.R.07: to encourage observations in visitor mode, that are not limited to technically challenging programs, or to increase use of Designated Visitor mode.**

With the ongoing update of our Phase 2 tools for Visitor Mode (VM) it is expected that VM support can become more agile and may thus require less preparation time on Paranal itself. As a result, the total trip length may become shorter and make VM more attractive for users. Likewise, ESO is investing resources to make the dVM experience closer to that of actual VM due to the implementation of an eavesdropping functionality, in combination with the more agile Phase 2 tools.

ESO changed the proposal form, swapping the previous request to justify observing modes with a more generic milder request for information on the proposer's preference as it was previously identified that this might inhibit VM requests.

Further clarification from the UC on issues that are addressed by further encouraging VM/dVM could help ESO identify other possible actions.

Discussion: **Prof. Cioni (DE)** asks whether ESO would like to see a higher VM ratio, and if so by how much. She further remarks that the visitor experience is important for the community. Rejkuba (USD) explains that the VLT science policy specifies that at least 40% of time will be reserved for Visitor Mode. In the beginning, it was close to 50-50% for VM-SM, but since then the request for Service Mode (SM) has increased dramatically. Given the large allocations for public spectroscopic surveys and GTO are in VM, there is still about 30% of time scheduled on Paranal in VM, but this is not what majority of the community requests, and on a long run may not be healthy. Patat (OPO) adds that ESO followed the community. Therefore, the VM/SM ratio is not so much a question for ESO, but for the community. From a scheduling point of view there are no constraints. Mieske (PSO) comments that for the operations it is important to keep the observing skills in the community. Moreover, users can make better proposals if they understand how things work. **Prof. Cioni (DE)** inquires whether ESO would recommend a VM/SM quota. Patat (OPO) confirms that this is technically possible. **Dr. Bouché (FR)** suggests requiring that users have observational experience to use the SM, but **Prof. Caputi (NL)** disagrees bringing up examples of space telescopes. Romaniello (BOD) also notes that ALMA is fully operated in SM, and wonders why, from the Committee's point of view, increasing VM quota would be desirable. **Prof. Cioni (DE)** remarks that the problems encountered when observing in sub-mm and optical are different, and direct experience at the telescopes may help. Ivison (DSC) notes that having visitors is also beneficial for the health of ESO and growing the future experts that could support operations. This is also supported by the **Director General**.

**UC40.R.08: to check for and/ or enable users to find possible conflicts of targets between approved and/ or carried-over programs and newly proposed programs.**

This recommendation touches upon the policies that regulate the access of information for approved programmes. Possible policy changes will be reviewed. Any such review/consideration would need to consider that making available information on targets that have been approved (but not yet observed) could again give unfair advantage to people who then could apply to observe them at other facilities.

Discussion: **Prof. Cioni (DE)** asks for reassurance from ESO that GTO programs are allowed to reserve targets only for specific time, and not twice as many targets as are observable. Ivison (DSC) reassures that this is already ESO's policy. Rejkuba (USD) remarks there has been only one single exception to this.

**UC40.R.09: to explore the possibility of increasing the number of participants or occasions for workshops/schools that are highly successful and oversubscribed.**

For most workshops the acceptance rate is very high, meaning that almost all are accepted to attend. The SOC are attentive in terms of the diversity (including seniority) and guidelines for workshops organization reflect that. ESO organized several schools and hands-on workshops recently: e.g. Observational School in La Silla and NEON Archive School in Garching in 2016; APEX-ALMA Band 5 workshop and VLT School in 2017. Such schools and workshops are part of ESO activities, which have to be balanced with programme and operations demands in terms of resources.

Discussion: **Prof. Cioni (DE)** acknowledges that such events are regularly taking place, and as De Breuck (APEX) recalls the APEX+ALMA workshop, she asks about the oversubscription of that workshop. De Breuck (APEX) replies that about 60 people applied and could be included, ensuring a healthy participation rate.

**UC40.R.10: to improve transparency of the OPC selection process (sometimes grades do not correspond to comments) by feeding back to the users the individual comments of panel members, together with the consensus comment from the panel.**

In the current implementation, the Panel Chairs (and, in the case of Large Programmes, the OPC chair) are responsible for checking the integrity and the consistency of the comments sent to the PIs. In addition, there is an official channel via which PIs can ask them to give more information if there is an ambiguity or discrepancy between a proposal science case, ranking and the panel's comments. ESO is strongly against distributing individual comments, as this defeats the whole purpose of a panel discussion, which is behind the consensus report and the final rank that is sent to the PI (and of course used when preparing the long-term schedule).

**UC40.R.11: to allow the identification of moving targets (solar system) in the archive by taking into account their ephemerides.**

The recommendation was included in the requirements for the upgrade of the Science Archive Facility user services. It will likely not be part of the first release, though, because of higher priority services of more general interest and impact, including several suggestions from UC39. The first release is scheduled for Q1 2018.

Discussion: **Prof. Cioni (DE)** is pleased to see this included. Romaniello (BOD) emphasises that in the first release of new archive services moving target are not included, because footprints need to be defined first. The next release will be able to include moving targets identification.

**UC40.R.12: to advise the users via the Call for Proposals to provide, in case of resubmissions, sufficient clarity to the comments received on previous evaluation(s).**

This is already addressed in the Call for Proposals (CfP), Section 1.2 Important reminders and Section 2.2.1 ESOFORM Important notes (pages 8 & 14 in the P99 CfP). In general, the points made by the OPC should be addressed in the Scientific rationale, with explicit mention and reference to the OPC feedback. In addition, this can be signalled in the Special Remarks box (in the current implementation). If the UC thinks this would be useful, ESO could make this more explicit in the newsletter that announces the release of the CfP.

Discussion: **Prof. Cioni (DE)** notes that a section in the proposal where the user could add this information may be useful.

**UC40.R.13: to add to the Call for Proposals the statistics of the over/ under subscribed right ascension range(s) for all the instruments including APEX.**

It is assumed the request refers to telescopes (and not to instruments). In this case, the oversubscription averaged over the last 5 semesters (on an even/odd basis) for non-APEX telescopes, is already available:

<https://www.eso.org/sci/observing/phase1/p99/pressure.html>.

Given that, as part of the extension agreement, the instrument suite of APEX will be upgraded (and ESO's share increased to 32%), we propose to include a general overview of the LST pressure on APEX at that moment (starting P101 in 2018). Because of scheduled major telescope maintenance activities, P100 at APEX will end 3 months earlier than usual, making an LST pressure plot based on previous even periods unreliable.

Discussion: De Breuck (APEX) remarks that a new generation of instruments will come soon, so it is difficult to implement this for now – the available instruments and time allocation (ESO's share) will change. In general, the Galactic Center is an oversubscribed target. **Prof. Cioni (DE)** stresses that statistics per telescopes will be sufficient.

**The UC recognizes the effort made by ESO on the following aspects and would like to recommend their continuation:**

**UC40.R.14:**

- To provide cookbooks and/ or video tutorials for data reduction for all instruments;
- To reach the community % of females in ESO advisory bodies (where ESO has control over selection);
- To guarantee a quick reply to DDT proposals;
- To support all critical software (data pipelines, Phase 2 preparation software) on both Linux and MacOS, and to provide detailed installation guidelines for both;
- To engage the UC in the development and testing of the new Phase 1, and Phase 2 tools.



On cookbooks and/or video tutorials: A first draft Reflex video tutorials were produced and are available at: <https://www.youtube.com/channel/UCCq4rxr30ydNyV94OWmLrMA> (or search "ESO reflex" on YouTube). Work is ongoing on cookbooks that include best practices on data reduction for different instruments. Furthermore, as part of the April release of the pipeline kits there is a new release of the FLAMES GIRAFFE workflow with an updated cookbook/tutorial as well as a thoroughly revised cookbook for KMOS. The latter includes a step-by-step description of the data processing sequence aimed at non-experienced users, as well as a detailed description of the most important processing parameters geared towards optimizing the output data products. Telluric correction, which is, of course, critical in the infrared, is also dealt with in some detail, with practical examples on how to optimize the use of molecfit. The documentation of molecfit was also improved, with hands-on example on, e.g. X-SHOOTER.

Gender balance in ESO advisory bodies:

In OPC and Panels: the female/male fraction (30/70) is fully consistent with that of the PI community (see [Ferdinando Patat \(OPO\) 2016, Messenger 165](#)). The Observing Programmes Office is very proactively promoting female participation and has the 50/50 balance in its goals. For P99 the gender balance is 33/67.

In the UC: Currently the UC female fraction is higher than 50%, exceeding the community fraction of female astronomers. It may fluctuate from year to year, depending on candidates proposed to represent the country in the UC.

In the STC: the female/male fraction (37/63) is fully consistent with that of the community or even possibly slightly higher considering the fraction of senior members of the astronomical community in this committee.

On response time-scale for DDT proposals: The median time for replies is 9 days (including weekends). The aim for ESO is to respond within 7 days. The urgent requests, requiring shorter response timescale are handled accordingly and, when needed, responses can be and were given within a day of submission.

On MacOS software support: Data pipelines and Reflex are publicly available for both Linux and MacOS. Installation is provided via RPM/MacPort packages and via command line scripts. Detailed instructions are available at [www.eso.org/pipelines](http://www.eso.org/pipelines).

All observations preparation software (Phase 1/Phase 2/ETCs) is available for Linux and MacOS, except the observation preparation for some of the FORS2 observing modes (those requiring FIMS) and the MOS observation preparation for VIMOS. The FLAMES preparation software (FPOSS) is now available both on Linux and MacOS. Detailed installation guidelines are provided in all cases.

All the tools for upcoming instruments are planned to be platform independent.

Phase 1/Phase 2 tools development and testing: ESO presented the status of the tools at the UC meeting. There is still a plan to engage the UC to provide feedback. What needs to be clear is that ESO will not be receiving feedback from single users, but unified users' view channelled through the UC. The recommendations will have to be based on general needs, and not on single-person tastes/preferences.

Discussion: Dr. Absil (BE) reports that some users were not satisfied with response time for DDT requests, particularly for transients. Patat (OPO) confirms that ESO aims to improve the response time as stated in the reply to the recommendation. OPO and PSO are discussing the implementation of a new procedure, in which the urgency of incoming DDTs is assessed shortly after their submission, and the appropriate urgency level is flagged. This will be most likely implemented as of P101.

**The UC has also identified the following minor issues:**

**UC40.R.15:**

- **The computers in the Paranal visiting astronomer rooms run under “old” versions of the operating systems;**
- **The choice of afternoon breakfast for night workers is limited;**
- **The bed sheets in La Silla are not changed weekly;**
- **There are no postcards of the observatory;**
- **It is difficult to find the transfer bus at the Antofagasta airport;**
- **The Skype video call from the guest house is slow;**
- **Some telephones in the La Silla dormitories do not work.**

Paranal related points: Computer replacements in the visiting astronomer offices were budgeted for 2017, but will be put on hold to give preference to computing infrastructure in the control room. Instead, it is expected that with

the roll out of the new web-based p2 tools for Visitor Mode the necessity for visiting astronomer offices and computers on Paranal will decrease, because those will not be necessary anymore for preparing and sending OBs to the control room. The plan is to keep two (instead of four) visiting astronomers' offices plus a large visiting astronomer's meeting room with a couple of machines, for which the library room in the Residencia will be refurbished. The two visiting astronomers' offices freed up will be re-assigned to the ELT project.

Afternoon breakfast indeed has more limited choices available, by design, given the lower demand for afternoon breakfast vs. the preparation for the evening dinner. However, the selection is still very reasonable including cereals and a selection of fresh fruit and juices. The location of the bus at Antofagasta airport is indicated to everyone by the person with the 'ESO' sign waiting at the airport exit for the passengers.

La Silla related points: it is hard to comment without knowing the exact dates related to reported problems. However, the one reported telephone problem was fixed soon after the End of Mission report was received. The bed sheets are changed for each new visitor, or weekly for long runs. The best way of notifying about these problems is in End of Mission reports, which are all read and any reported issue is followed-up and corrected as fast as possible.

Postcards of the observatory are available in the ESO online shop: <https://www.eso.org/public/shop/>

Guesthouse network speed: there is an ongoing project to replace the old IT equipment. It is expected that the new equipment is in place in the second part of 2017.

Discussion: **Prof. Cioni (DE)** is pleased to see that ESO asks for user feedback to improve its systems and finds it constructive. She acknowledges that lots of software is available, and that minor issues are solved. She is also satisfied with ESO's action on the problem of gender biases.

### 13. GENERAL DISCUSSION

This part is grouped according to broad themes that were discussed during this session.

#### CRIRES+

**Dr. Kausch (AT)** inquires on the status of CRIRES+. Mieske (PSO) informs that the current schedule foresees dismounting of VIMOS around 20<sup>th</sup> of March. ESO expects to have CRIRES+ on sky in P101.

#### Phase 1 and Phase 2 upgrade projects

**Dr. Zapatero Osorio (ES)** asks for updates on the timescale of Phase 1 upgrade. Patat (OPO) explains that the whole system will undergo a major change. For instance, there will be no latex ESOFORM, but rather a web based interface. Many new functionalities will be included at the proposal submission stage, such as a target visibility tool, the possibility to store/access preliminary versions of proposal, and much more. It will be a radical change that is hard to describe in a few words. The time scale for this change is several years. **Dr. Zapatero Osorio (ES)** remarks that this is too long. Bierwirth (DMO) notes that the goal is to improve the usability for both the community and the referees. The interface development was started, but the need to integrate Phase 1 + Phase 2 + ETCs presented a complexity for the infrastructure that had to be addressed carefully to keep the flexibility for future changes as well. The User Portal will also need to be extended or rewritten. Hainaut (DMO) stresses that a reason for the delay is the need for an integrated system, where the information is consistently passed from Phase 1 to Phase 2, including also feasibility assessments carried out by Paranal staff. Additional functionalities will be included, such as notebooks and excel sheets for notes, the capability of saving ETC runs, making all assumptions used for the ETC transparent. Also, the complexity of each instrument needs to be considered. Many things have already been done and it is not a large delay considering the scale of the project. **Prof. Smartt (UK)** remarks that a timescale of 3.5 years is surprising, recalling the impression he got from the last year of the order of 1-2 years. He wonders what kind of message to give back to his users' community. Sterzik (DMO) says that ESO never stated that it would take 2 years. ESOs goal and commitment is a future-proof and integrated system, in which Phase 1 is fully embedded in the end-to-end data flow. It is much more than just getting rid of latex. While it is unfortunate that ESO cannot deliver a product yet, he reassures that work is actively ongoing, and that 3.5 years is a conservative estimate. ESO focusses and delivers tools in a prioritised way, as well as considers ELT operations coherently. Users will need to be patient, but will receive a powerful tool. A demo showing some functionality of the new system could be prepared. **Prof. Cioni (DE)** suggests announcing the upcoming Phase 1 upgrade in the ESO newsletter, including the expected timeline. **Dr. Bouché (FR)** suggests not to attach a timeline, and wonders whether a single large release could be risky. He adds that possibly not enough resources are

available. Bierwirth (DMO) reassures that the Phase 2 upgrade is on its way and includes the state of the art technology development. This lends confidence that the same technology can be used for the Phase 1. A step by step introduction of the new Phase 1 is not possible for technical reasons. This is a completely new system and requires a binary switch. **Dr. Absil (BE)** asks whether the community was involved in specifications for the Phase 1 upgrade, and Prof. **Cioni (DE)** adds that ESO has collected feedback from the community for this purpose. Sterzik (DMO) confirms that users' feedback is included. However, the feedback from the users' community affects mostly the front end of the upgrade, which is a small part of the large project. Ivison (DSC) apologizes on behalf of ESO for the promises on the timescales of the Phase 1 upgrade made in the past. **Prof. Smartt (UK)** invites the UC to reconsider its recommendations based on the current timeline and to rethink the UC poll. Sterzik (DMO) does not think there is a need to apologise, because there is a clear plan and work ongoing, but he agrees with the suggestion to inform the community about the current plan.

**Prof. Smartt (UK)** inquires on the status of the Phase 2 upgrade. Bierwirth (DMO) recalls that web based p2 is operational for VM and designated VM on all Paranal telescopes, and will be extended to SM from next year. After that new functionalities can be added, including for example compatibility with Phase 1 and ETCs.

#### Photometric calibration of Z and Y bands

**Prof. Cioni (DE)** notes that the NIR photometric calibrations are mostly based on 2MASS, but Z and Y bands are not included. She asks whether there is a plan to improve calibrations. The NIR data in the archive are not fully characterized and different data sets, coming from different imagers (e.g. HAWK-I, VIRCAM) cannot be easily combined. She asks whether it will be possible to have a NIR calibrated photometric system which is consistent at least within ESO. Mieske (PSO) remarks that he has recently become aware of this issue, and that ESO will ensure appropriate calibration data are taken before VIRCAM will be decommissioned. Rejkuba (USD) thinks that there could already be suitable data in the archive. Y and Z-band observations of 2MASS touchstone fields are taken every night as part of the calibration plan, and the VVV public survey had specifically designed observations aiming to calibrate Y and Z photometry for their fields. **Prof. Cioni (DE)** remarks that a study of all VISTA data by CASU concluded that archival data is not sufficient for this purpose. Romaniello (BOD) comments that such specific feedback is very constructive and welcome.

#### Timescales and properties of feedback on WGs

**Prof. Cioni (DE)** asks what is the expected timescale for the UC to give feedback on the working groups' reports and whether UC should comment on the current recommendations or give some new ones. Ivison (DSC) emphasises that the most important thing is to obtain a coherent input. The feedback will be most welcome on the current recommendations on a timescale of several weeks to 3-4 months. **Dr. Zapatero Osorio (ES)** remarks that while the report of the Working Group on Data Management is public, the Time Allocation Working Group report is not yet public, and asks whether this can be shared. Ivison (DSC) notes that the Council did not see this document yet, and will meet in June. After that this document can be made public. ESO's intention is to make these documents public as soon as possible. Rejkuba (USD) notes that the Time Allocation WG report is public on the STC meeting page. **Prof. Cioni (DE)** reports that the UC wonders how ESO will process the feedback, and whether ESO asks for feedback from the UC or from the whole community. Ivison (DSC) answers that the UC represents the community, and can in this case provide feedback for the whole community.

#### ESO OPC/ALMA TAC feedback

In view of the users' complaints on the ALMA TAC feedback and of the high load on ALMA TAC panel members, **Dr. Absil (BE)** wonders if there is a plan to appoint a Time Allocation Working Group for ALMA, as was done for ESO. Andreani (EASC) reports that there are lots of discussions, but for now ALMA will keep the current system, although likely not sustainable on the long term. Suggestions for changes so far were rejected, but soon new solutions will be needed. **Dr. Beltran (IT)** complains about the consensus report for ALMA. She suggests that the TAC will have an additional half day or more to check the consensus report, and not only the individual comments to a proposal. Andreani (EASC) notes that this year the chair persons received guidelines to go through the consensus reports. However, the results depend sometimes on the chair. **Prof. Cioni (DE)** comments that increasing the TAC time is easy to implement but it costs more. Ivison (DSC) remarks that the quality of the consensus report is perhaps not so much affected by the lack of time, but rather from a more random factor brought by the stiffness of the system, which requires specific proportions for countries, gender, etc, and therefore the role of the chair is fundamental. The ability to write a good consensus report varies from person to person. **Dr. Beltran (IT)** comments that the chair is indeed important, but in the OPC the panel members review the consensus report,

while this is not happening for ALMA. **Prof. Cioni (DE)** wonders whether it would be reasonable for ESO staff to read the consensus reports. Patat (OPO) replies that it not possible to review the consensus report without reviewing the proposals, a task that cannot be placed on ESO staff. **Dr. Zapatero Osorio (ES)** comments on the different approach of the ALMA TAC and the OPC. For ALMA in addition to the comments, both negative and positive, there is a report with possible improvements. In the OPC this last part is missing. It seems that complaints arise from the recommendations for proposal improvement, and therefore she suggests removing them. She quotes a comment that “panel members are not intended to write proposals for users”. **Dr. Dessauges (CH)** reassures that the system in Cycle 4 has improved compared to previous cycles, because in Cycle 4 the comments were written by the whole panel. **Dr. Zapatero Osorio (ES)** agrees and prefers how the ALMA TAC is structured better than the OPC, where only 2-3 panel members read a given proposal. She suggests that all members of the panel read the proposals, because this makes for much more rich discussions during the panel meeting. Patat (OPO) points out that all panel members on the ESO OPC are already required to read all proposals and grade them before the OPC panel meeting. In fact, the working group recommends going to the opposite direction where not all panel members read all proposals, in line to what is done at other comparable facilities (HST).

### Survey of non-publishing PIs (SNPP)

**Prof. Cioni (DE)** would like to know more about the results of the SNPP survey. Patat (OPO) answers that a first report can be found in the Time Allocation WG report, which will be followed by a Messenger article. In summary, the reasons given for not having published a refereed paper are: 1) 24% are still working on the data, and this is indeed consistent with the delay in publication; 2) 10% report insufficient data quantity, although completion fraction was high by construction of the survey; 3) 13% insufficient data quality; 4) 12% inconclusive or no results; 5) for only 2% the science case lost interest. **Prof. Cioni (DE)** asks whether lack of resources plays a role. Patat (OPO) answers positively; ~10% of the users lacked resources, for example a postdoc that left. Additional factors may be related to the availability of reduced data and the data reduction procedure becoming more complex. **Dr. Absil (BE)** asks if ESO followed-up on the insufficient data quantity and data quality. Rejkuba (USD) recalls that the survey targeted only VM and A-rank class SM runs that had at least 1 science frame in the archive for each 1h of time allocation. This does not mean that all programmes were completed, but that there was substantial data taken. The percentage reporting insufficient data quantity is consistent with the completion fraction, and the quality assessed from the distribution of QC grades. Mieske (PSO) comments that the situation seems complex. The quality assessed by the user is consistent with the internal grades assigned by ESO, but there are no clear trends with type of observing constraints or observations. **Dr. Kausch (AT)** asks whether it would be helpful for the ~25% who are still working on the data to be directly provided with ready-to-use science data. Romaniello (BOD) remarks that such products are already available for some instruments, e.g. X-SHOOTER, UVES, etc., but not for all instruments. He points out that it typically takes months for users to download their data for the first time, and the reasons are not clear. Patat (OPO) adds that only 3% of users report inadequacy of ESO tool as the cause for non-publication, so that this cannot be the problem. **Dr. Kausch (AT)** suggests that as the data reduction becomes more complex, USD increases its support to the users, because it is easier for ESO to reduce the data than for inexperienced users.

**Prof. Puzia (CL)** suggests that many users pointed out to be unaware that their data were taken. Rejkuba (USD) reminds that it is possible to receive an e-mail notification every time an observation is taken for the users' observing run. **Prof. Cioni (DE)** notes that this requires that the user subscribes. De Breuck (APEX) mentions that a third of APEX data is downloaded within 2 days, and perhaps the notification email should be the default. Romaniello (BOD) reminds that the email notifications were implemented following a past UC recommendation, which specified that it should not be the default option. He remarks that PIs often prefer to reduce data themselves, while the archive users are more inclined to use the already reduced data. While 20 years ago the SM was not trusted, now 90% of users prefer it. We may see a similar transition for the data products. **Dr. Sobral (P)** asks how other facilities, such as Keck or Gemini, compare in terms of publications. Sterzik (DMO) answers that it is hard to find these numbers. The fraction of HST publications appears to be somewhat higher, but from ground-based observatories it seems consistently ~50-60%, so the low publication rates appear to be a general feature, at least qualitatively. The VM is doing well with publishing, perhaps because the visitor may be more engaged, and this is one additional value of the VM. **Dr. Dessauges (CH)** is curious about comparison in publication rate between ESO telescopes and ALMA. She also wonders whether face-to-face contact with ARCs and availability of reduced data help. Zwaan (ARC) answers that 90% of ALMA data is published within 4 years. Sterzik (DMO) adds that a proper comparison with ALMA should be within the same early days of facility operations, when publications are coming out fast. **Prof. Caputi (NL)** suggests having a system where instead of expecting ESO to reduce all data the user could ask ESO for help with the reduction when needed. Patat (OPO) remarks that from the statistics this may affect only 10% of cases of non-published data. Hainaut (DMO) asks how often USD receives requests for help with data reduction. Rejkuba (USD) reports that of the order of 1000 tickets are received from the users' community per year, and of these ~10-15% are for data reduction. These were increasing slowly over the past ~10

years from less than 100 to ~180 tickets/yr. In addition, there are requests for help with the pipeline installation. Romaniello (BOD) recommends ESO to be faster at answering tickets, to prevent the user from losing interest. He remarks that ESO is currently working toward this. He further comments that it is important to lower the expertise threshold to allow less expert users to reduce data with Reflex, and that ESO and the community need to improve the way to transfer the expertise among users.

#### Consortia pipelines and ESO involvement

**Prof. Cioni (DE)** asks how early ESO gets involved in projects when consortia develop new pipelines. Ballester (SCS) answers that the standards for development are well defined and documented and specifications agreed in the beginning of each project, but ESO needs to ensure that the deliverables are fulfilling to specifications. Sterzik (DMO) remarks that ESO is normally involved early, and typically has positive interactions with the consortia. For SPHERE the deliverables were not up to standards, but for many other complex facilities this worked well, such as MUSE or GRAVITY. **Prof. Cioni (DE)** asks, in the context of future MOS facilities, which level of data reduction, a first level or advanced data products, should be developed by the consortia, and whether ESO has a policy on this. Romaniello (BOD) confirms that a policy exists; the consortia write and deliver the pipeline as part of the project, similarly to the delivery of a mirror or a mechanical part. The rationale is that the consortia know best how to do it and therefore are in charge. Ballester (SCS) comments that in practice ESO provides up to ~10% of effort in developing the pipeline working with a consortium. If a consortium has problems to deliver, it is difficult for ESO to replace the missing resources. **Dr. Absil (BE)** asks for clarifications on whether data reduction is expected to be at level 2 science ready or a Phase 3 level. Sterzik (DMO) answers that in the past pipelines were delivering Quality Control level, not the Phase 3 level. For specific instruments, such as complex 3D or MOS, ESO aims to get the Phase 3, or general higher data products. **Prof. Cioni (DE)** reminds that users would like pipelines that do everything, up to the final science stage, so it is important that things develop in this direction. Sterzik (DMO) points out that this is already sometimes asked from the consortia, but it depends on the project. **Prof. Cioni (DE)** asks whether any science analysis could be included in some pipelines, such as velocities or abundances. Hainaut (DMO) points out that ESO expertise is on the instruments and not in the diverse science cases, and Castro (SCS) adds that the pipelines are not data analysis software such as CASA is for ALMA or in the past IRAF and MIDAS were for optical/near-IR data. **Dr. Kraus (CZ)** comments that there may sometimes be a gap between using the pipeline to reduce the data and knowing how to use the product, for example how to handle 3D data cubes, and the information on this is limited. **Prof. Bech Christensen (DK)** recommends continuing to promote workshops to educate users on data reduction.

#### 14. EAVESDROPPING AND NEW PHASE2 DEMO

**Steffen Mieske (PSO)** connects to Paranal for a live demo featuring eavesdropping and web based p2 and visitor Observing Tool (vOT).

**Dr. Absil (BE)** asks if eavesdropping requires connection via skype for the communication with the astronomer. Mieske (PSO) confirms that this is the case for now, but other platforms are possible. In principle eavesdropping can also be used interactively, which is particularly relevant for technical tests. It is currently not foreseen to do any kind of regular remote operation.

#### 15. CLOSED SESSION

*No meeting minutes are taken for the closed session.*

#### 16. SPECIAL TOPIC: “Multi-Object Spectroscopy”

##### *16.1. ESO Introduction*

**Bruno Leibundgut and Vincenzo Mainieri (DSC)** introduce the Special Topic with a presentation on the status of ESO MOS instruments and plans for the future ([attachment 7](#)).

#### Discussion:

**Prof. Cioni (DE)** asks about MOSAIC design and timescale for MOONS and 4MOST. Mainieri (DSC) reports that the MOS E-ELT instrument is in Phase A, so its design is not final and can change. Current MOSAIC specifications have a mix of fibers and fiber-fed IFUs. MOONS is meant to be shipped in 2020 and be fully

commissioned in 2021. 4MOST complementary facility in the north hemisphere WEAVES will go on sky first, but 4MOST will have larger multiplexing. The current schedule foresees arrival at the telescope at the end 2021, beginning 2022.

### ***16.2. ESO Introduction***

**Richard Ellis** (DSC) reports from the MOS Working Group ([attachment 8](#)).

#### Discussion:

**Prof. Smartt (UK)** is curious about comparison with the PFS. Ellis (DSC) answers that PFS is not a dedicated facility. Also, it will cover no transient science, and will have a smaller FOV. PFS will have lower spectral resolution than the proposed ESO facility but will go farther into the IR. The most complementary facility is the Mauna Kea Spectroscopic Explorer. **Prof. Bech Christensen (DK)** asks whether there is any competition with the Giant Magellan Telescope. Ellis (DSC) remarks that the future FOV of the ESO MOS facility will be unique. While the GMT will have range of instruments, but not a dedicated MOS, this is competitive. Therefore, the parameter space must be ambitious, meaning a large FOV, collecting area, and number of fibres. **Prof. Cioni (DE)** asks about the wavelength range and how far into IR it could be pushed. Ellis (DSC) answers that beyond 1.3 microns the thermal background is the main difficulty, and this is where synergy with MOONS comes in.

### ***16.3. Feedback from Expert User 1***

**Dr. Barbara Lanzoni** reports about the results of Cosmic-LAB Large Programmes and feedback from her colleagues on experience with MOS instruments at ESO ([attachment 9](#)).

#### Discussion:

Mieske (PSO) asks if Paranal staff was aware of offsets during SINFONI observations. **Dr. Lanzoni** says no, this was reported to User Support who then alerted Paranal and some observations were repeated. Most likely explanation is shift in guiding during an observation due to very crowded fields. Mieske (PSO) asks if USD was contacted regarding the SINFONI flux modulations. **Dr. Lanzoni** confirms that thanks to USD the modulation was recognized to be due to an undersampling of PSF. There is nothing that can be done, but it is an important issue to be aware of. Rejkuba (USD) further reports a very good collaboration with the team and states that the full analysis is under way. **Prof. Cioni (DE)** asks to have this information distributed to the community. **Dr. Lanzoni** adds that this issue affects KMOS data as well.

**Prof. Smartt (UK)** asks if Dr. Lanzoni's group used science-ready products from the archive or reduced it. **Dr. Lanzoni** reports that her group used a lot of data for the archive, but re-reduced everything. They would be happy to use more reduced data, but they were often not available at the time. Romaniello (BOD) explains that the FLAMES/UVES pipeline failure rate in unsupervised mode is too high to store reduced data in the archive. FLAMES/GIRAFFE products, however, are available in the archive. For KMOS, ESO is now exploring to correct for telluric features using 'molecfi' and then run the pipeline in unsupervised mode. He expects reduced data to become available at the end of the year.

### ***16.4. Feedback from Expert User 2***

**Dr. Christophe Adami** reports about experience on VIMOS, FORS2 and EFOSC2 for his Large Programme and several normal programmes ([attachment 10](#)).

#### Discussion:

**Dr. Beltran (IT)** asks whether the target change request was processed quickly by ESO. **Dr. Adami** answers that the request was quickly approved, but he would find it more flexible not having to ask in the first place. **Dr. Zapatero Osorio (ES)** asks why he found that VM is better than SM, to which **Dr. Adami** answers that VM was not working better, but was easier and faster, because this was at the beginning of the VIMOS project. Having experienced later both VM and SM, his opinion might change. Following on a short discussion regarding the

insufficient space in proposals, **Dr. Zapatero Osorio (ES)** recommends not including webpages link(s) in proposals, because all relevant information should be readable in the proposal itself.

### *16.5. General Discussion on Special Topic*

**Prof. Cioni (DE)** would like to know expert users' opinion on the (dis)advantages of VM vs SM for their projects. **Dr. Lanzoni** answers that VM allows last-minute changes, but is otherwise similar. For X-Shooter the VM was better because it allowed to skip acquisitions saving time. This was due to having many targets at almost identical position, situation may be different if targets are spread across the whole sky. She finds the technical difficulty to be the same between VM and SM. She thinks that for Large Programs the allowed proposal space is indeed limited, but this is also one way to select good proposals. **Dr. Adami** comments on a different VM and SM philosophies. In Europe users find SM more secure because the data are guaranteed, but he still finds it interesting/educational to go to Paranal. In the USA most users would choose the VM. Leibundgut (DSC) remarks that one of the reasons to limit large spectroscopic public surveys to VM was that the team has more control in VM. This may be better for such large investment.

**Dr. Dessauges (CH)** asks whether the 1h length limit for OBs is it still the optimal choice. Rejkuba (USD) reports that a recent study monitoring seeing stability, based on the old DIMM seeing measurements, has assessed the probability of finishing an OB within constraints if it is started at the time when requested seeing is satisfied. This study concluded that if all OBs were 1hr long and if the observer would wait to have stable conditions for ~30min before starting an OB, then we would expect a ~30% failure rate for 0.8" seeing. More loose constraints would give a higher success rate, but most requests are for 0.8-1" seeing. She further remarks that ESO does not charge the users for OB failures. Observers are using their experience and in fact the failure rate is lower than 30%, but perhaps at expense of a more conservative strategy. The longer the OBs the larger the failure rate will be, and less flexibility for starting the observation, e.g. there is limiting time to finish an OB successfully towards the end of the night or when targets are setting, or because of the change of weather. So, this study shows that indeed 1hr limit is still valid. **Prof. Cioni (DE)** comments that DIMM seeing seems quite reliable, but not all observations are done at airmass 1. She further recommends informing users about this study.

**Prof. Caputi (NL)** recommends keeping VIMOS, because it is the most efficient redshift machine. She asks about the impact of VIMOS unavailability. Leibundgut (DSC) answers that this has been extensively discussed by the STC. ESO has a mandate from the STC to recommission CRIFES+ as soon as possible, and for this one instrument needs to be removed. This must be either UVES, FLAMES, or VIMOS. VIMOS was selected as it is very resource-intensive to maintain. A study has indeed shown that VIMOS has been very efficient for spectroscopic surveys. If continued it should be mounted for at least 2 years or not at all as small programmes are not as attractive for VIMOS. Removing and remounting VIMOS is not trivial because of its size and weight. It was a difficult choice to decommission VIMOS, but given the circumstances it appeared the best solution as agreed by the STC. After decommissioning of VIMOS ESO will have a gap of 2 years before the next MOS facilities (MOONS and 4MOST) come online. **Prof. Cioni (DE)** asks whether FLAMES would be more suitable for dismounting and reinstallation. Leibundgut (DSC) comments that the fibre positioner and the fibre connections to UVES would make it very difficult to move the instrument.

Sterzik (DMO) thanks the expert users for their feedback and asks Dr. Adami to comment on the completion rate. Has the missing last 10% of the observations of one programme impacted the quantity and quality of his scientific output? This is not obvious given the high scientific return presented. **Dr. Adami** answers that this issue was related to the XXL survey, which had two aims. The main scientific goal was indeed achieved, but the second goal related to cosmology could not be done due to 10% of data lacking. Without complete dataset, the uncertainties on the selection function were too large, and therefore cosmology analysis could not be done.

**Dr. Bouché (FR)** asks whether MOS as redshift machines may perhaps no longer be the most efficient compared to IFU facilities such as MUSE. For example, MUSE observations of the Hubble Deep Field South resulted in 1,000 redshifts. Richard Ellis (DSC) reports that at the beginning his WG considered a kind of super-MUSE instrument. However, the current idea is a MOS instrument with a FOV of 3x3 sq.deg and with optical to near-IR capability. The WG study showed that MUSE-like instruments allow serendipitous discoveries, e.g. as for Hubble Deep Field, or for transient science, but the field of view is more limited. The new MOS facility will not make a revolution in this sense, but will be a complementary tool. **Dr. Bouché (FR)** asks whether an IFU instrument with a square degree FOV is conceptually feasible. **Prof. Cioni (DE)** comments that Sloan may change to a 3 times larger MUSE in the next phase, but not yet a square degree. **Prof. Caputi (NL)** mentions the option of using microshutters. **Richard Ellis (DSC)** remarks that regardless of the focal plane setup, a very large number of detectors would be needed. MUSE is surely exciting, but we still need targeted spectroscopy. Serendipitous

discoveries are important, but extremely expensive. **Prof. Caputi (NL)** asks whether keeping the spectral resolution up to ~10000 would be more feasible. Richard Ellis (DSC) confirms.

**Prof. Cioni (DE)** asks the expert users what is the most important observing capability for ESO MOS for them (comparing to Users' perspective plot from the UC Report). **Dr. Adami** answers that the most important capabilities for his group are the data reduction pipelines, the preparation of observations, and a flexible scheduling. **Dr. Lanzoni** comments that the flexible scheduling is not an issue for her group. They found that the preparation of the observations was sometimes problematic: e.g. finding guide stars of right the magnitude and color (although the PS1 survey is useful for this purpose nowadays). It is furthermore important to have a quick look of the data, to spot issues quickly. Mieske (PSO) remarks that ESO is considering the data quick look, for example by providing data sheets that summarize main characteristics of observations.

**Prof. Cioni (DE)** asks about importance of Normal vs Large Programmes and about the completion of their observations. **Dr. Adami** remarks that both are important and complementary. The citation rate is perhaps more favorable for shorter programmes, but Large Programmes have often a higher/wider science interest. **Dr. Lanzoni** comments that both Large Programmes and Normal Programmes are needed. While her SINFONI observations experienced delays, they were completed. The Normal Programmes are usually completed faster, if ranked A. Mieske (PSO) points out that, according to the citation study by Sterzik (DMO), Large Programmes are more productive and have a higher impact, in terms of citation rate. **Prof. Cioni (DE)** asks users about their view on the length of the proprietary time for Large Programmes. **Dr. Lanzoni** recalls that her group had two Large Programmes in P93 and P95, collecting a large amount of data, so one year is not so long. More time in practice could be needed, but she fully understands that the data release is important given such a large investment of telescope time. Thus, she finds the current proprietary time for Large Programmes fair. **Dr. Adami** agrees, and personally finds that the given proprietary time is short when working on the data from scratch, but the current proprietary times gives also the opportunity to exploit data from other programmes.

## 18. CLOSED SESSION

*No meeting minutes are taken for the closed session.*

## 19. RECOMMENDATIONS

**Prof. Cioni (DE)** announces the new UC chair, Dr. Absil (BE), and vice chair, Prof. Caputi (NL)

**Dr. Absil (BE)** reports overall satisfaction in the community, and presents preliminary recommendations, which are reported here including prioritization and consolidation after the meeting.

The UC has collected the users' opinions about several topics and in general regarding their experience in interacting with ESO. The UC is glad to report a high level of satisfaction of the community. Based on the users' feedback, the UC recommends ESO:

### High priority

(by order of priority)

**UC41.R.01:** to continue putting a high priority on the development, support, and improvement of **pipelines**. The ability of optimally exploiting data is a concern of ESO users. Some specific recommendations based on the UC poll are listed here:

- to improve documentation on pipelines, including on the recipe parameters in Reflex, and on the installation procedures;
- to explore how to make bug reports (issue tracker) on ESO pipelines available to the community;
- to provide information on the frequency of (future) pipeline upgrades, and to consider updating the pipelines faster following identified issues;
- to provide working optimal extraction for pipelines and all ADPs for all spectroscopic instruments (and XSHOOTER in particular), especially in the case of faint sources;
- to continue the on-going improvements of the SPHERE pipeline to bring it up to the same quality and usability as for the others as soon as possible;
- to use Gaia as a reference catalog when an astrometric solution is calculated.

**UC41.R.02:** to continue improving transparency by publicizing the following information:



- development roadmap for the Phase 1 & 2 tools;
- results of the study on the expected OB success rate vs. length (depending on seeing constraint);
- results of the study on the VM technical downtime;
- development of the eavesdropping mode (including as a means to assist less experienced visitor astronomers).

**UC41.R.03:** to accelerate the delivery of the new Phase 1 preparation tool.

There are constant and repetitive complaints from the users, and currently it is envisaged for delivery in 2020-21.

**UC41.R.04 (ALMA-specific):**

- to allow the ARC contact scientist to edit the Scheduling Blocks during Phase 2, in particular the target coordinates;
- to speed up the ticketing process, and to better monitor the quality of the answers;
- to homogenize the level of data products distributed to the users, in particular for spectral line observations where the following should be provided for each SPW: (i) map of the whole band with continuum subtracted, (ii) map of the whole band with continuum+line, and (iii) map of the continuum;
- to ensure that ALMA polarization observations requiring 3 hours or more of parallactic angle coverage for proper calibration are performed in blocks of at least 3 hours.

**UC41.R.05:** to promote the use and highlight the benefits of VM; to consider funding a 2nd visitor astronomer if (s)he is a student.

### **Medium priority**

(by order of priority)

**UC41.R.06:** to continue

- participating in country-led workshops on how to prepare ESO proposals;
- holding regular workshops/schools on data reduction, and providing **remote** connection as well as access to the tutorial sessions in online videos;
- developing video tutorials, cookbooks, etc.

**UC41.R.07:** to improve the reproducibility and transparency of observations stored in the archive by making OBs public after the observations are publicly available; to explore how to make example OBs available for various science cases that beginners can grab to prepare their own.

**UC41.R.08:** to allow for multi-cycle ToO proposals, and to consider allowing Large programs to include ToO targets.

**UC41.R.09:** to clarify the timing and scheduling of the decision process for carrying-over A-ranked proposals; to clarify the fact that **all** non-completed A-ranked proposals are carried over **by default**.

**UC41.R.10:** to calibrate the Z and Y bands of VIRCAM independently of 2MASS; to characterize all near-infrared imaging filters across ESO instruments and provide color terms for them.

**UC41.R.11: Miscellaneous**

- to provide the UC with a list of all active ESO users (from member states) to enlarge the poll participation;
- to send email notifications by default to PIs about the observation of their run(s);
- to provide suggestions to users about improving the technical side of their proposals, once they prepare Phase 2;
- to provide a wired connection for laptops at Paranal: to easily get large data sets on observers machines for analysis and bringing home;
- to offer FORS2 with the blue CCD in service mode;
- to make it an option with FPOSS fibre priorities that some targets **must** be assigned a fibre;
- to offer direct trips to the mountain if users request it, and if it is possible within the current ESO transport scheduling;
- to clarify/publicize the policy regarding charging users using the bus to go to La Silla for technical work on PI instruments/telescopes.

## 20. ANY OTHER BUSINESS

The **Director General** announces that Australia is to start discussions about a 10-years strategic partnership with ESO.

## 21. CLOSING REMARKS

The **Director General** thanks everybody for their participation and discussions. He is pleased to see such a gender diverse, energetic and young UC, and to hear that most users are well satisfied with ESO staff and products. He remarks that the prioritization of the recommendations is important to help ESO to assess what can be improved.