

Distributed User Support at ESO

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Head of the User Support Department

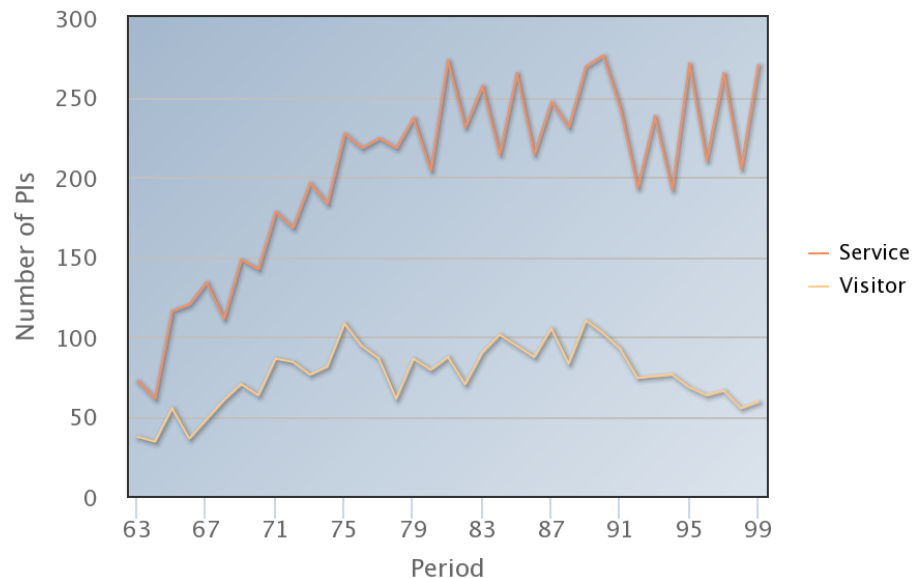
User Support Department

- Main interface to the **external users** and to the **Observatory**
 - Scientific and technical support in proposal and observation preparation
 - Proposal and observation preparation, post-observation support
 - Up-to-date status information services
 - observing queues, observation progress reports and programme management, execution problems follow-up and solution, operations metrics
 - Specification and operation of the front-end infrastructure
 - tools, User Portal, **helpdesk**, user satisfaction surveys
 - Visiting Astronomers travel
 - ESO Users' Committee
 - New instruments: Reviews, Science Verification, Advanced Commissioning



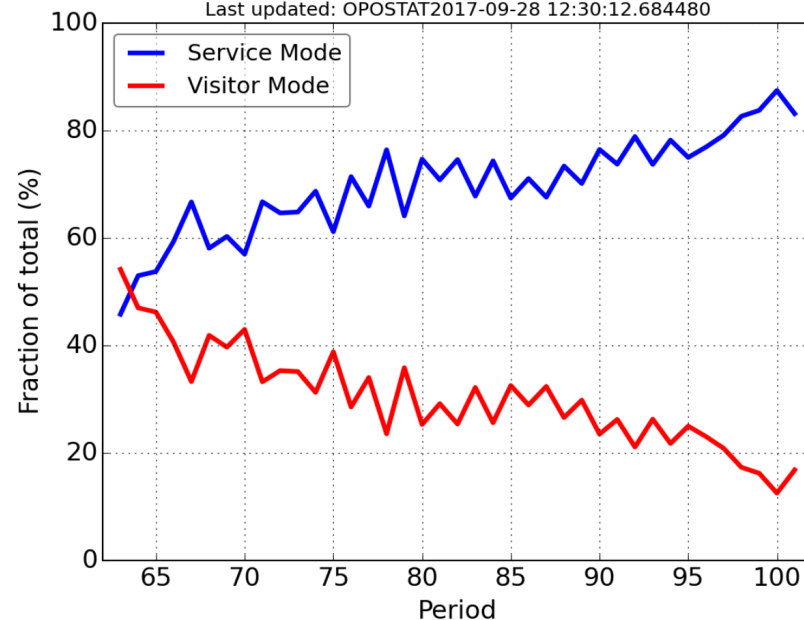
In numbers: users and proposals

Number of new PIs per Period



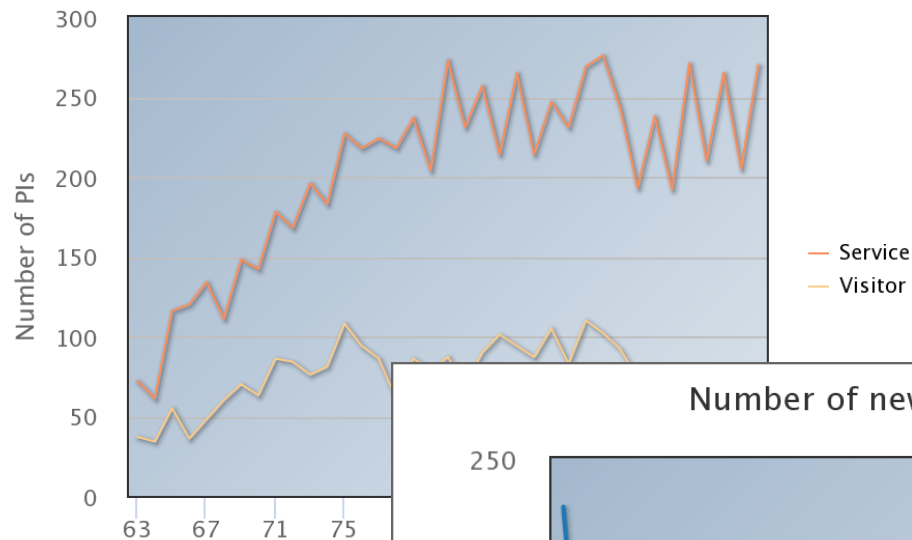
Service/Visitor request (Normal, UTs only)

Last updated: OPOSTAT2017-09-28 12:30:12.684480



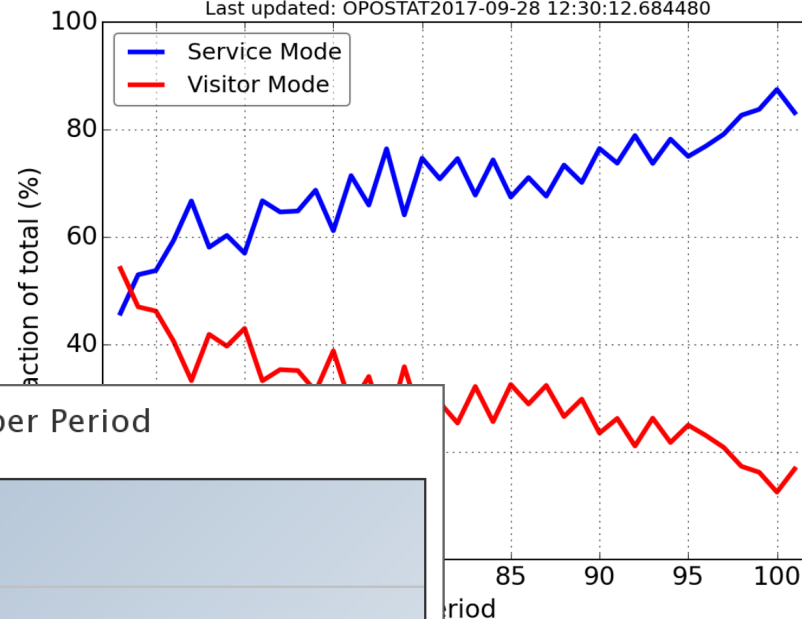
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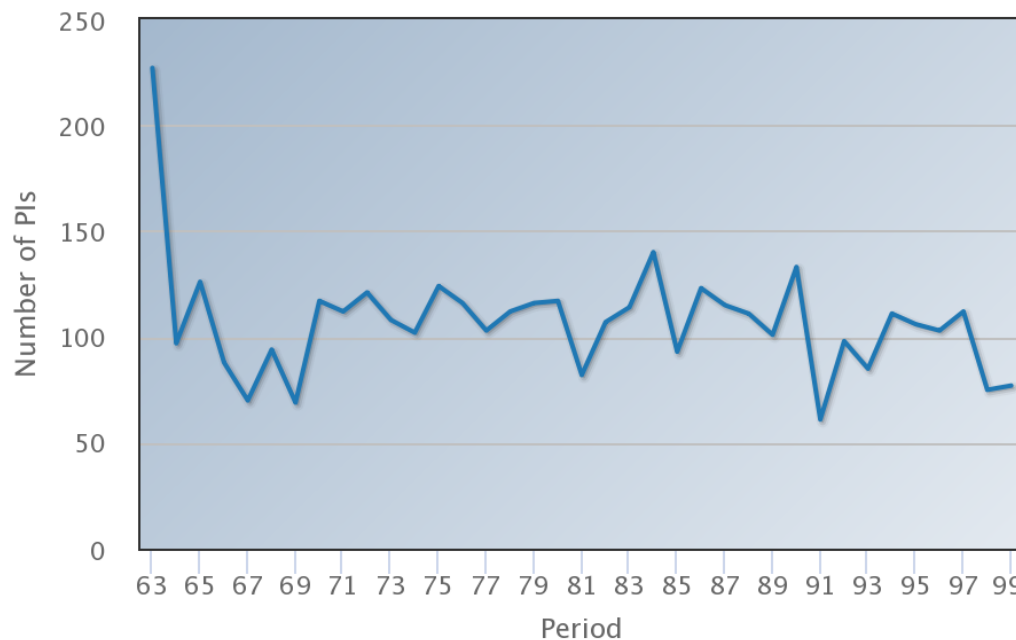


Service/Visitor request (Normal, UTs only)

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Number of new PIs per Period

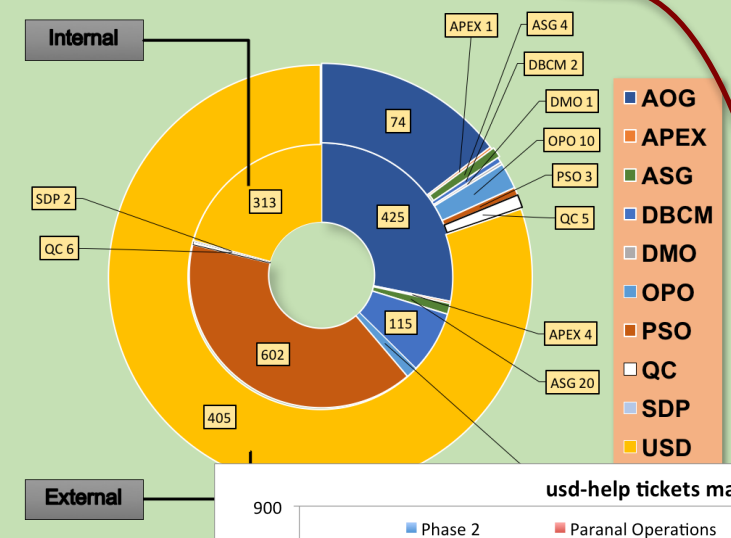


And more operations numbers

Smooth operations and support

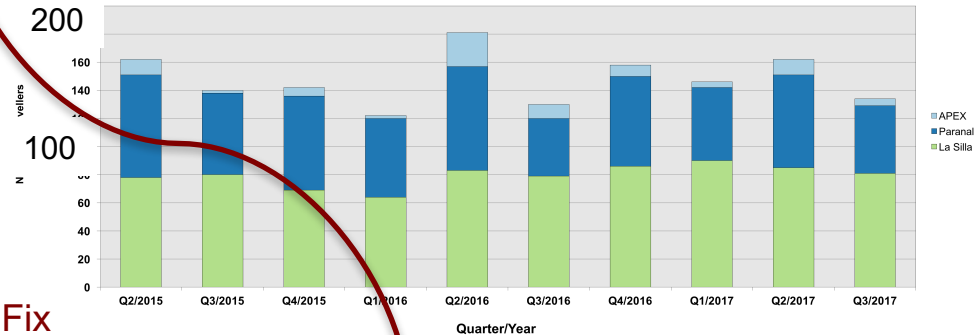
- ~900 new Service Mode observing runs per year
- 17 instruments – approx 1 new instrument/year coming to operations
- ~2500 tickets; ~300 prog. change+300 waivers; ~550 VA Travel/yr

PROP Tickets - Q3 2017



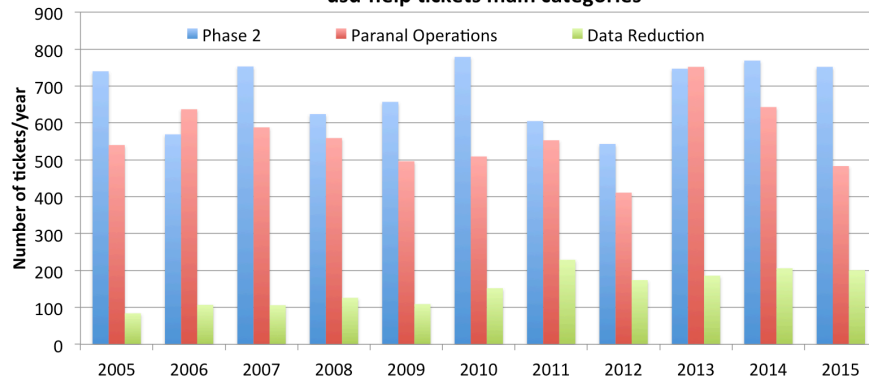
Help & Fix

VATravel - Travellers per quarter

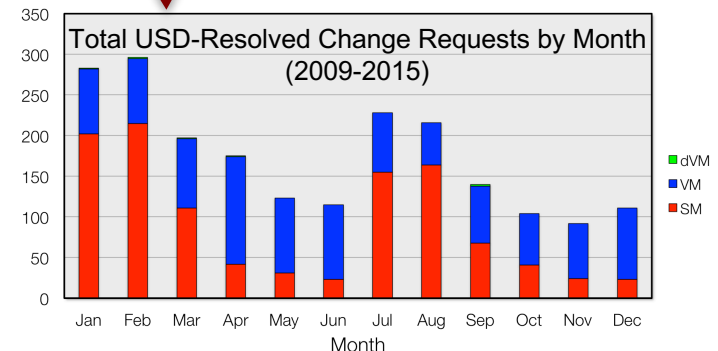


Organize & Help

usd-help tickets main categories



Flexibility





Visiting Astronomer Travel Office

A vital ancillary to ESO's Observing Model

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¹ Visiting Astronomer Travel Office ² Operations Support Group (*User Support Department*)

Abstract: The Visiting Astronomer Travel (VAT) office is an important interface between ESO and its user community. The VAT office is a part of the *User Support Department* and is responsible for organizing all aspects of travel for astronomers on observing missions to ESO observatories. The VAT office is the first point of contact for the Visiting Astronomer (VA) and continues to be the central source of information until all travel arrangements are made. Thus, the VAT office provides a high level of individual service to each traveller while ensuring that ESO financial regulations and Observatory policies are strictly adhered to at all times. There are multiple steps in a chain of events that must take place in order to ensure that the VAs make the best use of their allocated telescope time. Bringing over 550 VAs to La Silla, Paranal, and APEX observatories each year requires excellent coordination among all parties including travel and logistics teams distributed over multiple ESO sites. We present here the central role played by the VAT office in making for a straightforward preparation process and hassle-free travel for the astronomer on an ESO observing mission.

ESO Observing Model

Visitor Mode (VM): classical observing mode where the astronomer is physically present at the observatory to conduct observations. Programmes needing real-time decisions to be taken for their scientific success are allocated time in VM. Each approved VM run is allocated specific calendar nights during the observation period of a semester.

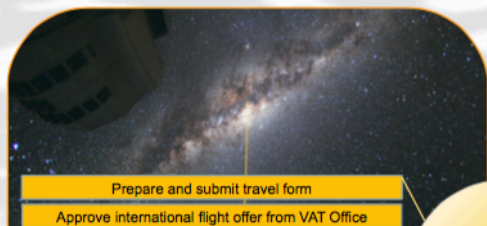
Service mode (SM): queue observing mode where the lineup of observations to be conducted is continuously updated to optimize the use of available time and the prevailing observing conditions. SM slots in the schedule are allocated per telescope for the semester. During these time slots, observations belonging to SM programmes with highest scientific priority and under the required observing conditions are carried out first by ESO staff astronomers and instrument operators.



VLT/VLTI telescopes on Paranal have VM nights and SM slots interspersed through the duration of the observing period. La Silla is fully operated in VM.

Traveller's task list

Before and after
an observing mission



Prepare and submit travel form

Approve international flight offer from VAT Office

Partners/Agencies
interacting with VA Travel Office

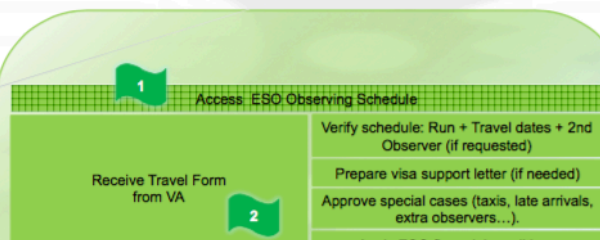
La Silla: SciOps and Logistics

Paranal: SciOps and Logistics

APEX: SciOps and Logistics

Behind the scenes

Chain of events
distributed over multiple sites



Long-Term Schedule

Service Mode Queues

Short-Term Schedule

Observation Preparation

Program Selection

Program Preparation

User Community

Observation Execution

Phase 1
Observation proposals

Visitor Mode

Raw data
Science-Grade Data Products
Phase 3
Advanced Data Products

Science Archive

Raw+Processed Data
Publication+Curation
+Preservation

Quality Control

Data Reduction

Observing programmes

Observation Blocks

Science process
Data papers
Usage statistics

Instrument quality status
Calibration Plan Feedback

Raw data

Master Calibration Frames
Science-grade data products

Interfaces and distributed support

- Science policies
- Proposals, selection, scheduling
- Software
 - Instruments preparation
 - User Portal, Observation preparation, ETCs, P2, ...
- Science Operations, Instrument Operation Teams
- Quality Control: calibrations, instrument health
- Instrument pipelines
 - software development & scientific validation
- Archive
 - Internal & External Data Products

Some of the key ingredients

■ Communication & coordination

- Weekly operations telecons
- Bi-yearly Science Operations Meetings
- Face-2-face working visits: Service Mode shifts
- Helpdesk: Ticketing system(s) – internal and external
- webpages, twiki, mailing lists – per group/area
- Reporting: internal, committees, external
- Workshops

■ Priorities, Projects & Processes (CCBs)

■ Documentation & Training

■ Standards, Rules & Procedures

■ Flexibility and science focus

Diversity and flexibility

■ Observing Modes

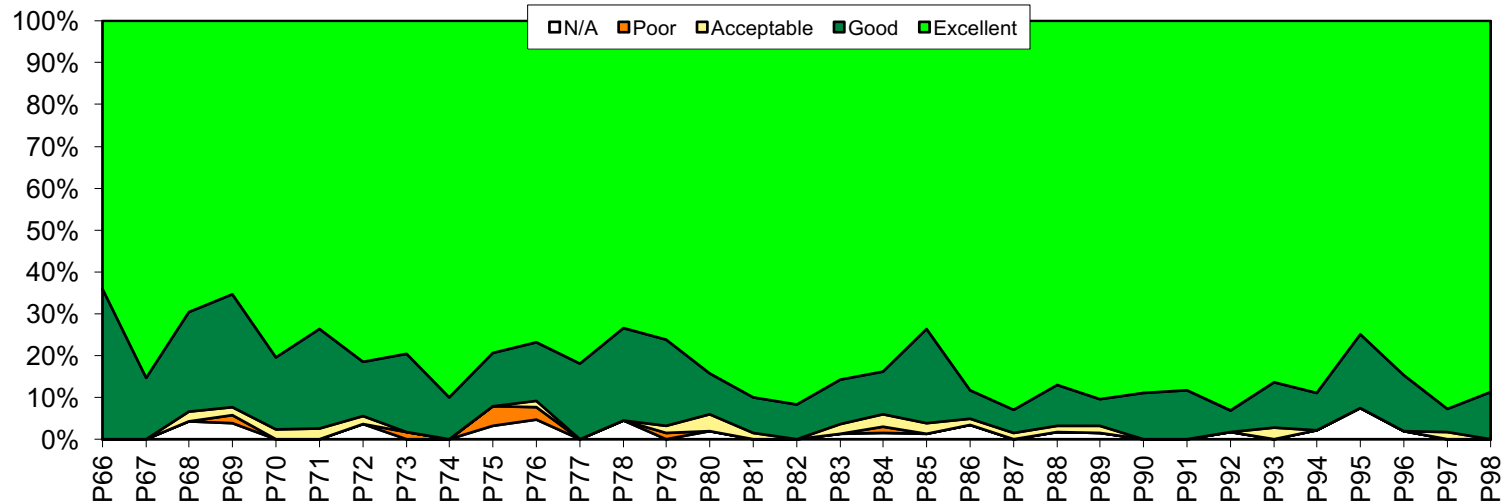
- Visiting Mode (VM)
 - Visiting Astronomers Travel
 - Support at the observatory
 - Designated Visitor Mode, Eavesdropping
- Service Mode (SM)

■ Observing programme types

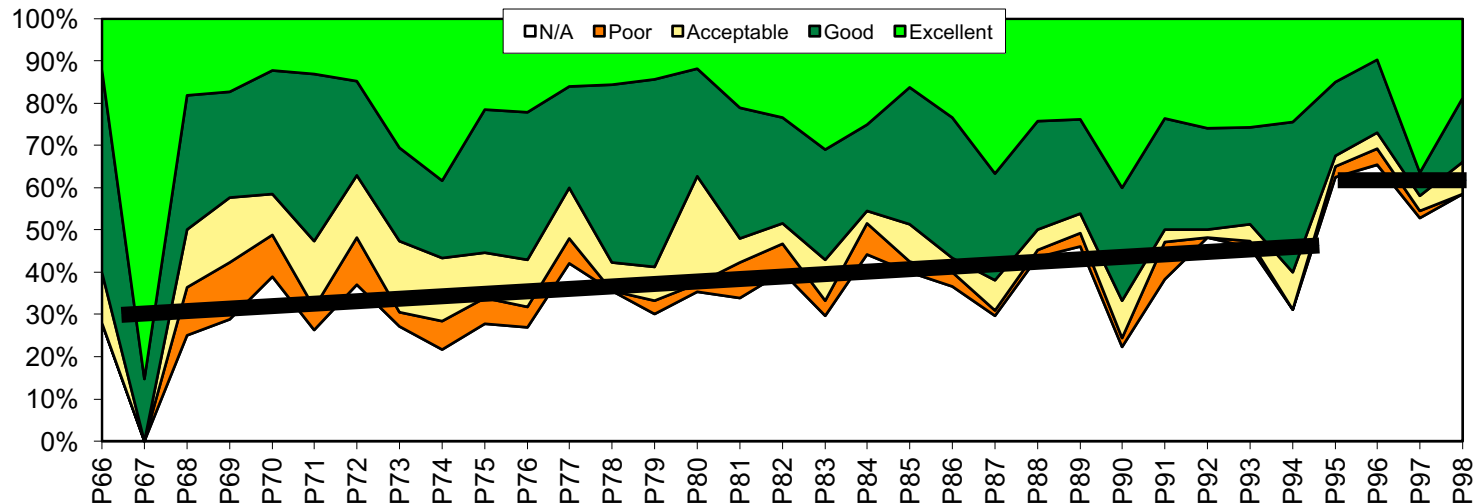
- Normal – high priority vs filler type
- Monitoring Programme – relatively small but long time
- Target of Opportunity, Rapid Response Mode
- Large Programme – 10 nights or longer
- Public Surveys – imaging, spectroscopic surveys
- Calibration Programme

Measuring Success: VM Feedback – 15 years trends

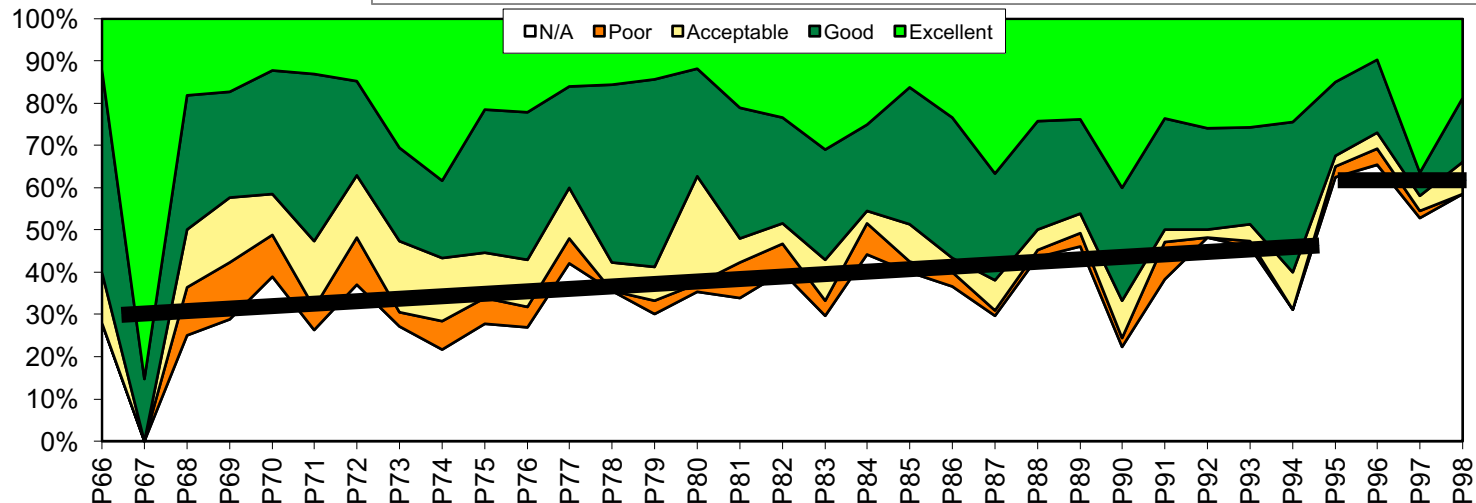
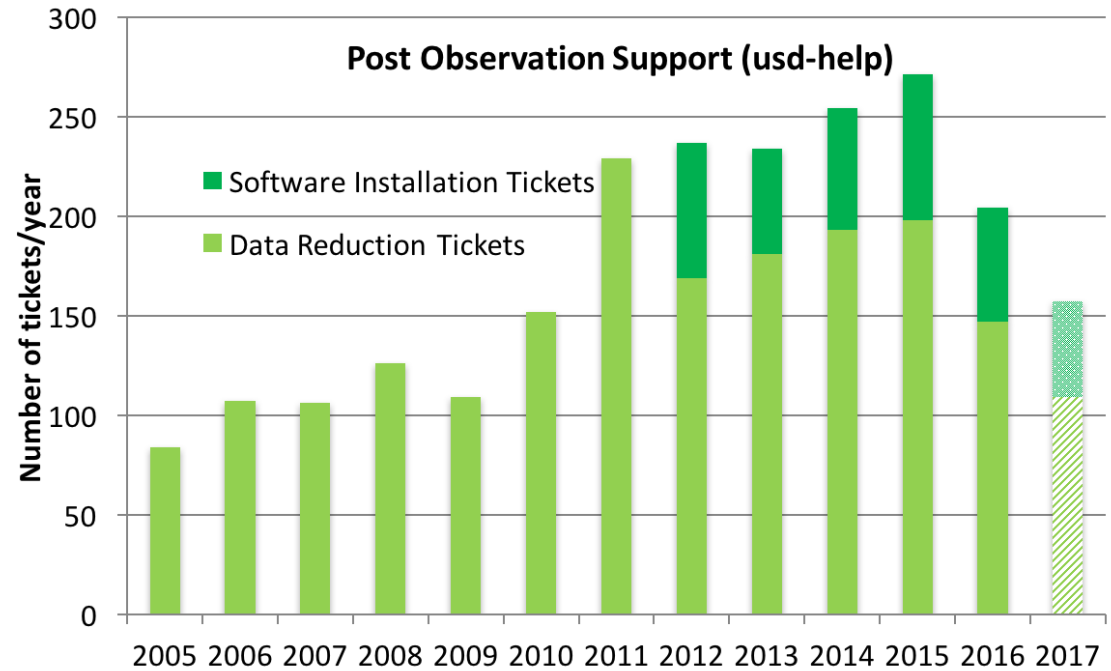
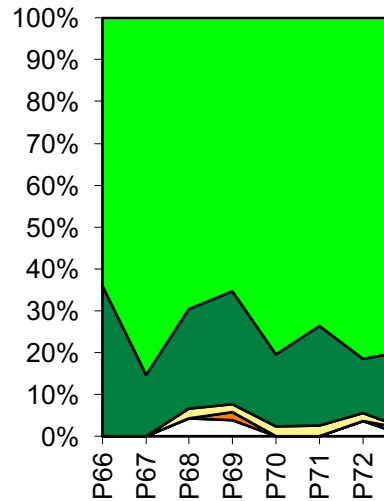
EoM Stats History - Astronomer Support



EoM Stats History - On-line Pipeline

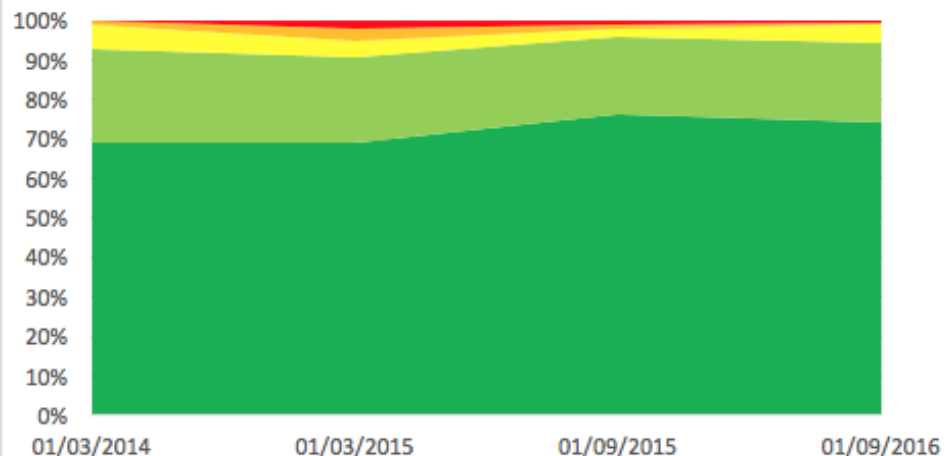


Measuring Success: VM Feedback – 15 years trends

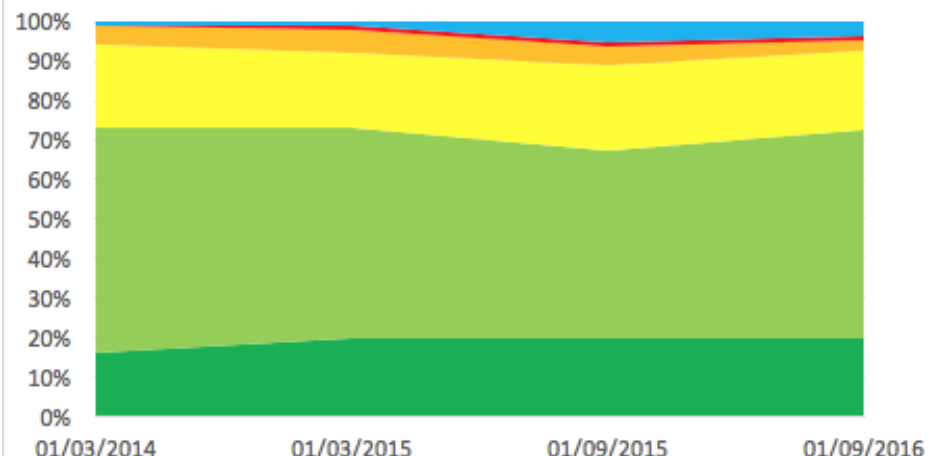


SM User Satisfaction Trends

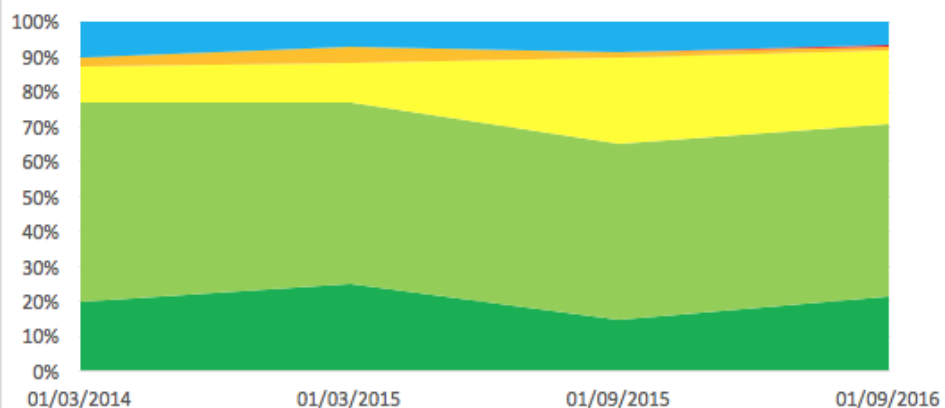
Satisfaction with Phase 2 Help/Advice Provided



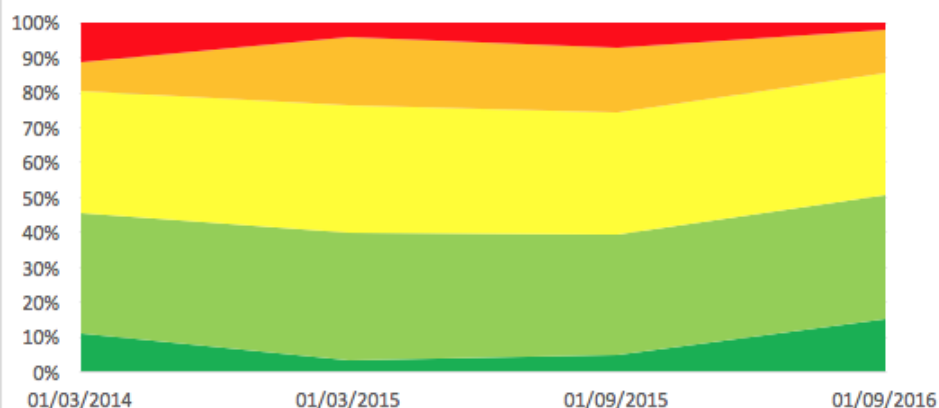
Satisfaction with P2PP Functions



Satisfaction with the ETCs



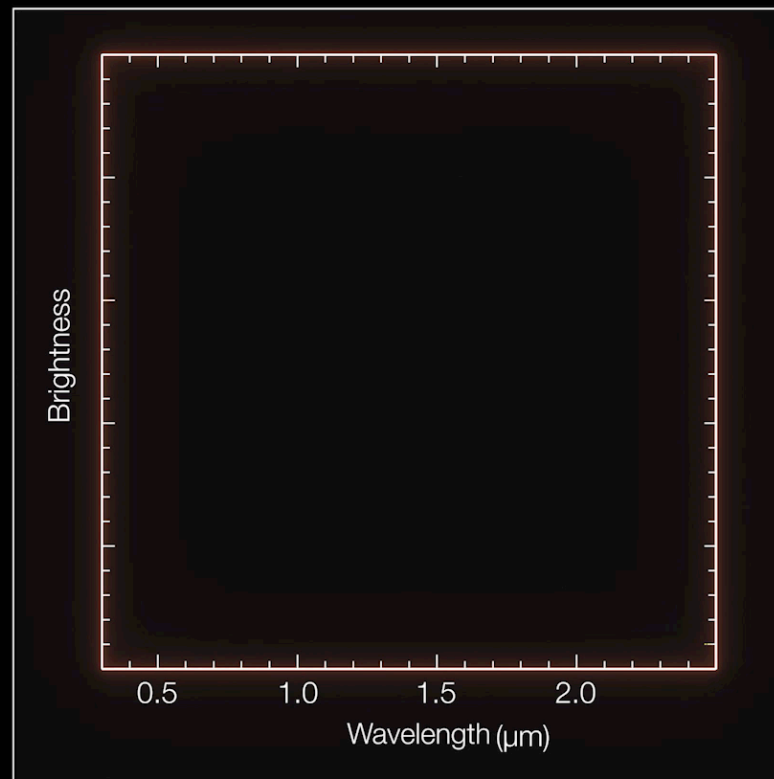
Global Satisfaction with Observation Preparation Tools Functions



Focus on Science

GW170817: VIRCAM & X-SHOOTER

<https://www.eso.org/public/videos/eso1733e/>



Time: -1225 days



Measuring & Analysing

Telescopes and Instrumentation

Fifteen Years of Service Mode Operations: Closing the Loop with the Community

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Lowell Tacconi-Garman¹
Stéphane Marteau¹
Vincenzo Mainieri¹
Marina Rejkuba¹
Sangeeta Mysore¹
Christophe Dumas¹
Andreas Kaufer¹
Ferdinando Patat¹
Michael Sterzik¹

¹ ESO

The first Service Mode (SM) operations with the VLT were made in April 1999. Since then, new instruments have become operational, first generation ones replaced by second generation ones. 12 VLT foci and feeding the telescope and its four Auxiliary Telescopes. Efficiently operating such a large number of instruments, installed every night of each year, on the VLT offers many challenges. Although it may appear that the VLT has changed since 1999, the operational model has evolved to accommodate different needs from the user community and the arrival of new instruments. As ESO Member States approach negotiations with ALMA, and at the same time prepare for the next challenge, the construction of the E-ELT, it seems a good time to take a closer look at what has been brought to the scientific community by the VLT Service Mode.

Telescopes and Instrumentation

The Scientific Return of VLT Programmes

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Christophe Dumas²
Uta Grothkopf¹
Andreas Kaufer¹
Bruno Leibundgut¹
Stéphane Marteau¹
Silvia Meakins¹
Ferdinando Patat¹
Francesca Primas¹
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Martino Romaniello¹
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Ignacio Vera¹

¹ ESO

² TMT Observatory Corporation,
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An in-depth analysis of the public return of the VLT from 8414 distinct scheduled VLT observing programmes between April 1999 and March 2015 (Periods 63 to 94) is presented. The productivity by mode (Visitor or Service Mode) and by

Telescopes and Instrumentation

The Growth of the User Community of the La Silla Paranal Observatory Science Archive

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Magda Arnaboldi¹
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Carlos De Breuck¹
Nausicaa Delmotte¹
Adam Dobrzycki¹
Nathalie Fourniol¹
Wolfram Freudling¹
Laura Mascetti²
Alberto Micol¹
Jörg Retzlaff¹
Michael Sterzik¹
Ignacio Vera Sequeiros¹

operates on La Silla and the Atacama Pathfinder Experiment (APEX) antenna on Chajnantor. Also available through the SAF are data from selected La Silla instruments, for example, the Gamma-Ray burst Optical/Near-infrared Detector (GROND), the Fibre-fed Extended Range Echelle Spectrograph (FEROS) and the Wide Field Camera (WFI), together with the raw data for the UKIDSS WFCAM survey obtained at the United Kingdom Infrared Telescope (UKIRT) in Hawaii.

algorithms. The Reflex environment (e.g., et al., 2013) allows the data to be conveniently organised, so that they can be run through the processing pipeline, actively assess the quality of the data, and, if needed, iterate on the

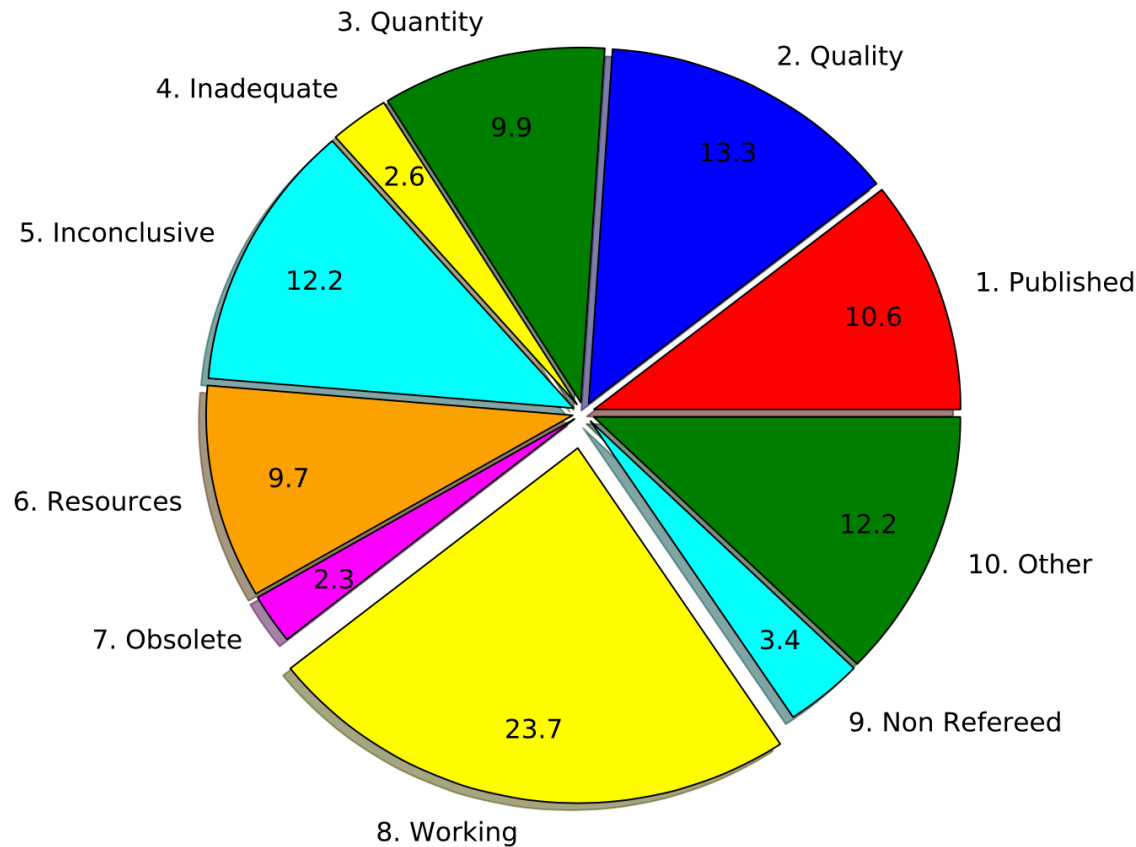
Processed data are also available through the Science Archive Facility and can be used directly for scientific analysis, thus alleviating the need for users to do any data processing of the data mentioned above, the SAF

- ESA/ESO Sciops 2017, Madrid

SNPP results (Patat et al., in prep)

■ 1278 targeted programmes (P78-P90)

➤ Replies from 965 (+70 bounced) → 80% return!



Evolving support & role of the community

■ Public Surveys

- Data reduction & data products from the community

■ ESPRESSO

- Scheduling multiple telescopes
- Further flexibility: challenging the predictive scheduling
- New or updated tools (EOPS, P2 API)

■ 4MOST

- Changing the paradigm: one observation – one programme/one PI
- User support & Data processing

■ SOX & NIRPS at La Silla

■ E-ELT as “just another telescope”