LSP Observatory Operations
Updates La Silla
New Weather Restrictions for La Silla ESO Telescopes

Published: 24 Feb 2017

Amended restrictions on humidity, wind and dew point applicable to opening and closing of the domes of the ESO 3.6-metre and the New Technology Telescope (NTT) have been recently released. Both telescopes will be closed when humidity reaches 80% and can only be opened when it is below 70% for 30 minutes. For the ESO 3.6-metre, the new wind speed restriction will be 18 ms⁻¹. The full listing of the weather restrictions for La Silla telescopes is available here (PDF). These stricter limits lead to a very small increase in weather downtime as result of increased telescope and instrument safety.
NEW instruments / modes

- NIRPS @ 3.6m
  - November 4, 2016: PDR in Montreal
  - May 16-17, 2017: FDR in Porto

- SOXS @ NTT
  - Two team members visited NTT in March
  - July 20, 2017: PDR in Milan

- Designated VM
  - On-going for high-ranked proposals

- Remote observing
  - Tests of connectivity (latency) coming soon
Updates APEX
APEX achieved 4763 hours on sky (+6.5% 2015)
SciOps-R[emote]

- To allow remote 24h science operation from basecamp
- Commissioning of new control system completed
- End-to-end testing and commissioning completed
- Regular SciOps-R operation started 3 April 2017
Timeline towards APEX extension 2018-2022

- January 2016: External review @APEX.
- 6-9 March 2016: APEX science meeting in Ringberg + APEX Board meeting. External review panel presents their report.
- 12 April: ESAC telecon to discuss report of External Review.
- 26 April 2016: Update to STC.
- June 2016: Update to Council.
- 30 September: Update to ESAC/STC.
- 10 October 2016: APEX Board meeting.
- 11 October 2016: Finalisation of draft Agreement (text, investments, instrumentation, costs).
- 07 December 2016: Council decision on extension.
- 5 May 2017: Signature of Extension Agreement by Partners.
New shares as of 1. Jan 2018:
- MPIfR Bonn: 55% (+5%)
- OSO: 13% (-10%)
- ESO: 32% (+5%)

Agreed Upgrades by 2018:
- New Facility Receivers:
  - ALMA Bands 6 + 8 (New FLASH, MPIfR)
  - ALMA Bands (5 +) 7 + 9 (New SEPIA, OSO+ESO)
  - dual-polarization, 2SB with 4-12 GHz IF response, dual-color
- Broad-band IF processors and back-ends (64 GHz)
- New antenna surface with <10 micron rms
- New M2 system (subreflector, wobbler, hexapod)

Extended shutdown mid-Sept 2017 – March 2018
Updates Paranal
Successful Coatings of UT1/2/3

Latest news from Paranal operations: the UT1 recoating shutdown in numbers

8 September 2016

- Process and nominal performance recovered
- UT1 coated in August 2016
- UT2 in December 2016
- UT3 in April 2017
Coating Process

Before

After
Paranal Instruments

- NACO: stabilization intervention completed
- VISIR: new entrance window, no more fringing in HR spec
- X-shooter: ADC fixed! (intervention completed last week)
- UVES blue arm: R back to ~84,000
Paranal Instruments

- NACO: stabilization intervention completed
- VISIR: new entrance window, no more fringing in HR spec
- X-shooter: ADC fixed! (intervention completed last week)
- UVES blue arm: R back to ~84,000
- SPHERE ESO-Consortium meeting on Paranal in March
  - Punch list items, documentation, path towards PAC
Since Oct. 2016, instrument doing regular operations and commissioning in parallel

- Challenge for both ESO and the Consortium

First observations of the GC with ATs and UTs done in late March 2017

First 2017 GTO slot on GC ongoing at the moment
AOF@UT4

- Successful installation and commissioning of the deformable secondary mirror on UT4 in October and November
  - Return to Service Mode in December ahead of schedule
  - Great team effort!
GRAAL Maintenance and Commissioning Mode
- commissioned in February 2017

GALACSI commissioning started in March 2017
- March 22: first light with MUSE & closed loop on all 4 lasers

3 nights Science Verification for AO-WFM foreseen in August
Timeline for offering AOF systems

- CfP 101: MUSE-AO-WFM (SV in August 2017)
- CfP 102: HAWK-I+GRAAL (SV in Q1/2018)
- CfP 103: MUSE-AO-NFM (SV in Q2 or Q3 2018)
Upcoming activities

P99:
- Continued Gravity & AOF commissioning
- Installation of ESPRESSO Coudé trains UT3
- UT4 M1/3 coating + maintenance
- AT Coudé train refurbishment

P100:
- Commissioning & SV of GRAAL+HAWK-I
- Start Commissioning of MUSE-NFM
- Start AIV & Commissioning of ESPRESSO
- Start AIV & Commissioning of Matisse
Upcoming activities

- **Gravity** observations with the 4 UTs on the Galactic Center
- **AOF** commissioning of GALACSI+MUSE in WFM
• **General:** PSO has 60 staff members, contributing about 47 FTEs to operations
• News 2016-2017:
  • **Julien Milli** appointed as AO Scientist
  • **Alain Smette & Stephane Brillant** appointed department head deputies
  • Visitor mode target change requests handled fully by PSO (was shared w/ USD)
**Evolution of Paranal Science Operations**

Current daily working timeline:

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>9am</td>
<td>Dpt Secretary</td>
</tr>
<tr>
<td></td>
<td>Day Shift Coordinator</td>
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<tr>
<td></td>
<td>Operations Specialist / Day Astronomer</td>
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<tr>
<td>2-3pm</td>
<td>Support Astronomer</td>
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<td>Support Astronomer</td>
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<tr>
<td>2-3am</td>
<td>Support Astronomer</td>
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<tr>
<td></td>
<td>Night Shift-Coordinator</td>
</tr>
<tr>
<td></td>
<td>VLTI Support Astronomer</td>
</tr>
<tr>
<td></td>
<td>TIOs (4 UTs, VLTI, VST, VISTA)</td>
</tr>
</tbody>
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Evolution within the next 12-18 months:

**2017:**
- VLTI SciOps 2 (classical shift)
- single TIO operations of survey telescopes

**2018:**
- Vitacura operations hub

41st UC Meeting, Garching, 9 May 2017 / ESO Internal Use
VLT Science Operations

- New web-based phase 2 tool (p2) deployed for Visitor Mode observations as of P99
  - Real-time bi-directional replication of OBs between web tool and observing tools on the mountain
VLT Science Operations

- New web-based phase 2 tool (p2) deployed for Visitor Mode observations as of P99
  - Real-time bi-directional replication of OBs between web tool and observing tools on the mountain
  - More agile and practical Visitor Mode support
  - Improves user experience for remote observing (along with eavesdropping implementation)
  - API allows to cleanly plug your favourite OB creation software (EOPS Espresso, ASPRO..) to the tool

- Will fully replace p2pp in the medium term, for both Visitor and Service Mode
Eavesdropping implementation for designated Visitor Mode planned for P100

- Real-time view of acquisition screen via web browser
  - Technical solution identified. IT security rules being defined.
- Possible extension to time critical Service Mode (ToO)
  - and point-to-point transfer of reduced data
Closing the loop on UC items from the last 2 years
VLT instrument KPIs
- in internal quarterly report since Q1/2017-

→ Part of UC report as of 2018?
Technical downtimes during Visitor Mode, P95-P98 (2 years)

- **UT1**
  - 2.2% (global tech downtime = 3.4%)
    - 1 night with >6hr downtime

- **UT2**
  - 2.5% (global tech downtime = 3.1%)
    - 3 nights with >3hr downtime, 1 night with >6hr downtime (all ESO-GAIA)

- **UT3**
  - 3.4% (global tech downtime = 4.6%)
    - 5 nights with >3hr downtime, 4 nights with >6hr downtime, all but one during GTO+LP+PS

- **UT4**
  - 1.2% (global tech downtime = 3.9%)
    - 0 nights with >3hr or >6hr downtime

- **VLTI**
  - 3.8% (global tech downtime = 7.9%)
    - 1 night with >3hr downtime
Conclusions from the stats:
- visitor mode less affected by technical downtime than service mode
- (close-to-)total loss events are very rare (3 in two years)

Current formulation regarding compensation from CfP:
- “In general, the Observatory does not compensate for weather or technical losses of observing time. However, compensation may be granted by the Director of the Observatory under exceptional circumstances. “

Statement was added on visitor info page of PSO:
- “In general, the Observatory does not compensate for weather or technical losses occurred during visitor mode observations. Only in very exceptional cases, if a close-to-total loss (>2/3 of the total program time) occurs for technical reasons, compensation may be considered by the Director.”
Visiting astronomers offices on Paranal

- Introduction of web-based p2 removes need to prepare OBs on the workstation in the office

- During 2017:
  - Two of the four VA offices will be taken over by the ELT project
  - The library will be refurbished to become a meeting room / office for VA

- No operating system or hardware upgrade foreseen for VA office workstations
EoM fact sheets

EoM Stats History - Run Completion

0% 25% 50% 75% 100%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
P66 P67 P68 P69 P70 P71 P72 P73 P74 P75 P76 P77 P78 P79 P80 P81 P82 P83 P84 P85 P86 P87 P88 P89 P90 P91 P92 P93 P94 P95 P96 P97

41st UC Meeting, Garching, 9 May 2017 / ESO Internal Use
EoM fact sheets

EoM Stats History - TIO Support

N/A  Poor  Acceptable  Good  Excellent
EoM fact sheets

Less usage of on-site pipeline (already seen 2016)

EoM Stats History - On-line Pipeline

Large fraction of GTO and public survey VM
Live demo of new p2 and eavesdropping

Today at 16:20