



Scientific Prioritisation: 'ESO in the 2020s' workshop



Scientific Prioritisation

- Review of current and future ESO programme
 - Report will exploit and/or incorporate:
 - VLT/I Instrumentation Road Map
 - ALMA2030 exercise
 - “Shaping ESO2020+ Together” community poll
 - “ESO in 2020s” workshop, 2015 January 19-22
 - Involves: Scientific and Technical Committee, Users Committee, Visiting Committee and ESO Faculty
- Deliverables and timescale
 - Scientific prioritisation of current/future programme
 - Final report: STC, April, and ESO Council, June 2015
 - Updates given at recent Council and STC meetings



Scientific Prioritisation: Terms of Reference

- The panel will review and **prioritise ESO's scientific programme**, evaluating all existing and planned projects above a nominal total cost threshold of €1M. Although the panel will generally take a bird's-eye view, where it is deemed necessary it is free to investigate topics in detail – an “adaptive grid” approach.
- The panel will organize a major **ESO workshop** in 2015 January to look at the likely astronomical landscape in the 2020s, inviting the community to advise the ESO Executive with regard to future facilities, including but not limited to LSP and the Joint ALMA Observatory.
- The panel's recommendations will be **presented to STC**.
- The review will take into account the views of the ESO community via an **electronic poll**, and via **cross-membership in the Visiting Committee (VC), Users' Committee (UC) and STC** of five (of 13) panel members.
- The report will include the ALMA2030 report and the latest version of the Paranal Instrumentation Roadmap, and will supersede the so-called LPO White Paper.
- Panel members will declare personal or institutional **conflicts of interest**.
- The process will be **transparent** and the panel's report will be freely available.

Report contents, parts 1-3 of 4

- **Expert opinion:** Science-based discussion documents being authored by ALMA, VLT, VLTI + E-ELT Programme Scientists
 - Strengths/weaknesses, risks/opportunities of current and planned ESO programme
 - Are all ESO activities science driven?
 - Are they consistent with ESO Mission Statement?
- **Quantitative exercise:** How well do items in current ESO programme (La Silla, VLT/I, E-ELT, ALMA) match today's *compelling research areas*?
- **Community Poll:** Francesca's talk, next up

Compelling research areas

- Cosmology and/or fundamental physics
- Large-scale structure of the Universe
- Structure and evolution of galaxies (incl. AGN)
- Milky Way dynamics and evolution
- Life cycle of interstellar matter
- Life cycle of stars
- Planetary system formation and evolution
- Search for life outside Earth
- Pre-biotic chemistry
- Extreme states of matter
- The Sun and the solar system

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Report contents, part 4 of 4

- **“ESO in the 2020s”** – workshop to tension current and planned ESO programme against future possibilities
 - How best can ESO meet the future needs of its community?
 - e.g. LSST, SKA, CTA, ESA missions – PLATO, EUCLID, etc.
- **Science + discussion dominates workshop programme**
 - Planets and planet formation
 - Stars, formation and evolution
 - Milky Way and local neighbourhood
 - Galaxies/AGN
 - Cosmology/Large-Scale Structure
 - Future Facilities (incl. ESA, SKA, LSST)
 - Scientific priorities for ALMA, VLT/I, E-ELT

'ESO in the 2020s'

- Recorded for internal (working group) consumption
 - Recording will NOT be placed online
 - Slides *will* go on-line
- Discussion/debate are vital elements of workshop
 - Relatively informal environment

