



What did ESO hear at 'ESO in the 2020s'?



ESO in the 2020s, 19-22 January 2015





Scientific Prioritisation @ESO

- Scientific prioritisation of current/planned programme
 - Experts from STC, UC, Visiting Committee, ESO Faculty
 - How best can ESO meet the future needs of its community?
e.g. LSST, SKA, CTA, ESA missions – PLATO, EUCLID, etc.
 - Anything weak scientifically, or outside ESO mission?
- “Shaping ESO2020+ Together” community poll
- “ESO in 2020s” workshop, 2015 January 19-22
 - tension current/planned ESO programme vs future possibilities
- Deliverables and timescale
 - Report due at STC, April, and ESO Council, June 2015
 - Will be made available to everyone



ESO's Programme

- Visible/infrared light
 - La Silla telescopes incl. 3.6m and NTT
 - VLT, VLTI, VISTA and VST on Paranal
 - E-ELT construction on Armazones
 - Instrumentation development
- Submillimetre radio waves
 - APEX & ALMA partnerships at Chajnantor
- High-quality user support







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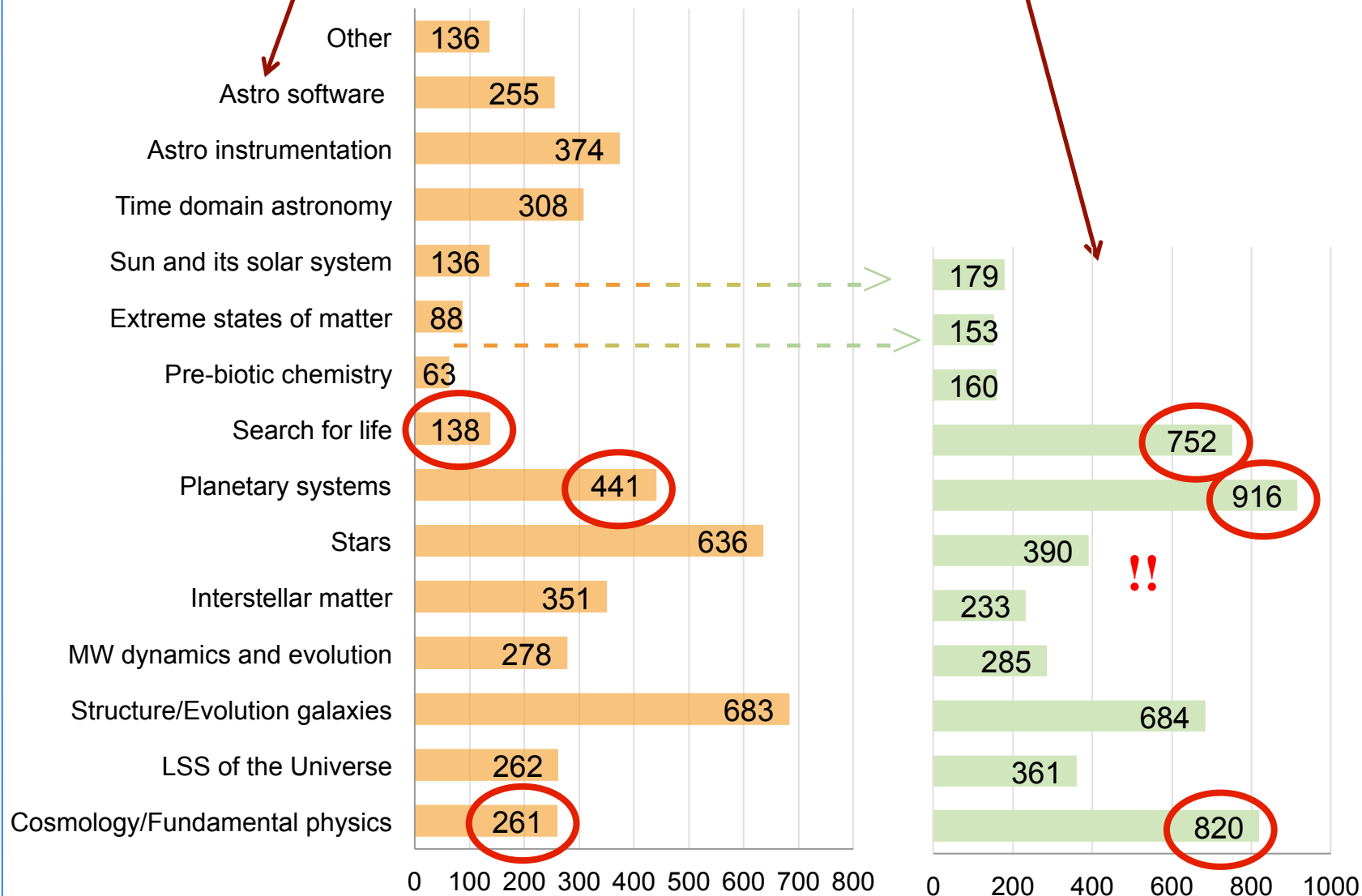


Paranal Instrumentation

- MUSE and SPHERE arrived in 2014
 - Tremendously powerful instruments
- More instruments to come
 - ESPRESSO, CUBES, CRIRES+, ERIS, MOONS for VLT
 - GRAVITY & MATISSE for VLTI
 - 4MOST for VISTA
- Ongoing infrastructure upgrades
 - Adaptive Optics Facility on UT4
 - Key components for VLTI
 - Incoherent combined focus for ESPRESSO
- Upgrades + new instruments in budget thro' 2030

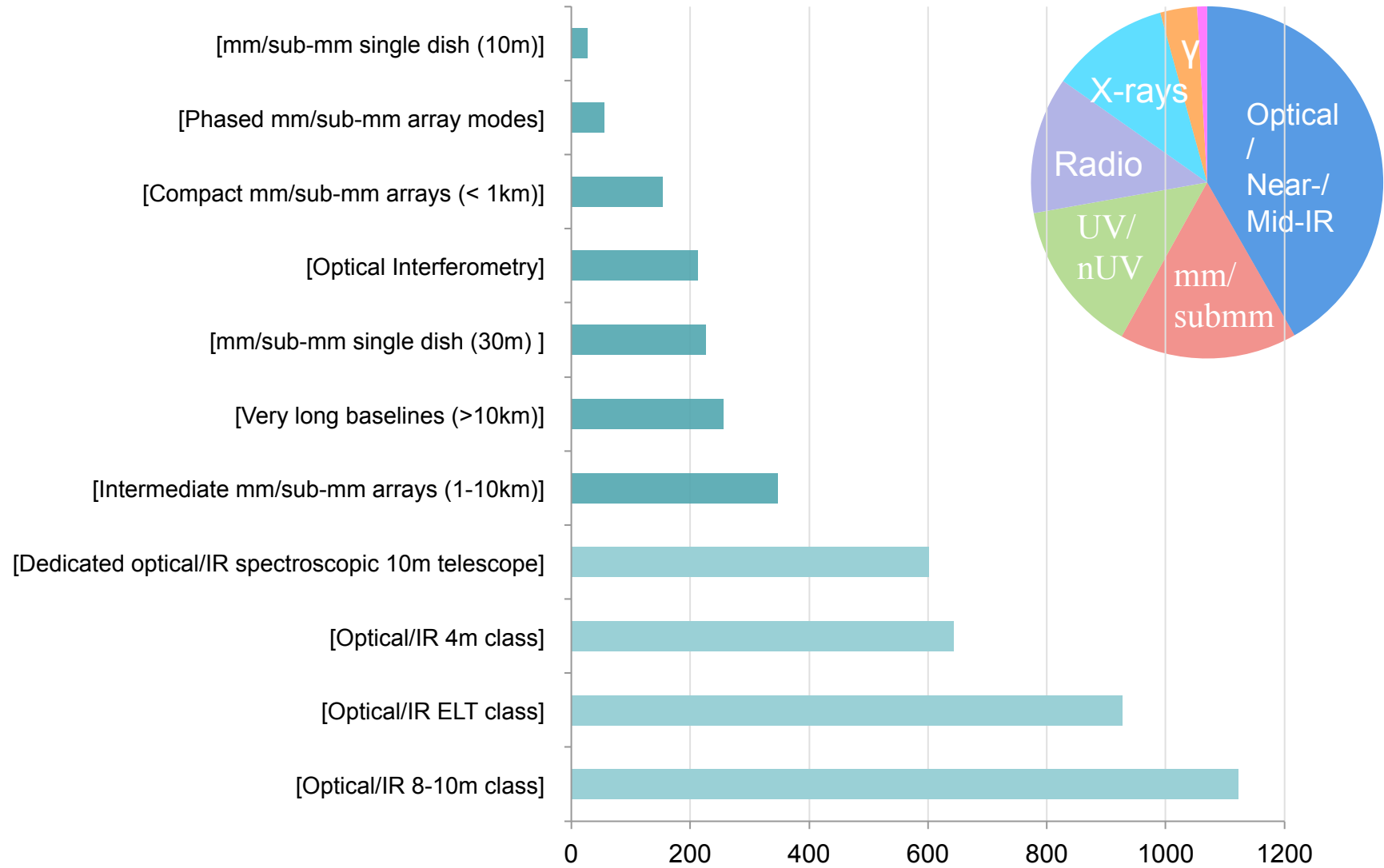


Poll: Research interests vs science vision



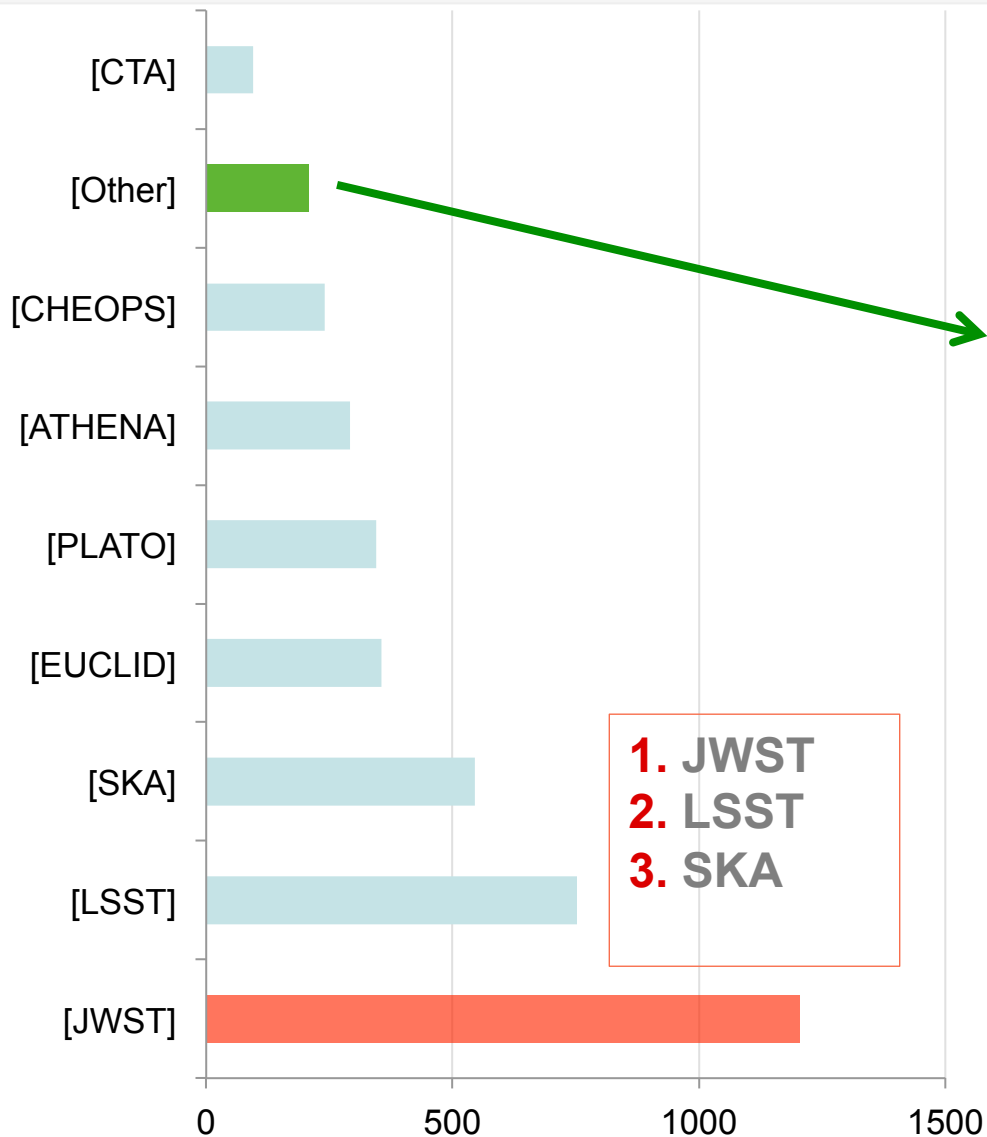


Poll: Required facilities





Poll: Other planned facilities





Community desires: facilities (1)

■ Full suite of E-ELT instruments

- Already in the approved plan
- Blue (370nm) spectroscopy @ E-ELT (star formation, comets...)

■ ALMA

- Bandwidth+, baselines+, (sensitivity+?), APP (mm-VLBI)
- Moving in right direction with “ALMA2030” exercise

■ CTA

- ESO site in Chile in contention to host southern array

■ SKA

- ESO engaging constructively with current group to explore how best to help get SKA off the ground
- in particular to help make the enormous leap to SKA2, where transformational science undoubtedly lies



Community desires: facilities (2)

- Large Submm Single Dish (~CCAT)
 - Popular, but case not yet obvious, esp. at high frequency
 - *Community working group*
- 10-15m wide-field spectroscopic survey telescope
 - ~5000-10,000 multiplex, ~3-deg field
 - Gaia-related science, transients, cosmology (Euclid, LSST...)
 - Single IFU for transients
 - *Community working group*
- Deliver planned programme ***on time***
 - Gravity, ERIS...
 - Galactic Centre peri event won't wait for us
 - A clear brake on ambition, in absence of new funds



Community desires: coordination

■ Coordination of time allocation

- ESO-ESA coordination particularly important (PLATO, EUCLID)
 - Regular ESO-ESA meetings continue
 - Formal high-level interaction/agreement foreseen on short timescale
- Does some MW/Gaia, cosmology/Euclid, exoplanet/PLATO science justify a potentially disruptive approach to time allocation, with potential for *colossal* time allocation(s)?
- Time domain – fast response on VLT, ultimately E-ELT
- Is ESO's natural optical/IR/submm (LSP+ALMA) synergy in southern hemisphere being fully exploited?
- *Working group, initially within ESO*

■ Laboratory work

- *Community working group*



Thanks!

- Lovely hum of discussion emanating from coffee
- Superb talks
 - “so what?” moments thin on the ground
- Superb young speakers
 - point towards a bright future for ESO community
- Constructive discussion
 - Led by trios of experts – did lovely job, stimulating debate

- Particular thanks to Bruno Leibundgut, Svea Teupke, rest of SOC/LOC and the many Fellow/student helpers