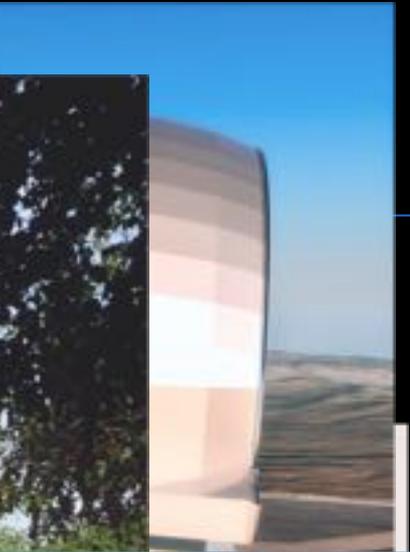




ESO – Your Observatory

Bruno Leibundgut





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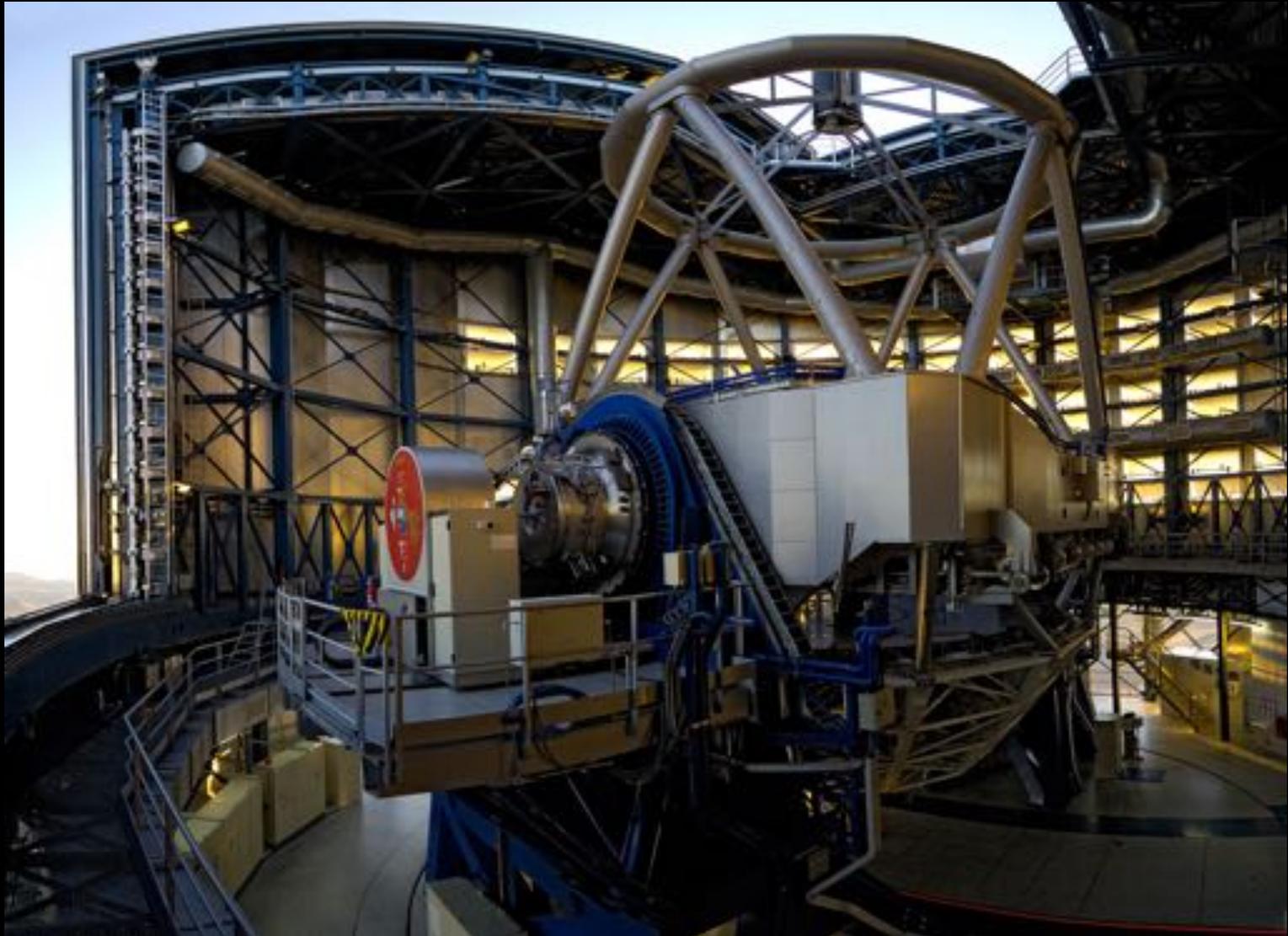


Paranal 2018



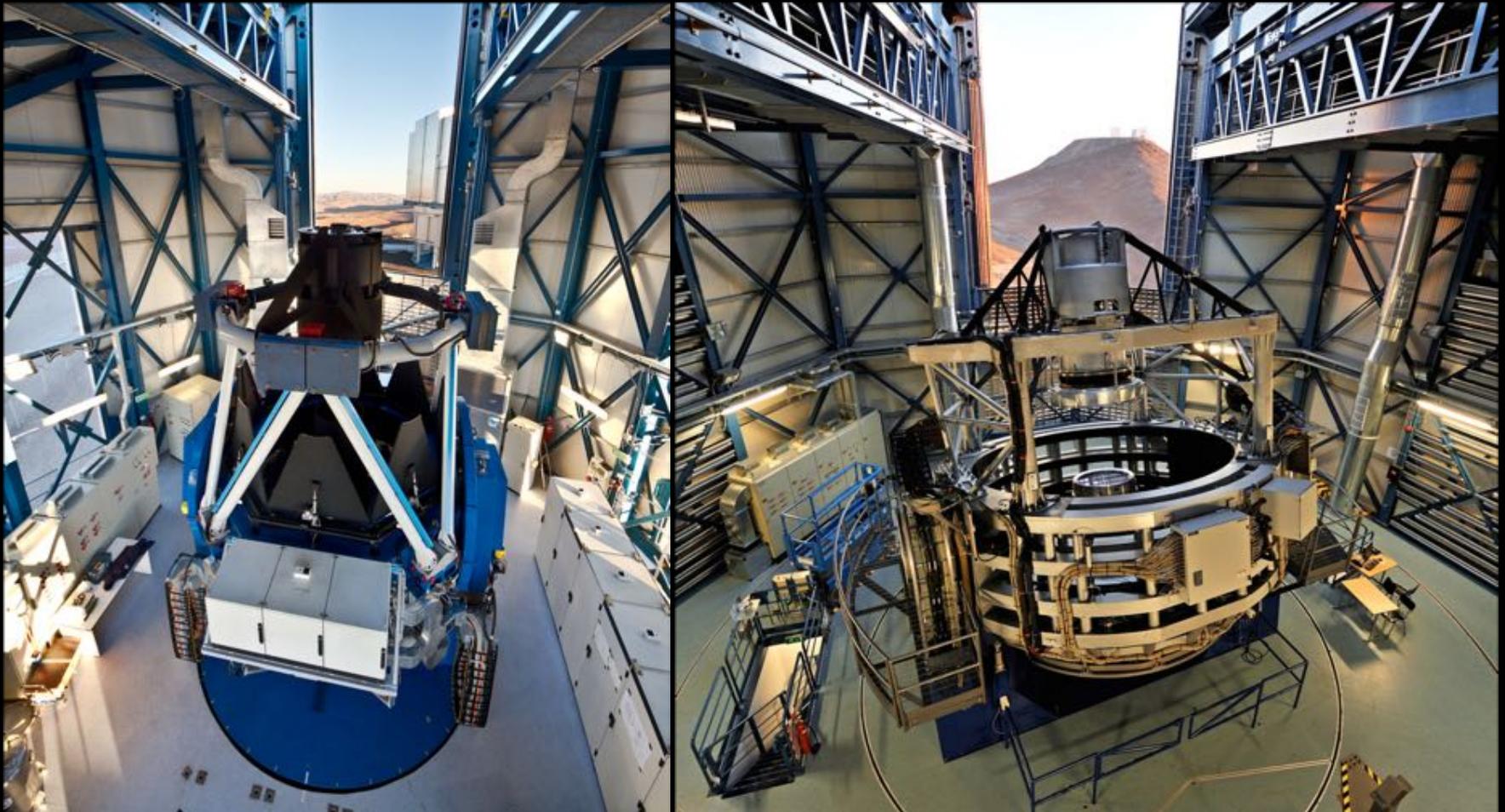


One of the 8m telescopes

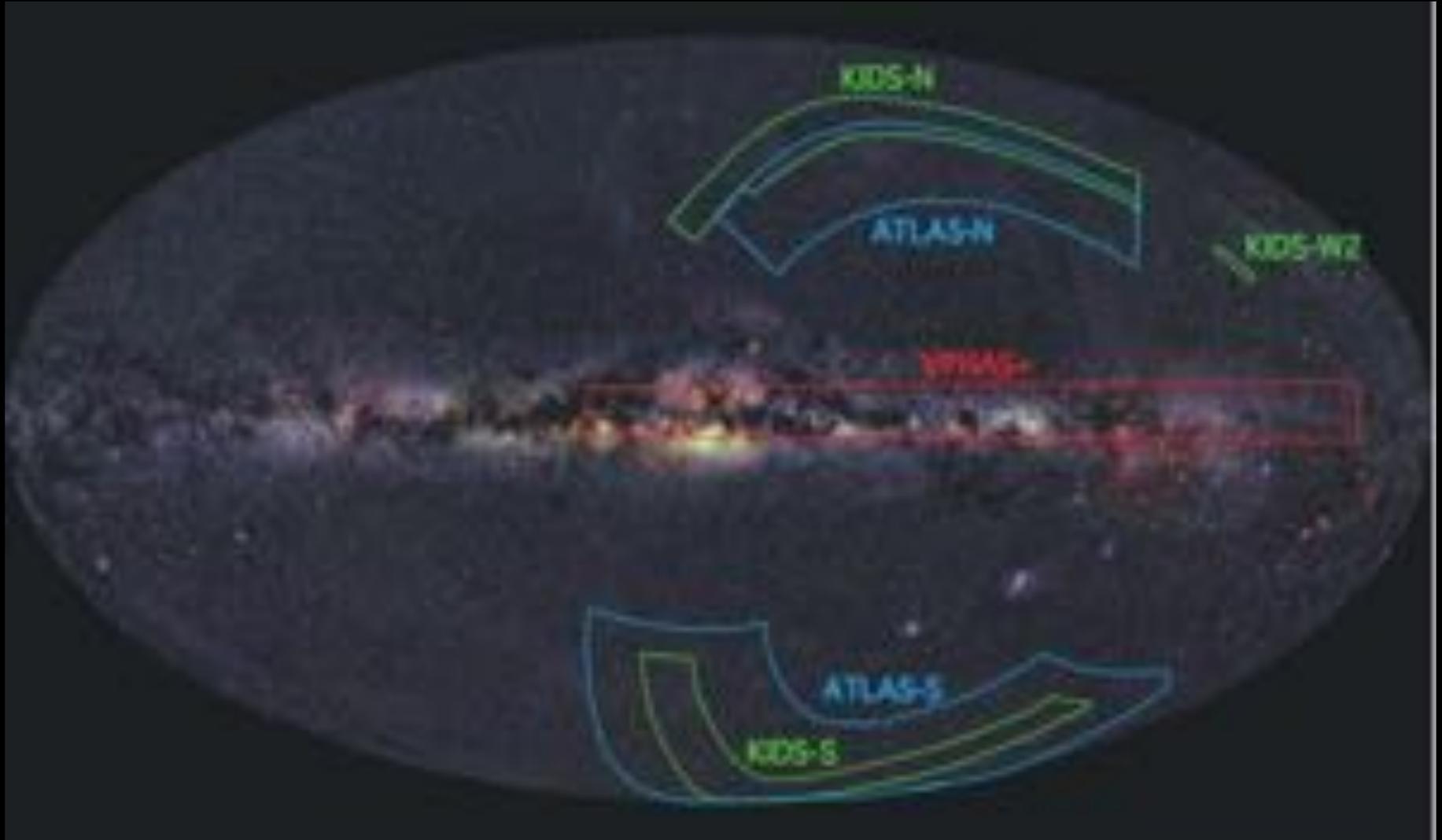


The Survey Telescopes

VST 2.6m for optical and VISTA 4.1m für infrared observations
Coordinated sky surveys in 5-year projects



Public Surveys



■ Four 8m telescopes

- flexibility
- scientific throughput
 - 1200 observing nights/year

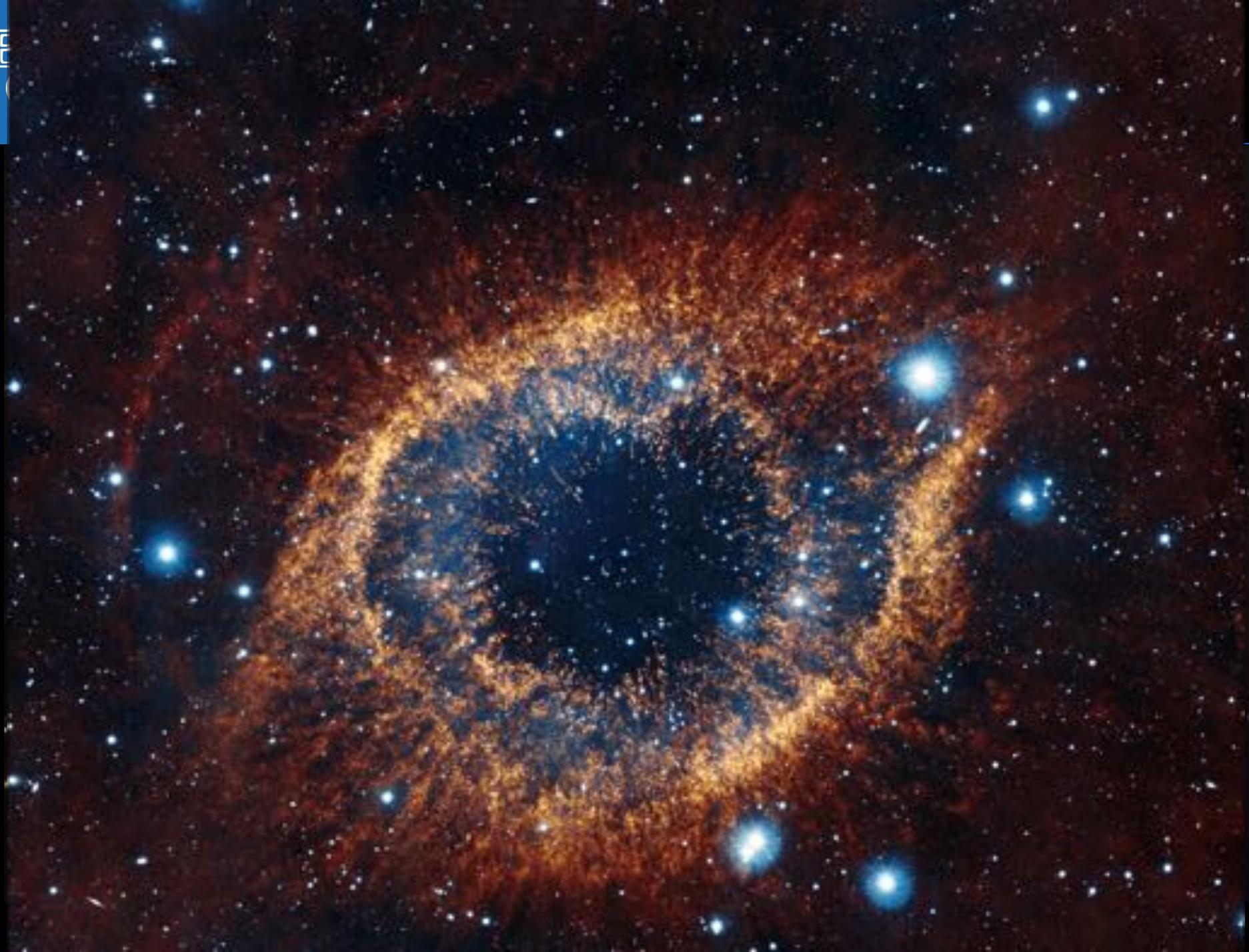
■ Successful operational model

- expand existing model to allow new modes
 - high time resolution photometry and spectroscopy
 - faster turnaround (currently DDT)
 - closer interaction with user, e.g. remote observing

■ Telescope system

- spatial resolution from 1 degree to 2 mas
- wavelength coverage from 320nm to 20 μ m
- spectral resolutions from a few to 100000

➤ Talks by H. Boffin, M. Petr, C. Hummel





Science with Paranal/La Silla telescopes

■ Contributions to nearly all of astrophysics

➤ Solar system

- Trans-Neptunian Objects, asteroids, comets

➤ Exo-planets

- direct imaging, temperate planets, planetary systems

➤ Stellar physics

- metal-poor stars, supernovae, neutron star mergers

➤ Milky Way structure

- galactic centre, distances

➤ Galaxy evolution

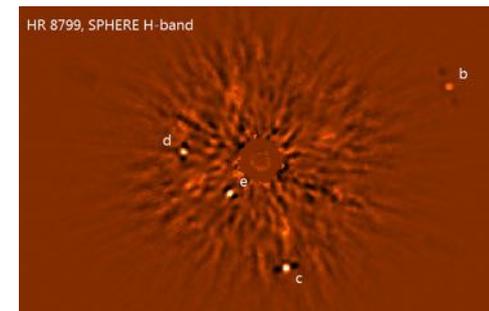
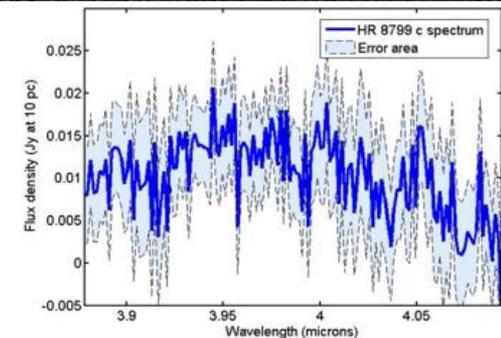
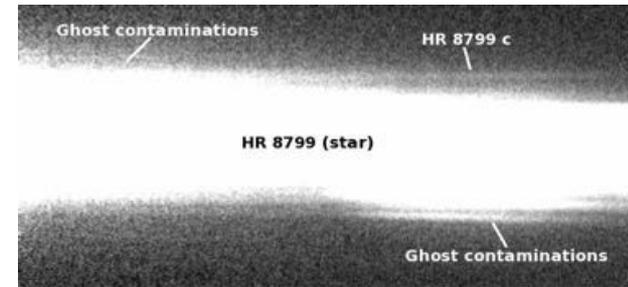
- redshift surveys, rotation curves, absorption studies

➤ Cosmology

- accelerating universe, background temperature, chemical evolution

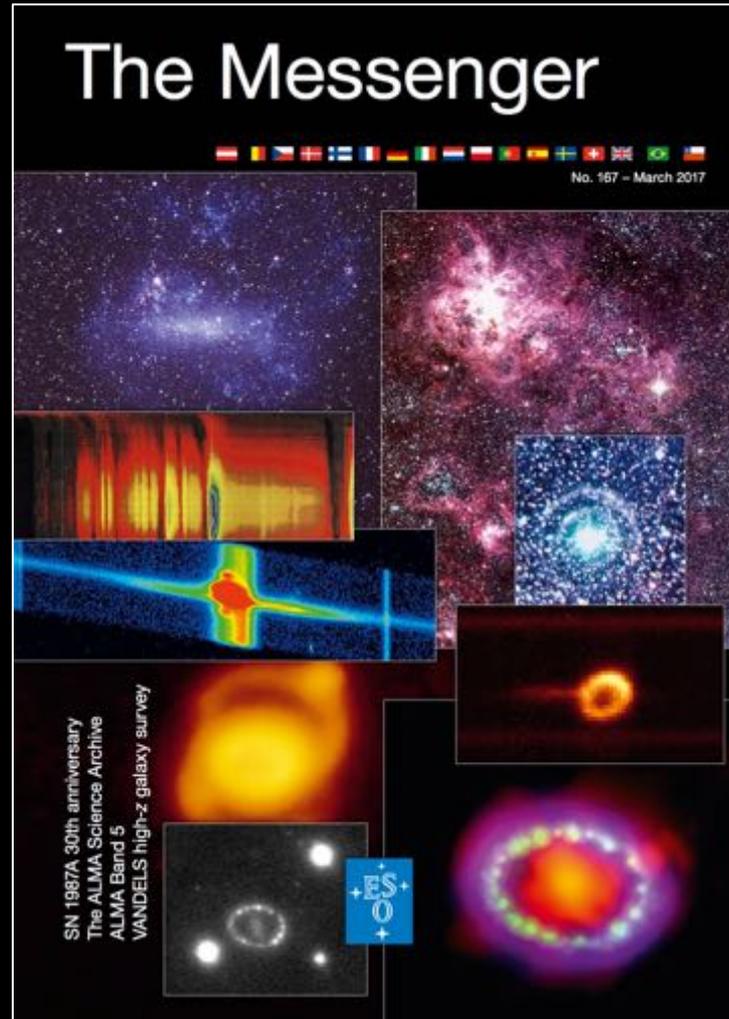
The ESO exo-planet machinery

- HARPS at 3.6m telescope (in the future also NIRPS)
 - best radial velocity machine at a 4m telescope
 - extremely stable spectrograph
 - ESPRESSO at VLT
- NACO/SPHERE
 - adaptive optics supported imaging and spectroscopy
- VLTI
 - highest spatial resolution for follow-up observations of known systems
- NACO/SINFONI/FORS2
 - transit measurements, atmospheres of exo-planets
- CRRES+
 - spectroscopy of atmospheres



Long-term observations

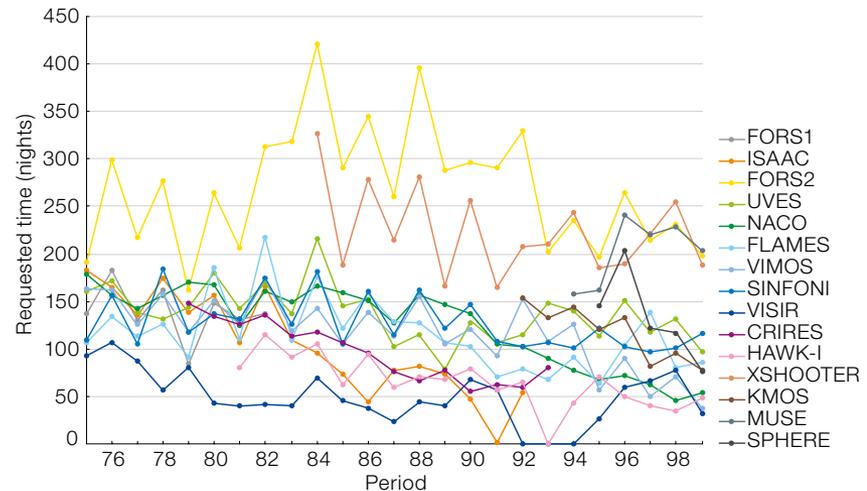
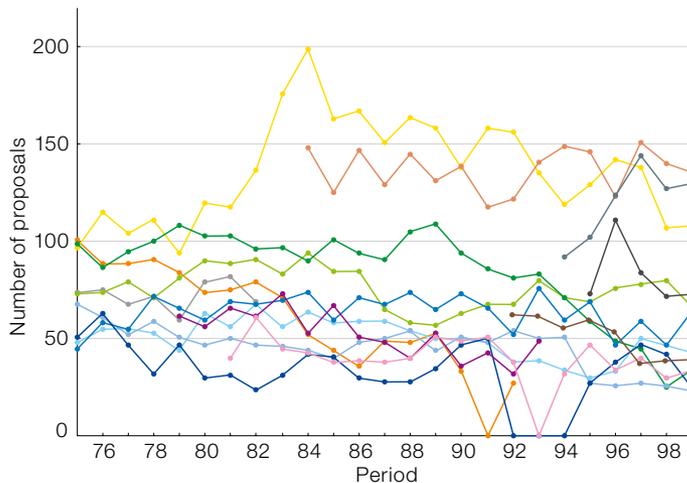
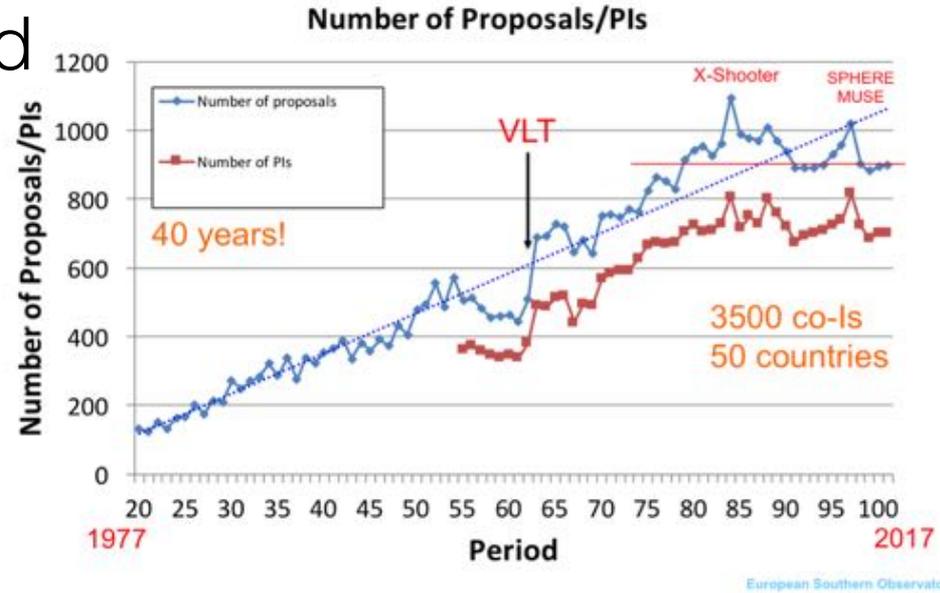
SN 1987A observed over 3 decades



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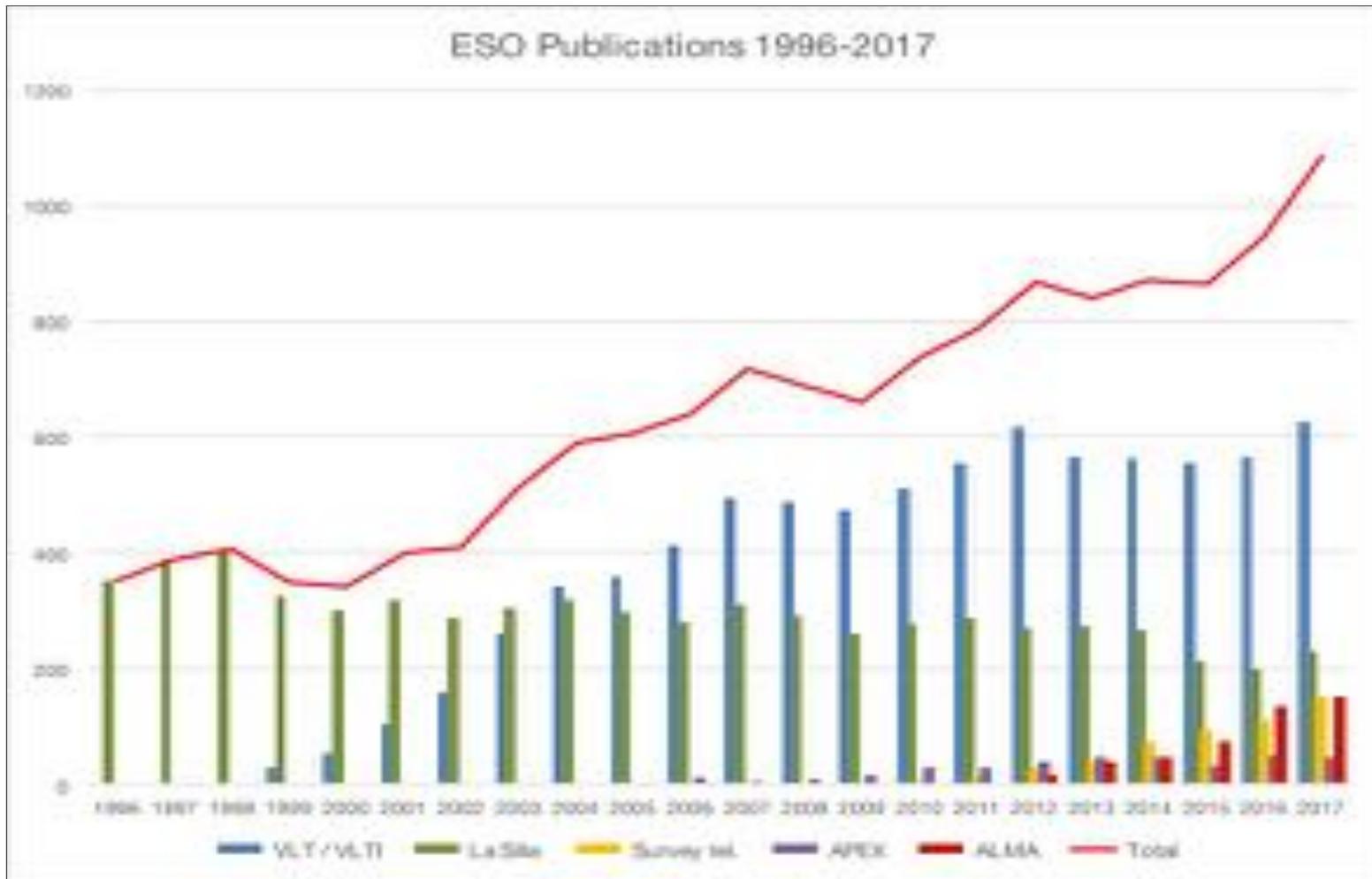
■ Consistently high demand

➤ F. Patat and D. Gadotti



ESO – Your Observatory

■ Steadily increasing science return



ESO – Your Observatory

■ High impact

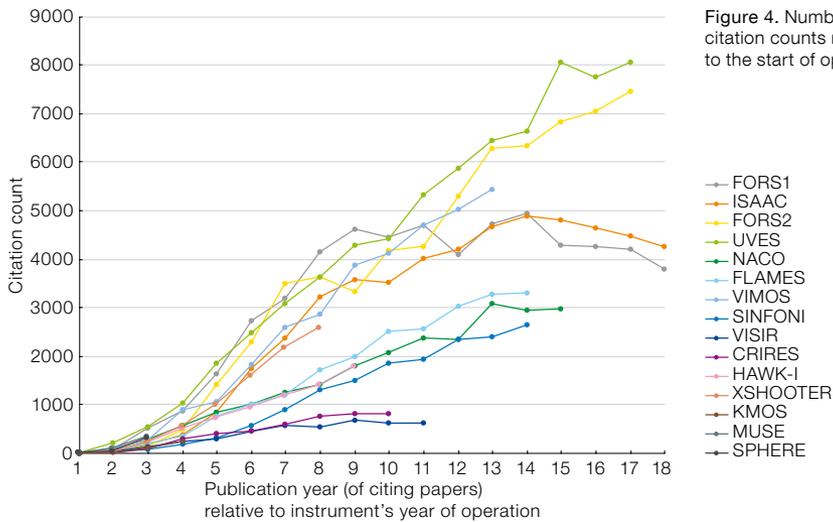


Figure 4. Number of citation counts relative to the start of operation.

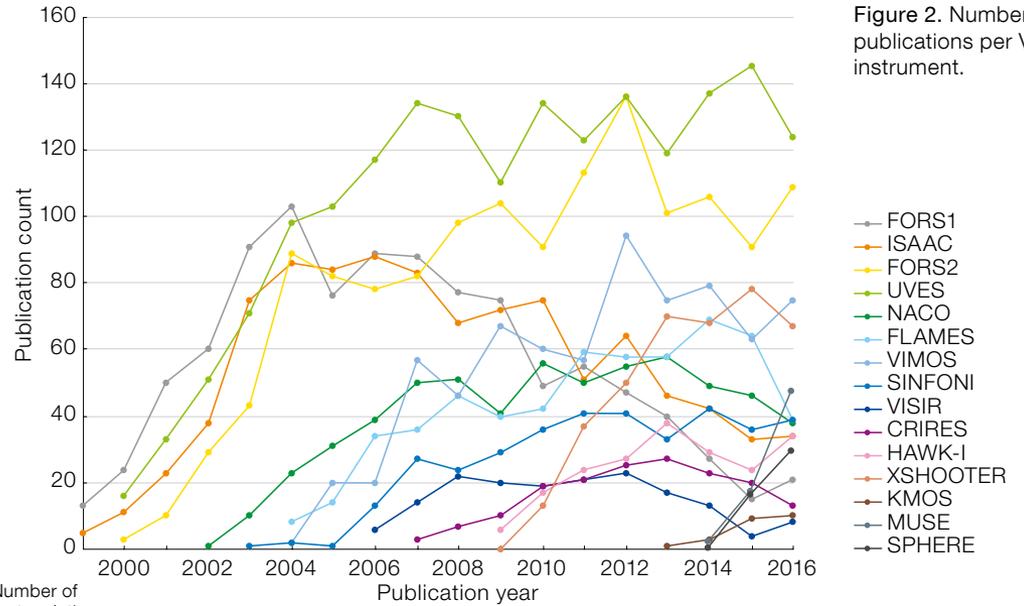
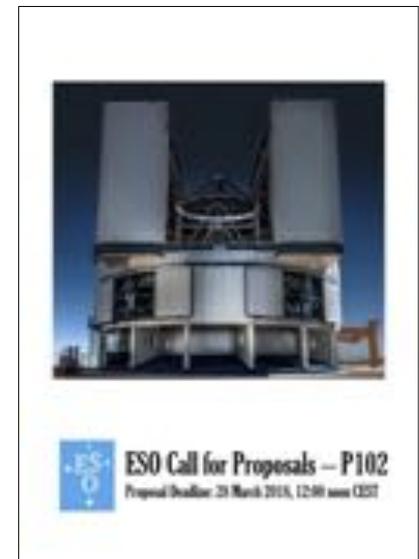


Figure 2. Number of publications per VLT instrument.

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- Support for observation preparations
- Talks by H. Boffin, F. Primas, L. Tacconi-Garman, M. Hilker, G. Beccari, J. Pritchard



- Support with data reductions
 - Instrument pipelines
- Presentations by W. Freudling, L. Coccato, J. Pritchard



Science Archive

archive.eso.org/omni/data-portal.html

European Southern Observatory

ESO — Reaching New Heights in Astronomy

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14 May 2017

Science Archive Facility

- Data Portal
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- ESO Data
- Hubble Space Telescope Data
- Virtual Observatory Tools
- Catalogues, Plates and DBS
- Tools and Documentation
- Related External Services
- ESO & HST Image Galleries
- News and Updates
- FAQ
- ESO Data Access Policy

Data Portal

The ESO Science Archive Facility contains data from ESO telescopes at La Silla Paranal Observatory, including the APEX submillimeter telescope on Llano de Chajnantor. In addition, the new UKIDSS/WFCAM data obtained at the UK Infrared Telescope facility in Hawaii are available.

The Principal Investigators of successful proposals for time on ESO telescopes have exclusive access to their scientific data for the duration of a proprietary period, normally of one year, after which the data becomes available to the community at large. Please read the [ESO Data Access Policy](#) statement for more information, along with the [relevant FAQs](#).

Browsing the archive does not require authentication, but to request and download data you have to log in to the [ESO User Portal](#). Please [acknowledge the use of archive data](#) in any publication.

Latest News and Updates

- New release of imaging and multi-band catalogue data from the VST Public Survey ATLAS published (31 Mar 2017)
- Image and source list products released from the VISTA Variables in the Via Lactea Survey (VVV) (20 Jan 2017)
- First catalogue data release providing the weak lensing shear measurements obtained from the KIDS DR3 images (04 Jan 2017)

More news ...

To browse the archive

Currently, **raw data** and various types of **data products** can be reached via different interfaces:

Category	Access Point	Data collection	Data Type	Instruments
LPO Raw Data	Raw data query form (all instruments) Instrument specific query forms Direct retrieval of raw data by file name	All ESO raw data	Various	Many La Silla Paranal instruments
LPO Data Products	Phase 3 multi query form Phase 3 imaging query form Phase 3 spectral query form Phase 3 WFCAM specific query form Direct retrieval of reduced data by file name	Phase 3 Data Products (ESO public surveys, ESO pipeline-reduced products, Large programs: GOODS, zCOSMOS, etc.)	Imaging, Spectroscopy, Catalogs, etc.	Various

► Talks by M. Romaniello

Garching | 12 March 2018



Science Archive

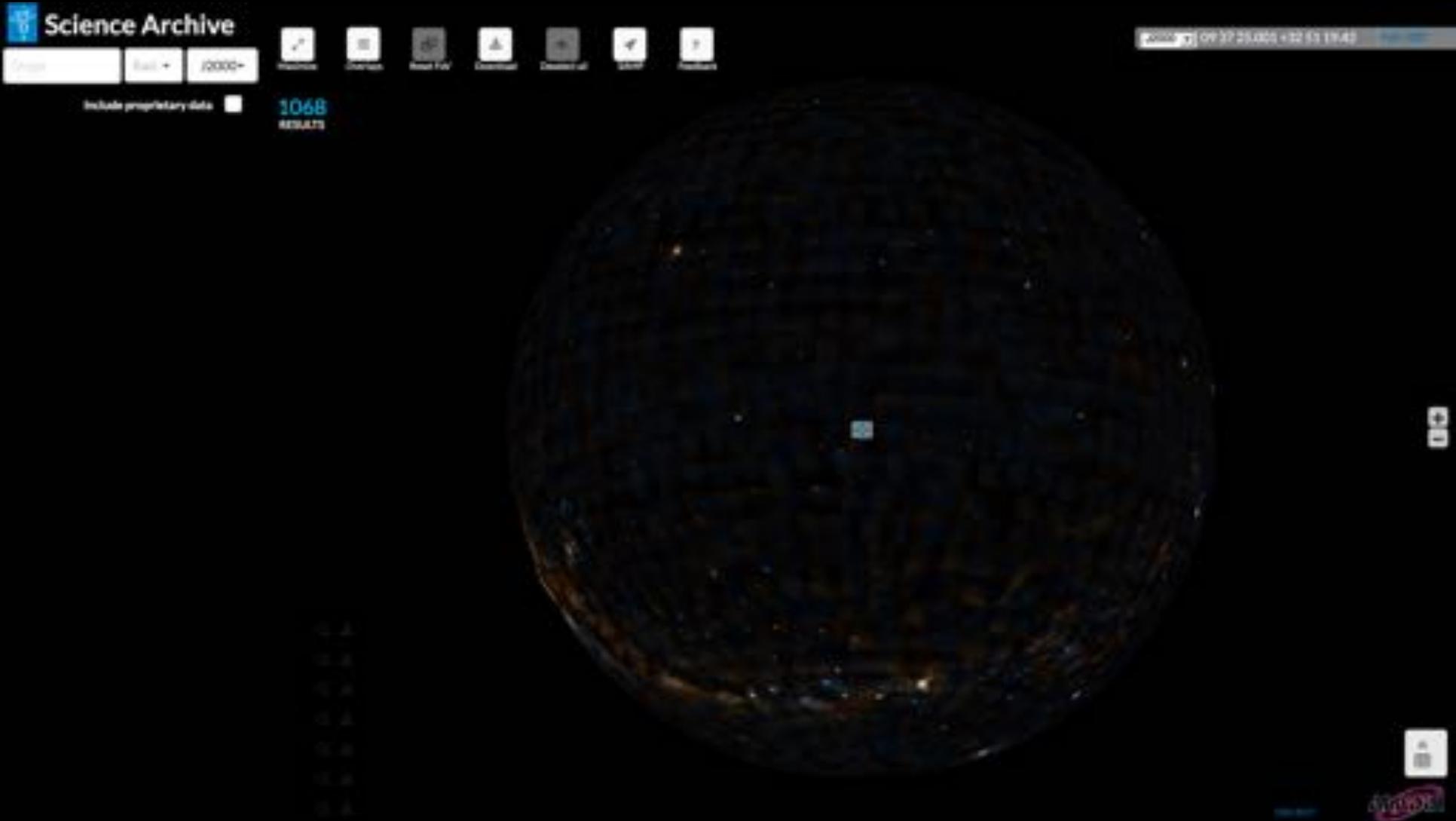
To browse the archive

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LPO Raw Data	Raw data query form (all instruments) Instrument specific query forms Direct retrieval of raw data by file name	All ESO raw data	Various	Many La Silla Paranal instruments
LPO Data Products [Description of reduced data products types]	Phase 3 main query form Phase 3 imaging query form Phase 3 spectral query form Phase 3 VIRCAM-specific query form Direct retrieval of reduced data by file name	Phase 3 Data Products (ESO public surveys; ESO pipeline-reduced products; Large programs: GOODS, zCOSMOS; etc.)	Imaging, Spectroscopy, Catalogs, etc.	Various
	Catalogue Facility query interface	Phase 3 Catalogues [ESO User Portal authentication required also when browsing]	Catalogues	Various
	HARPS-Polarimetry pipeline processed data query form	HARPS-Polarimetry pipeline processed data	Spectroscopy	HARPS-Polarimetry, HARPS reduced calibrations (other HARPS see Phase3 above). FEROS is now available via the Phase 3 interfaces.
	Other Advanced Data Products (available only as downloadable packages, no query form)	Various (30 Doradus, Corot, GaBoDs, etc.)	Spectroscopy Imaging	FEROS WFI
	Science Verification, Commissioning, EIS, etc. (no query form)	Full list of available data packages	Various	Many
APEX Quick Look Products	APEX query form	APEX	Heterodyne, Bolometer	APEX-2A, LABOCA, SABOCA, SHeFI
LPO Schedule	Scheduling query form	ESO Observing Programme Information and Scheduling		All La Silla Paranal instruments, including APEX
ALMA Data	ALMA Science Archive	All ALMA data	Cube	ALMA



New Science Archive Interface



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- Student- and Fellowship programme
- Visitor programme
- Workshops and conferences
- Messenger
- Science Newsletter
- Web pages

ESO Studentship Programme

- Open to all nationalities, but preference to ESO member countries
- Students spend one or two years at ESO
- Also 2-3 month research opportunities for student interns



ESO Fellowship Programme



- Open to all nationalities, but preference to ESO member states
- 3 years in Garching or 4 in Chile
- Chile Fellows do research plus observatory work
- Garching Fellows do research plus support work
- New: Technical Fellowships

ESO Visitor Programme

- ESO welcomes short and long term visits by astronomers from around the world





ESO Messenger

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* Note: use + for AND, use - for NOT, use "" for phrases (i.e. "optical spectrograph" +FEROS -lib)



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Highlights include:

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- B.M. Poggiani et al.: Tales of Tails: Gas Stripping Phenomena in Galaxies with MUSE
- M. Sparvoli et al.: Unveiling the Nature of Star Ellipticals and their Stellar Halos with the VST
- P.A. Crowther et al.: Dissecting the Core of the Tarantula Nebula with MUSE

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September 2017 (No. 169)

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- F. Pätz et al.: Period 100: The Past, Present and Future of ESO Observing Programmes
- A. Garufi et al.: Three Years of SPHERE: The Latest View of the Morphology and Evolution of Protoplanetary Disks
- B. Huisman et al.: The Close AGN Reference Survey (CARS)
- S.P. Venemans: ALMA Observations of z ~ 7 Quasar Hosts: Massive Galaxies in Formation

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