



Giacomo Beccari

gbeccari@eso.org

This presentation is extensively based on the slides prepared by Elena Valenti for the AASS – Cycle XXXVII, VLT & ELT, Rome 07.12.2021



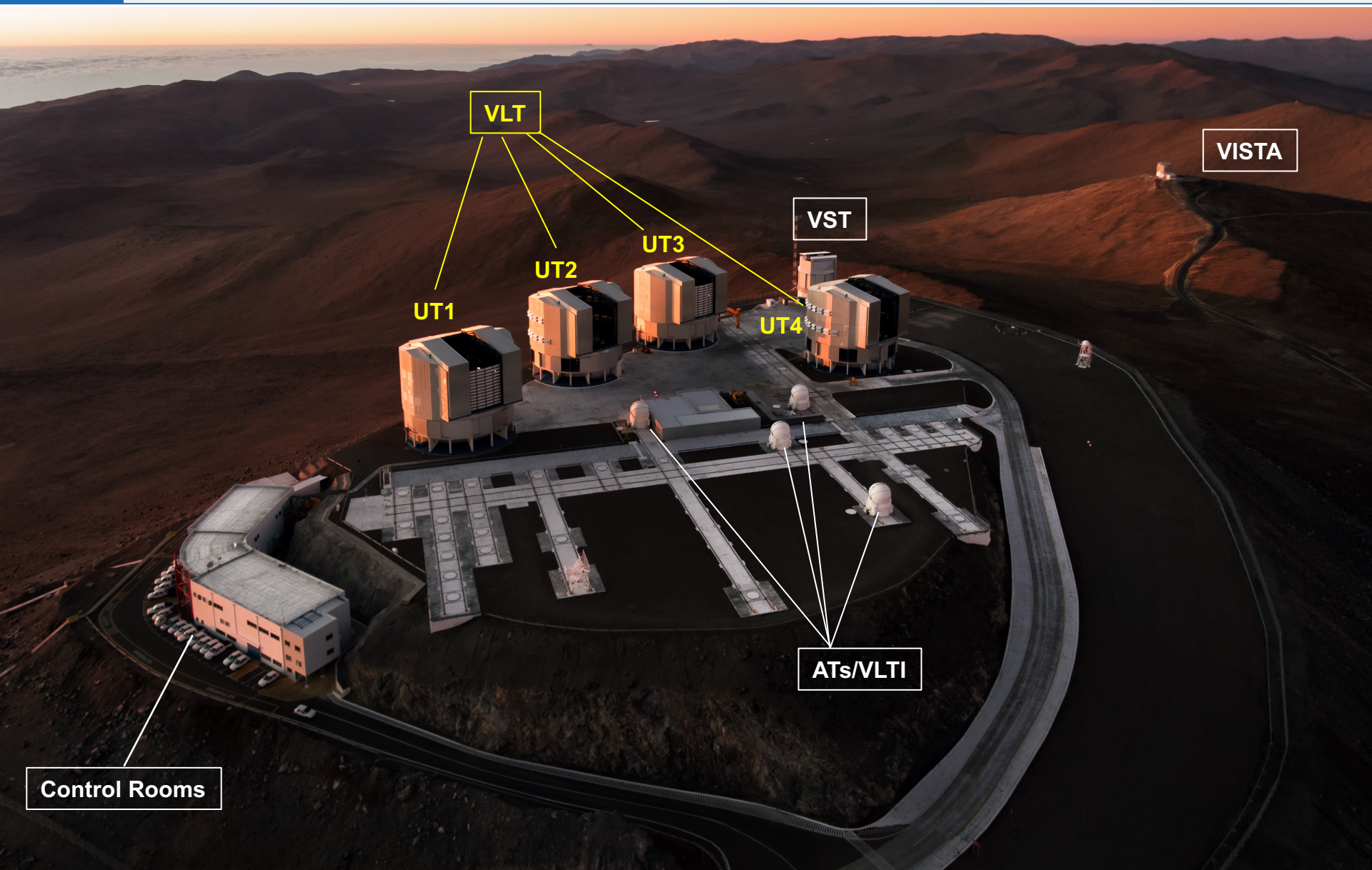
ABOUT ESO

✦ Observational Facilities ✦





Paranal



VLT

VISTA

VST

UT1

UT2

UT3

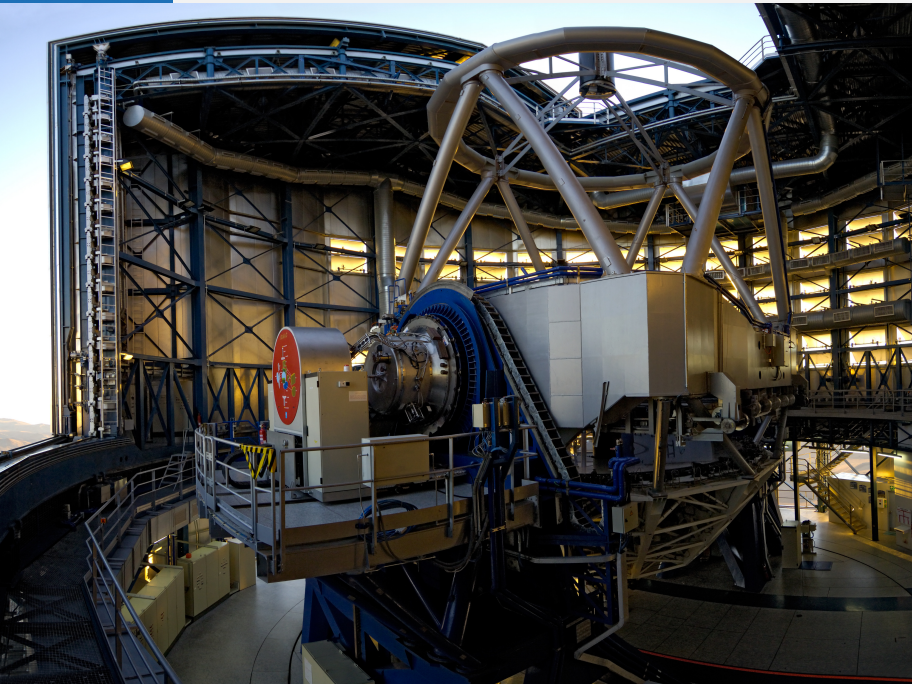
UT4

ATs/VLTi

Control Rooms



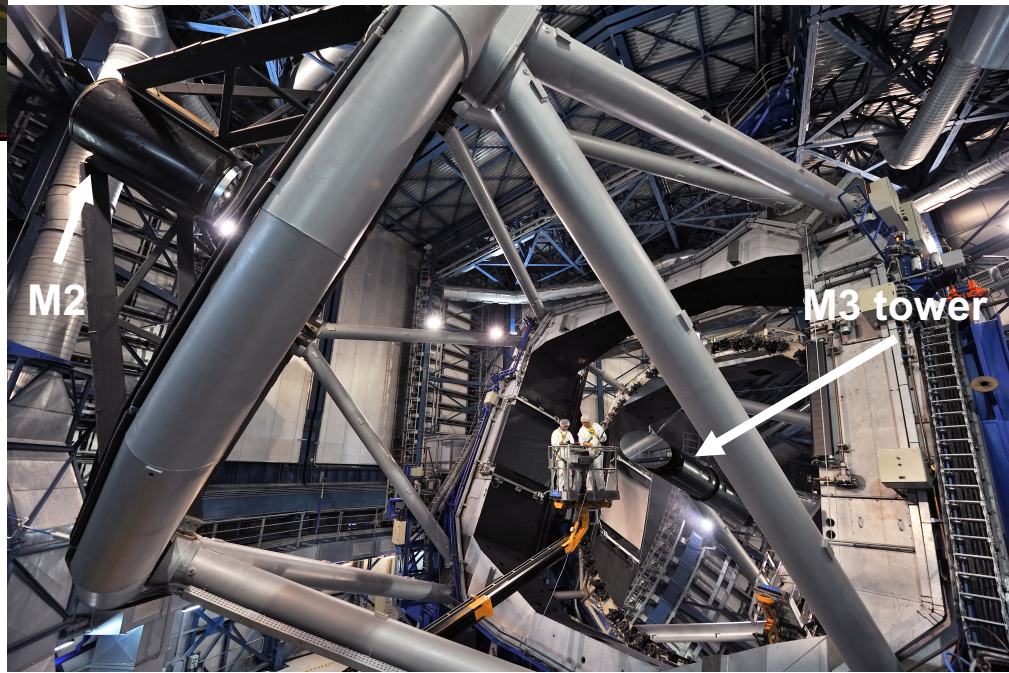
The Unit Telescope (UT)



M1: 8.2m diameter (175mm thick), actively controlled by 150 actuators

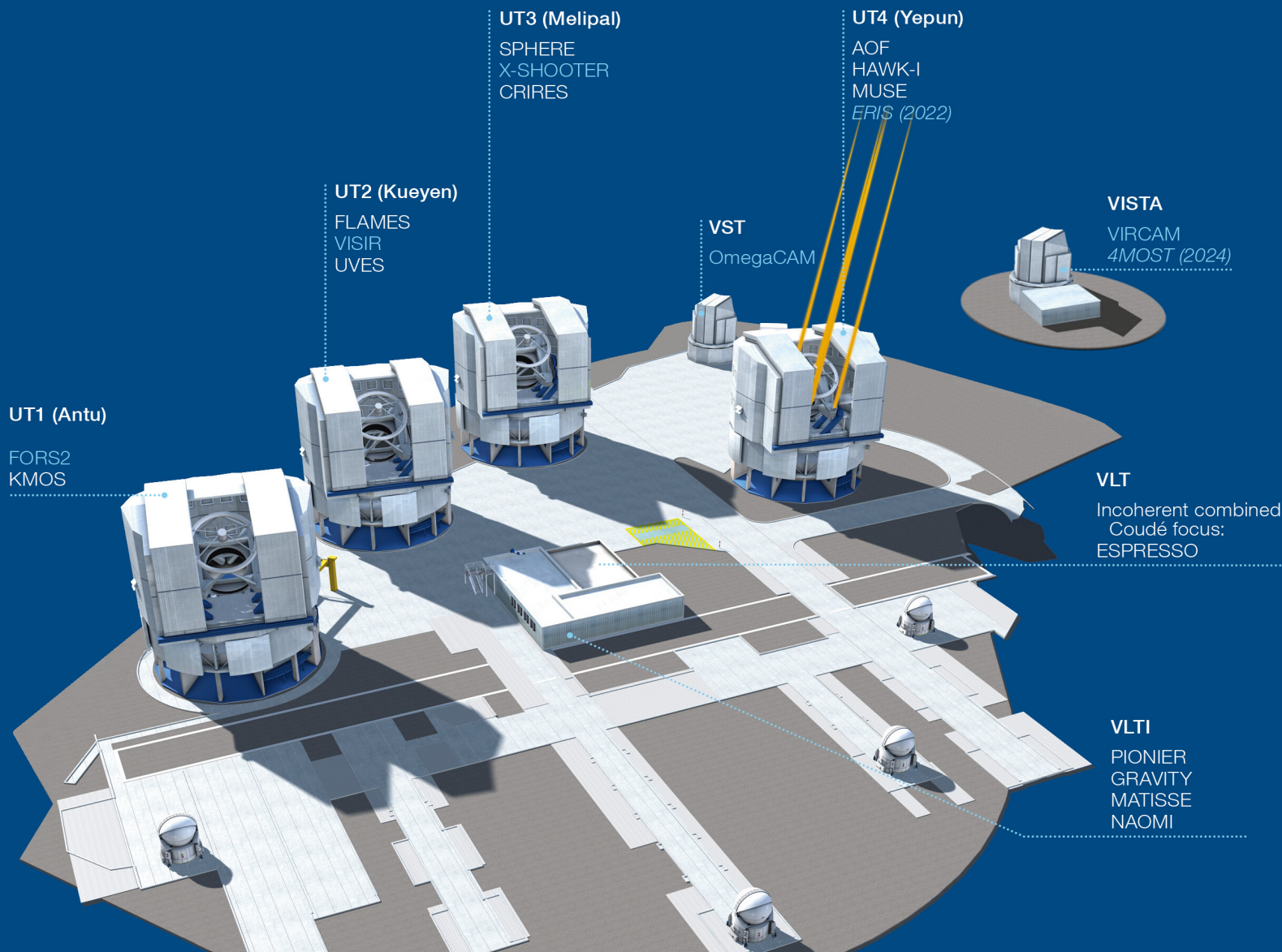
M2: 0.94m diameter

M3: 1.2x0.86m (elliptical flat)





The VLT in 2021





The VLT instruments in 2021

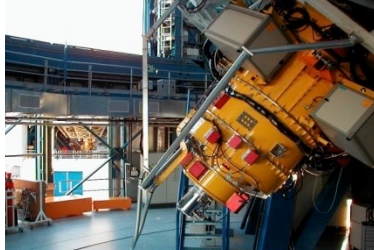
UT1

UT2

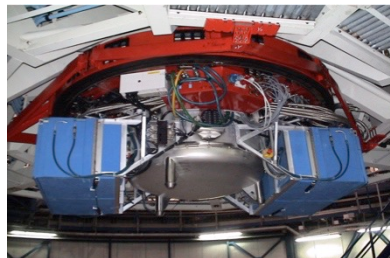
UT3

UT4

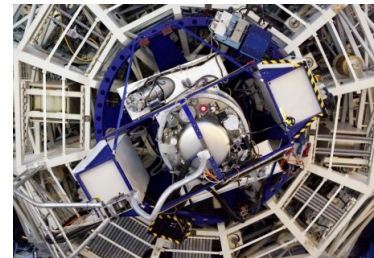
FORS2



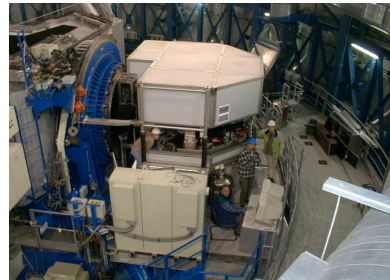
VISIR



XSHOOTER



UVES



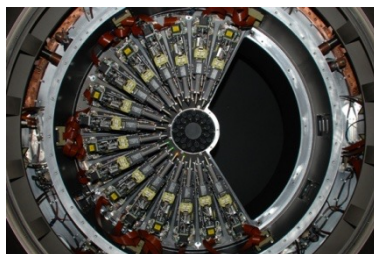
CRIRES+



MUSE



KMOS



FLAMES



SPHERE



HAWKI



Incoherent Combined
Coude focus

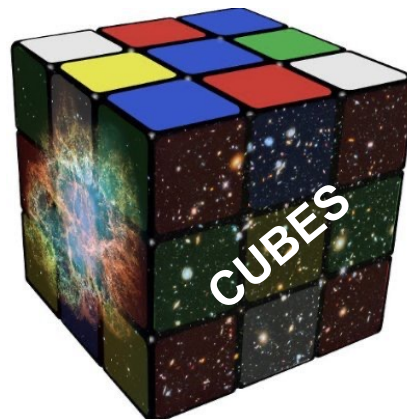


Coherent combined
focus





Coming next



Coming next

12+7 VLT instruments !!

Several working wavelength range!!

Tenths of different modes !!

Seeing
and/or
diffraction
limited

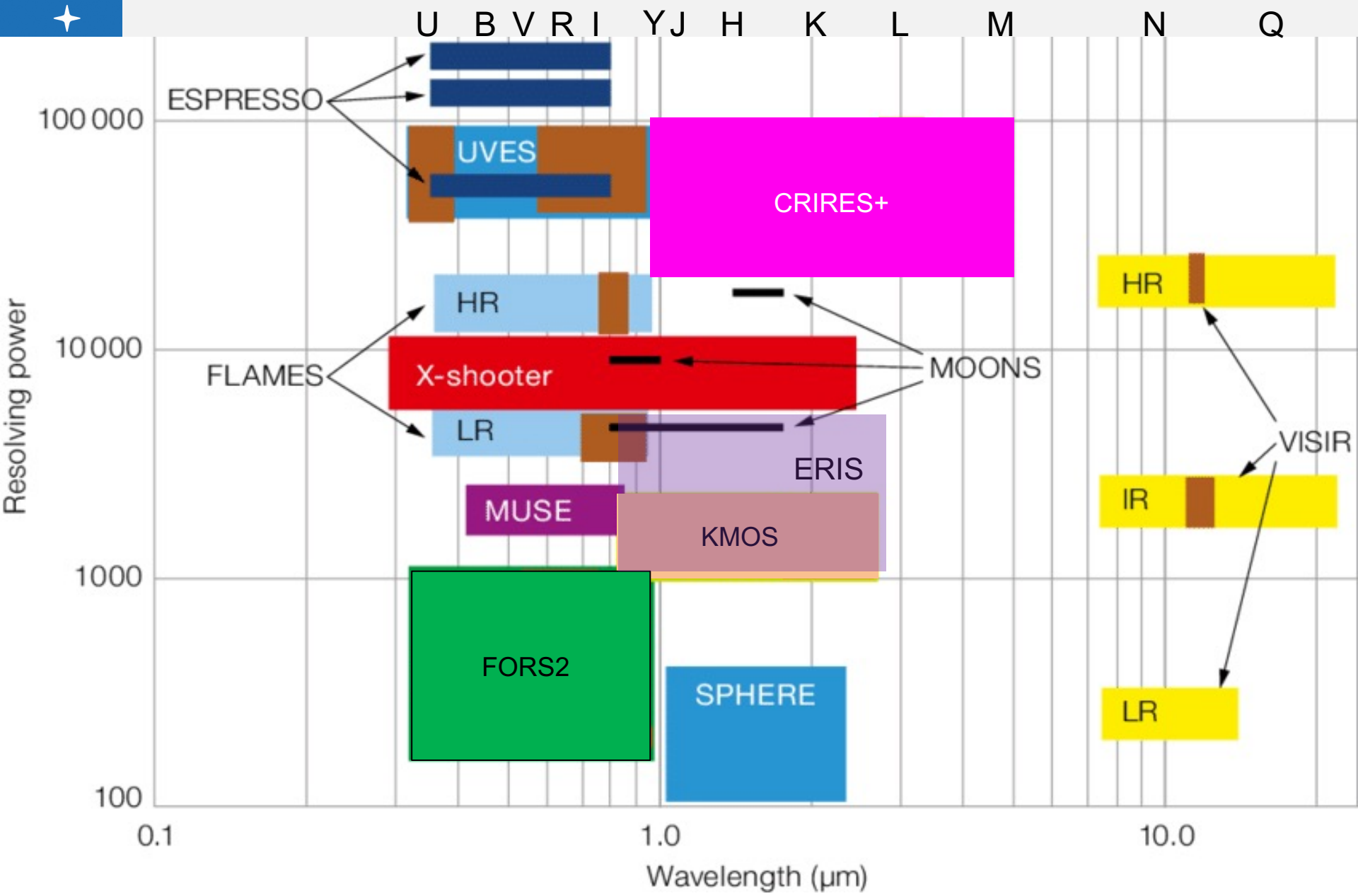
- Imaging
- Coronagraphy (HCI, ADI)
- Single-object slit spectroscopy
- Multi-object spectroscopy
- IFU
- Polarimetry (Ima & Spec)

MOONS

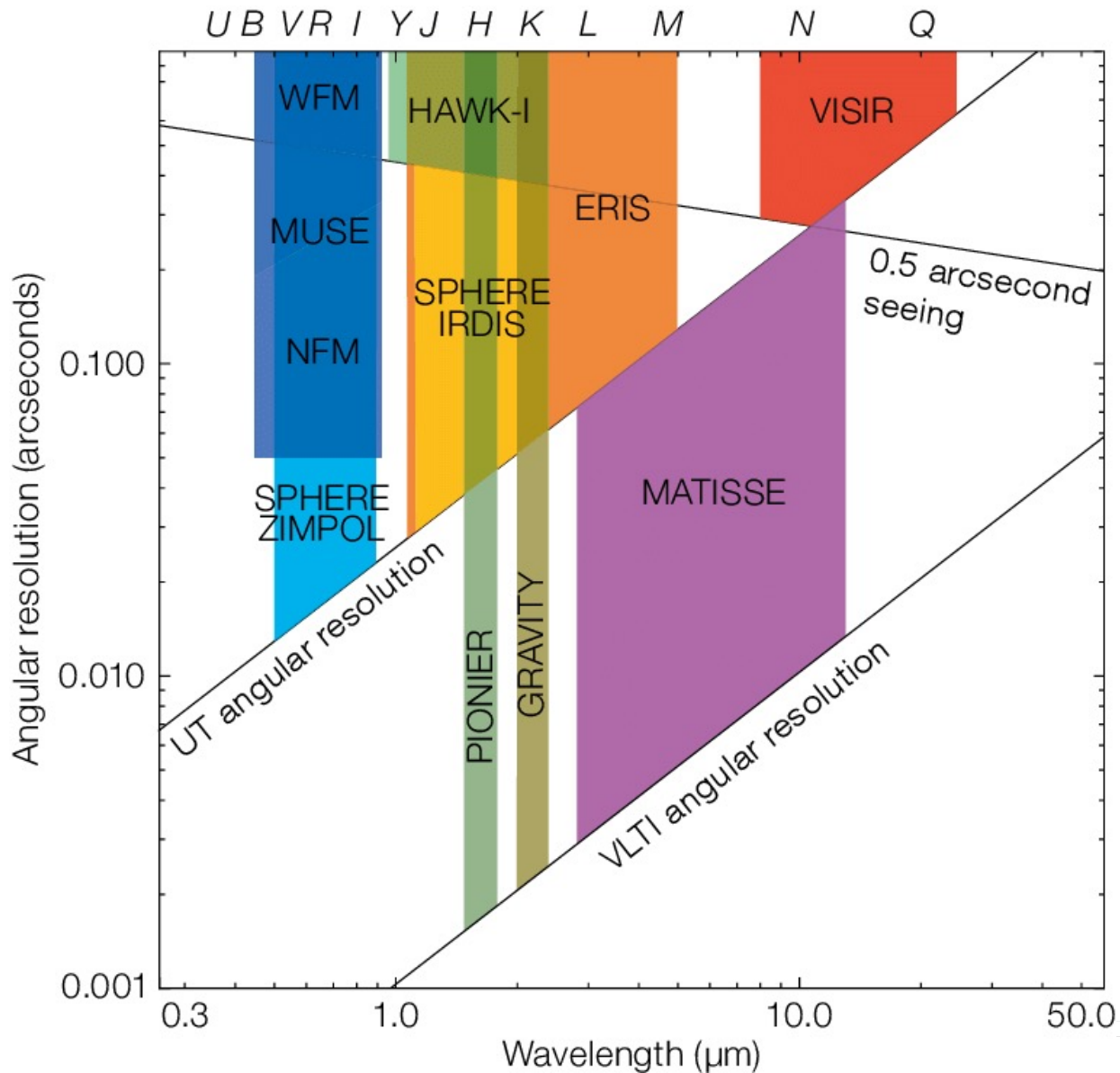
CUBES



VLT instruments in a nutshell



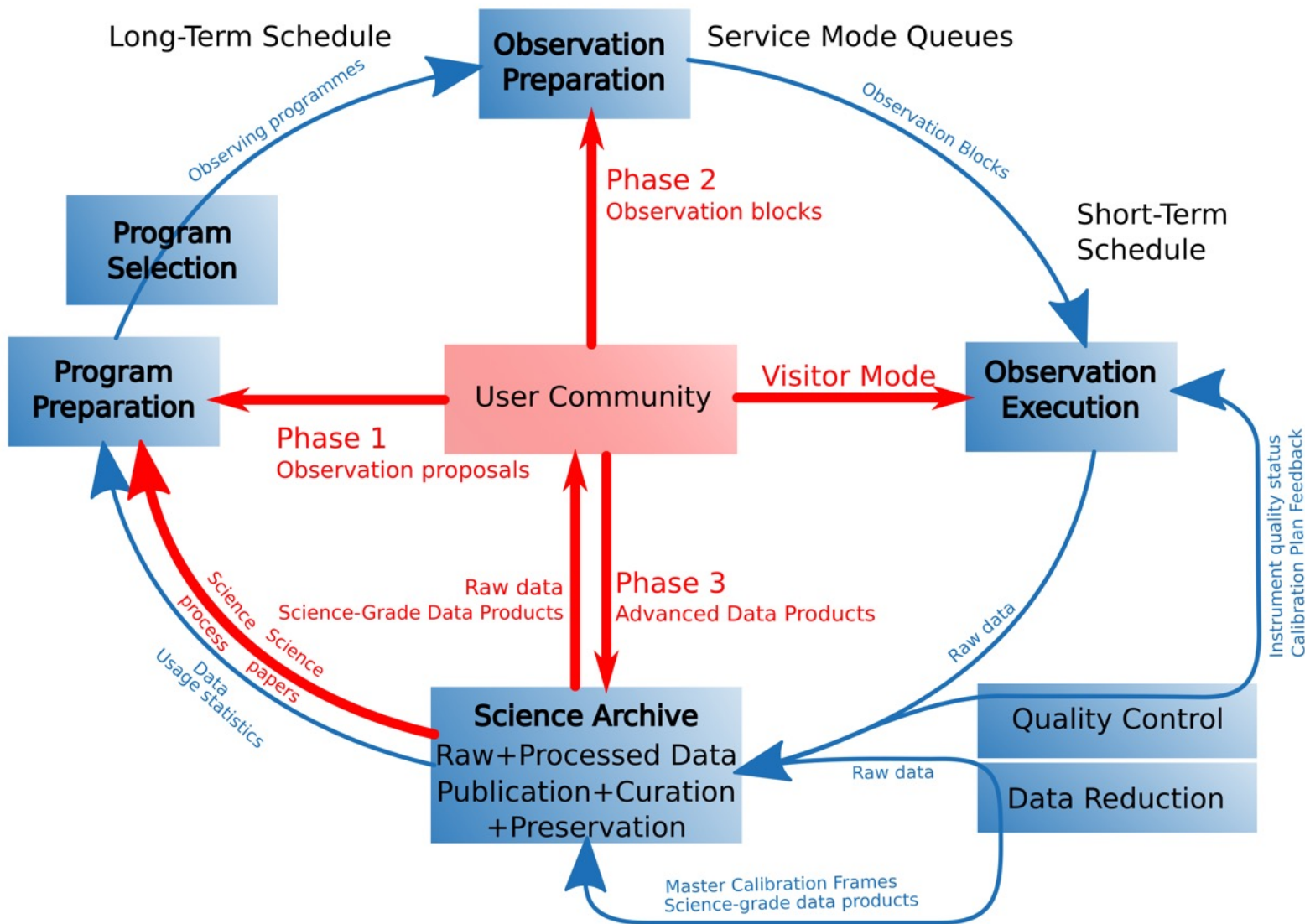
VLT instruments in a nutshell



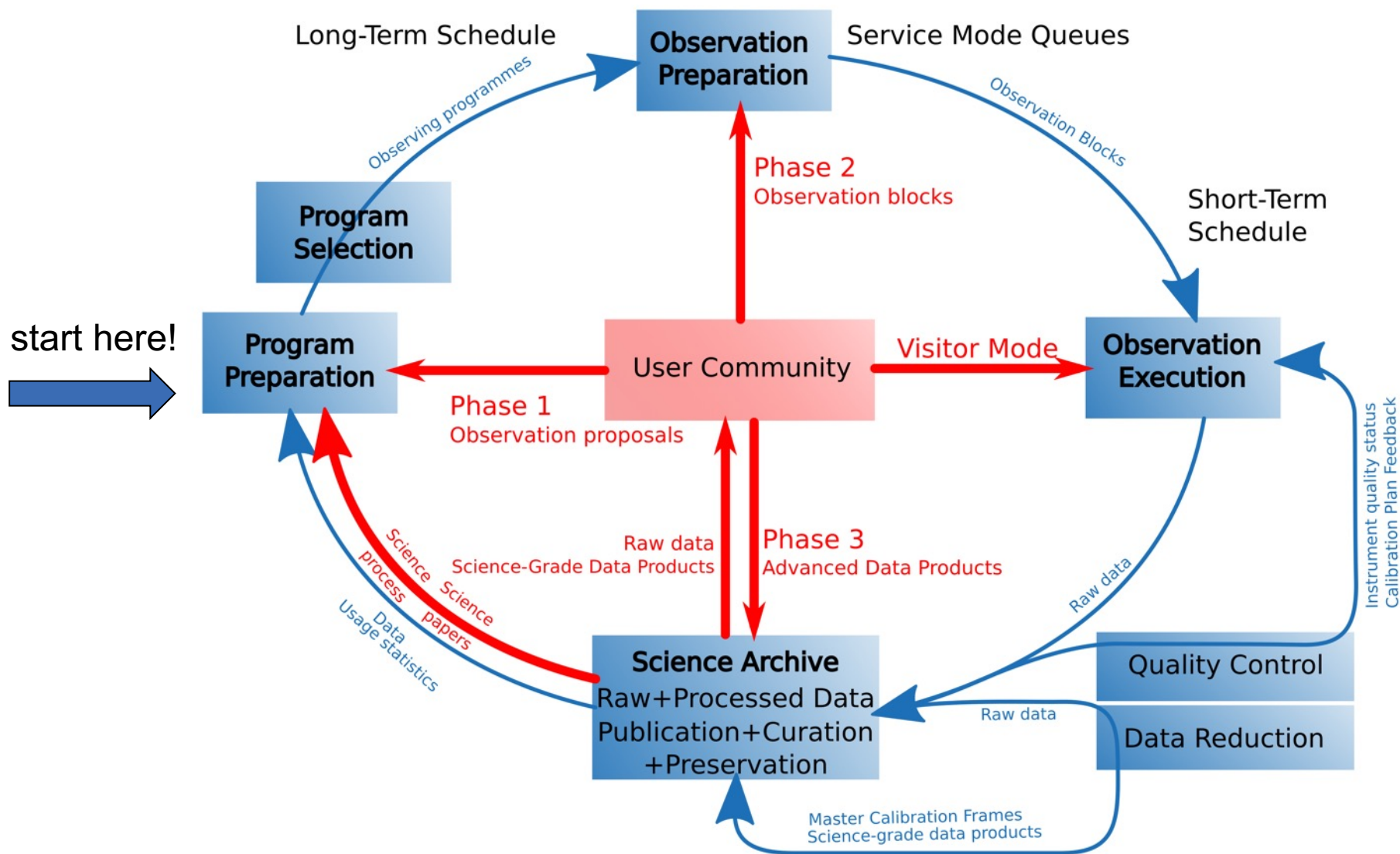
How can I get observing time at ESO?



The ESO operational model



The ESO operational model





The ESO tools!

Phase 1: Read the ESO Call for Proposal....

<https://www.eso.org/sci/facilities/paranal/cfp/cfp109.html>



European
Southern
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ESO — Reaching New Heights in Astronomy



Public

Science

User Portal

Intranet

Contact

Site Map

Go!

Science Users Information > Observing Facilities > Paranal Facilities > Call for Proposals > Paranal - Call For Proposals P10905 Jan 2022

Paranal Facilities

Emergency Procedures

Procedimientos de Emergencia

Call for Proposals

Offered Instruments

Recent Changes

Foreseen Changes

Overheads

Instruments Summary

Paranal News

Contact Information

Paranal Telescopes

Paranal Instrumentation

Decommissioned Instruments

Paranal Site Information and Logistics

Paranal Astroclimatology

Paranal Science Operations

Safety Information

Paranal - Call for Proposals for Period 109

The **European Southern Observatory (ESO)** invites **proposals** for observations at ESO telescopes during

Period 109 (1 April 2022 - 30 September 2022)

Please refer to the **Call for Proposals for Period 108** for instruments offered in Period 108, relevant for DDT proposals during Period 108.

This section provides tables of the **Paranal instruments and facilities** offered for observations during Period 109.

This section also lists the **recent changes** to Paranal instruments and facilities since period 107 or expecting to take place during Period 109, as well as the **changes foreseen** in the coming periods; please refer to the **Call for Proposals for Period 109** for other changes (policy, etc.) relevant for observations with ESO telescopes. Finally, a quick look table provides the estimated **overheads** for each instrument.





The ESO tools!

if you don't have it, create an account in the ESO User Portal

<https://www.eso.org/UserPortal/>



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[Home](#) ESO Home

[Science](#)

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Dr. Beccari



ESO User Portal

Privileged Actions

[Check the web letters](#)

[My Archive Requests](#)

[Browse the archive](#)

[My Programmes and Runs](#)

[Request a Special Run](#)

[Submit/edit a proposal](#)

Account Configuration

[Change Username](#)

[Change Password](#)

[Change E-mail Address](#)

[Manage Profile](#)

Science Users

[Science User Information](#)

[ALMA Science Portal](#)

ESO User Portal Services



Phase 1

Submit/edit an observing proposal
Check the time allocation information



Phase 2

Prepare observing materials
Submit a target or set-up change request
Check the status of your observing runs
Delegate Phase 2 tasks



Phase 3

Download the Science Data Products Standard
Submit data
Delegate Phase 3 tasks



Archive Services

La Silla Paranal data (raw)
Science Portal (processed data)
APEX reduced data
Catalogue data
Programmatic and Tool Access

Check your Archive requests
Delegate proprietary data access rights
Access ALMA data
Archive homepage for other services



Help

Ask for help
Find User Portal Information and FAQ
Check the data reduction FAQ
Go to the ESO Archive Community Forum [↗](#)





The ESO tools!

...then prepare and submit your observing proposal

<https://www.eso.org/p1>

Phase 1 1.2.37

Proposals Overview

Help

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Your Proposals

New Proposal

Sort by:

12 pi | 12 cycle | 12 title

108.2206 Old protopla

Summary

Title & Abstract

Category

Investigators

Rationale

Targets

Runs

Targets Runs

Observations

Remarks & Justifications

Awarded & Future Time Requests

Previous Usage

Applicants' Publications

106.215B Old protopla

106.213F Determining ..

PI: Henri Boffin

108.224W Rejuvenated

PI: Henri Boffin

109.2305 What shapes

PI: Francesco Delgado

APPLICATION FOR OBSERVING TIME

Clone Help pdf

Principal Investigator: Giacomo Beccari

Programme ID: 108.2206 · Programme Type: Normal · Cycle: P108 · Status: Valid

By submitting this proposal, the PI takes full responsibility for the content of the proposal, in particular with regard to the names of Cols and the agreement to act according to the ESO policy and regulations, should observing time be granted.

TITLE: Old protoplanetary discs in Orion? Getting the final word

ABSTRACT

The use of Gaia data, combined with optical to IR photometry, is changing our notion of the evolution of Pre-Main Sequence (PMS) stars in close-by star-forming regions. Several published studies revealed the presence of PMS stars that, according to their location on the Colour Magnitude Diagram (CMD), are accreting material from a disc at ages > 10Myr, at odds with the typical life-time of discs (<3Myr). The available data-sets do not allow us to exclude alternative explanations (strong accretion veiling or highly inclined disc) which would alter the optical colors of the PMS stars and misplace them on a CMD. With this proposal we aim at observing a number of candidate long-living discs in a 1.5deg area around the Orion Nebular Cluster (ONC) with X-Shooter in order to constrain the impact of the aforementioned processes. Confirming the existence of long-living discs in ONC will have profound implications on our understanding of the physics of discs and the theory of planet formation.

SCIENTIFIC CATEGORY

C4 Pre-main-sequence stars

RUNS

Run	Period	Instrument	Tel. Time	Constraints	Mode	Type	Tel. Setup	Proprietary Time	Time Constr.
1. Run 1	108	XSHOOTER	32h00m	FLI: 100% • Turb.: 85% • pwv: 30mm • Sky: THN • Airmass: 1.8	SM	Normal	UT3	12m	

AWARDED AND FUTURE TIME REQUESTS

Time already awarded to this project

Instrument	Time	Comment
------------	------	---------





How to select your VLT instrument(s)?

Start with a clear and well-defined scientific goal!!!

How to select your VLT instrument(s)?

Trade-off between:

- FoV vs angular resolution
- Multiplexing vs single-object capability
- Wavelength coverage vs spectral resolution

INST	FORS2	KMOS	VISIR	SPHERE	HAWKI	MUSE	ERIS
FoV	6.8'x6.8' 4.3"x4.3"	2.8"x2.8"	1'x1' 38"x38"	11"x11" 1.7"x1.7" 3.5"x3.5"	7.5'x7.5'	1'x1' 7.5" x 7.5"	1'x1' 30"x30" 8"x8" 3.2x3.2" 0.8"x0.8"

INSTRUMENT	FORS2	KMOS	FLAMES	MOONS
Multiplexing	19 [MOS] ~470 [MXU]	24	8+130	1000



How to quickly get info

Paranal: Instruments Summary Table:

https://www.eso.org/sci/facilities/paranal/cfp/cfp109/instrument_summary.html

Paranal Instrumentation:

<https://www.eso.org/sci/facilities/paranal/instruments.html>

Service Mode guidelines:

<https://www.eso.org/sci/observing/phase2/SMGuidelines.html>

Ask for help: support@eso.org

Phase 2 Preparation
Observing conditions
Service Mode Philosophy
Service Mode Policies
Phase 2 Instrument Table
Service Mode Guidelines
Recent Changes/News
Manuals and Tutorials
Service Mode OB Rules
OB Naming Conventions
Observing Constraints
Finding Charts
Readme File
Calibration Plan
Waiver/Change Requests
Frequently Asked Questions

Service Mode Guidelines for Period 108

This page and the links in the left menu provide the general information necessary to complete the Phase 2 preparation for **Service Mode** programmes at the VLT/VLTI, VISTA and VST.

This information has been updated for Period 108. Period 107 users (including the authors of the Special Call for P107 (SC107) or Director's Discretionary Time proposals approved during Period 107) should continue to follow the **Period 107 procedures**.

P108 Phase 2 deadline:

Thursday, 12 August 2021 at 12:00 CET

News and Recent Changes

Please follow [this link](#) to get the news on recent changes concerning general phase 2 matters, observatory news, as well as instrument specific news (if you have chosen an instrument with the Instrument Menu on the right).

Instrument selector

MUSE



=

Public	Science	User Portal	Intranet
Science Users Information > Observing Facilities > Paranal Facilities > Paranal Instruments			
Paranal Facilities		Paranal Instrumentation	
Emergency Procedures Procedimientos de Emergencia		Overview	
Call for Proposals		News	
Paranal News		Instrument Description	
Contact Information		Manuals	
Paranal Telescopes		Tools	
Paranal Instrumentation		Instrument Operation Team	
CRIRES		Visitor Instructions	
ESPRESSO		Science	
FLAMES		Telescope	
FORS		UT1 (Antu)	
HAWK-I		UT2 (Kueyen)	
KMOS		UT3 (Melipal)	
MUSE		UT4 (Yepun)	
SPHERE			
UVES			
VISIR			
X-SHOOTER			
Visitor Focus			
VLTI GRAVITY			
VLTI MATISSE			
VLTI PIONIER			
VLTI Visitor Instrument			
VIRCAM @ VISTA			
OmegaCAM @ VST			
Mascot			



Check the feasibility of your observations

<https://www.eso.org/observing/etc/>



ESO Exposure Time Calculators

Documentation and Tools

- [Frequently Asked Questions](#)
- [Formula Book](#)
- [Database of efficiency profiles](#)
- Previous ETC versions:
- [SkyCalc](#) Sky Model Calculator
 - with advanced Almanac
 - command-line interface [skycalc_cli](#)

News and Notes

P109 - August 26, 2021

CRIRES ETC:

Introduced support for polarimetry and off-axis NGS AO guiding

MUSE ETC:

Updated Instrument Transfer Function (ITF) model

ESO Exposure Time Calculators

	Imaging	Spectroscopy
La Silla	EFOSC2 SUSI WFI SOFI	EFOSC2 HARPS FEROS SOFI
Paranal UT1	FORS2	FORS2 KMOS
Paranal UT2	VISIR	UVES UVES-FLAMES GIRAFFE VISIR
Paranal UT3	SPHERE-IRDIS SPHERE-ZIMPOL	X-SHOOTER SPHERE-IFS CRIRES
Paranal UT4	HAWK-I	MUSE
Paranal ICCF		ESPRESSO
Paranal VISTA	VIRCAM	4MOST
Paranal VST	OmegaCAM	
ELT	ELT	ELT
VLTi	GRAVITY MATISSE VisCalc CalVin	



Prepare your observations

<https://www.eso.org/p2/>

Phase 2 2.8.17

Details

Overview

Schedule

Execution Sequence

Help

UT: 12:02:01 · LST: 14:20:40

Giacomo Beccari

Your Observing Runs

Sort by: mode | period

108.2206.001 · XSHOOTER 3

Templates 7

bright 10

OB 3080764 · template_bright_2

OB 3080767 · template_bright_3

OB 3080770 · template_bright_4

OB 3080773 · template_bright_5

OB 3080776 · template_bright_6

OB 3080779 · template_bright_7

OB 3080782 · template_bright_8

OB 3080785 · template_bright_9

OB 3080788 · template_bright_10

OB 3080791 · template_bright_11

OB CB C

Exec. Time Report

Import/Export

Refresh Run

Generate Finding Charts

Change Request

Run 108.2206.001 · XSHOOTER · Old protoplanetary discs in Orion? Getting the final word

Exp. Time: 00:00:00 · Exec. Time: 00:00:00

Run Info

Readme

Checklist

OBX Import

Principal Investigator

Giacomo Beccari gbeccari@eso.org

Observing Mode

Service Mode

Instrument

XSHOOTER (UT3)

Instrument Package Version

108.14

Container ID for obximport

3048108

Period

108

Scheduled Period

108

Own Run

yes

Delegated

no

Notify ESO

By clicking Notify ESO you confirm that you have

certified at least one OB or scheduling container

completed the preparation of the Readme

and your Phase 2 material is ready for review by ESO.



The ESO Science Archive

- Remember that every photon collected with ESO facilities is stored in the Science Archive
- Upon the proprietary period expiration, access to the data is free to anyone!
- Check the archive before applying for VLT time

<http://archive.eso.org/cms.html>

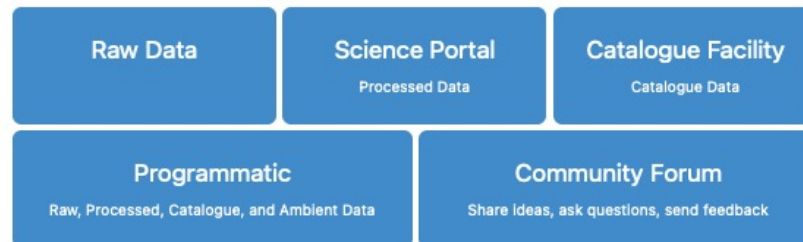
Welcome to the ESO Science Archive Facility

The ESO Science Archive Facility contains data from ESO telescopes at La Silla Paranal Observatory, including the APEX submillimeter telescope on Llano de Chajnantor. All raw data from the La Silla Paranal Observatory are stored together with the corresponding calibrations, as well as selected products both contributed by the [community](#) or generated at [ESO](#). In addition, the raw UKIDSS/WFCAM data obtained at the UK Infrared Telescope facility in Hawaii are available.

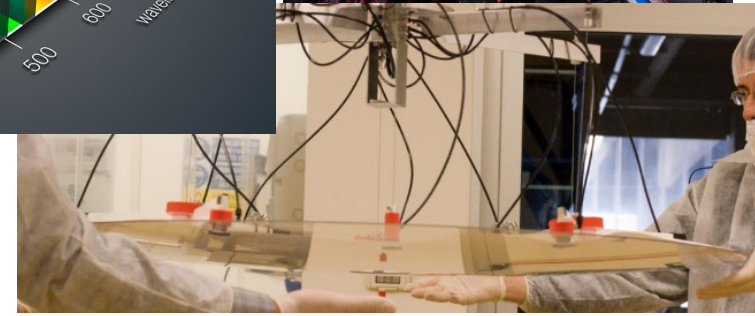
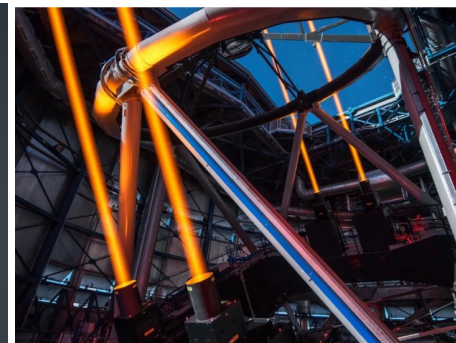
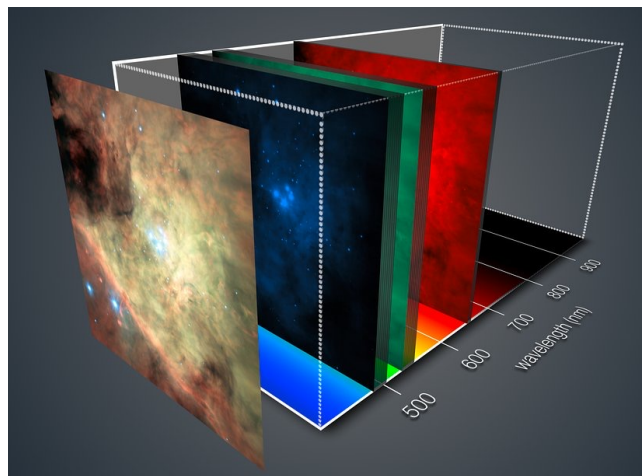
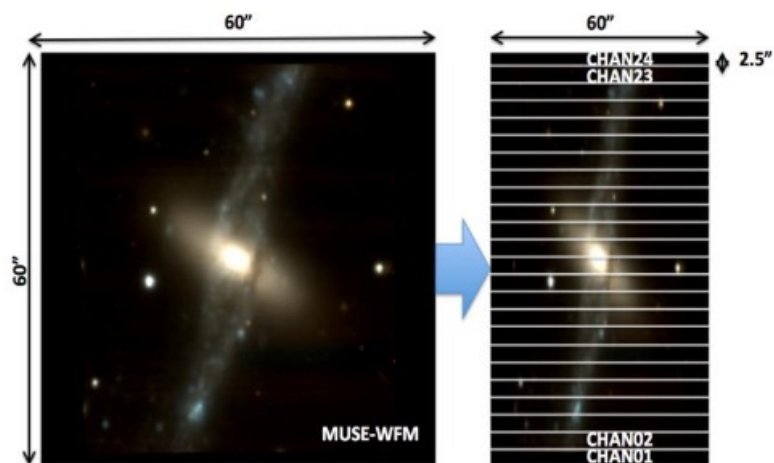
The Principal Investigators of successful proposals for time on ESO telescopes have exclusive access to their scientific data for the duration of a proprietary period, normally of one year, after which the data becomes available to the community at large. Please read the [ESO Data Access Policy](#) statement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

Browsing the archive does not require authentication. Please **acknowledge the use of archive data** in any publication.

There are three main ways to access the archive, varying for content and presentation/interface: the usual Raw Data query form, the innovative Science Portal to browse and access the processed data, and the novel Programmatic and Tools access which permits direct database access to both raw and processed data, and to the ambient condition measurements, also in a scriptable and VO manner. Other query forms are available in the table at the bottom of this page.



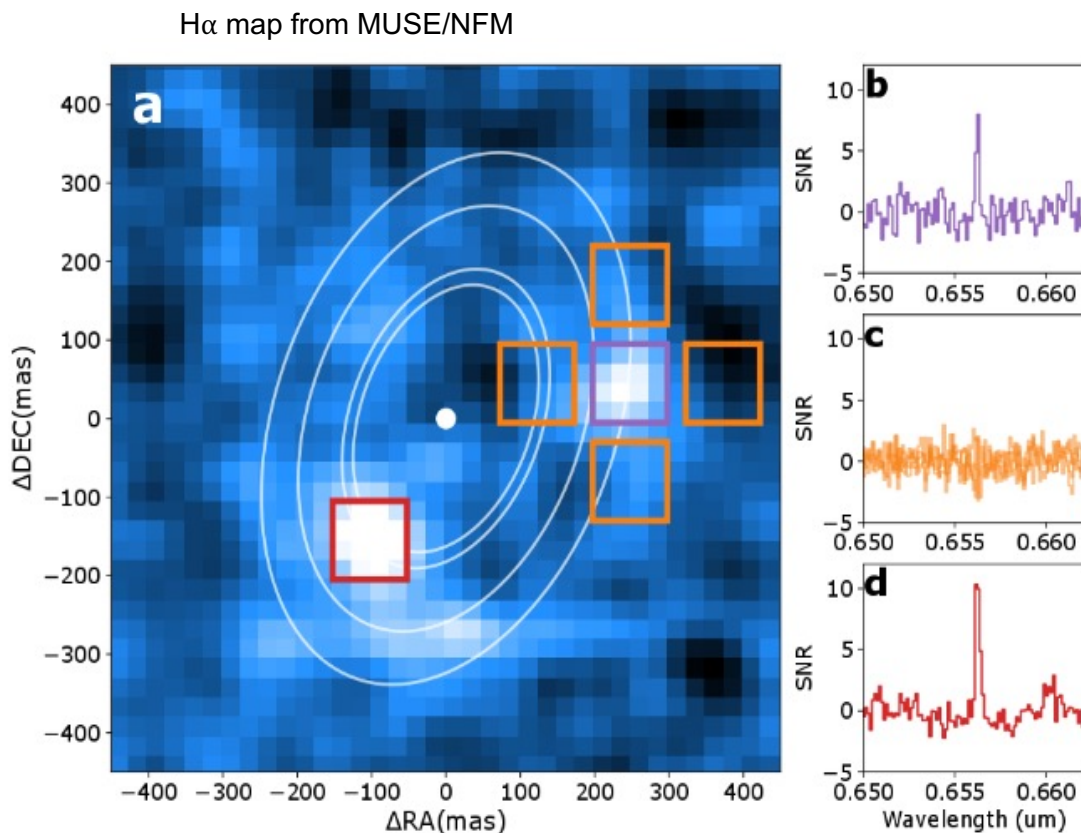
- 24 IFUs
- Wavelength coverage: 480nm - 930nm (N), 465nm – 930 (E)
- Spectral sampling: 0.125 nm/px
- FoV: 59.9" x 60.0" (WFM), 7.42" x 7.42" (NFM)
- Spatial pixel scale: 0.2"/px (WFM), 25mas/px (NFM)
- AOF (4LGSF & DSM) + GALACSI: GLAO (WFM) & LTAO (NFM)



Science with MUSE: Planet formation

- Tracing ongoing planet formation in transitional disks at different stages of their evolution via accretion signature

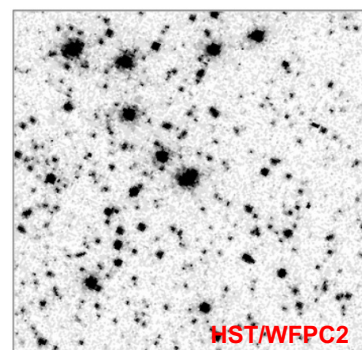
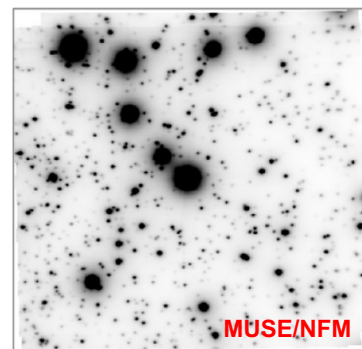
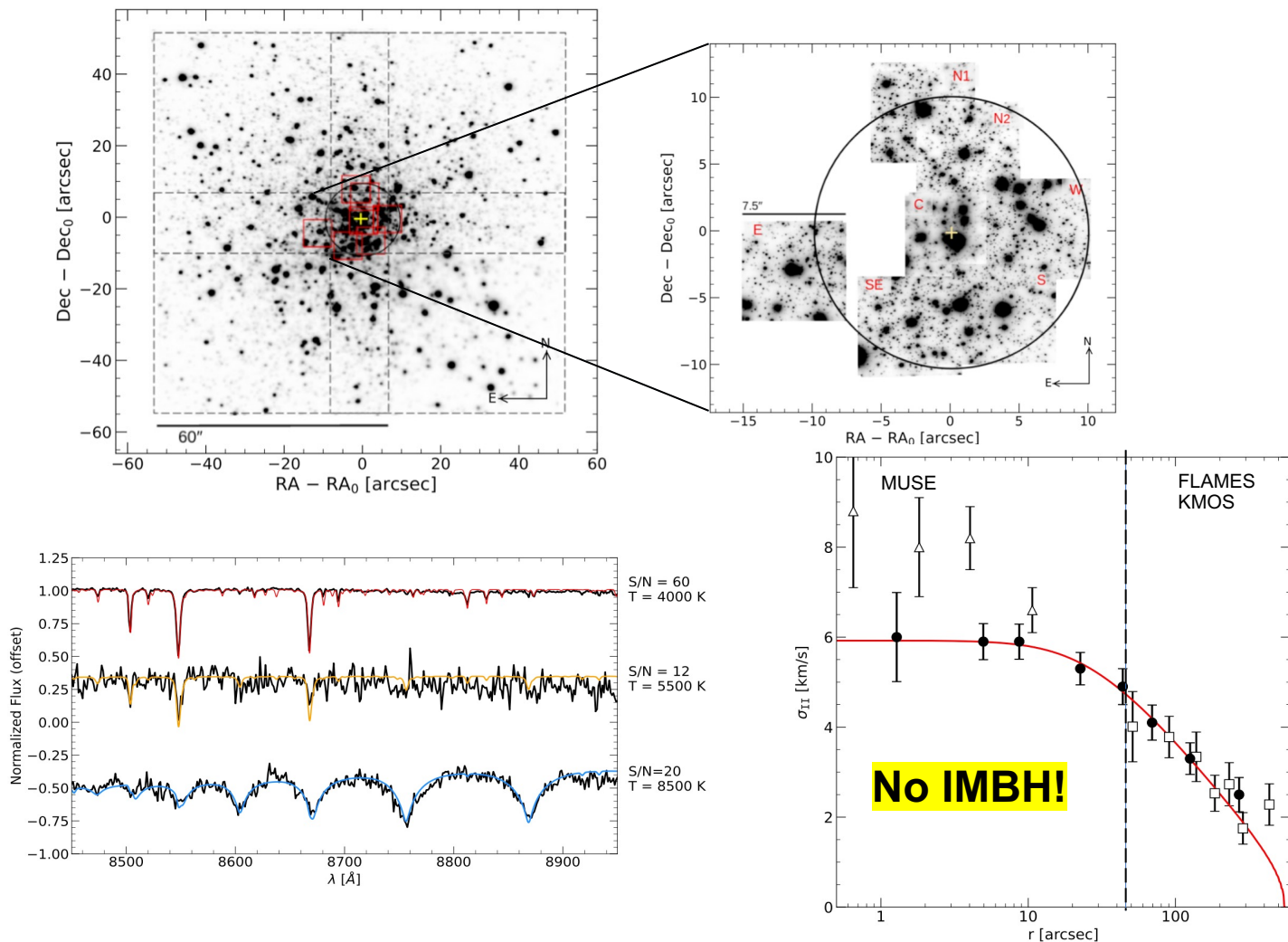
The case of the young (5.4Myr) T-Tauri star PDS70 (d=113.4pc)



Haffert et al. 2019

■ Kinematics and internal dynamics of Globular Clusters

Spectra for more than 1700 individually resolved stars from MUSE+FLAMES+KMOS

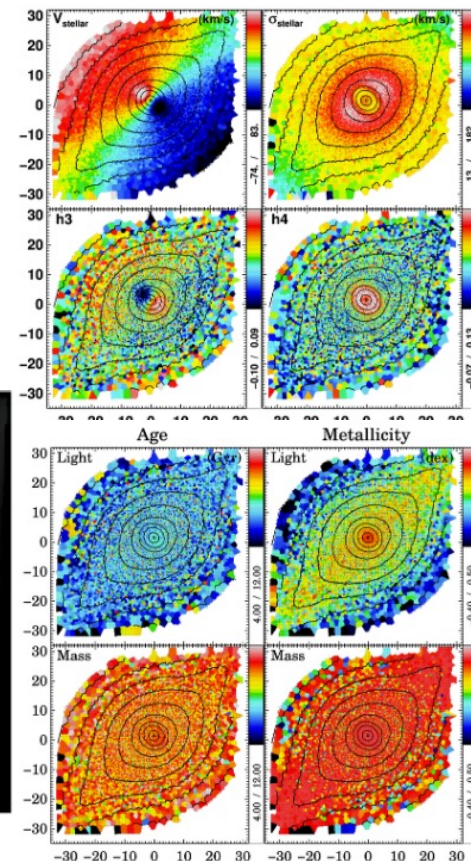
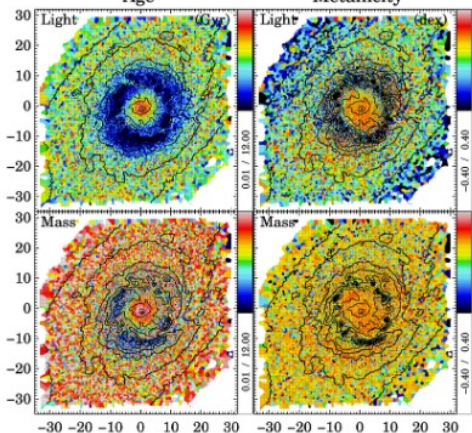
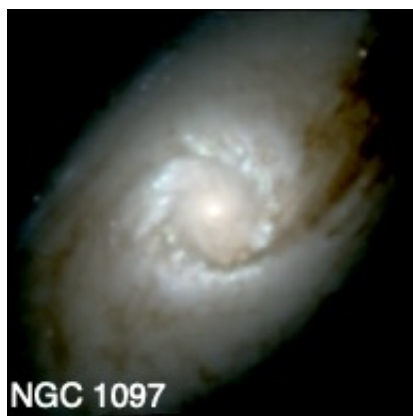
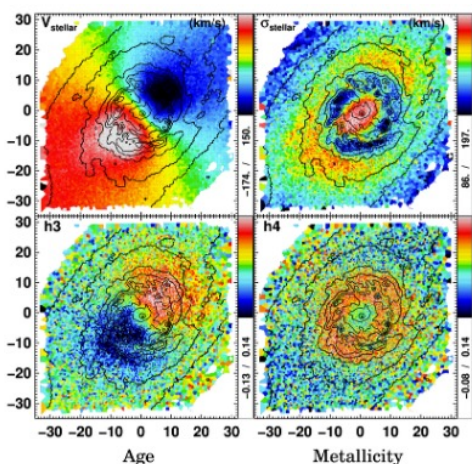


Leanza et al. 2021, sub.

Science with MUSE: Galaxy evolution

■ TIMER Survey: cosmic epoch of disk and bar formation

24 nearby barred galaxies with prominent central structure (i.e., nuclear rings and disk)



Gadotti et al. 2018