



**Introduction to
observation preparation**

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So you have an idea...

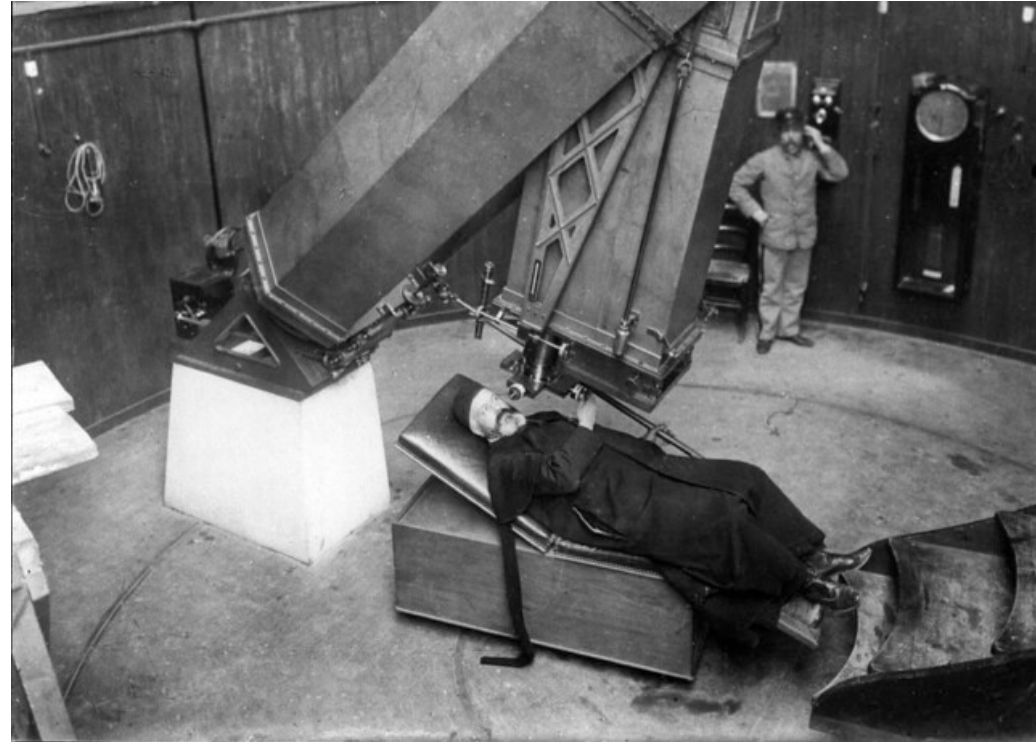


Observation preparation starts with the preparation of the proposal:

- Is the idea feasible?
- What telescope should I use?
- Which instrument? With which setup?
- How much time to apply for?
- What should be my targets?
- Service or visitor mode?
- What time of the year?
- Etc...

Congratulations! You got the observing time

- Do Not Improvise!
- Time at the telescope is valuable
- You will arrive tired after long trip
- You have long nights ahead and it will be hard to stay awake at 4am
- Altitude may have an effect on you
- The unexpected will happen, so reserve as much time as possible to deal with it
- You will have things to do in real time (doing quick-data reduction, checking quality, making sense out of the results, figuring out what went wrong...).
- So, *think ahead about everything that is predictable.*



Some tips to prepare in advance

- Have your target list and the time when you will observe each target (don't chase them near the horizon if you can avoid it, don't run out of targets because some have set and others are not up yet).
- Have finding charts if needed.
- Have contingency plans for bad seeing, non-photometric conditions if you need them.
- Have a backup program if possible.
- Familiarize yourself with the tools that you will be using.
- Make sure that you have enough disk space in your laptop
- Think before arriving at the telescope everything that can be thought in advance.
- Give yourself time to adapt to night schedule (sleep well).
- At ESO, have your Observation Blocs ready.

Exposure time calculators

- Exposure Time Calculators(ETCs) encapsulate the best knowledge that ESO has about its instruments
- ETCs make you take into account all the factors that go into defining an observation and its conditions of execution

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

January 10th, 2020
HAWK-I ETC: Corrected a bug which caused the input values of airmass and moon phase to be ignored, always using the default values instead.

December 19th, 2019
Corrected wrong IQ calculations in MUSE WFM_AO mode and HAWKI in AO TTS free mode.


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

Send comments and questions to usd-help@eso.org

Exposure time calculators

Infrared Exposure Time Calculator - Mozilla Firefox

www.eso.org/observing/etc/bin/gen/form?INS.NAME=SOFI+INS.MODE=swimaging



SOFI Exposure Time Calculator

Infrared Short Wavelength Imaging Mode Version P105.6 [Description](#) [FAQ](#)

Input Flux Distribution

Uniform (constant with wavelength)
 Blackbody: Temperature: Kelvin

Object Magnitude: Vega AB

Single Line
Wavelength: nm
Flux: 10^{-18} ergs/s/cm² (per arcsec² for extended sources)
FWHM: nm

Spatial Distribution: Point Source Extended Source
Magnitudes are given per square arcsec for extended sources

Sky Conditions

Override almanac sky parameters and use instead typical fixed sky model parameters except Moon phase and airmass

Moon FLI: Airmass:

PWV: mm *Probability > 95% of realising the PWV \leq 30.0 mm*

Seeing/Image Quality:

Turbulence Category: IQ: arcsec FWHM at the airmass and reference wavelength
The corresponding seeing and turbulence category will be indicated in the output page

Instrument Setup

Filter:

Wide Band:

Narrow Band:

Selecting the filter sets the observation band

Objective:

Results

<input type="radio"/> S/N ratio:	S/N: <input type="text" value=""/>	DIT: <input type="text" value="20"/> s
<input type="radio"/>	NDIT: <input type="text" value="3"/>	<i>The minimum DIT is 0.0032 s</i>

Exposure time calculators

Infrared Exposure Time Calculator - Mozilla Firefox

www.eso.org/observing/etc/bin/genform?INS.NAME=SOFI+INS.MODE=swimaging

Wave length: 1500.000 nm
Flux: 1.000 10^{-18} ergs/s/cm² (per arcsec² for extended sources)
FWHM: 1.00 nm

Spatial Distribution: Point Source Extended Source
Magnitudes are given per square arcsec for extended sources

Sky Conditions

Override almanac sky parameters and use instead typical fixed sky model parameters except Moon phase and airmass

Moon FLI: 0.30 Airmass: 1.50

PWV: 30.0 mm Probability > 95% of realising the PWV \leq 30.0 mm

Seeing/Image Quality:

Turbulence Category: 70% (seeing \leq 1.0")

IQ: 0.80 arcsec FWHM at the airmass and reference wavelength
The corresponding seeing and turbulence category will be indicated in the output page

Instrument Setup

Filter:

Wide Band: Js

Narrow Band: 1.08

Selecting the filter sets the observation band

Objective: Large Field

Results

S/N ratio: S/N:

Exposure Time: NDIT: 3 NINT: 8 DIT: 20 s
The minimum DIT is 0.0032 s

The total exposure time is the product of DIT (Detector Integration Time) by NDIT (number of DITs). Instrument and telescope overheads are not taken into account.

Plots: Toggle All / No Plots

Detector illumination

S/N as a function of Exposure Time

Total Efficiency

S/N as a function of seeing (only for point-source)

Input spectrum in physical units

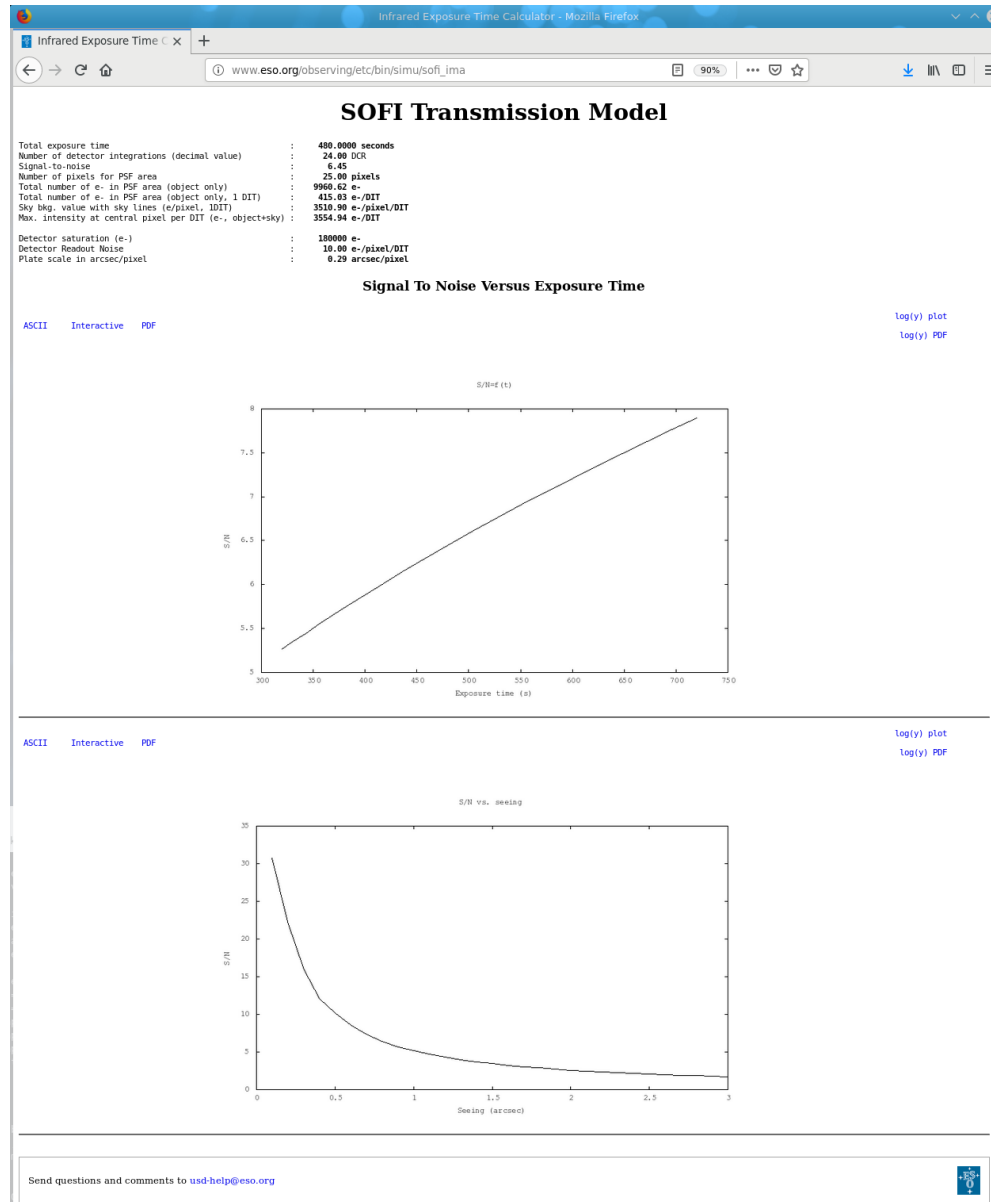
Sky spectrum

Sky transmission spectrum

Submit Reset

Send questions and comments to usd-help@eso.org

Exposure time calculators



Other tools

The ESO Sky Calendar Tool

See also [Object Observability](#) - [Airmasses](#) - [Daily Almanac](#) - [Ephemerides](#)

Observability for 08 22 33.26 -15 28 53.2

La Silla Observatory

RA & dec: 8 22 33.3, -15 28 53, epoch 2000.0
 Site long&lat: +4 42 55.1 (h.m.s) West, -29 15 25 North.

Shown: local eve. date, moon phase, hr ang and sec.z at (1) eve. twilight, (2) natural center of night, and (3) morning twilight; then comes number of nighttime hours during which object is at sec.z less than 3, 2, and 1.5. Night (and twilight) is defined by sun altitude < -18.0 degrees.

Date (eve)	moon	eve	cent	morn	night	hrs@sec.z:
		HA	sec.z	HA	sec.z	<3 <2 <1.5
2020 Feb 8	F	-2 51	1.3	+1 06	1.1	+5 03 2.9 7.9 7.1 6.2
2020 Feb 22	N	-2 11	1.2	+2 00	1.2	+6 12 11.4 7.2 6.4 5.5

[SkyCalc](#) provided by courtesy of John Thorstensen, Dartmouth College. John.Thorstensen@dartmouth.edu

[Send comments to <usd-help@eso.org>](#)
 Last update: November 10, 2006

MOON PHASES FOR 2020, at ESO La Silla

Times and dates are given in local time, zone = 4 hr West. They are generally better than +/- 2 minutes. Daylight savings time used.

The end of the previous year and the beginning of the next are included for continuity.

NEW	1ST	FULL	LAST
Dec 26 2 16	Jan 03 1 47	Jan 10 16 23	Jan 17 10 01
Jan 24 18 44	Feb 01 22 43	Feb 09 4 35	Feb 15 19 19
Feb 23 12 34	Mar 02 16 59	Mar 09 13 49	Mar 16 5 36
Mar 24 5 30	Apr 01 6 22	Apr 07 22 36	Apr 14 18 57
Apr 22 22 27	Apr 30 16 39	May 07 6 46	May 14 10 03
May 22 13 40	May 29 23 30	Jun 05 15 13	Jun 13 2 25
Jun 21 2 42	Jun 28 4 17	Jul 05 0 45	Jul 12 19 31
Jul 20 13 34	Jul 27 8 34	Aug 03 12 00	Aug 11 12 48
Aug 18 22 42	Aug 25 13 59	Sep 02 1 23	Sep 10 5 28
Sep 17 7 01	Sep 23 21 57	Oct 01 17 07	Oct 09 20 41
Oct 16 16 32	Oct 23 10 24	Oct 31 11 51	Nov 08 10 48
Nov 15 2 09	Nov 22 1 46	Nov 30 6 32	Dec 07 21 38
Dec 14 13 19	Dec 21 20 43	Dec 30 0 30	Jan 06 6 39

***** 2020 FEBRUARY *****

Calendar for ESO La Silla, west longitude (h.m.s) = 4 42 55, latitude (d.m) = -29 15.4
 Note that each line lists events of one night, spanning two calendar dates. Rise/set times are given in Chilean time (4 hr W), for 2347 m above surroundings, DAYLIGHT time used, * shows night clocks are reset. Moon coords. and illum. are for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

Date (eve/morn)	JMid	LMStmid	Sun: set twi.end twi.beg rise	LST twilight: eve morn	Moon: rise set illum RA Dec
Sat Feb 01/Sun Feb 02	8881.6	7 04 14	20 48 22 08 5 46 7 06	5 12 12 51 1 26 50 2 45.7 12 18
Sun Feb 02/Mon Feb 03	8882.6	7 08 10	20 47 22 07 5 47 7 07	5 15 12 56 2 02 60 3 33.8 16 20
Mon Feb 03/Tue Feb 04	8883.6	7 12 07	20 46 22 06 5 48 7 07	5 18 13 01 2 42 70 4 25.1 19 46
Tue Feb 04/Wed Feb 05	8884.6	7 16 03	20 46 22 05 5 49 7 08	5 21 13 06 3 28 79 5 20.0 22 21
Wed Feb 05/Thu Feb 06	8885.6	7 20 00	20 45 22 04 5 50 7 09	5 24 13 11	17 32 4 21 87 6 18.5 23 49
Thu Feb 06/Fri Feb 07	8886.6	7 23 56	20 44 22 03 5 51 7 10	5 27 13 16	18 31 5 21 93 7 19.8 23 54
Fri Feb 07/Sat Feb 08	8887.6	7 27 53	20 44 22 02 5 52 7 11	5 30 13 21	19 28 6 26 98 8 22.4 22 28
Sat Feb 08/Sun Feb 09	8888.6	7 31 49	20 43 22 01 5 53 7 12	5 33 13 26	20 21 100 9 24.5 19 31
Sun Feb 09/Mon Feb 10	8889.6	7 35 46	20 42 22 00 5 54 7 12	5 36 13 31	21 09 99 10 25.0 15 17
Mon Feb 10/Tue Feb 11	8890.6	7 39 43	20 41 21 59 5 55 7 13	5 39 13 36	21 52 95 11 23.2 10 05
Tue Feb 11/Wed Feb 12	8891.6	7 43 39	20 41 21 58 5 56 7 14	5 41 13 41	22 32 88 12 19.2 4 22
Wed Feb 12/Thu Feb 13	8892.6	7 47 36	20 40 21 57 5 57 7 15	5 44 13 46	23 10 79 13 13.6 - 1 29

- Ephemeris
- Visibility plots
- Satellite maps, weather conditions

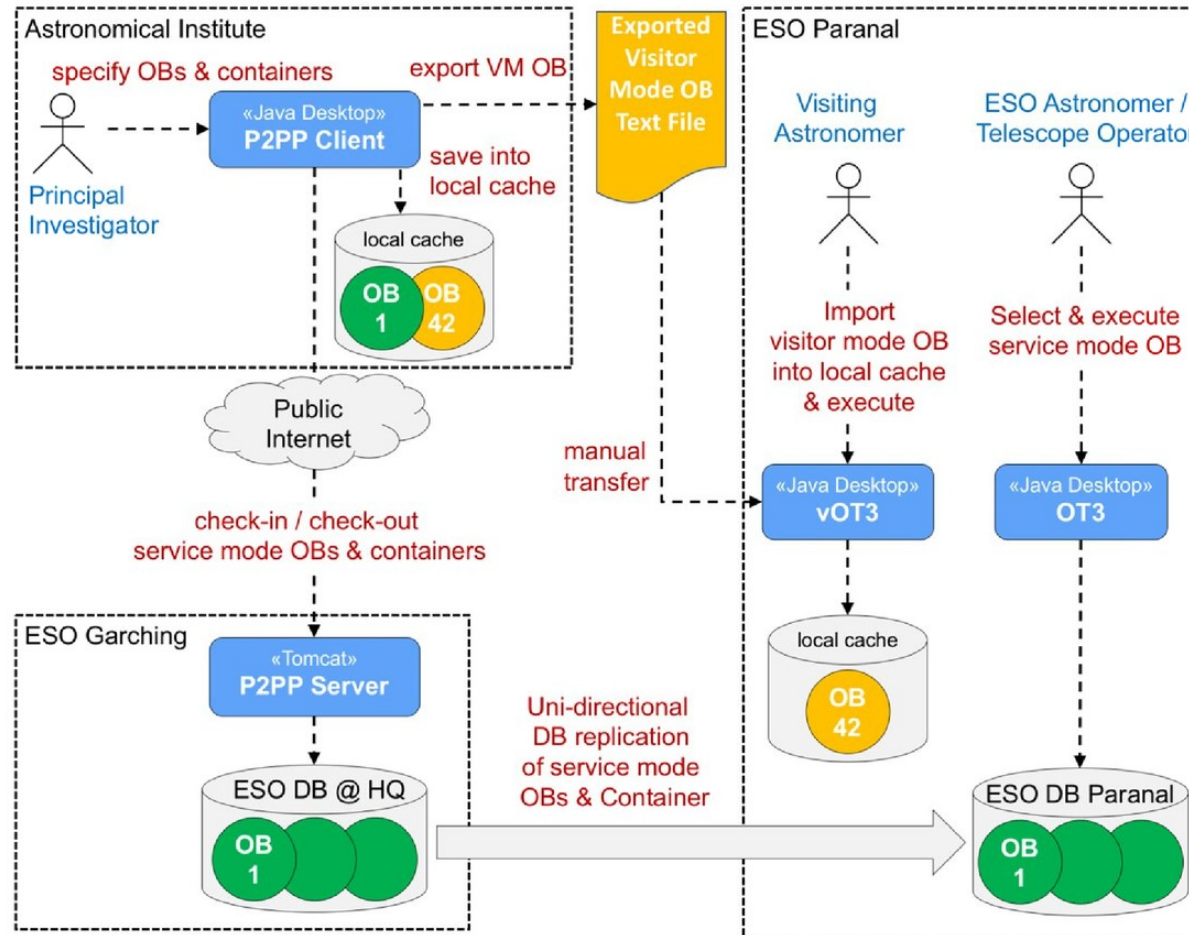
Observation Blocks

All ESO telescopes are operated by the users through *Observation Blocks*, in which all the observations composing an observing program are defined.

- Each Observation Block (OB) is a “unit of observation”
 - Specifies the target acquisition and the observation description (instrument configuration, exposure parameters)
 - Can contain finding charts, ephemeris files
 - In Service Mode, the OB specifies time-critical constraints and conditions of observation
- OBs are built using purpose-specific templates
 - Templates can be for acquisition, for science observations, for calibration
 - Each ESO instrument has its own set of templates
- Containers can be defined in which OBs can be grouped, concatenated, or specified as time-critical

The OB concept (or equivalent) is nowadays used at most major observatories, ground-based and in space, at any wavelengths...

Observation Blocks



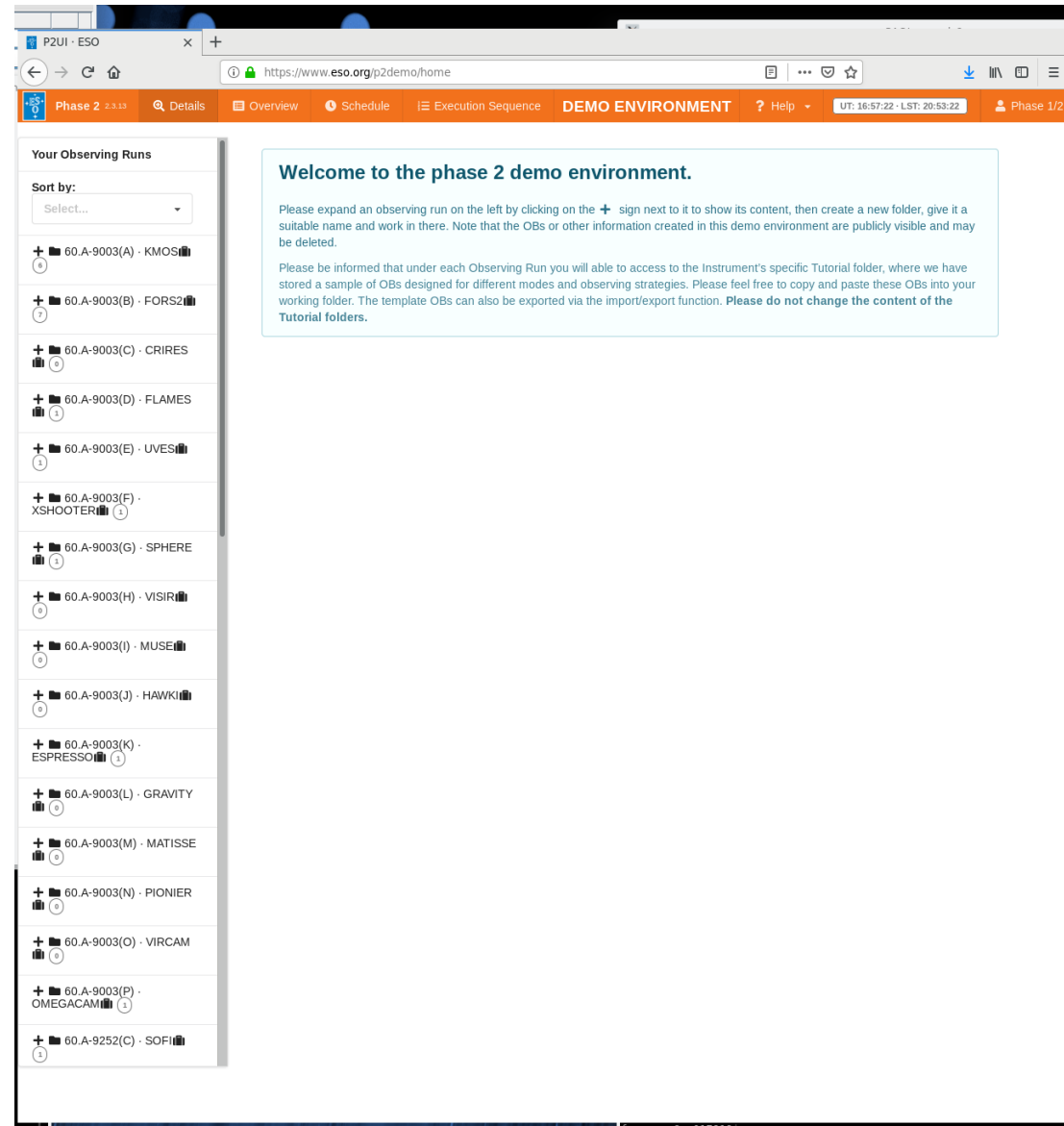
OBs are essential components of the ESO Dataflow System, involving different tools, processes, databases and sites

The Phase 2 Preparation program (p2, or p2ls for La Silla)

p2 is a web-based tool used to build OBs

- OBs are constructed by putting their component templates together and filling their user-defined values using p2
- Groups and links among OBs are defined in p2
- Finding charts and other auxiliary files can be attached using p2
- p2 also provides an interface to communicate to the observatory generic information on Service Observing programs
- p2 provides an interface with the database where all OBs are stored
- The use of p2 “forces” you to plan your upcoming observing run in detail and well in advance

The Phase 2 Preparation program (p2, or p2Is for La Silla)



The screenshot shows a web browser window with the URL <https://www.eso.org/p2demo/home>. The page title is "Phase 2 2.3.13". The navigation bar includes "Details", "Overview", "Schedule", "Execution Sequence", "DEMO ENVIRONMENT", and "Help". The current time is "UT: 16:57:22 - LST: 20:53:22".

Your Observing Runs

Sort by: Select...

- + 60.A-9003(A) · KMOS
- + 60.A-9003(B) · FORS2
- + 60.A-9003(C) · CRIRES
- + 60.A-9003(D) · FLAMES
- + 60.A-9003(E) · UVES
- + 60.A-9003(F) · XSHOOTER
- + 60.A-9003(G) · SPHERE
- + 60.A-9003(H) · VISIR
- + 60.A-9003(I) · MUSE
- + 60.A-9003(J) · HAWKI
- + 60.A-9003(K) · ESPRESSO
- + 60.A-9003(L) · GRAVITY
- + 60.A-9003(M) · MATISSE
- + 60.A-9003(N) · PIONIER
- + 60.A-9003(O) · VIRCAM
- + 60.A-9003(P) · OMEGACAM
- + 60.A-9252(C) · SOFI

Welcome to the phase 2 demo environment.

Please expand an observing run on the left by clicking on the + sign next to it to show its content, then create a new folder, give it a suitable name and work in there. Note that the OBs or other information created in this demo environment are publicly visible and may be deleted.

Please be informed that under each Observing Run you will be able to access to the Instrument's specific Tutorial folder, where we have stored a sample of OBs designed for different modes and observing strategies. Please feel free to copy and paste these OBs into your working folder. The template OBs can also be exported via the import/export function. **Please do not change the content of the Tutorial folders.**

Upon authentication, p2s gives access to all the observing runs approved for the user as Principal Investigator

The Phase 2 Preparation program (p2, or p2Is for La Silla)

The screenshot displays the ESO P2UI interface for configuring an observation. The browser address bar shows the URL <https://www.eso.org/p2demo/home/ob/2733600>. The interface includes a navigation bar with tabs for 'Phase 2 2.3.13', 'Details', 'Overview', 'Schedule', 'Execution Sequence', 'DEMO ENVIRONMENT', and 'Help'. The main content area shows the configuration for observation '60.A-9252(C) · SOFI · 2733600 · No Name'. The 'Obs. Description' is 'Blind acquisition and jitter'. The 'Template Type' dropdown is set to 'acquisition', and the 'Template' dropdown is set to 'SOFI_img_acq_MoveToPixel'. The 'Observing Description Name' field contains 'Blind acquisition and jitter'. The left sidebar lists various instrument folders, including FORS2, CRIRES, FLAMES, UVES, XSHOOTER, SPHERE, VISIR, MUSE, HAWKI, ESPRESSO, GRAVITY, MATISSE, PIONIER, VIRCAM, and OMEGACAM. The bottom of the sidebar shows a 'New Folder' button and a list of observation types: 'OB', 'CB', and 'Fid'.

An OB usually starts with the acquisition of the target

The Phase 2 Preparation program (p2, or p2Is for La Silla)

The screenshot displays the ESO Phase 2 Preparation program interface. On the left, a sidebar lists various observation folders, including 60.A-9003(B) - FORS2, 60.A-9003(C) - CRIRES, 60.A-9003(D) - FLAMES, 60.A-9003(E) - UVES, 60.A-9003(F) - XSHOOTER, 60.A-9003(G) - SPHERE, 60.A-9003(H) - VISIR, 60.A-9003(I) - MUSE, 60.A-9003(J) - HAWKI, 60.A-9003(K) - ESPRESSO, 60.A-9003(L) - GRAVITY, 60.A-9003(M) - MATISSE, 60.A-9003(N) - PIONIER, 60.A-9003(O) - VIRCAM, and 60.A-9003(P) - OMEGACAM. The selected folder is 60.A-9252(C) - SOFI. The main panel shows the observation details for 60.A-9252(C) - SOFI, including the observation ID 2733600, a 'No Name' label, and a '(Partially Defined)' status. The observation description is 'Blind acquisition and jitter'. The template type is 'acquisition', and the selected template is 'SOFI_img_acq_Preset'. Other templates listed include 'SOFI_img_acq_MoveToPixel', 'SOFI_img_acq_MoveToSilt', 'SOFI_img_acq_Polarimetry', and 'SOFI_img_acq_Preset'. The interface also shows a 'New Folder' button and a 'New Folder' dialog box.

Several types of acquisition can be chosen from a list of options

The Phase 2 Preparation program (p2, or p2Is for La Silla)

The chosen acquisition template has several parameters that must be entered by the user

The screenshot displays the ESO P2UI web interface for configuring an observation. The browser address bar shows the URL <https://www.eso.org/p2demo/home/ob/2733600>. The top navigation bar includes 'Phase 2 2.2.12', 'Details', 'Overview', 'Schedule', 'Execution Sequence', 'DEMO ENVIRONMENT', and 'Help'. The main configuration area shows the observation name '60.A-9252(C) - SOFI' and a 'Blind acquisition and jitter' description. The 'SOFI_img_acq_Preset' template is selected, with parameters such as DIT (5), NDT (2), Filter wheel 1 (H), Filter wheel 2 (open), and Instrument Mode (LARGE_FIELD_IMAGING). A 'Delete' button is visible at the bottom right of the template configuration.

The Phase 2 Preparation program (p2, or p2Is for La Silla)

The Observation Description usually contains science templates. Each instrument has typically many science templates to choose from

The screenshot displays the ESO P2UI interface for observation preparation. The browser address bar shows the URL: <https://www.eso.org/p2demo/home/obj/2733600>. The interface is in a "DEMO ENVIRONMENT" and shows the "Phase 2" preparation stage.

The main content area displays details for observation **60.A-9252(C) · SOFI · 2733600**. The observation is currently "No Name" and has an exposure time of 00:00:00 and an execution time of 00:00:00. The observation description is "Blind acquisition and jitter".

The "SOFI_img_acq_Preset" section shows the following parameters:

Parameter	Value
DIT (individual exposure)	5
NDIT (number of DIT)	2
Filter wheel 1	H
Filter wheel 2	open
Instrument Mode	LARGE_FIELD_IMAGING
Add Velocity Alpha	0
Add Delta Velocity	0
Rotation Offset on Sky	0

The "Template Type" is set to "science". A dropdown menu is open, showing a list of available templates for SOFI, including:

- SOFI_img_obs_AutoJitter
- SOFI_img_obs_AutoJitterArray
- SOFI_img_obs_AutoJitterArray_1
- SOFI_img_obs_AutoJitterOffset
- SOFI_img_obs_AutoJitterRot
- SOFI_img_obs_FastPhotJitt
- SOFI_img_obs_GenericImaging
- SOFI_img_obs_Jitter
- SOFI_img_obs_JitterOffset
- SOFI_img_obs_JitterRot
- SOFI_img_obs_Polarimetry
- SOFI_spec_obs_AutoNodNonDestr
- SOFI_spec_obs_AutoNodOnSilt
- SOFI_spec_obs_GenSpecNonDestr
- SOFI_spec_obs_GenericSpectro
- SOFI_img_obs_AutoJitter

The interface also includes a sidebar with a list of observation folders for various instruments, such as FORS2, CRIRES, FLAMES, UVES, XSHOOTER, SPHERE, VISIR, MUSE, HAWKI, ESPRESSO, GRAVITY, MATISSE, PIONIER, VIRCAM, and OMEGACAM. The current observation is highlighted under a "New Folder" section.

The Phase 2 Preparation program (p2, or p2Is for La Silla)

Each science template defines the configuration of the instrument (optical components, detector windowing) and exposure parameters (exposure times, number of exposures, telescope offsets between exposures...)

The screenshot displays the ESO Phase 2 Preparation program interface. The browser address bar shows <https://www.eso.org/p2demo/home/ob/2733600>. The interface includes a navigation bar with tabs for Phase 2, Details, Overview, Schedule, Execution Sequence, DEMO ENVIRONMENT, and Help. The main content area shows the configuration for observation 60.A-9252(C) · SOFI · 2733600. The 'Obs. Description' is 'Blind acquisition and jitter'. The 'Obs. Description Name' is 'Blind acquisition and jitter'. The 'User Comments' field is empty. The 'Obs. Description' is expanded to show two templates: 'SOFI_img_acq_Preset' and 'SOFI_img_obs_AutoJitter'. The 'SOFI_img_acq_Preset' template is configured with the following parameters: DIT (individual exposure) 5, NDIT (number of DIT) 2, Filter wheel 1 H, Filter wheel 2 open, Instrument Mode LARGE_FIELD_IMAGING, Add Velocity Alpha 0, Add Delta Velocity 0, and Rotation Offset on Sky 0. The 'SOFI_img_obs_AutoJitter' template is configured with the following parameters: Exposure Name SOFI, DIT (individual exposure) 10, NDIT (number of DIT) 6, Number of columns 1024, Number of rows 1024, First column of window 1, First row of window 1, Number of Exposures ? 8, Filter wheel 1 H, Filter wheel 2 open, Instrument Mode LARGE_FIELD_IMAGING, Combined offset ? (FIT) no, Jitter Box Width (arcsec) 20, and Return to Origin ? (T/F) yes. The 'Template Type' is 'science' and the 'Template' is 'SOFI_img_obs_AutoJitter'. The interface also includes a sidebar with a list of observation folders and a 'New Folder' button.

The Phase 2 Preparation program (p2, or p2Is for La Silla)

Very often, each OB contains several science templates as part of the observation description

The screenshot displays the ESO P2UI interface in a Mozilla Firefox browser. The browser address bar shows the URL: <https://www.eso.org/p2demo/home/ob/2733600>. The interface is titled "Phase 2" and includes a navigation bar with tabs for "Details", "Overview", "Schedule", and "Execution Sequence". The current environment is "DEMO ENVIRONMENT".

The main content area shows the details for observation "60.A-9252(C) · SOFI · 2733600". The observation is currently "No Name" and has an expiration time of "00:00:00" and an execution time of "00:00:00". It is marked as "(Partially Defined)".

On the left side, there is a list of observation blocks (OBs) for various instruments: 60.A-9003(B) - FORS2, 60.A-9003(C) - CRIRES, 60.A-9003(D) - FLAMES, 60.A-9003(E) - UVES, 60.A-9003(F) - XSHOOTER, 60.A-9003(G) - SPHERE, 60.A-9003(H) - VISIR, 60.A-9003(I) - MUSE, 60.A-9003(J) - HAWKI, 60.A-9003(K) - ESPRESSO, 60.A-9003(L) - GRAVITY, 60.A-9003(M) - MATISSE, 60.A-9003(N) - PIONIER, 60.A-9003(O) - VIRCAM, and 60.A-9003(P) - OMEGACAM. A "New Folder" button is also visible.

The main panel displays the configuration for the selected observation. At the top, there are buttons for "Check", "Certify", "Revise", "Edit", "Import/Export", "Delete", and "Refresh OB". Below this, there are two configuration panels for "SOFI_img_obs_AutoJitter".

The first configuration panel, labeled "#3 science 1866241", has the following settings:

Exposure Name	SOFI_H
DIT (individual exposure)	10
NDIT (number of DIT)	6
Number of columns	1024
Number of rows	1024
First column of window	1
First row of window	1
Number of Exposures ?	8
Filter wheel 1	H
Filter wheel 2	open
Instrument Mode	LARGE_FIELD_IMAGING
Combined offset ? (FT)	no
Jitter Box Width (arcsec)	20
Return to Origin ? (T/F)	yes

The second configuration panel, labeled "#4 science 1866242", has the following settings:

Exposure Name	SOFI_Ks
DIT (individual exposure)	5
NDIT (number of DIT)	12
Number of columns	1024
Number of rows	1024
First column of window	1
First row of window	1
Number of Exposures ?	8
Filter wheel 1	Ks
Filter wheel 2	open
Instrument Mode	LARGE_FIELD_IMAGING
Combined offset ? (FT)	no
Jitter Box Width (arcsec)	20
Return to Origin ? (T/F)	yes

At the bottom of the interface, there is a "Template Type" dropdown set to "science" and a "Template" dropdown set to "SOFI_img_obs_AutoJitter". An "Add Template" button is located to the right of the "Template" dropdown.

The Phase 2 Preparation program (p2, or p2Is for La Silla)

While building the OB it is possible to compute the exposure time, plus the total execution time (exposure plus overheads)

The screenshot displays the P2UI-ESO web interface for configuring a Phase 2 preparation program. The interface is divided into several sections:

- Navigation and Status:** The top bar shows the current phase as "Phase 2" and the environment as "DEMO ENVIRONMENT". It includes navigation tabs for "Details", "Overview", "Schedule", and "Execution Sequence".
- Toolbar:** A row of buttons for "Check", "Certify", "Revise", "Edit", "Import/Export", "Delete", and "Refresh OB".
- Object List:** A vertical list of objects on the left, including various instruments like FORS2, CRIRES, FLAMES, UVES, SPHERE, VISIR, MUSE, HAWKI, ESPRESSO, GRAVITY, MATISSE, PIONIER, VIRCAM, and OMEGACAM. The selected object is "60.A-9252(C) · SOFI".
- Object Details:** The main area shows details for the selected object, including its name, ID, and a circled field for "Exp. Time: 00:24:00 - Exec. Time: 00:36:32".
- Configuration Panels:** Two panels show configuration for "SOFI_img_obs_AutoJitter" exposures. The first panel shows settings for exposure name, DIT (10), NDIT (6), and other parameters. The second panel shows settings for exposure name, DIT (5), NDIT (12), and other parameters.
- Template Selection:** At the bottom, there are dropdown menus for "Template Type" (set to "science") and "Template" (set to "SOFI_img_obs_AutoJitter").

The Phase 2 Preparation program (p2, or p2Is for La Silla)

Verification Report for OB 2733600 · No Name

Your OB is observable (Partially Defined)

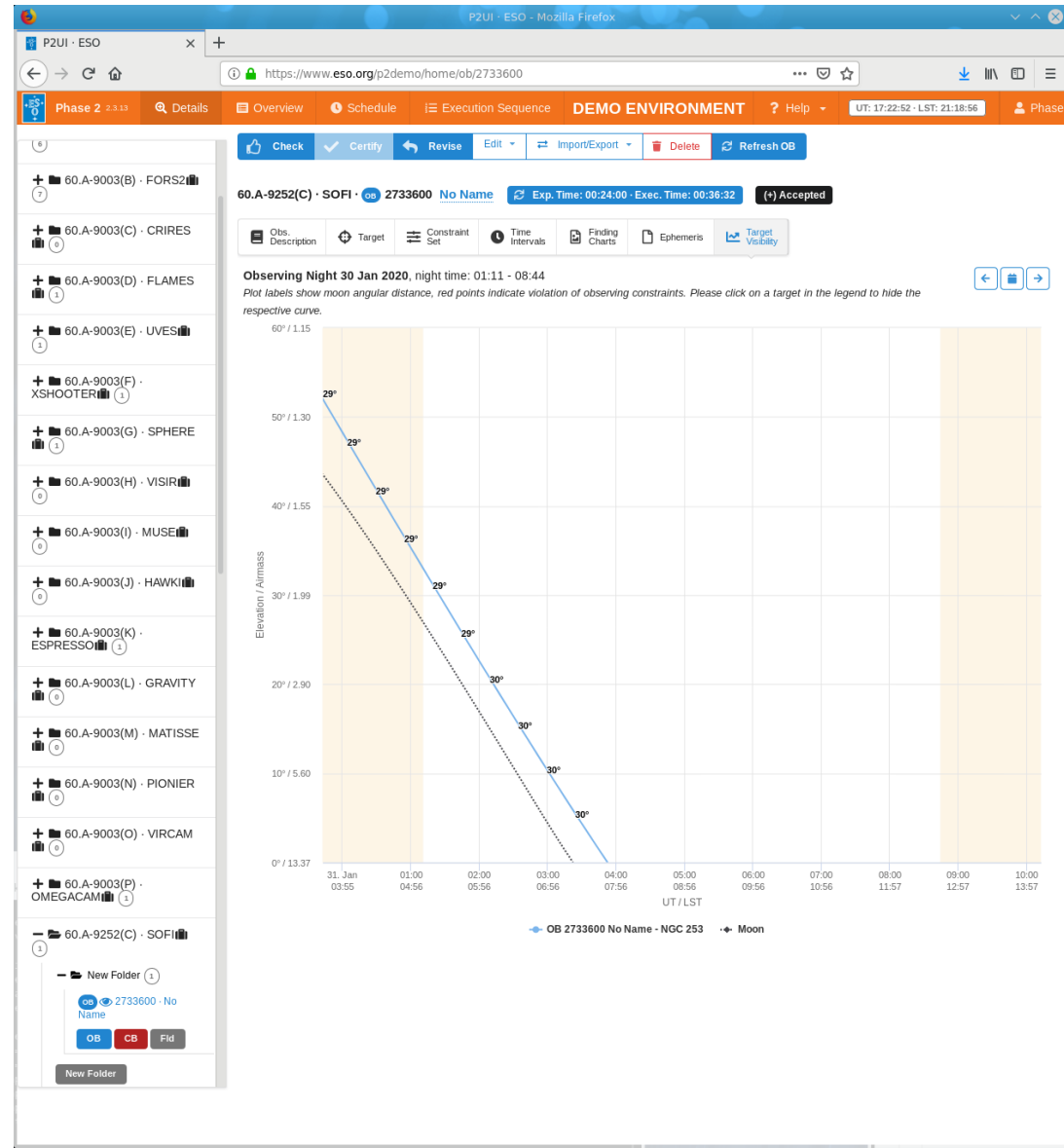
Exposure Name	SOFI_H
DIT (individual exposure)	10
NDIT (number of DIT)	6
Number of columns	1024
Number of rows	1024
First column of window	1
First row of window	1
Number of Exposures ?	8
Filter wheel 1	H
Filter wheel 2	open
Instrument Mode	LARGE_FIELD_IMAGING
Combined offset ? (FIT)	no
Jitter Box Width (arcsec)	20
Return to Origin ? (TIF)	yes

Exposure Name	SOFI_Ks
DIT (individual exposure)	5
NDIT (number of DIT)	12
Number of columns	1024
Number of rows	1024
First column of window	1
First row of window	1
Number of Exposures ?	8
Filter wheel 1	Ks
Filter wheel 2	open
Instrument Mode	LARGE_FIELD_IMAGING
Combined offset ? (FIT)	no
Jitter Box Width (arcsec)	20
Return to Origin ? (TIF)	yes

Template Type: science | Template: SOFI_img_obs_AutoJitter

It is possible to verify too that the parameters introduced make sense, that the instrument configuration does not include something awkward, and that the OB will not fail at execution time

The Phase 2 Preparation program (p2, or p2Is for La Silla)



p2 offers some useful gadgets, like a visibility plot

The Phase 2 Preparation program (p2, or p2Is for La Silla)

The screenshot displays the P2UI web interface in a Mozilla Firefox browser. The address bar shows the URL <https://www.eso.org/p2demo/home/ob/2733600>. The interface is titled "Phase 2" and includes a navigation menu with options like "Details", "Overview", "Schedule", and "Execution Sequence". The main content area shows a list of observation folders on the left, including "60.A-9003(B) - FORS2", "60.A-9003(C) - CRIRES", "60.A-9003(D) - FLAMES", "60.A-9003(E) - UVES", "60.A-9003(F) - XSHOOTER", "60.A-9003(G) - SPHERE", "60.A-9003(H) - VISIR", "60.A-9003(I) - MUSE", "60.A-9003(J) - HAWKI", "60.A-9003(K) - ESPRESSO", "60.A-9003(L) - GRAVITY", "60.A-9003(M) - MATISSE", "60.A-9003(N) - PIONIER", "60.A-9003(O) - VIRCAM", and "60.A-9252(C) - SOFI". The right panel shows the details for the selected observation "60.A-9252(C) - SOFI" with ID "2733600". It includes a "Constraint Set" tab and various input fields for constraints: "Good conditions", "Airmass" (1.5), "Sky Transparency" (Photometric), "Lunar Illumination" (0.3), "Image Quality" (1), "Moon Angular Distance" (60), and "Twilight" (0). The interface also shows a "New Folder" button and a "New Folder" dropdown menu.

In Service Mode, the Constraint set specifying the worst possible conditions under which the OB can be executed and still be scientifically valid is an essential piece of information at the time to decide whether or not to execute an OB.

The ESO Archive as an observation preparation tool

With the ESO archive, you can locate observations similar to the ones you are planning, download them, experience with them, try your data reduction procedures...

This can be very useful if you have never used the instrument before

ESO Science Archive Facility

Observational Raw Data Query Form

This query interface allows to search and to request raw observational data taken by telescopes of the La Silla Paranal Observatory. At request time the user can decide whether raw or processed calibrations needed to process the selected raw science data should also be delivered. To search through the raw frames **querying by instrument-specific parameters**, please use the *Instrument-specific Interfaces* link above. To search for **reduced Data Products**, including public surveys and pipeline-reduced and quality-controlled science-ready data, please have a look at the [generic data products](#) query form. A list of other retrievable [advanced data products](#) is available.

Checkboxes on the right of the parameters' names define whether or not the relative parameters will be displayed in the query result page; checkboxes on the left of the parameters' values are used to constrain the query on those values.

Search [Reset] Output preferences: html table Return max 99999 rows. All Fields Syntax Help

Target, Program, and Scheduling Information

Target Name NGC253 Resolved by SIMBAD
Night (YYYY MM(M) DD)
RA DEC J2000
Search Box Input RA(h) DEC(deg)
Output Sexagesimal (h, deg)
Program ID Program Type Any
PI CoI SV Any
Title
List of Targets Browse... No file selected.

Observing Information

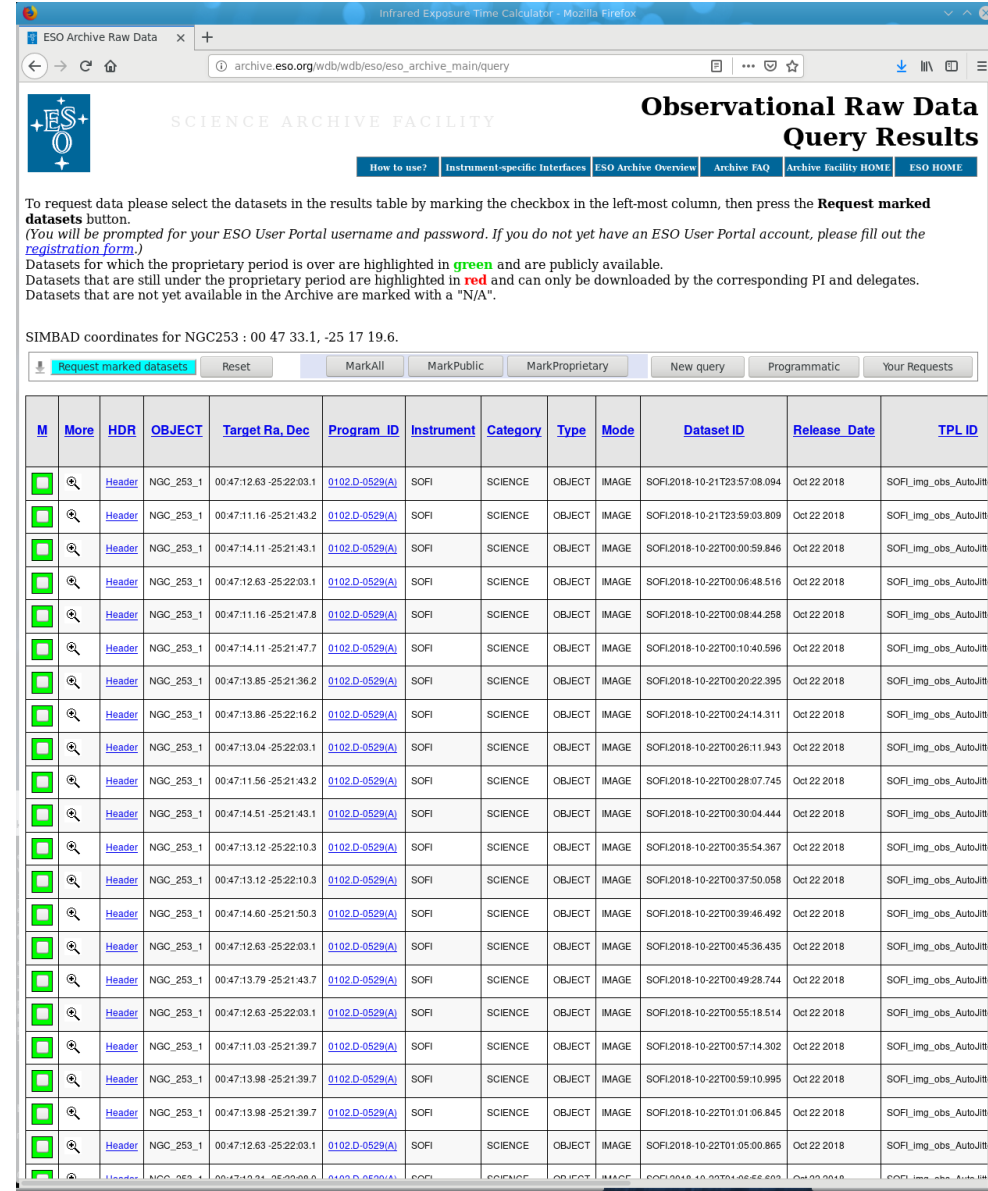
Imaging ALL NONE <input type="checkbox"/> EFOSC2/LaSilla <input type="checkbox"/> EMMI/LaSilla <input type="checkbox"/> FORS1/VLT <input type="checkbox"/> FORS2/VLT <input type="checkbox"/> HAWKI/VLT <input type="checkbox"/> GROND/LaSilla <input type="checkbox"/> ISAAC/VLT <input type="checkbox"/> NACO/VLT <input type="checkbox"/> OMEGACAM/VST <input type="checkbox"/> SOFI/LaSilla <input type="checkbox"/> SPHERE/VLT <input type="checkbox"/> SUSI2/LaSilla <input type="checkbox"/> TIMMI2/LaSilla <input type="checkbox"/> VIMOS/VLT <input type="checkbox"/> VIRCAM/VISTA <input type="checkbox"/> VISIR/VLT <input type="checkbox"/> WE/LaSilla	Spectroscopy ALL NONE <input type="checkbox"/> CES/LaSilla <input type="checkbox"/> CRIRES/VLT <input type="checkbox"/> EFOSC2/LaSilla <input type="checkbox"/> EMMI/LaSilla <input type="checkbox"/> ESPRESSO/VLT <input type="checkbox"/> FEROS/LaSilla <input type="checkbox"/> FORS1/VLT <input type="checkbox"/> FORS2/VLT <input type="checkbox"/> GIRAFFE/VLT <input type="checkbox"/> HARPS/LaSilla <input type="checkbox"/> ISAAC/VLT <input type="checkbox"/> KMOS/VLT <input type="checkbox"/> MUSE/VLT <input type="checkbox"/> NACO/VLT <input type="checkbox"/> SINFOI/VLT <input type="checkbox"/> SOFI/LaSilla <input type="checkbox"/> SPHERE/VLT <input type="checkbox"/> TIMMI2/LaSilla <input type="checkbox"/> VIVES/VLT <input type="checkbox"/> VIMOS/VLT <input type="checkbox"/> VISIR/VLT <input type="checkbox"/> XSHOOTER/VLT	Interferometry ALL NONE <input type="checkbox"/> AMBER/VLT <input type="checkbox"/> GRAVITY/VLT <input type="checkbox"/> MATISSE/VLT <input type="checkbox"/> MIDI/VLT <input type="checkbox"/> PIONIER/VLT <input type="checkbox"/> VINCI/VLT Polarimetry ALL NONE <input type="checkbox"/> EFOSC2/LaSilla <input type="checkbox"/> FORS1/VLT <input type="checkbox"/> FORS2/VLT <input type="checkbox"/> ISAAC/VLT <input type="checkbox"/> NACO/VLT <input type="checkbox"/> SOFI/LaSilla <input type="checkbox"/> SPHERE/VLT Coronagraphy ALL NONE <input type="checkbox"/> EFOSC2/LaSilla <input type="checkbox"/> NACO/VLT <input type="checkbox"/> SPHERE/VLT <input type="checkbox"/> VISIR/VLT	Other ALL NONE <input type="checkbox"/> APICAM/Paranal <input type="checkbox"/> BOU/APEX <input type="checkbox"/> HET/APEX <input type="checkbox"/> LGSF/VLT <input type="checkbox"/> MAD/VLT <input type="checkbox"/> MASCOT/Paranal <input type="checkbox"/> WFCAM/UKIRT Sparse Aperture Mask ALL NONE <input type="checkbox"/> NACO/VLT <input type="checkbox"/> SPHERE/VLT <input type="checkbox"/> VISIR/VLT
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Data Product Info

Type Any
User defined input:
Mode Any
User defined input:
Dataset ID
Orig Name
Release Date
OB Name
OB ID
TPL START
Instrumental Setup
TPL ID
Exptime
Filter
Grism
Grating
Slit

The ESO Archive as an observation preparation tool

All existing observations are easy to identify and select.



ES+
SCIENCE ARCHIVE FACILITY

Observational Raw Data Query Results

[How to use?](#) [Instrument-specific Interfaces](#) [ESO Archive Overview](#) [Archive FAQ](#) [Archive Facility HOME](#) [ESO HOME](#)

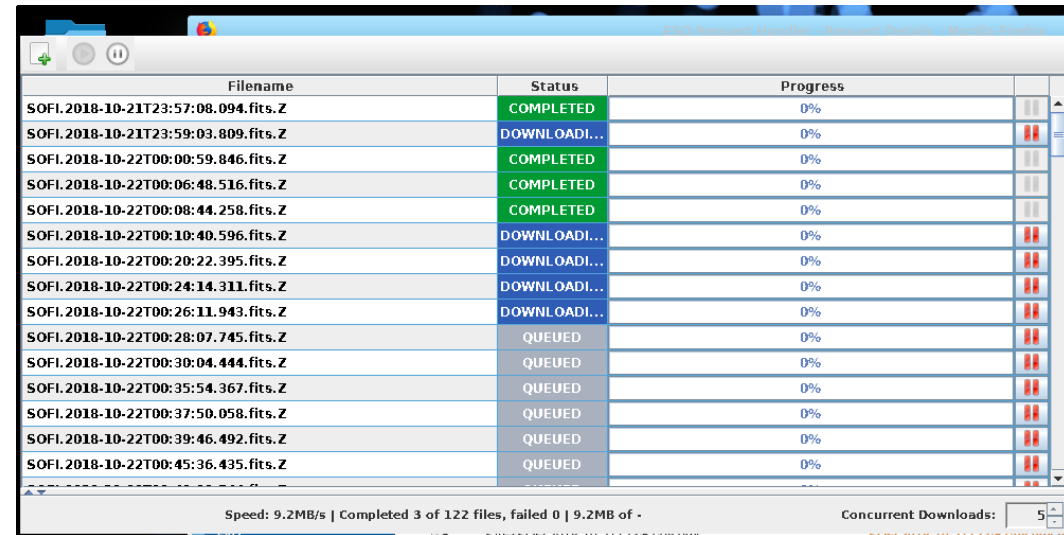
To request data please select the datasets in the results table by marking the checkbox in the left-most column, then press the **Request marked datasets** button.
(You will be prompted for your ESO User Portal username and password. If you do not yet have an ESO User Portal account, please fill out the [registration form](#).)
Datasets for which the proprietary period is over are highlighted in **green** and are publicly available.
Datasets that are still under the proprietary period are highlighted in **red** and can only be downloaded by the corresponding PI and delegates.
Datasets that are not yet available in the Archive are marked with a "N/A".

SIMBAD coordinates for NGC253 : 00 47 33.1, -25 17 19.6.

M	More	HDR	OBJECT	Target Ra, Dec	Program ID	Instrument	Category	Type	Mode	Dataset ID	Release Date	TPL ID
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:12.63 -25:22:03.1	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-21T23:57:08.094	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:11.16 -25:21:43.2	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-21T23:59:03.809	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:14.11 -25:21:43.1	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:00:59.846	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:12.63 -25:22:03.1	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:06:48.516	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:11.16 -25:21:47.8	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:08:44.258	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:14.11 -25:21:47.7	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:10:40.596	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:13.85 -25:21:36.2	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:20:22.395	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:13.86 -25:22:16.2	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:24:14.311	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:13.04 -25:22:03.1	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:26:11.943	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:11.56 -25:21:43.2	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:28:07.745	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:14.51 -25:21:43.1	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:30:04.444	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:13.12 -25:22:10.3	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:35:54.367	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:13.12 -25:22:10.3	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:37:50.058	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:14.60 -25:21:50.3	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:39:46.492	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:12.63 -25:22:03.1	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:45:36.435	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:13.79 -25:21:43.7	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:49:28.744	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:12.63 -25:22:03.1	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:55:18.514	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:11.03 -25:21:39.7	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:57:14.302	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:13.98 -25:21:39.7	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T00:59:10.995	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:13.98 -25:21:39.7	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T01:01:06.845	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:12.63 -25:22:03.1	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T01:05:00.865	Oct 22 2018	SOFI_img_obs_AutoJitt
<input checked="" type="checkbox"/>	?	Header	NGC_253_1	00:47:13.04 -25:22:03.1	0102 D-0529(A)	SOFI	SCIENCE	OBJECT	IMAGE	SOFI2018-10-22T01:06:56.693	Oct 22 2018	SOFI_img_obs_AutoJitt

The ESO Archive as an observation preparation tool

Accessing and downloading the observations of interest is very easy and user-friendly.



The screenshot shows a download manager window with a table of files. The table has three main columns: 'Filename', 'Status', and 'Progress'. The 'Status' column contains values like 'COMPLETED', 'DOWNLOADI...', and 'QUEUED'. The 'Progress' column shows '0%' for all entries. The status bars on the right of the table are red, indicating that the progress is not yet started or is very slow. At the bottom of the window, there is a status bar that reads 'Speed: 9.2MB/s | Completed 3 of 122 files, failed 0 | 9.2MB of -' and 'Concurrent Downloads: 5'.

Filename	Status	Progress
SOFI.2018-10-21T23:57:08.094.fits.Z	COMPLETED	0%
SOFI.2018-10-21T23:59:03.809.fits.Z	DOWNLOADI...	0%
SOFI.2018-10-22T00:00:59.846.fits.Z	COMPLETED	0%
SOFI.2018-10-22T00:06:48.516.fits.Z	COMPLETED	0%
SOFI.2018-10-22T00:08:44.258.fits.Z	COMPLETED	0%
SOFI.2018-10-22T00:10:40.596.fits.Z	DOWNLOADI...	0%
SOFI.2018-10-22T00:20:22.395.fits.Z	DOWNLOADI...	0%
SOFI.2018-10-22T00:24:14.311.fits.Z	DOWNLOADI...	0%
SOFI.2018-10-22T00:26:11.943.fits.Z	DOWNLOADI...	0%
SOFI.2018-10-22T00:28:07.745.fits.Z	QUEUED	0%
SOFI.2018-10-22T00:30:04.444.fits.Z	QUEUED	0%
SOFI.2018-10-22T00:35:54.367.fits.Z	QUEUED	0%
SOFI.2018-10-22T00:37:50.058.fits.Z	QUEUED	0%
SOFI.2018-10-22T00:39:46.492.fits.Z	QUEUED	0%
SOFI.2018-10-22T00:45:36.435.fits.Z	QUEUED	0%

So, once again...

ESO (and other places) offer you a good assortment of tools to prepare your observations – use them, it is worth doing!!

	Imaging	Spectroscopy
La Silla	EFOSC2 SUSI WFI SOFI	EFOSC2 HARPS FEROS SOFI
Paranal UT1	FORS2	FORS2 KMOS
		VIVES UVES-FLAMES GIRAFFE X-SHOOTER
		VISIR SPHERE-IFS
		MUSE
		ESPRESSO
		4MOST
		E-ELT
		VisCal CaVin