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FACULTAD DE CIENCIAS FÍSICAS

Departamento de Física de la Tierra y Astrofísica

Group of Extragalactic Astrophysics and Astronomical Instrumentation

Dwarfs4MOSAIC

QUICK START GUIDE

Version 1.0 - August 2025

About this guide

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Intended Audience

Part I of the guide is designed for researchers and users without administrative privileges. It explains how to navigate and use the dwarfs4MOSAIC repository platform as a non-administrative user, providing step-by-step instructions.

Part II is intended for the Administrator user, with administrative privileges, and describes exclusively the platform's administrative functionalities, with step-by-step guidance.

Contents

User's Guide

1. Accessing the Platform

To start using dwarfs4MOSAIC repository, open your preferred web browser and navigate to the project URL, `http://halmax.fis.ucm.es/`. It is recommended to use modern browsers such as *Chrome*, *Firefox*, or *Edge* for optimal compatibility with all platform features. Once the page loads, you will reach the welcome page.

Fig I.1. Dwarfs4MOSAIC welcome page.

Click the `LOGIN` option at the top-right corner of the page to access the login form and enter your assigned username and password in the corresponding fields. If you forget your password or experience login issues, please contact to `https://guaix.ucm.es/dwarfs4mosaic` to request a new password.

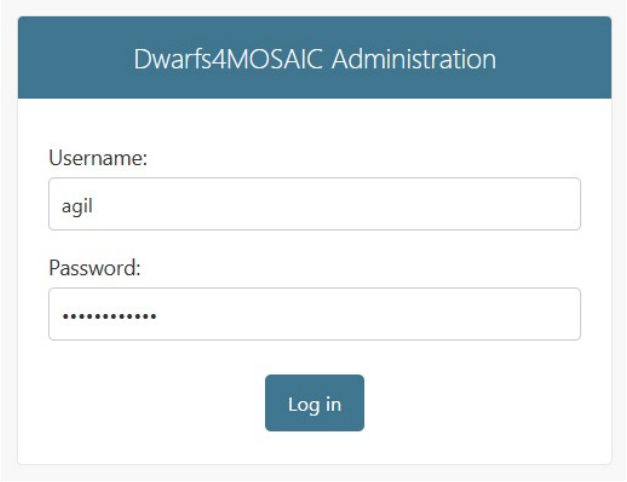


Fig I.2. Login form.

2. Navigating the Home Page

After logging in, you will be directed to the *Home* page, which shows a welcome message with your name and displays a table with the targets you have permission to view.

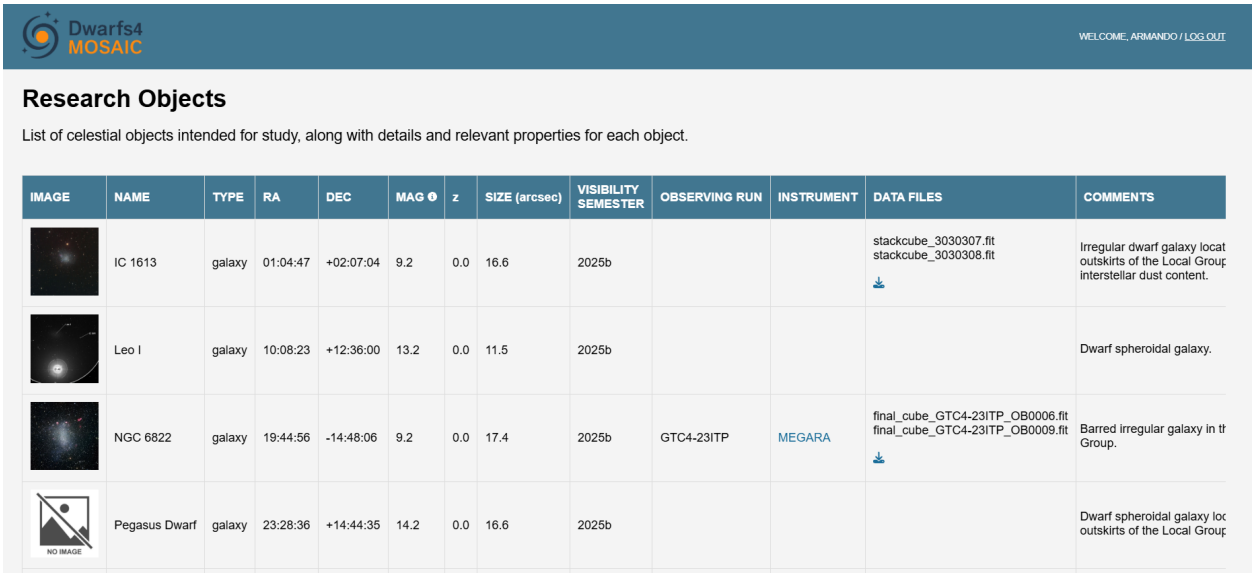


Fig I.3. Home page.

Each target is displayed with several fields that provide key information at a glance:

- **Image**: target's associated image, if available.
- **Name**: unique identifier of the target.
- **Type**: category of the astronomical object.
- **Right Ascension**: celestial coordinate along the equatorial plane [hh:mm:ss].
- **Declination**: celestial coordinate perpendicular to the equatorial plane [dd:mm:ss].
- **Apparent Magnitude**: brightness of the target as observed from Earth.
- **Redshift (z)**: measured redshift of the object.
- **Angular Size**: apparent size of the target in the sky.
- **Visibility Semester**: observing semester when the target is visible.
- **Observing Run**: name of the observing run(s) the target belongs to.
- **Instrument**: instrument used to acquire data for the target.
- **Data Files**: list of associated files available for download.
- **Comments**: additional information.

3. Downloading Files

On the *Home* page, locate the target of interest. In the `Data Files` column, you will see the available files along with the download icon . Clicking this icon opens the file download view.

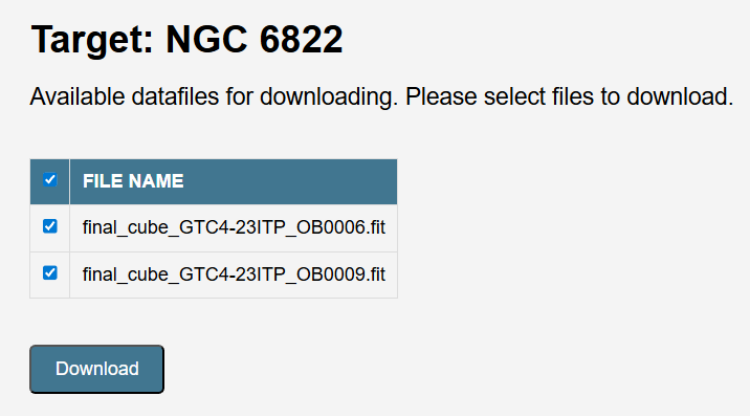


Fig I.4. File download view.

In this view, a table lists all files associated with the selected target. You can select one, multiple, or all files at once. If only a single file is selected, it will be downloaded directly. If multiple files are selected, a .zip archive containing all selected files is generated. The download process is handled directly by your web browser.

4. Logging Out

To securely exit the platform, click the `LOG OUT` option located at the top-right corner of the page. This will end your session and return you to the welcome page. Your session will also automatically expire after 15 minutes of inactivity, requiring you to log in again. This helps protect your account on shared computers.

Always log out when you finish using the system, especially on shared or public computers, to protect your account and data.

5. Support

For any questions, technical issues, or to request a new password, please contact please contact to https://guaix.ucm.es/dwarfs4mosaic.

Response times may vary, and users are encouraged to provide a clear description of the issue.

Always keep your login credentials secure and do not share them with others.

Administrator's Guide

1. Accessing the Platform

For general instructions on logging in and accessing the platform, the Administrator should refer to *Chapter 1. Accessing the Platform* in *Part I. User's Guide* .

After logging in, the platform header displays a welcome message along with several navigation options:

- **Home**: redirects to the main page (see *Chapter 2. Navigating the Home Page*).
- **Database**: access to consult database tables (see *Chapter 3. Database Visualization*).
- **Admin**: administration interface to manage users, permissions, and tables (see *Chapter 4. Administration Panel*).
- **Log out**: option to manually log out of the platform (see *Chapter 5. Logging Out*).

Fig II.1. Navigation links for the Administrator.

2. Navigating the Home Page

For an overview of Home page navigation and target access, the Administrator should refer to *Chapter 2. Navigating the Home Page* in *Part I. User's Guide* .

3. Database Visualization

This section introduces the interface for browsing the project's database tables. It allows the Administrator to explore the stored records, consult details quickly, and verify relationships between different objects. The feature ensures that the database content remains consistent with the project's current state.

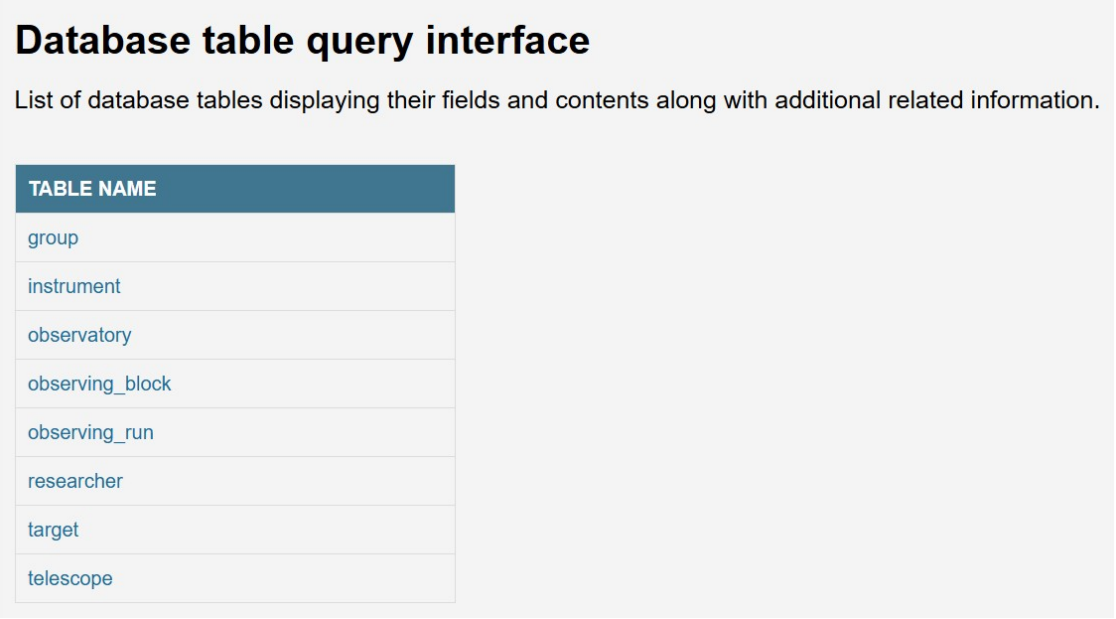


Fig II.2. Database tables interface.

The list of categories appears in alphabetical order; however, in the following sections, they are presented according to the order in which they are created, making it easier to understand the relationships between objects.

3.1 Groups

The *group* table contains information about the project groups used to organize members.

Each record represents a single group and shows its name, members (researchers) and authorized observing blocks for the researchers belonging to the group.

Groups table

NAME	MEMBERS	ALLOWED OBSERVING BLOCKS
megara-group	agil acastillo ccabello mlara	GTC4-23ITP - MEGARA (2023-02-18)
weave-group		

Fig II.3. *Groups* table.

3.2 Researchers

The *researcher* table contains information about the project members.

Each record represents a single researcher and shows its full name, role (*Core Team* or *Collaborator*), the group it belongs to, whether it holds a PhD, affiliated institution, the observing runs it has participated in, specific denied observation blocks, email address and comments.

Researchers table

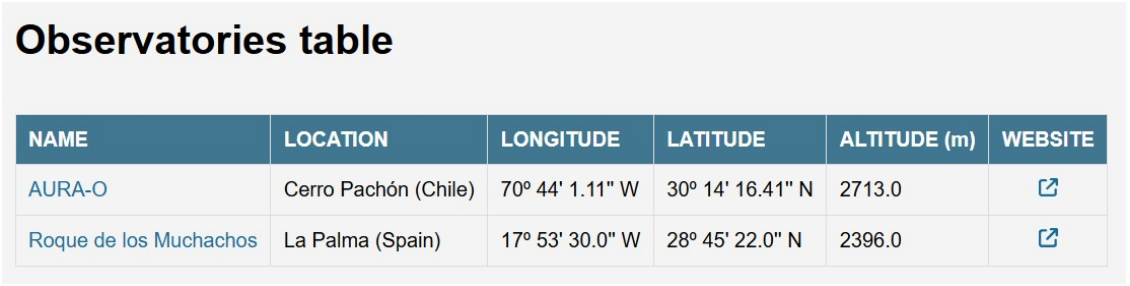
NAME	ROLE	GROUP	PhD	INSTITUTION	OBSERVING RUNS	DENIED OBSERVING BLOCKS	EMAIL
África Castillo Morales	core_team	megara-group	✓	Universidad Complutense de Madrid, Spain	GTC4-23ITP		aca
Armando Gil de Paz	core_team	megara-group	✓	Universidad Complutense de Madrid, Spain	GTC4-23ITP		a
Cristina Cabello González	core_team	megara-group	✓	Universidad Complutense de Madrid, Spain			cris
Carolina Kehrig Martin dos Santos	core_team		✓	Instituto de Astrofísica de Andalucía, Spain	GTC4-23ITP	GTC4-23ITP - MEGARA (2023-02-18)	k
Christopher J. Conselice	core_team		✓	University of Nottingham, UK			conselic
Davor Krajnovic	core_team		✓	Institute Astrophysics Potsdam, Germany			dkr
Jorge Iglesias Páramo	core_team		✓	Instituto de Astrofísica de Andalucía, Spain			jig
José Manuel Vílchez Medina	core_team		✓	Instituto de Astrofísica de Andalucía, Spain	GTC4-23ITP	GTC4-23ITP - MEGARA (2023-02-18)	
Luca Costantin	core_team		✓	Centro de Astrobiología, Spain			lcostant
Matthew Hayes	core_team		✓	Stockholm University, Sweden			mattl
Maritza Lara López	core_team	megara-group	✓	Universidad Complutense de Madrid, Spain			ma
Mathiew Puech	core_team		✓	Paris-Meudon Observatory, France			Mathie

Fig II.4. *Researchers* table.

3.3 Observatories

The *observatory* table contains information about the observatories associated with the project.

Each record represents a single observatory and shows its name, location, geographic longitude, geographic latitude, altitude above sea level and a link to a website with additional information.

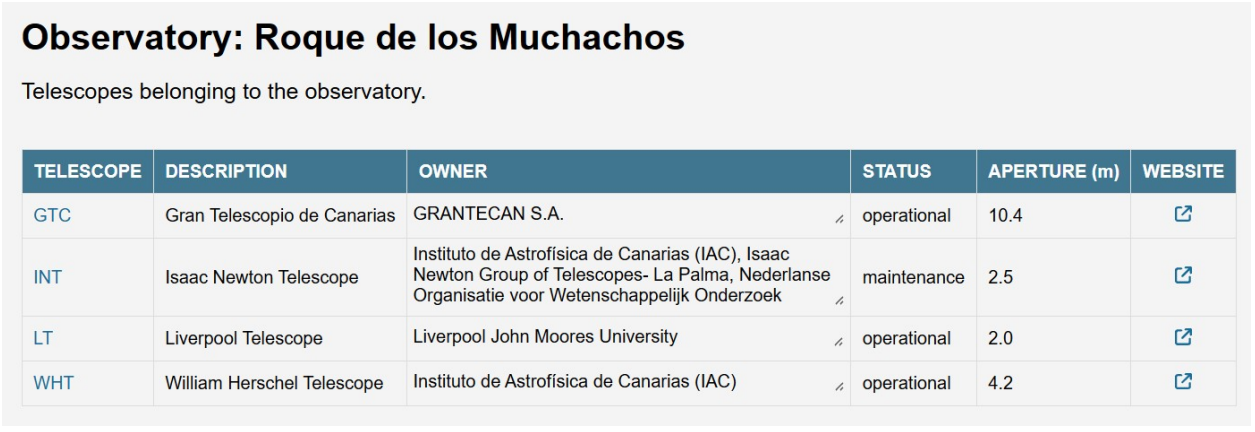


Observatories table

NAME	LOCATION	LONGITUDE	LATITUDE	ALTITUDE (m)	WEBSITE
AURA-O	Cerro Pachón (Chile)	70º 44' 1.11" W	30º 14' 16.41" N	2713.0	
Roque de los Muchachos	La Palma (Spain)	17º 53' 30.0" W	28º 45' 22.0" N	2396.0	

Fig II.5. *Observatories* table.

Clicking on an observatory name in the list a detailed page opens displaying all telescopes related to that observatory.



Observatory: Roque de los Muchachos

Telescopes belonging to the observatory.

TELESCOPE	DESCRIPTION	OWNER	STATUS	APERTURE (m)	WEBSITE
GTC	Gran Telescopio de Canarias	GRANTECAN S.A.	operational	10.4	
INT	Isaac Newton Telescope	Instituto de Astrofísica de Canarias (IAC), Isaac Newton Group of Telescopes- La Palma, Nederlanse Organisatie voor Wetenschappelijk Onderzoek	maintenance	2.5	
LT	Liverpool Telescope	Liverpool John Moores University	operational	2.0	
WHT	William Herschel Telescope	Instituto de Astrofísica de Canarias (IAC)	operational	4.2	

Fig II.6. Specific observatory information.

3.4 Telescopes

The *telescope* table contains information about the telescopes associated with each observatory.

Each record represents a single telescope and shows its name, description, observatory to which it belongs, institutional owner, operational status (Unknown, Operational, Inoperative, or Under Maintenance), aperture and a link to a website with additional information.

Telescopes table

NAME	DESCRIPTION	OBSERVATORY	OWNER	STATUS	APERTURE (m)	WEBSITE
GTC	Gran Telescopio de Canarias	Roque de los Muchachos	GRANTECAN S.A.	operational	10.4	
INT	Isaac Newton Telescope	Roque de los Muchachos	Instituto de Astrofísica de Canarias (IAC), Isaac Newton Group of Telescopes- La Palma, Nederlanse Organisatie voor Wetenschappelijk Onderzoek	maintenance	2.5	
LT	Liverpool Telescope	Roque de los Muchachos	Liverpool John Moores University	operational	2.0	
SOAR	Southern Astrophysical Research	AURA-O	The SOAR Consortium	operational	4.1	
WHT	William Herschel Telescope	Roque de los Muchachos	Instituto de Astrofísica de Canarias (IAC)	operational	4.2	

Fig II.7. *Telescopes* table.

Clicking on a telescope name in the list a detailed page opens showing all instruments related to that telescope.

Telescope: GTC (Gran Telescopio de Canarias)

Instruments belonging to the telescope.

INSTRUMENT	DESCRIPTION	STATUS	WEBSITE
MEGARA	Multi-Espectrógrafo en GTC de Alta Resolución para Astronomía	inoperative	

Fig II.8. Specific telescope information.

3.5 Instruments

The *instrument* table contains information about the instruments available for each telescope.

Each record represents a single instrument and shows its name, description, telescope on which it is installed, operational status (Unknown, Operational, Inoperative, or Under Maintenance) and a link to a website with additional information.

Instruments table

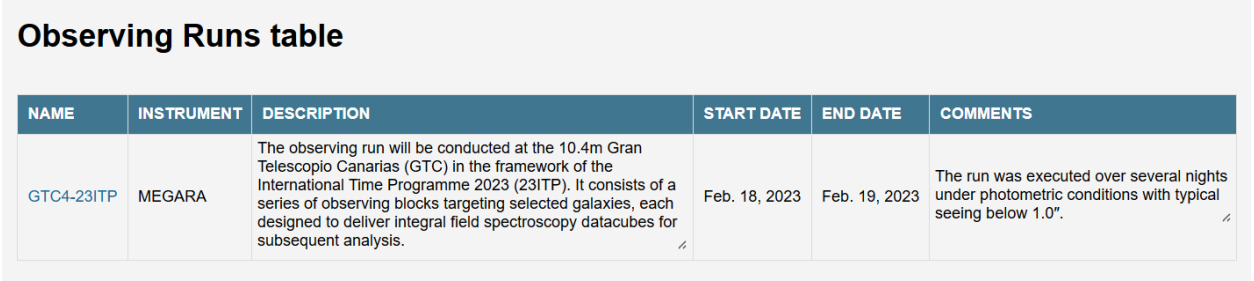
NAME	DESCRIPTION	TELESCOPE	STATUS	WEBSITE
IO:O	Infrared-Optical suite of instruments: optical imaging component	LT	operational	
MEGARA	Multi-Espectrógrafo en GTC de Alta Resolución para Astronomía	GTC	inoperative	
SIFS	SOAR Integral Field Spectrograph	SOAR	operational	
WEAVE	WHT Enhanced Area Velocity Explorer	WHT	operational	
WFC	Wide-Field Camera	INT	inoperative	

Fig II.9. *Instruments* table.

3.6 Observing Runs

The *observing_run* table contains information about the periods during which observations are scheduled for each instrument.

Each record represents a single observing run and shows its name, instrument used, description, start and end dates, and comments.

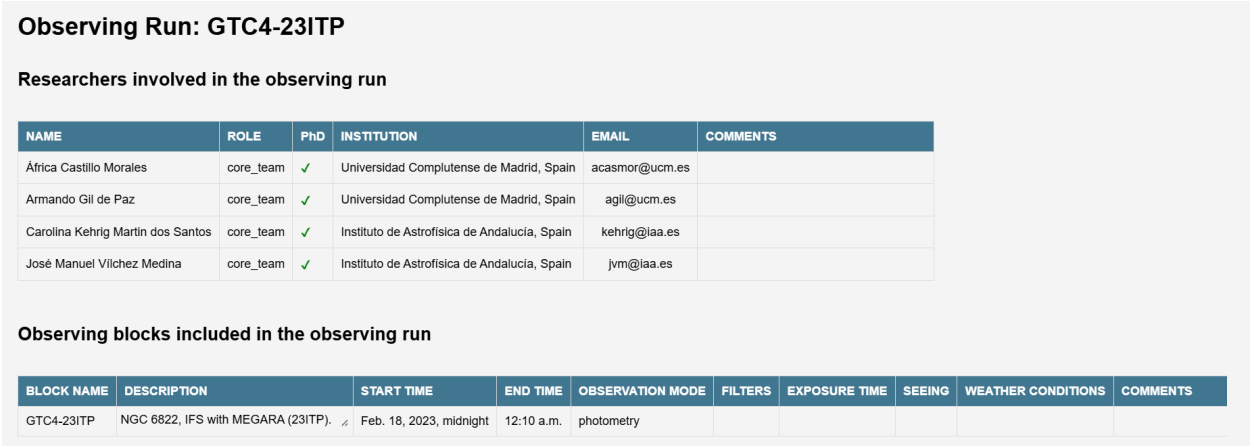


Observing Runs table

NAME	INSTRUMENT	DESCRIPTION	START DATE	END DATE	COMMENTS
GTC4-23ITP	MEGARA	The observing run will be conducted at the 10.4m Gran Telescopio Canarias (GTC) in the framework of the International Time Programme 2023 (23ITP). It consists of a series of observing blocks targeting selected galaxies, each designed to deliver integral field spectroscopy datacubes for subsequent analysis.	Feb. 18, 2023	Feb. 19, 2023	The run was executed over several nights under photometric conditions with typical seeing below 1.0″.

Fig II.10. *Observing Runs* table.

Clicking on an observing run name in the list a detailed page opens showing all researchers involved in the observing run as well as all the observing blocks included.



Observing Run: GTC4-23ITP

Researchers involved in the observing run

NAME	ROLE	PhD	INSTITUTION	EMAIL	COMMENTS
África Castillo Morales	core_team	✓	Universidad Complutense de Madrid, Spain	acasmor@ucm.es	
Armando Gil de Paz	core_team	✓	Universidad Complutense de Madrid, Spain	agil@ucm.es	
Carolina Kehrig Martin dos Santos	core_team	✓	Instituto de Astrofísica de Andalucía, Spain	kehrig@iaa.es	
José Manuel Vílchez Medina	core_team	✓	Instituto de Astrofísica de Andalucía, Spain	jvm@iaa.es	

Observing blocks included in the observing run

BLOCK NAME	DESCRIPTION	START TIME	END TIME	OBSERVATION MODE	FILTERS	EXPOSURE TIME	SEEING	WEATHER CONDITIONS	COMMENTS
GTC4-23ITP	NGC 6822, IFS with MEGARA (23ITP).	Feb. 18, 2023, midnight	12:10 a.m.	photometry					

Fig II.11. Specific observing run information.

3.7 Observing Blocks

The *observing_block* table contains information about the specific set of scheduled observations for each observing run.

Each record represents a single observing block and shows its name, observation run to which it belongs, description, start date and time, end time, observed objects (targets), observation mode (Photometry, Spectroscopy, or Imaging), filters, exposure time of the observation, seeing value, weather conditions, and comments.

Observing Blocks table

NAME	OBSERVING RUN	DESCRIPTION	START TIME	END TIME	TARGET	OBSERVATION MODE	FILTERS	EX
GTC4-23ITP	GTC4-23ITP	NGC 6822, IFS with MEGARA (23ITP).	Feb. 18, 2023, midnight	12:10 a.m.	NGC 6822	photometry		

Fig II.12. *Observing Blocks* table.

3.8 Targets

The *target* table contains information about the observable astronomical objects.

Each record represents a single target and shows its image (if available), name, observing blocks where it has been observed, type (*Galaxy*, *Calibration*, or *Other*), right ascension, declination, apparent magnitude, redshift, angular size, visibility semester, comments, and path to store associated files.

Targets table

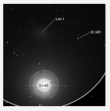
IMAGE	NAME	OBSERVING BLOCK	TYPE	RA	DEC	MAG	z	SIZE (arcsec)	VISIBILITY SEMESTER	COMMENTS	DATA FILES PATH
	IC 1613		galaxy	01:04:47	+02:07:04	9.2	0.0	16.6	2025b	Irregular dwarf galaxy located on the outskirts of the Local Group, with low interstellar dust content.	IC_1613\datafiles
	Leo I		galaxy	10:08:23	+12:36:00	13.2	0.0	11.5	2025b	Dwarf spheroidal galaxy.	Leo_I\datafiles
	NGC 6822	GTC4-23ITP - MEGARA (2023-02-18)	galaxy	19:44:56	-14:48:06	9.2	0.0	17.4	2025b	Barred irregular galaxy in the Local Group.	NGC_6822\datafiles

Fig II.13. *Targets* table.

4. Administration Panel

The *Administration Panel* offers a centralized interface to maintain the database, and manage user accounts and permissions.

The header menu presents the following options for the Administrator user:

- **View Site**: returns to the platform's main page (see *Chapter 2. Navigating the Home Page*).
- **Change Password**: allows the Administrator to update their password.
- **Log out**: closes the current session (see *Chapter 5. Logging Out*).

Fig II.14. Administration's panel menu options.

4.1 Panel Overview

The administration panel is organized into two main sections.

Authentication and Authorization section contains the *Groups* and *Users* categories, to manage user accounts, assign users to groups, and configure permissions.

Fig II.15. Authentication and Authorization administration.

Database section defines a category for each table of the *dwarfs4MOSAIC* platform, allowing to view, add, modify, or delete records as required.

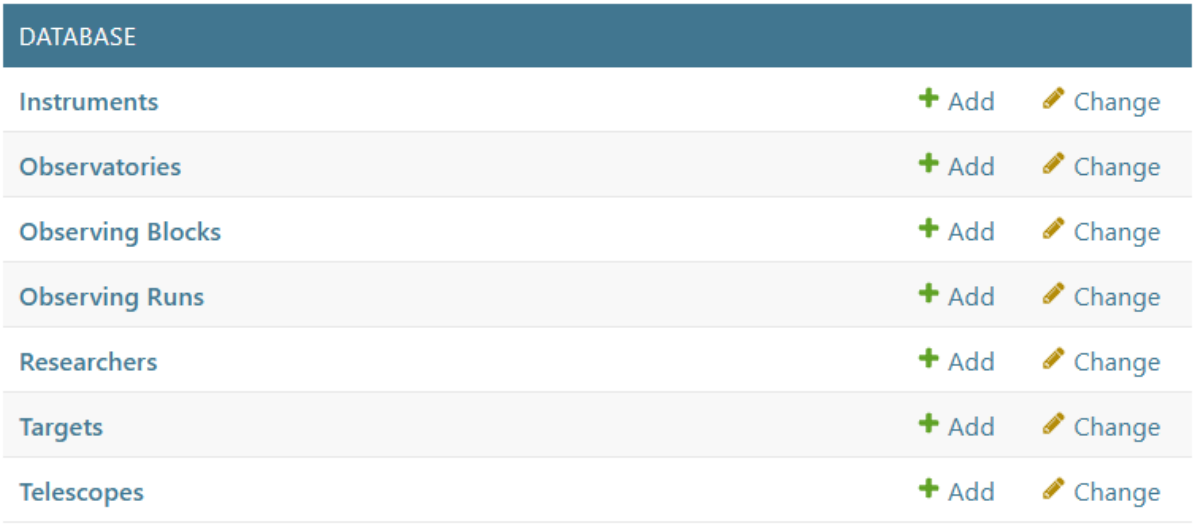


Fig II.16. Database administration.

When selecting a category in the administration panel, a list of existing objects of that type is displayed, allowing you to view, edit, or delete them as needed.

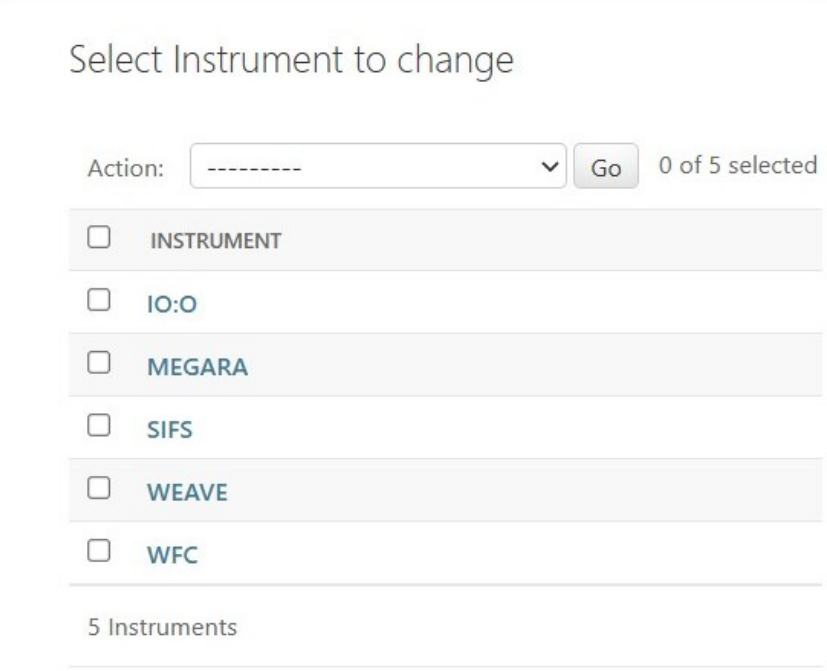


Fig II.17. List of instruments.

All categories in the Administration Panel follow the same basic workflow:

Adding an object

Open the form to create a new object:

- By clicking `Add+` next to the category name in the main panel.
- By selecting a category and then clicking `Add [object name]+`.
- By clicking `Save and add another` after creating an object, which immediately opens a new form for the same type of object.

Fig II.18. Add a new object.

Fill in the required fields and any optional fields as needed, and click `Save` to create the object. After saving, the new object will appear in the list of objects of that category, and you can edit it at any time to view it, update it or delete it if it is no longer needed.

Editing an object

Select a category and click on the object you wish to modify from the list. Update the fields as needed and click `Save` to apply the changes.

Deleting an object

Select a category, click on the object from the list to open its form, and click `Delete`. You will be asked to confirm before the deletion is applied.

It is also possible to delete multiple objects at once by selecting several entries in the list and choosing the `Delete selected` action from the dropdown menu.

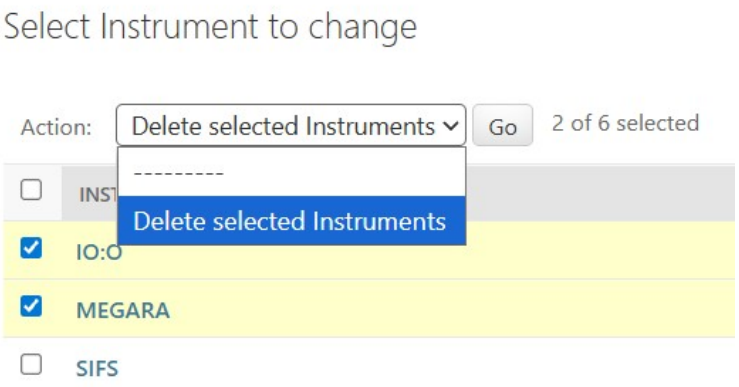


Fig II.19. Delete existing object/s.

4.2 Database

This section describes the database categories in an order that reflects the typical workflow for creating and linking objects. Presenting them in this sequence helps clarify the relationships between different types of entries and ensures a logical understanding of how data is organized within the platform.

4.2.1 Observatories

Observatories represent the locations where telescopes and instruments are installed. Each entry includes information such as the observatory name, location, website, geographical coordinates (latitude and longitude) and altitude.

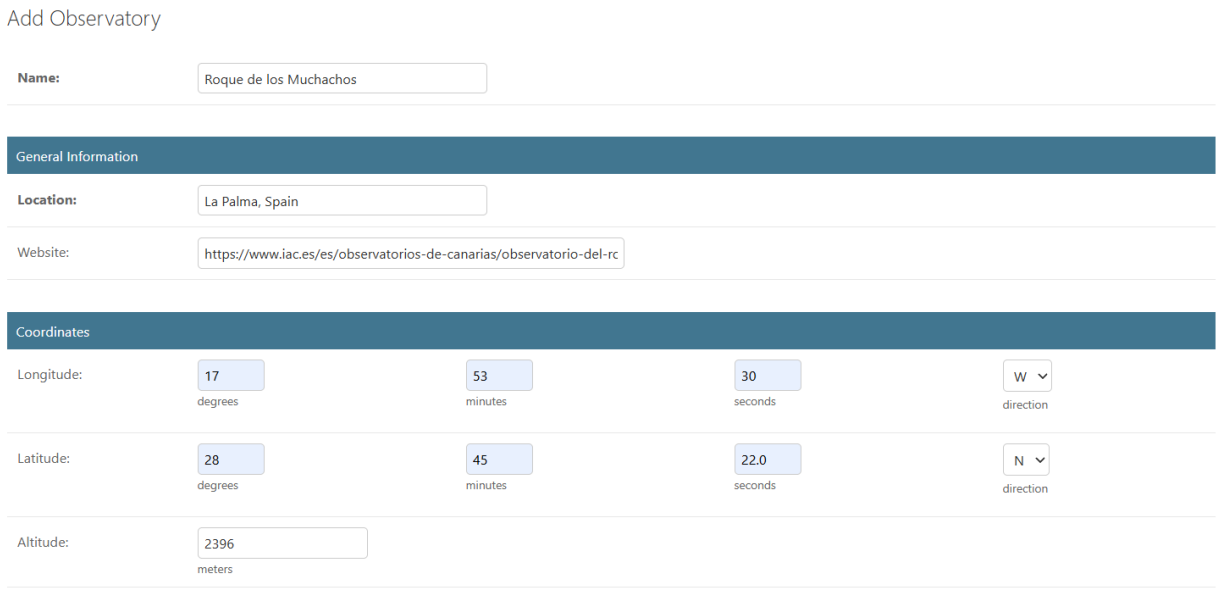


Fig II.20. Observatory information.

Maintaining accurate observatory data is essential, as telescopes and observing blocks are linked to these locations, and the relationships are used throughout the platform to manage observations efficiently.

4.2.2 Telescopes

Telescopes are the instruments installed at observatories to carry out astronomical observations. Each telescope entry includes its name, type, and the observatory where it is located. Additional details such as aperture size, focal length, and relevant notes can also be specified.

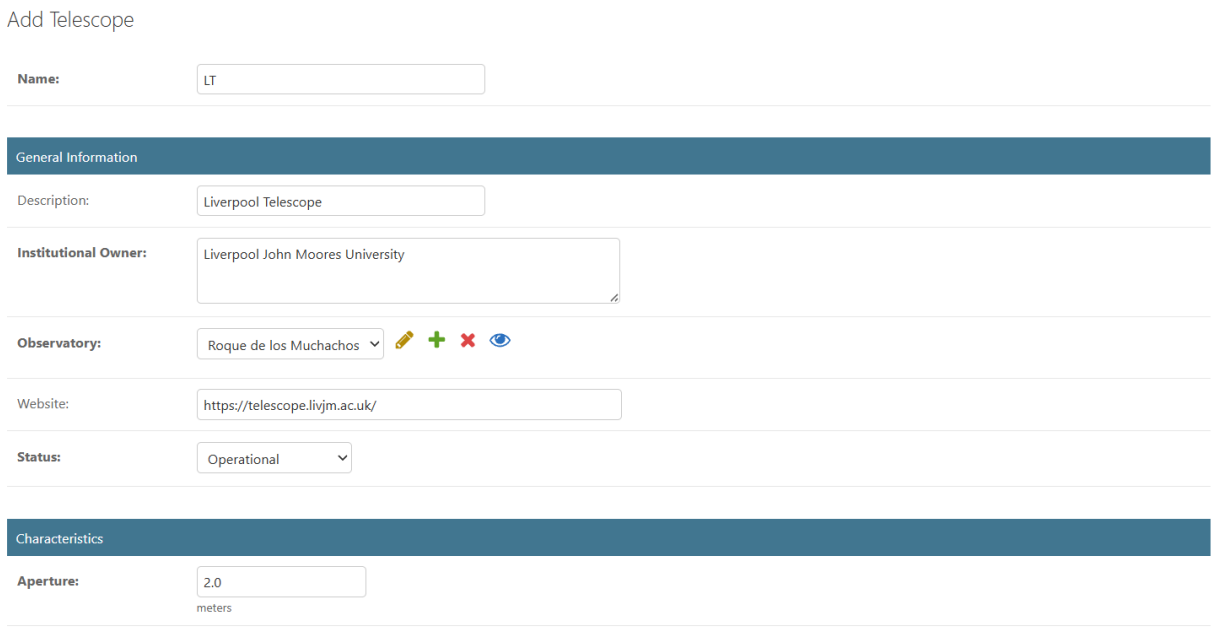


Fig II.21. Telescope information.

Accurate telescope data is important because instruments, observing blocks, and targets are linked to specific telescopes. Ensuring these relationships are correctly established allows proper management and planning of observations across the platform.

4.2.3 Instruments

Instruments are the devices attached to telescopes used to acquire observational data, such as cameras, spectrographs, or photometers. Each instrument entry includes its name, type, and the telescope to which it is associated, along with optional descriptive notes.

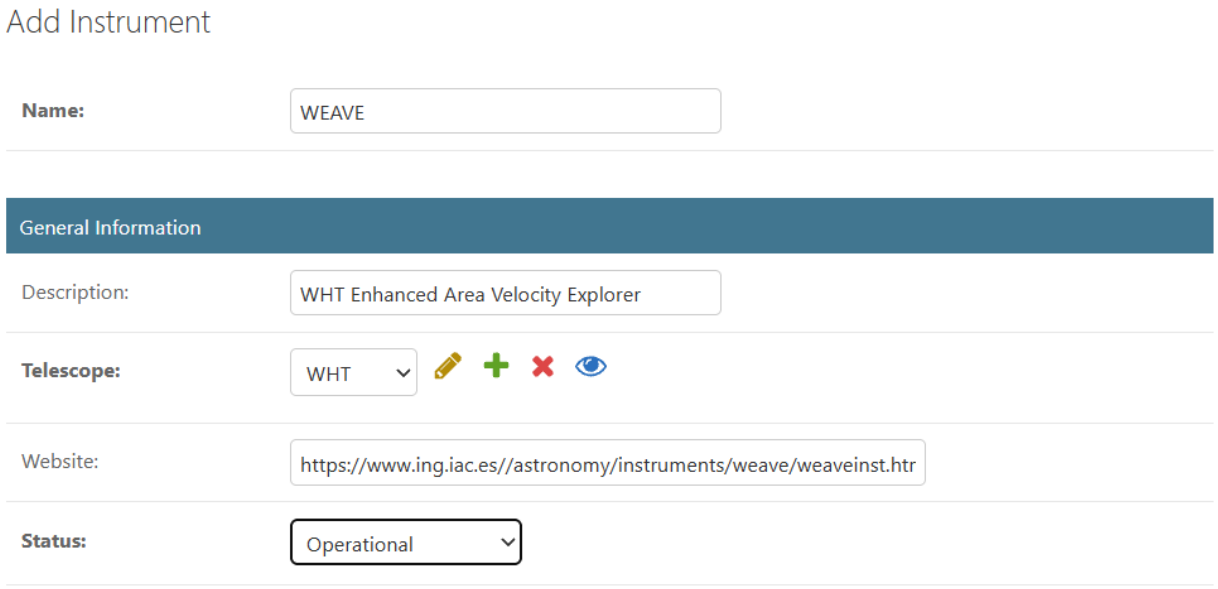


Fig II.22. Instrument information.

Correctly registering instruments ensures that observing blocks and targets are properly associated with the hardware used, which is essential for data management and planning of observations.

4.2.4 Observing Runs

Observing runs represent the periods of scheduled observations conducted at a given observatory with specific telescopes and instruments. Each observing run entry includes its name, the associated observatory, the telescope used, the start and end dates, and optional notes.

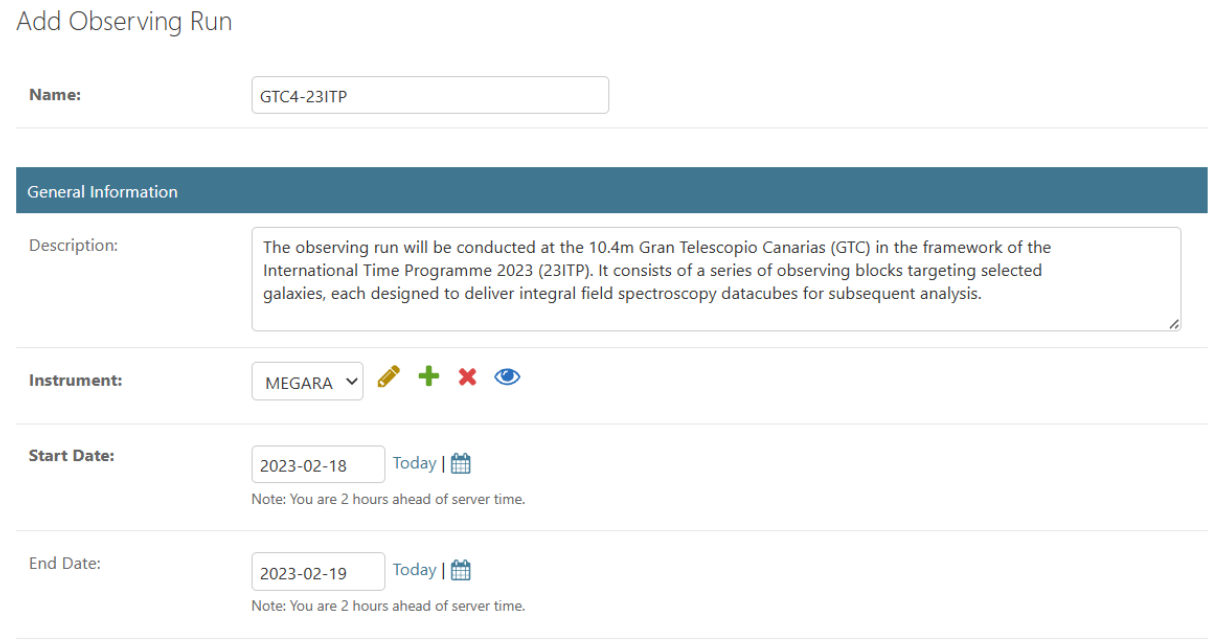


Fig II.23. Observing run information.

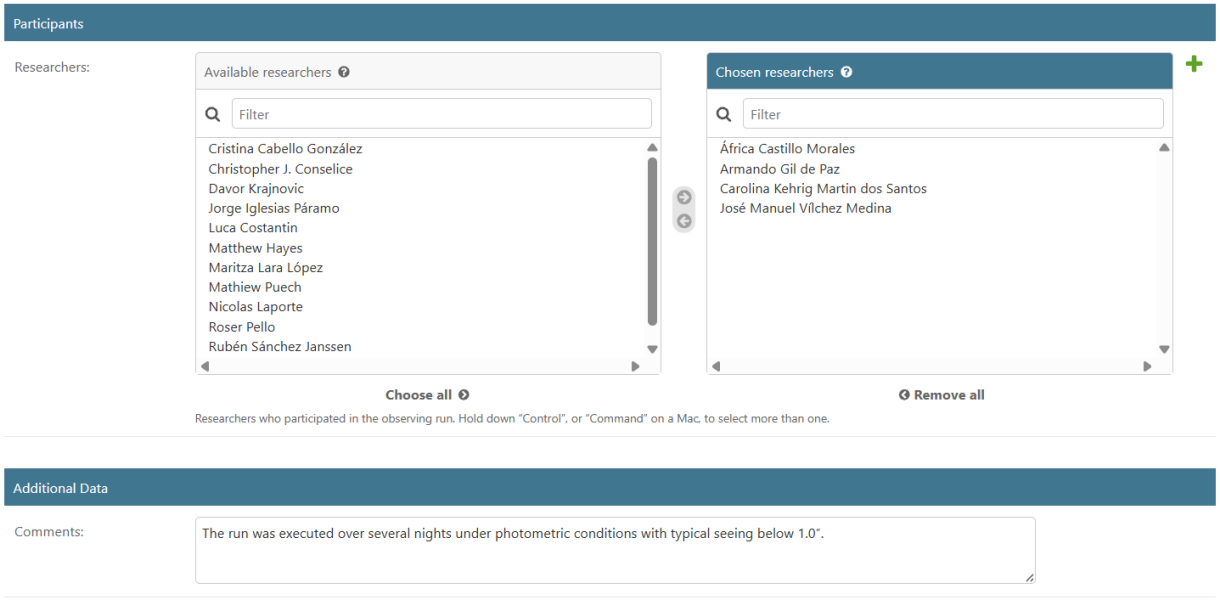


Fig II.24. Observing run participants.

Properly registering observing runs is crucial for organizing observing blocks, associating data files, and maintaining accurate records of the observations carried out.

4.2.5 Observing Blocks

Observing blocks are subdivisions of an observing run that define specific targets, instruments, and observation parameters for a given session. Each block includes a name, the observing run it belongs to, assigned targets, instruments, and any relevant notes.

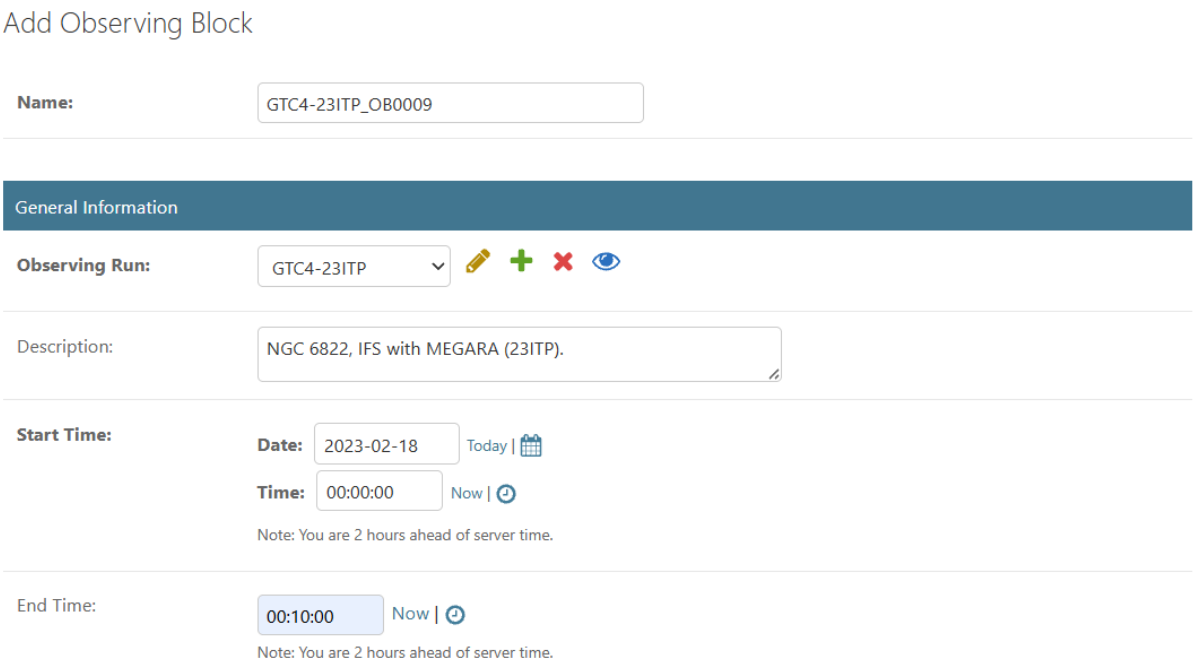


Fig II.25. Observing block information.

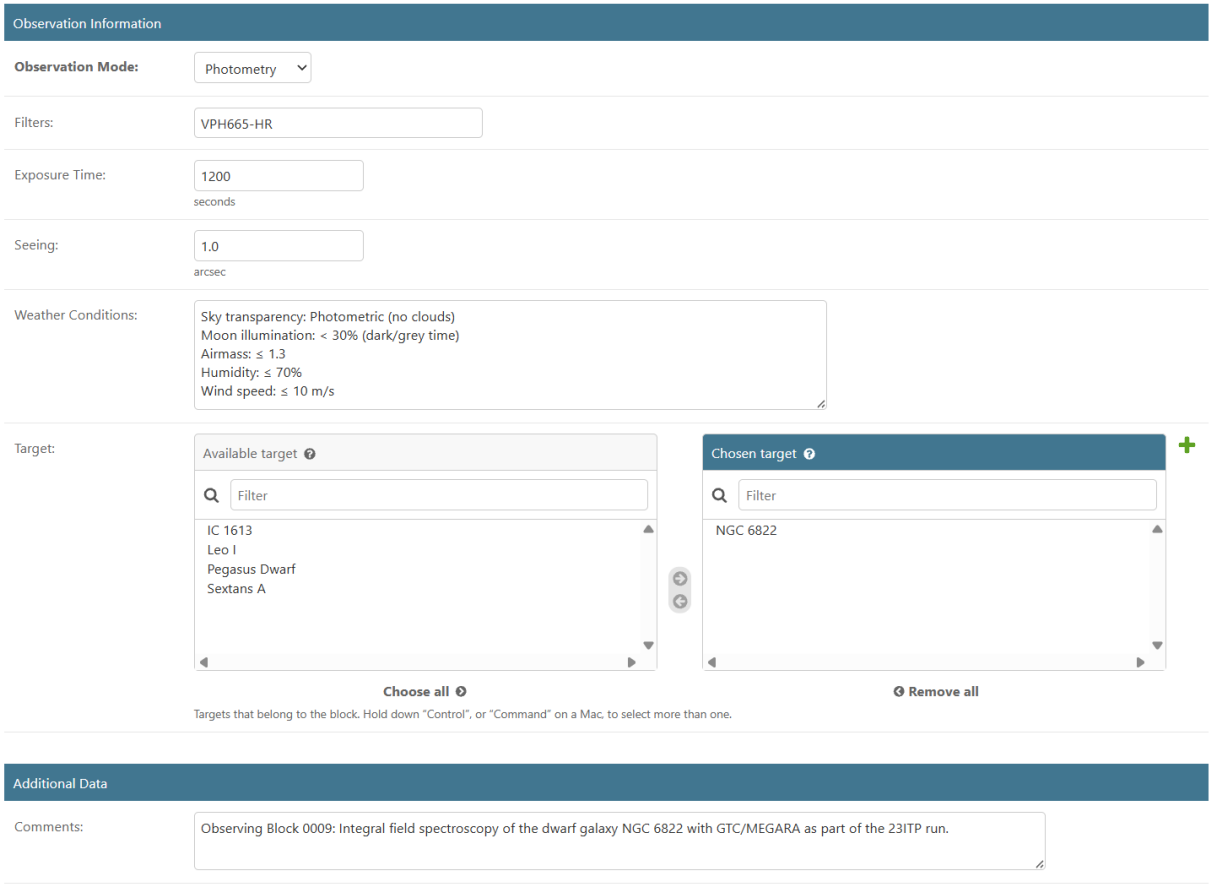


Fig II.26. Observing block targets.

Proper configuration of observing blocks ensures that data files are correctly associated with their targets and runs, and that access permissions can be assigned effectively to researchers and groups.

4.2.6 Targets

Targets are the astronomical objects of study in the project. Each target has associated coordinates (right ascension and declination), apparent magnitude, redshift, angular size, visibility semester, and links to observing runs, instruments, and data files.

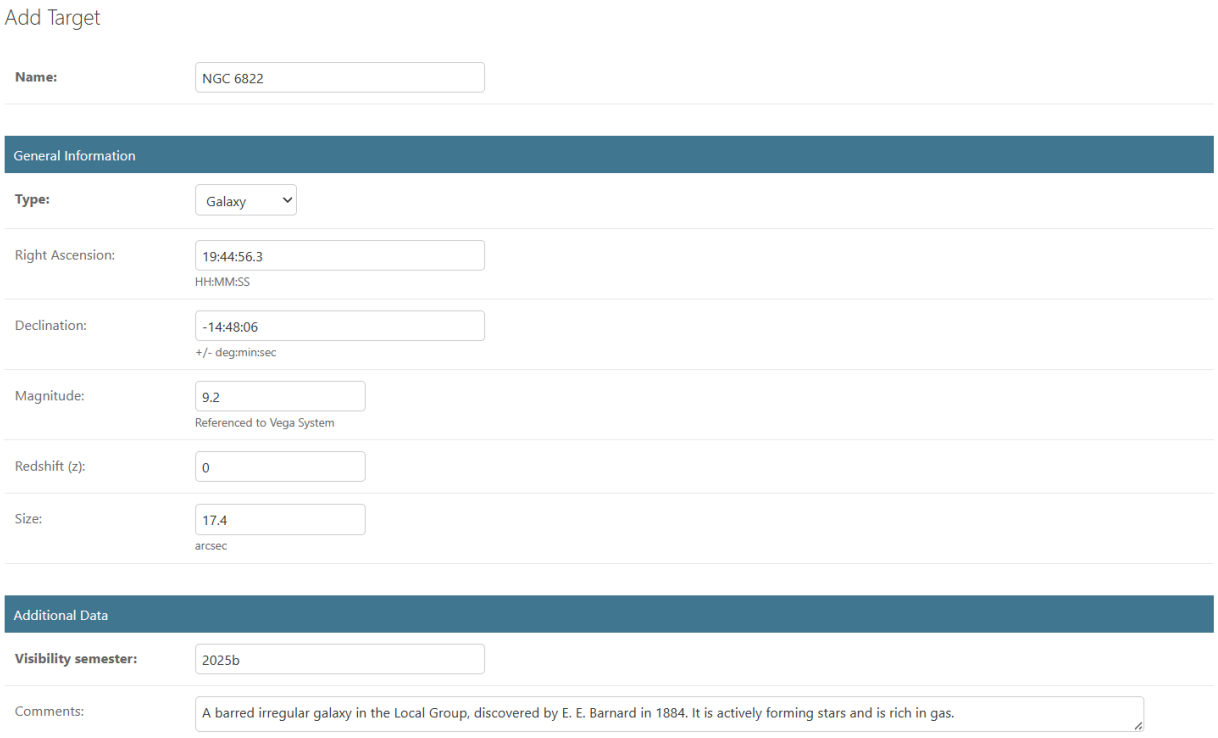


Fig II.27. Target information.

Correct configuration of targets allows for accurate organization of observations, data management, and control of user access permissions for each object.

4.3 Authentication and Authorization

4.3.1 User/Researcher Management

Every member involved in the project is represented by two linked records: a **User** and a **Researcher**.

The *User* account manages the basic login credentials and general access settings, such as password and group membership. The *Researcher* record extends this information by adding specific details about the person as a scientist, such as role, PhD status, and permissions to access observing blocks.

When creating a new member, the process always begins with the *User* account. Once the account is saved, the corresponding *Researcher* information can be added and configured.

Creating a new user/researcher

Create account

First, *add user* or *add researcher* from the corresponding category. In both cases, the *Add User* form will be opened.

In this initial form, you must enter the username for the new account and set a password. The password can be typed manually twice for confirmation, or it can be generated automatically by the system. If generated, the password will be displayed so that you can share it with the new user by email.

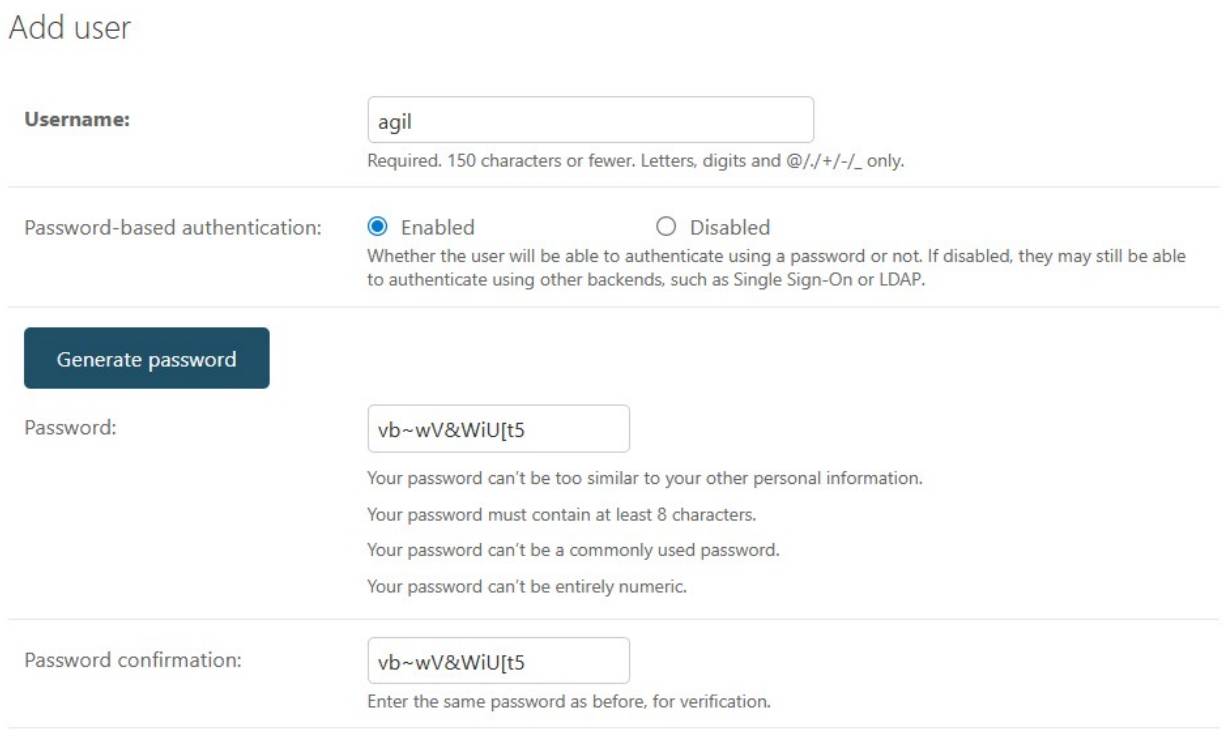


Fig II.28. Creating a new user.

Add user information

After saving, you will be redirected to the user details page. In this second step, you can complete the personal information fields (first name, last name, and email), assign staff status if needed, and manage groups and permissions to control access to targets, blocks, and administrative features. To allow the user to access the platform, the `Staff status` option must be checked.

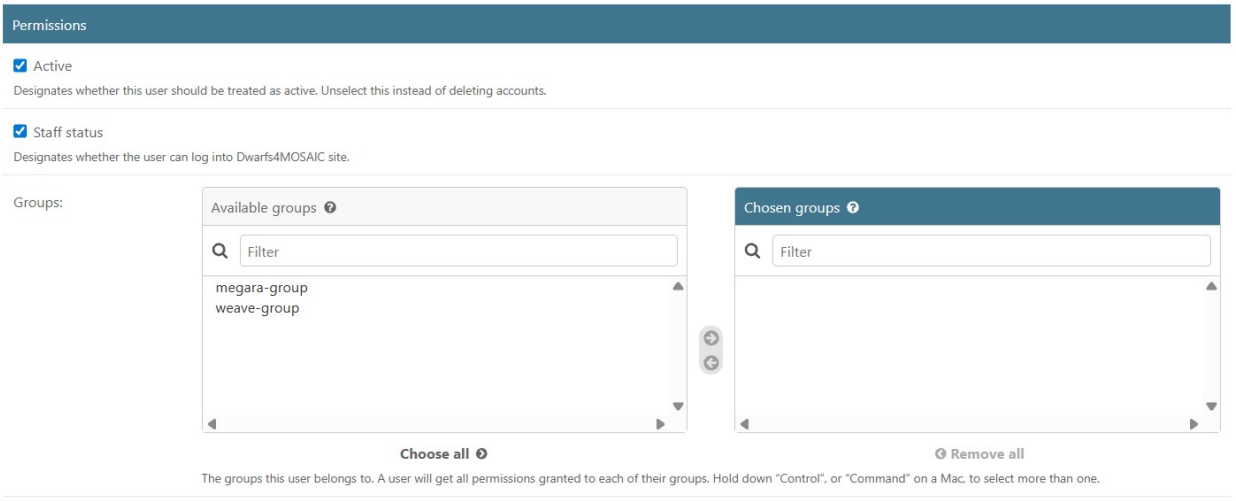


Fig II.29. User permissions.

This page also displays additional information automatically managed by the system, such as the dates when the user account was created (`Date joined`) and the last time the user logged in (`Last login`).

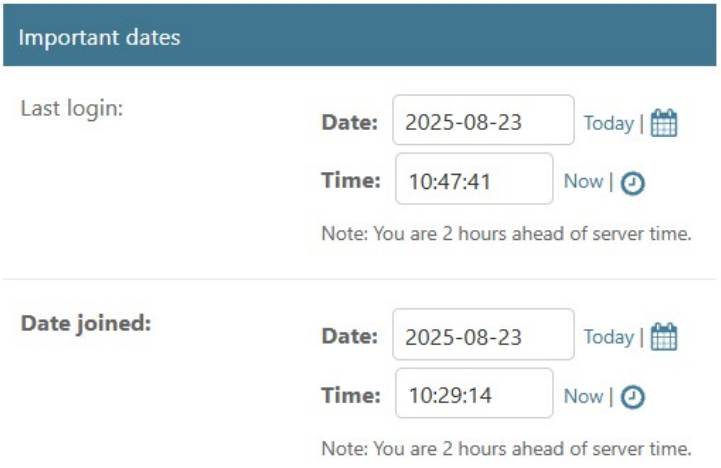


Fig II.30. User dates.

Add researcher information

Finally, the researcher information can be added either directly from the user page by clicking `Open Researcher`, or by selecting an existing researcher from the *Researchers* category.

In this form, you can complete all fields related to the researcher's role, PhD status, and permissions for observing blocks. This ensures that the account is fully linked to its corresponding researcher profile and that all relevant access rights are properly assigned.

Use the Role field to assign *Core Team* or *Collaborator* status. Core Team members have full access to all targets and observing blocks, while Collaborators are restricted to the targets and blocks assigned to their group. The *Denied blocks* field specifies which observing blocks the researcher

does not have permission to access.

Fig II.31. Researcher information.

From the researcher form, you can also access the corresponding user account by clicking on the username link, allowing you to view or edit the account information directly.

Deleting a user/researcher

When a user account is deleted, the login credentials are removed, but the researcher record remains in the database. This ensures that the researcher's participation and history in past observing campaigns are preserved. However, once the associated user account is deleted, the researcher record becomes read-only and can no longer be edited.

⚠ Conversely, if a researcher record is deleted, both the researcher and the linked user account are permanently removed.

4.3.2 Groups Management

Groups are used to organize users according to their roles and responsibilities within the project. By assigning users to a group, you can efficiently manage permissions and control access to targets, observing blocks, and administrative features.

Creating a new *group* is a two-step process. First, *add group* and enter the group name. After saving, you will be redirected to the group details page.

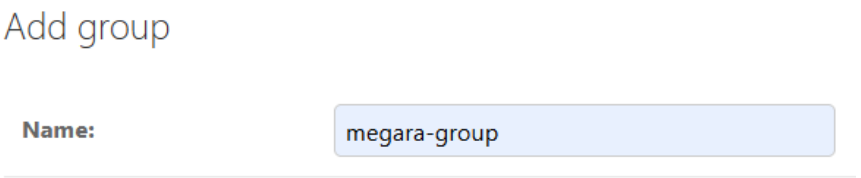


Fig II.32. Group information.

In a second step, the Authorization section appears, where you can assign the group access to specific observing blocks. This specifies which observing blocks the users in the group are allowed to access or modify.

Fig II.33. Group allowed blocks.

Users can then be assigned to the group when creating or editing their accounts.

5. Logging Out

The Administrator user should refer to *Chapter 4. Logging Out* in *Part I. User's Guide* for general instructions for guidance on logging out.

6. Support

For any support-related issues, the Administrator user should refer to *Chapter 5. Support* in *Part I. User's Guide* , which provides guidance for contacting the project coordinator and requesting assistance.