

# The European ALMA Regional Centre node (EU ARC)

<https://www.eso.org/sci/facilities/alma/arc.html>

Public

Science

User Portal

ContactSite MapSearchGo!

Science Users Information > Observing Facilities > ALMA > European ALMA Regional Centre09 Jun 2023

ALMA

ALMA News

About ALMA

ALMA Observatory

ALMA Science Portal

Observing with ALMA

European Development Studies

European ALMA Regional Centre

ALMA Explained

ALMA Archive School 2022

Meeting of ALMA Young Astronomers

Contact Information

ARC Staff at ESO

User Support at the EU ARC

Employment

ALMA Advanced Data Products

ALMA EUROPEAN ARC ALMA Regional Centre

## European ALMA Regional Centre

The European ALMA Regional Centre (ARC) provides the interface between the ALMA project and the European science community. The ARC is staffed by scientists with expertise in radio astronomy and interferometry and it supports its users throughout the lifetime of a project, from proposal preparation to data analysis. The primary aim of the European ARC is to maximize ALMA's scientific return for European users.

The European ARC is organized as a coordinated network of scientific support nodes distributed across Europe located in [Bologna](#), [Bonn/Cologne](#), [Grenoble](#), [Leiden](#), [Manchester](#), [Ondřejov](#), and [Onsala](#). The central node is located at ESO Headquarters in Garching bei München and carries the responsibility for all the core ARC activities as well as the coordination of the science support provided by the regional nodes. A more detailed description is available in the ['Guide to the European ALMA Regional Centre'](#).

The European ARC is the point of contact for European ALMA users from the moment of proposal submission to the actual distribution of calibrated data and subsequent analysis via the [ALMA Helpdesk](#).

### European ARC Network



News and Announcements

ALMA Helpdesk for direct support

ALMA Science Portal

ORP funding for face-to-face visits

# The Italian ARC node

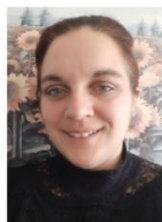
New website: [arc.ira.inaf.it](https://arc.ira.inaf.it)

Contact [help-desk@ira.inaf.it](mailto:help-desk@ira.inaf.it)

Support to ALMA  
community



Jan Brand



Marcella  
Massardi



Rosita  
Paladino



Elisabetta  
Liuzzo



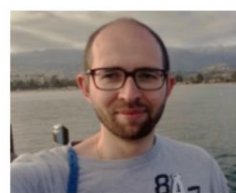
Kazi Rygl



Nicola  
Marchili

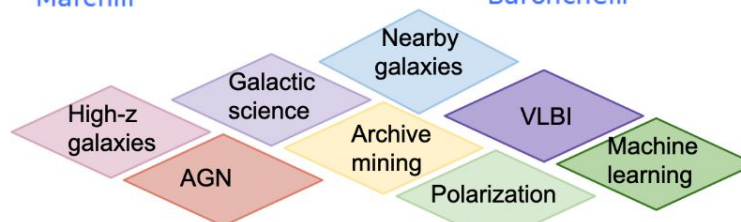
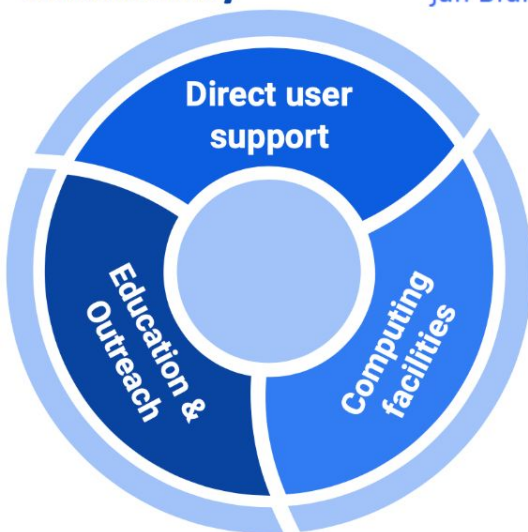


Matteo Bonato



Ivano  
Baronchelli

Support to ALMA  
project



# The IT ARC node activities



EUROPEAN ARC  
ALMA Regional Centre

## Network activities for the community

**Education, outreach**  
by the EU nodes network

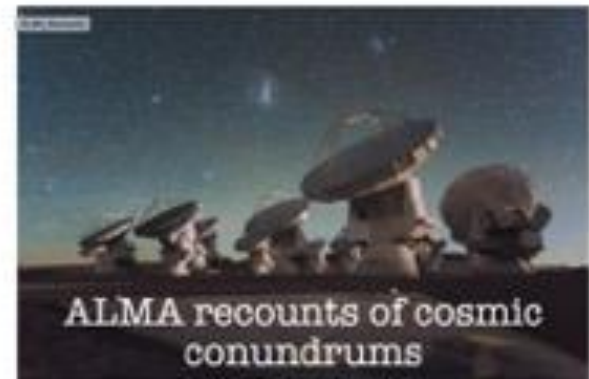


EUROPEAN ARC  
ALMA Regional Centre



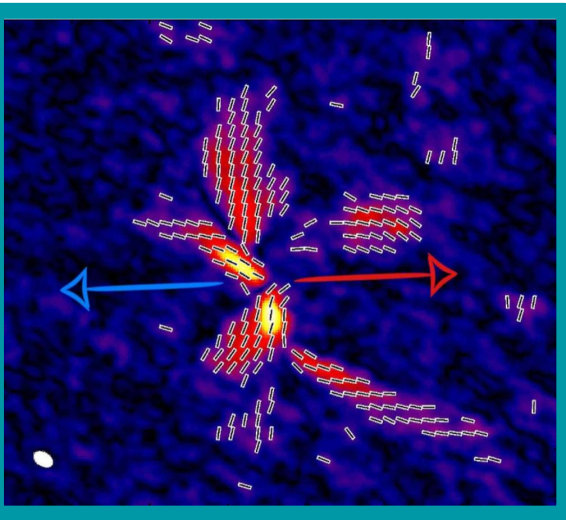
Meeting of ALMA Young  
Astronomers 2023

[https://www.youtube.com/playlist?list=P\\_LSPuDgCIX-pYJkZ3VEd\\_SewcPkPh5BpyE](https://www.youtube.com/playlist?list=P_LSPuDgCIX-pYJkZ3VEd_SewcPkPh5BpyE)



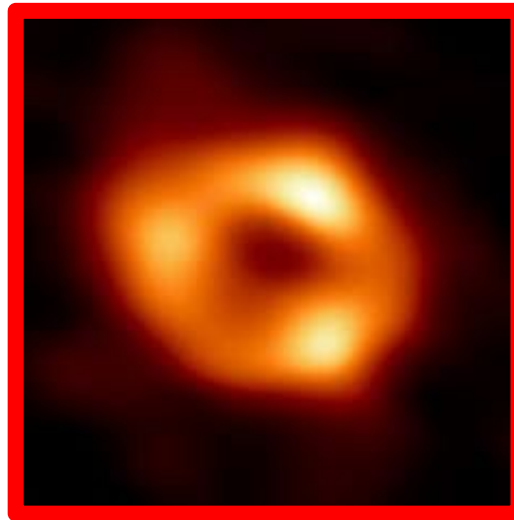


# The IT ARC node expertise



## Polarization

- data calibration and imaging (Rosita)

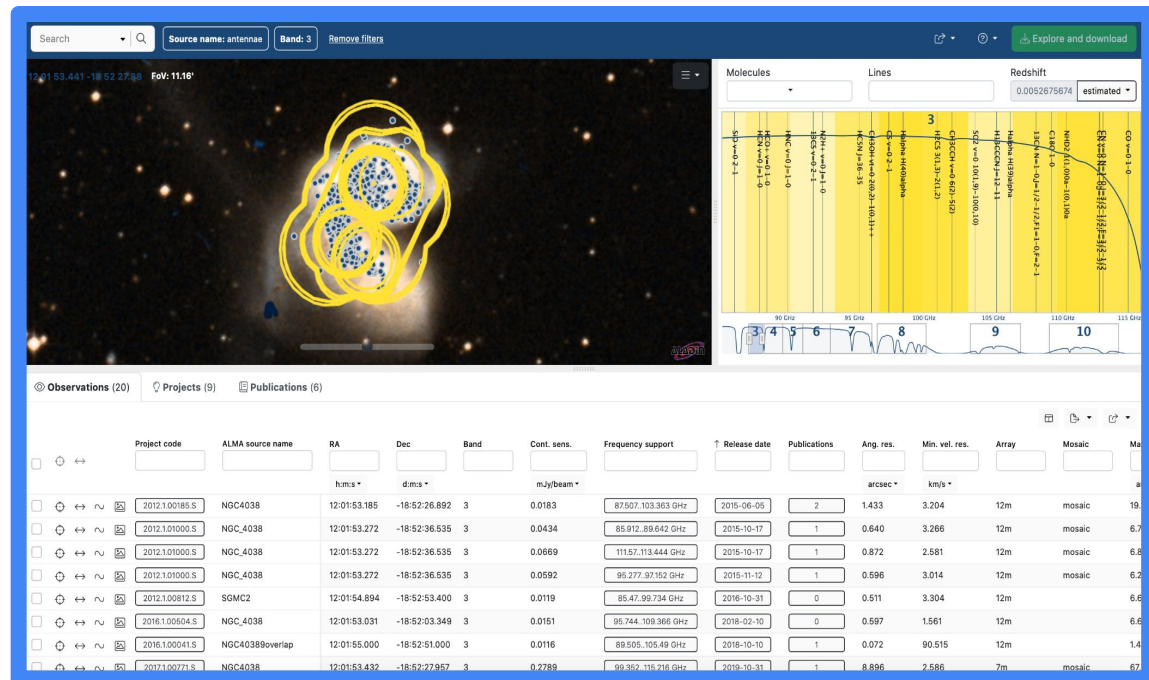


## mm-VLBI with ALMA

- calibration (Kazi & Elisabetta)
- time domain analysis (Nicola)

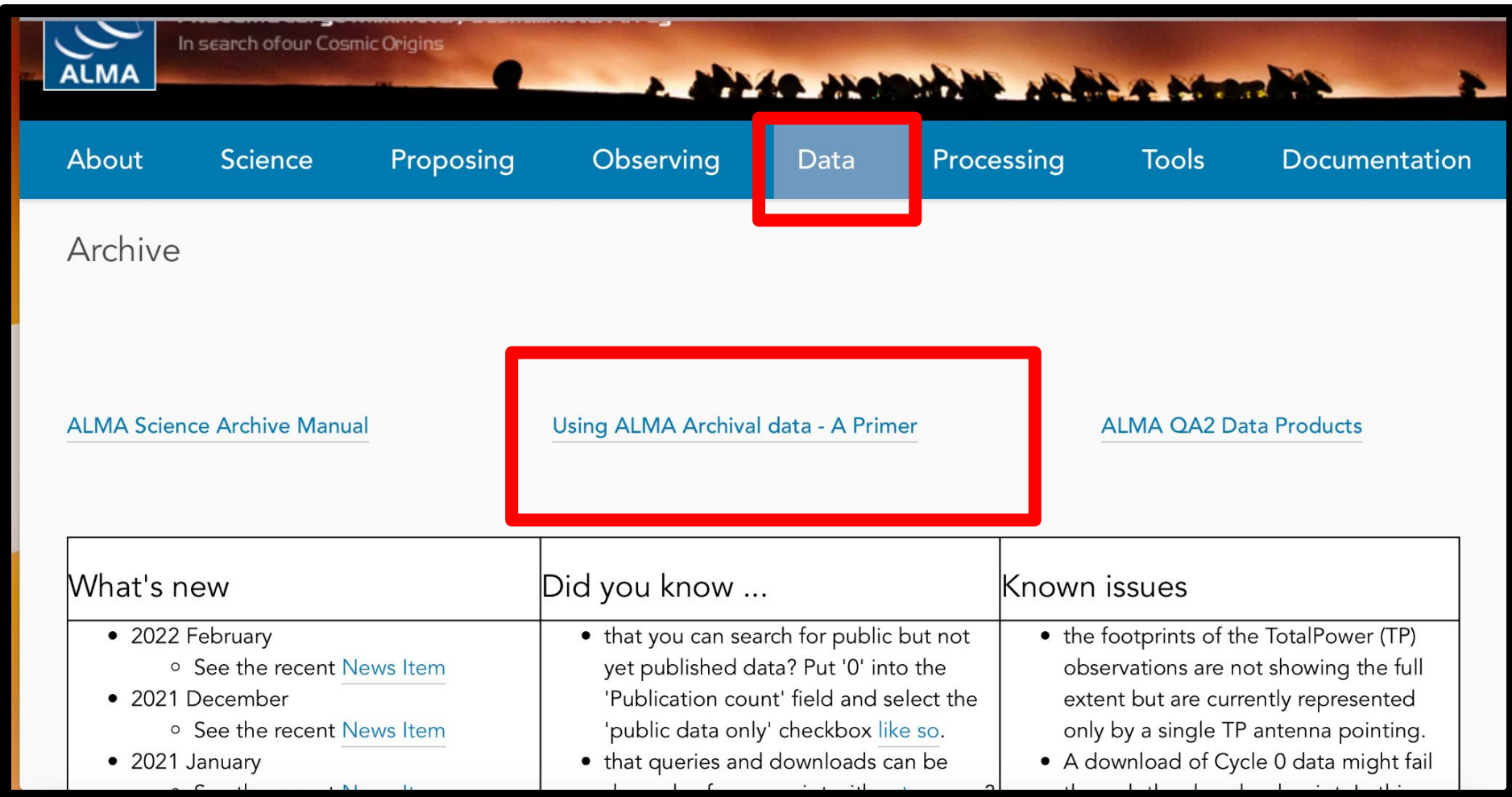
## Archive mining

- ARI-L project (Marcella)
- ALMA calibrators science (Matteo)
- machine learning technique for imaging (Ivano)
- Archive primer (Kazi)



# Using ALMA Archival data - Primer

<https://almascience.eso.org/alma-data/archive/archive-documentation>



The screenshot shows the ALMA Science Archive website. At the top is a banner with the ALMA logo and the text "In search of our Cosmic Origins". Below the banner is a navigation bar with links: About, Science, Proposing, Observing, Data, Processing, Tools, and Documentation. The "Data" link is highlighted with a red box. Below the navigation bar is the "Archive" section. In this section, three links are displayed: "ALMA Science Archive Manual", "Using ALMA Archival data - A Primer" (highlighted with a red box), and "ALMA QA2 Data Products". At the bottom of the page is a table with three columns: "What's new", "Did you know ...", and "Known issues".

ALMA

In search of our Cosmic Origins

About Science Proposing Observing **Data** Processing Tools Documentation

Archive

[ALMA Science Archive Manual](#) [Using ALMA Archival data - A Primer](#) [ALMA QA2 Data Products](#)

What's new	Did you know ...	Known issues
<ul style="list-style-type: none"><li>• 2022 February<ul style="list-style-type: none"><li>◦ See the recent <a href="#">News Item</a></li></ul></li><li>• 2021 December<ul style="list-style-type: none"><li>◦ See the recent <a href="#">News Item</a></li></ul></li><li>• 2021 January</li></ul>	<ul style="list-style-type: none"><li>• that you can search for public but not yet published data? Put '0' into the 'Publication count' field and select the 'public data only' checkbox <a href="#">like so</a>.</li><li>• that queries and downloads can be</li></ul>	<ul style="list-style-type: none"><li>• the footprints of the TotalPower (TP) observations are not showing the full extent but are currently represented only by a single TP antenna pointing.</li><li>• A download of Cycle 0 data might fail</li></ul>

# Archive primer - contents

<https://almascience.eso.org/documents-and-tools/cycle10/archive-primer>

- ALMA intro
- Archive query
- download
- exploitation
- .....

<b>1</b>	<b>Introduction</b>	<b>5</b>
1.1	Purpose	5
1.2	The ALMA Interferometer	6
1.3	Science with ALMA	6
1.4	The ALMA Science Archive	7
<b>2</b>	<b>Querying the ALMA Science Archive</b>	<b>8</b>
2.1	ALMA data structure	8
2.2	The ASA query and results interface	8
2.3	Querying the ASA	10
2.3.1	The search box	10
2.3.2	Searching using the image panel	10
2.3.3	Refining search results in the results table	12
2.3.4	Preview of archived ALMA observations within the ASA interface	12
2.4	Example: star-forming regions on the spiral arms in M 83	13
2.5	Producing query scripts	13
2.5.1	PyVO	13
2.5.2	Astroquery	17
2.5.3	ALminer	18
2.6	Results tables	19
2.6.1	Release dates, proprietary periods and data accessibility	19
2.6.2	ALMA quality assurance	21
2.6.3	Exporting the result tables	22
2.7	Additional considerations when using archival data	22
<b>3</b>	<b>Downloading data from the ASA</b>	<b>23</b>
3.1	The Request Handler	23
3.1.1	Data packages available and their content	23
3.1.2	Download selection in the Request Handler	27
3.2	Download options	27
3.3	External download options	28
3.3.1	PyVO	28
3.3.2	Astroquery	28
3.3.3	ALminer	28
3.3.4	ALMA Science Archive Notebooks	29
3.4	Download completion checks	29
<b>4</b>	<b>Overview of downloaded archival data</b>	<b>30</b>
4.1	Unpacking archival data	30
4.2	Archival data structure	30

# The IT ARC node cluster

<https://arc.ira.inaf.it/about/arc-cluster/>

## Performances:

- 13 blades
- RAM up to 256 GB
- up to 6/12 cores
- storage 10 TB/each user
- numerous softwares available

## User policy

- e-mail to [help-desk@alma.inaf.it](mailto:help-desk@alma.inaf.it)
- 6 months account
- possibility to extend the duration
- [arc-cluster-users@ira.inaf.it](mailto:arc-cluster-users@ira.inaf.it) mailing list





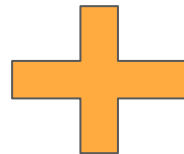
# The IT ARC node recent events



EUROPEAN ARC  
ALMA Regional Centre || Italian

Italian ARC node  
Community tour 2023

## ALMA CYCLE 10 AND BEYOND




availability for local support



# Enter the ALMA world through the ALMA Science Portal

<http://almascience.eso.org/>

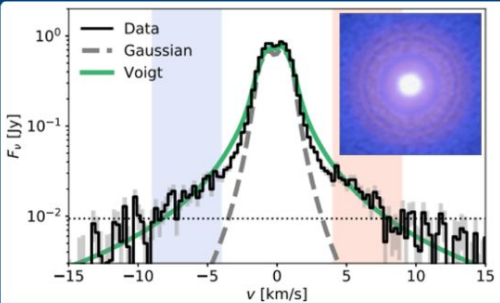


**Atacama Large Millimeter/submillimeter Array**  
In search of our Cosmic Origins

[About](#) [Science](#) [Proposing](#) [Observing](#) [Data](#) [Processing](#) [Tools](#) [Documentation](#) [Help](#)

### Science Highlight

New Method for Measuring Gas Surface Density in a Planet-Forming Disk



Integrated spectrum of CO (3-2) in the 0.2" aperture centered at the stellar position. The inset shows the dust continuum image and the central white area roughly corresponds to the location where enough amount of gas to form a Jupiter-mass planet is present, as estimated in this study.

The evolution of gas surface density in protoplanetary disks is one of the very basic properties to understanding the process of planetary-system formation. However, molecular hydrogen, which accounts for most of the gas mass, does not emit efficiently at low temperatures, and the conversion of CO to H<sub>2</sub>, as well as the conversion from the dust to gas mass, is known to be highly uncertain. Accurate

### Observatory News

**Issue affecting some proposals requiring ACA observations**  
Apr 26, 2023

Registration and abstract submission are open for the conference "ALMA at 10-years: Past, Present, and Future!"  
Apr 24, 2023

**Issue affecting Total Power data processed with Single Dish Pipeline version 2022.2.0.64**  
Apr 17, 2023

**ALMA Cycle 10 Call for Proposals is Now**

[More...](#)

### EU ARC News

**German ALMA Community Meeting 2023**  
Apr 18, 2023


**Sixth European ALMA community assembly**  
Apr 13, 2023

**Fifth workshop on millimetre astronomy for the Italian astronomical community**  
Mar 24, 2023

**ALMA Regional Centre Astronomer - ESO Garching (closed)**

[More...](#)

### Current configuration: C-7



[More...](#)

## Help

- Knowledgebase/FAQ
- Helpdesk
- EA ARC
- EU ARC
- NA ARC

The ALMA Science Portal is a one-stop source for information and tools aimed at the scientific community as a whole, including proposers, archive researchers, ALMA staff, journalists, and funding agencies.


### Quick Links

[ALMA Basics](#)

[Cycle 10 Call for Proposals](#)

# ALMA Helpdesk

<https://help.almascience.org>



Atacama Large Millimeter/submillimeter Array  
Observer Support


ALMA Science

Submit Helpdesk Ticket


Log in

How can we help you today?


[Help Center](#) [TOO](#) [Search Sci Portal](#)




**Knowledgebase**  
View all articles



**Submit Helpdesk Ticket**  
Get in touch for help



**My Tickets**  
View your tickets



**Face to Face Visit**  
Arrange a visit

Note: To submit an hp ticket you need an ALMA account!!

# Opticon Radionet Pilot (ORP) funding Request

<https://www.eso.org/sci/facilities/alma/arc/user-support/ORP-f2f-visit-request.html>



European  
Southern  
Observatory

ESO — Reaching New Heights in Astronomy



Public

Science

User Portal

Contact

Site Map

Search

Go!

Science Users Information > Observing Facilities > ALMA > European ALMA Regional Centre > User Support at the EU ARC > ORP funding request

09 Jun 2023

## ALMA

ALMA News

About ALMA

ALMA Observatory

ALMA Science Portal

Observing with ALMA

European Development Studies

European ALMA Regional Centre

ALMA Explained

ALMA Archive School 2022

Meeting of ALMA Young  
Astronomers

Contact Information

ARC Staff at ESO

User Support at the EU ARC

ORP funding request

Employment

ALMA Advanced Data Products



EUROPEAN ARC  
ALMA Regional Centre

## Face-to-Face Visit ORP Funding Request

Users that want to visit an ARC node for a face-to-face visit can apply for funding through the **ORP** (Opticon Radionet Pilot).

To request ORP funding for your prospective visit, please fill the form below. After filling in the form and pressing SUBMIT an email with your request information will be sent to the ORP coordinator.

Official approval has to be received **prior** to the visit. This is a e-mail to the user sent by [RadioNet@mpifr-bonn.mpg.de](mailto:RadioNet@mpifr-bonn.mpg.de), with a subject that looks like "[ORP-101004719] Support for ARC visit | approval & instructions".

Users have to claim their expenses from their institutes, like any other trip. It's up to the institute to then claim the expenses from RadioNet. However, the possibility for individual claims also exists (explained in the TC). TC and invoices have to be sent to the RadioNet Management.

Once again: Please note that your must receive the formal approval from RadioNet **before the start of your trip**.



The **Opticon Radionet Pilot** (ORP) project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004719.

User support by the European ARC receives support from the Opticon Radionet Pilot (ORP).

The fields marked with "\*" are mandatory and need to be filled in!

First and Last Name \*

Nationality \*

Gender \*

Select a Gender

Cestino



# How can we help you more/better?

We would like to hear your opinion on:

- Training : periodic schools?  
basic or specific on techniques?
  - Single dish / interferometry school?

# How can we help you more/better?

We would like to hear your opinion on:

- Proposal days: format?  
One/more day?  
Hybrid format?  
would Joint preparation days be useful?  
ALMA+VLT/VLA/JWST

## How can we help you more/better?

We would like to hear your opinion on:

- Are available repositories sufficiently known?



# How can we help you more/better?

We would like to hear your opinion on:

- Tools coordination (as suggested yesterday for kinematic tools)

## How can we help you more/better?

We would like to hear your opinion on:

- Meetings like this one