

The European ARC Services and User Support

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**European ALMA
Regional Centre**

ALMA observatory

Joint ALMA Office

High-level concepts for ALMA Science Operations

- Observations only in service observing mode with flexible (dynamic) scheduling
- Observations 24h/day interrupted by maintenance periods
- All observations executed in the form of scheduling blocks (SBs)
- Default output: reliable images, calibrated according to the calibration plan
- The Joint ALMA Observatory (JAO) is responsible for the data product quality
- All science and calibration raw data are captured and archived
- **User interface is provided by the ALMA Regional Centres (ARCs)**



The ALMA Regional Centres

- The ALMA Regional Centres (ARCs) are the **interface** between the user communities and the observatory
- There is one ARC for **each executive**
 - one in Europe, one in North America, one in East Asia
- The ARCs provide a core package of **operationally critical services** to ALMA Operations in Chile and their regional user communities
- Close links with the **Department of Science Operations (DSO)** in Chile

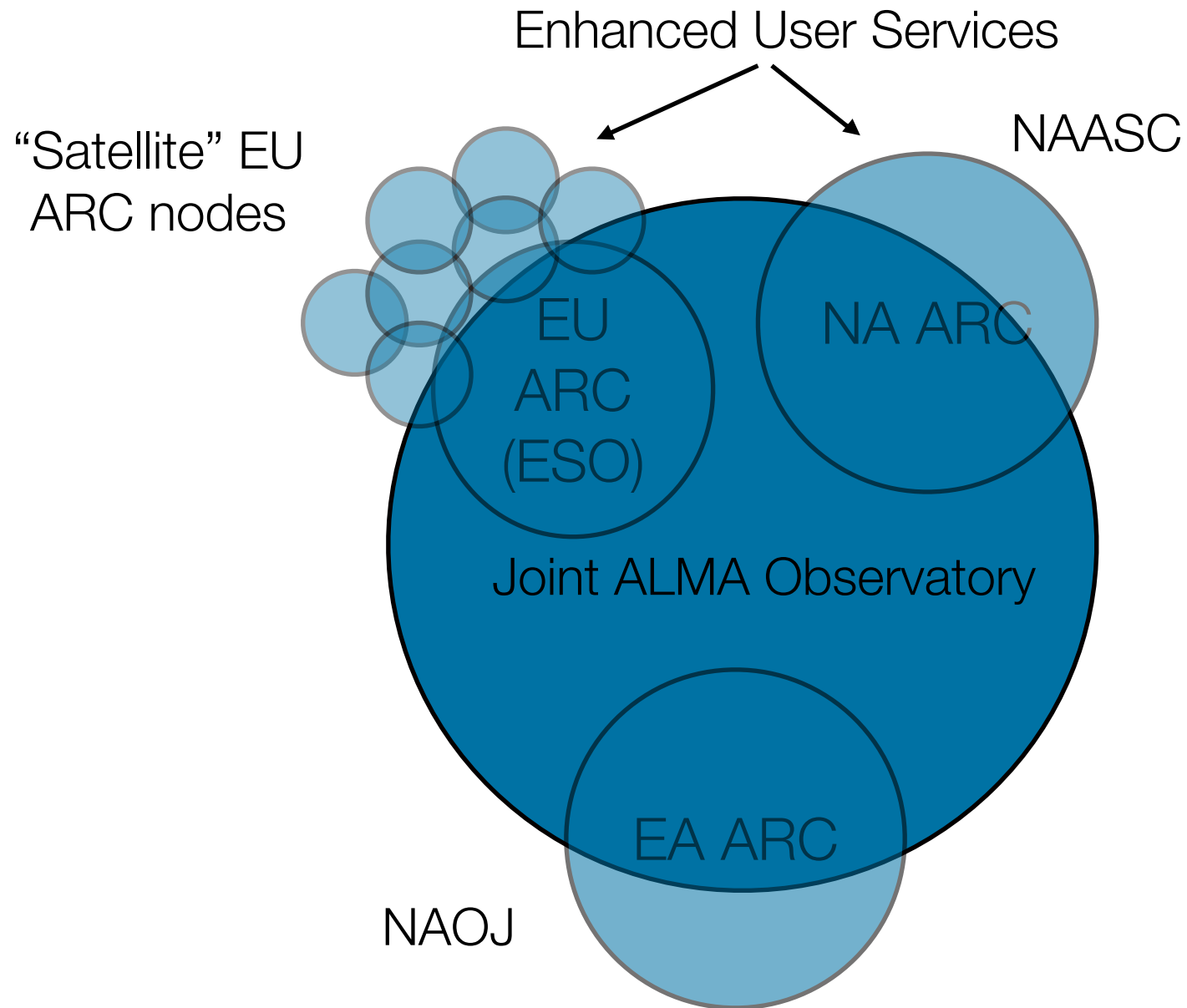
The ARC is your One Stop Shop for all ALMA questions

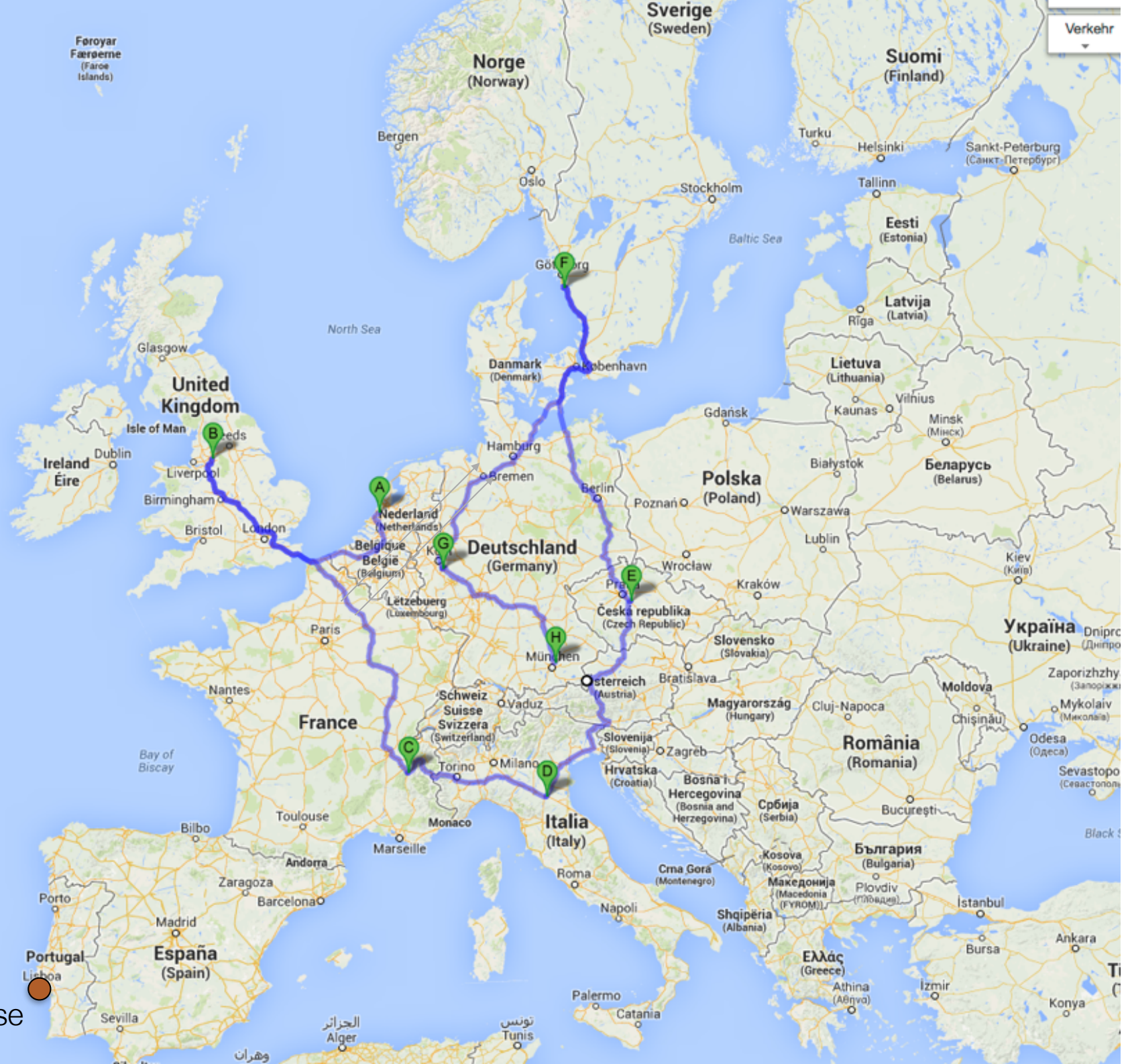
The ALMA Regional Centre **Nodes**

- The European ARC is unique for having a **distributed network of ARC nodes**
- These ARC nodes
 - have close ties with the community (active research environments)
 - host many of the mm/submm experts in Europe
 - are actively involved in ALMA commissioning and optimisation
 - have a lot of experience in preparing ALMA observations and analyzing data



Three ALMA Regional Centres





Centre of expertise

Role of the ARC at ESO

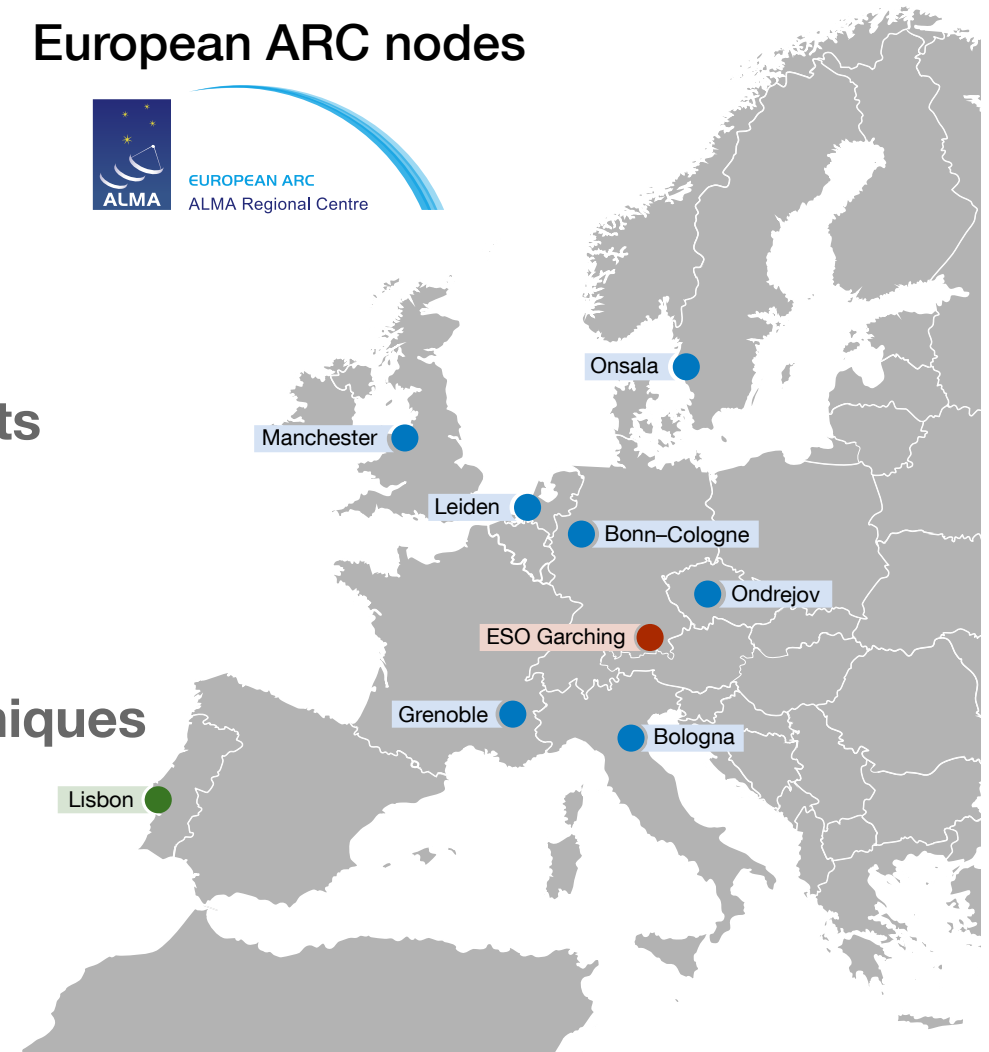
- **Science portal, helpdesk, user documents**
- **User support: Phase 1 and Phase 2**
 - OT support, preparations of SBs
- **Data quality process**
 - Data quality assessment and management
- **Observatory support**
 - Astronomer on duty shifts, commissioning, Science Verification
 - Proposal review process, technical assessment
 - Subsystem scientists for OT, archive, Pipeline, and EU CASA development
- **ALMA Archive operations: host copy, data delivery**
- **Science community development**
- **Management**
 - involvement in ALMA Science Operations Team and Coordination of ARC network



Role of the ARC nodes

- **Provide face to face user support**
 - proposal and SBs preparation
 - data reduction,
 - archive research
- **Contact Scientists for European projects**
- **Quality Assurance of ALMA data**
- **Participate in the ALMA helpdesk**
- **New software and data reduction techniques**
- **Scientific community development**
- **Public relations and outreach**

European ARC nodes



What ARC nodes offer

- All ARC nodes offer
 - Computer facilities for guests
 - Fast internet links (to Garching)
 - Accommodation in guest house or local hotels
- Funding for travel to ARC nodes:
 - Some ARC nodes have funds available (check local web pages)
 - RadioNet funding through MARCUs (until end of 2015)
 - In general, visiting an ARC node is like going on an observing trip



The EU ARC network staff



The ARC nodes' webpages

[Public](#) | [Science](#) | [User Portal](#) | [Intranet](#) | [Contact](#) | [Site Map](#)

[Science Users Information](#) > [Observing Facilities](#) > [ALMA Observatory](#) > [European ALMA Regional Centre](#)

ALMA Observatory

- News
- >> [ALMA Science Portal](#)
- European ALMA Regional Centre**
 - ARC Staff at ESO
 - Science at the ARC
 - User Support at the EU ARC
 - >> [ARC TWiki](#)
- Meetings and Events
- Documentation
- Employment
- Contact

European ALMA Regional Centre

The European ALMA Regional Centre (ARC) provides the interface between the ALMA project and the European science community. It supports its users mainly in the areas of proposal preparation, observation preparation, data reduction, and data analysis.

Unlike its partner ARCs in [North America](#) and [Japan](#), the European ARC is organized as a coordinated network of scientific support nodes distributed across Europe. 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 additional science support provided by the [regional nodes](#).

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 nodes

The central European ARC node is located at the ESO headquarters in Garching bei München. A distributed network of ARC nodes is being set up to provide services to the community. ARC nodes are currently set up throughout Europe at the following locations:

- #### Bonn-Cologne

Country: Germany
 Contact person: F. Bertoldi
 Current staff: 3 staff astronomers, 5 postdocs, 1 IT support, 2 COFUND fellows
 Expertise: advanced data analysis and modeling (including Cologne Database for Molecular Spectroscopy), polarimetry, zero-spacings correction for continuum data
[Local web pages](#)
- #### Bologna

Country: Italy
 Contact person: J. Brand
 Staff: 5 staff astronomers, 2 postdocs, 2 IT support, 1 COFUND fellow
- #### IRAM, Grenoble

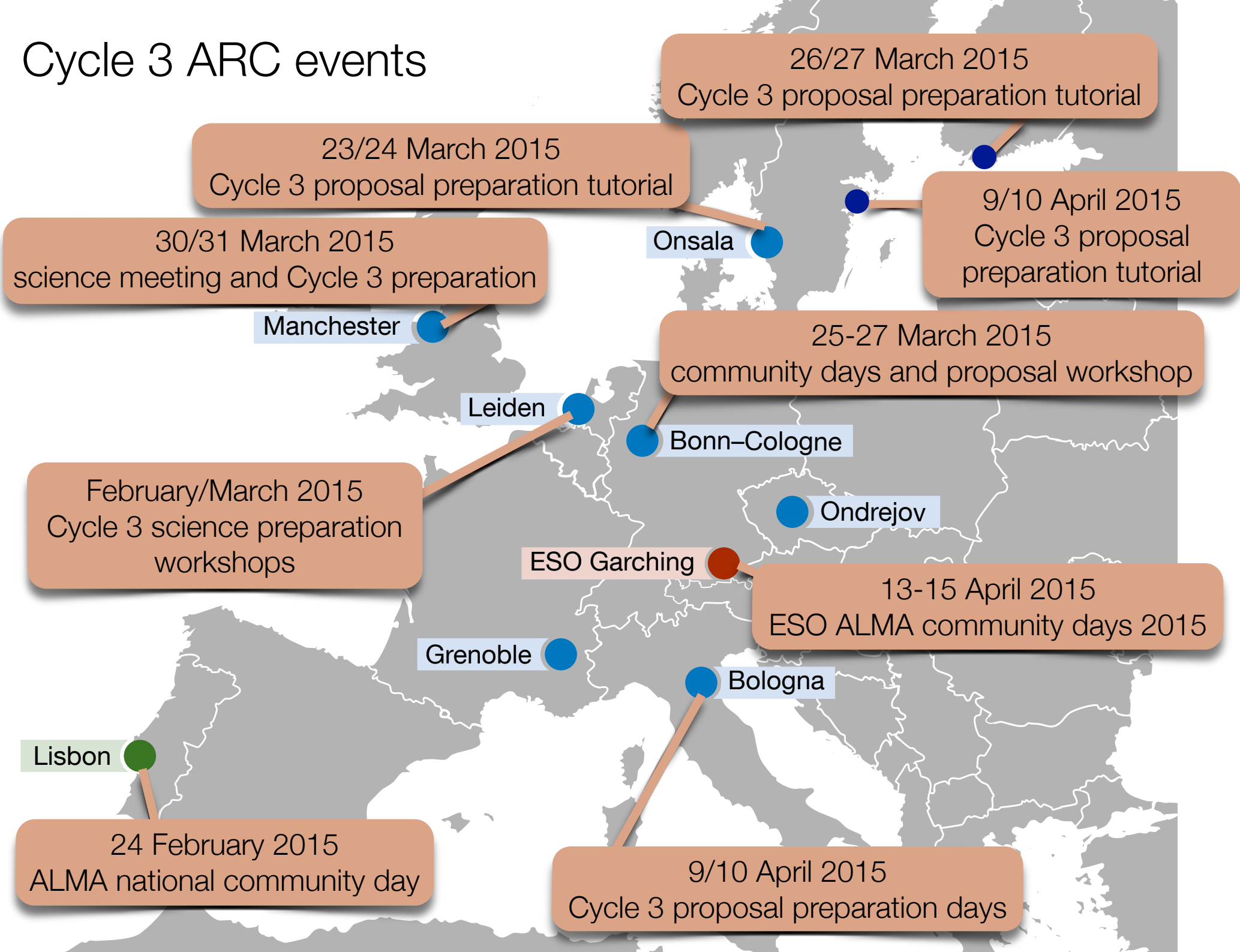
Countries: France, Spain, Germany
 Contact person: F. Gueth
 Staff: 4 staff astronomers, 1 postdoc, 2 software engineer
 Expertise: Calibration, Phase correction, Polarimetry, Ima
[Local web pages](#)
- #### Allegro, Leiden

Country: The Netherlands
 Contact person: M. Hogerheijde
 Staff: 1 staff astronomer, 3 postdocs
 Expertise: High-frequency, Wide field imaging, Data anal
[Local web pages](#)
- #### Manchester

Country: United Kingdom



Cycle 3 ARC events



Science Portal: almascience.org

- Identical user-experience at all three sites
- One-stop-shop for ALMA science
- All ALMA users need to register!
- All details in next talk!

The screenshot displays the ALMA Science Portal interface. At the top left is the ALMA logo with the tagline "Atacama Large Millimeter/submillimeter Array" and "In search of our Cosmic Origins". To the right is a search bar labeled "Search Site" and a user profile for "Martin Zwaan". Below the header is a navigation bar with links for "ESO", "NRAO", and "NAOJ". A sidebar on the left contains a menu with items: "About", "Science", "Proposing", "Observing", "Data", "Documents & Tools", and "Knowledgebase/FAQ". The main content area features a large banner image of the ALMA observatory with the text "Welcome to the Science Portal at ESO". Below the banner is a paragraph: "This is the website for The ALMA Science Portal, served from one of the ALMA Regional Centers (ARCs) of the ALMA... NRAO or NAOJ. You may switch between the different instances of the portal through the links to... can find details about the technical capabilities of... documents and...". On the right side, there is a "General News" section with several news items, including "Urgent: Cycle 2 Observing Tool Update" (Nov 15, 2013), "ALMA Cycle 2 Call for Proposals is now open" (Oct 24, 2013), "Cycle 1 Update and Transfer to Cycle 2" (Oct 07, 2013), "ALMA Cycle 2 Pre-announcement" (Sep 17, 2013), and "ALMA Cycle 1 Status Update" (Sep 10, 2013).

The ALMA Helpdesk

- All communications with the ARC network: **Use the Helpdesk**
- The ARC nodes are integrated into the ALMA Helpdesk

The screenshot shows the ALMA European ARC Helpdesk website. At the top left is the ALMA logo and the text "EUROPEAN ARC ALMA Regional Centre". The date "04 Apr 2011" is displayed in the top right. Below the header is a "Support Center" section. A notification bar indicates "Logged in successfully". The main content area is divided into four columns: "View Tickets" (Submit new tickets, view existing tickets or create new replies), "Submit a Ticket" (Submit a new ticket), "Knowledgebase" (Search support articles and find answers to frequently asked questions), and "Downloads" (View our library of file downloads and links). To the right of these columns is a "My Account" section showing "Logged In: Martin Zwaan" with a "[Logout]" link, and a "Search" box with a "Search" button and a dropdown menu for "Entire Support Site". Below the main content is a table of "Popular Knowledgebase Articles" with columns for the article title and "Views".

Popular Knowledgebase Articles	Views
What do I do if I can't get the OT to work?	482
How do I arrange a visit to one of the ARCs?	382
Can I reduce ALMA data in software packages other than CASA, and is there support for that?	307
What do I do if my helpdesk ticket goes unanswered?	227
Where can I find ALMA documentation and manuals?	226
What translations will be available for user documentation from ALMA?	225
Where can I find data reduction tutorials and recipes using CASA?	222
Can I submit a ticket in Japanese?	194
Why do I see a "Login" screen within the helpdesk when I already logged in via the ALMA User Portal?	146
How can I find out my operating system if I'm using a Mac?	120

At the bottom of the page, there is a navigation bar with links: "Home | View Tickets | Submit a Ticket | Knowledgebase | Downloads". On the right side of the navigation bar, there is a "Language:" dropdown menu set to "English".



After your Cycle 3 data have been taken: Quality Assurance

- Goal: “*deliver to the PI a reliable final data product that has reached the desired control parameters outlined in the science goals, that is calibrated to the desired accuracy and free of calibration or imaging artifacts*”
- **QA is done on *best effort* basis**
- Errors introduced by user-supplied parameters are outside the scope the ALMA QA
- QA Approach: Breakdown of QA into broad steps that mimic data flow.
 - Data Taking: QA0 (SB-level) & QA1 (Observatory Tasks)
 - Data Reduction: QA2 (Data Reduction / Science Pipeline)
 - Post Data Reduction: QA3 (Feedback from users)



After your Cycle 3 data have been taken: QA2

- When the required number of executions of an SB have been observed, the data are reduced in order to perform QA2
- All data are reduced using standard procedures for flagging, calibration and imaging
 - Cycle 0 and early Cycle 1/2: standard CASA scripts
 - **Now: calibration using the ALMA science pipeline**
 - Science pipeline has been commissioned for calibration
 - Pipeline is integrated into CASA; the tasks look like CASA tasks
 - Science target imaging performed manually by ALMA staff until pipeline imaging is commissioned

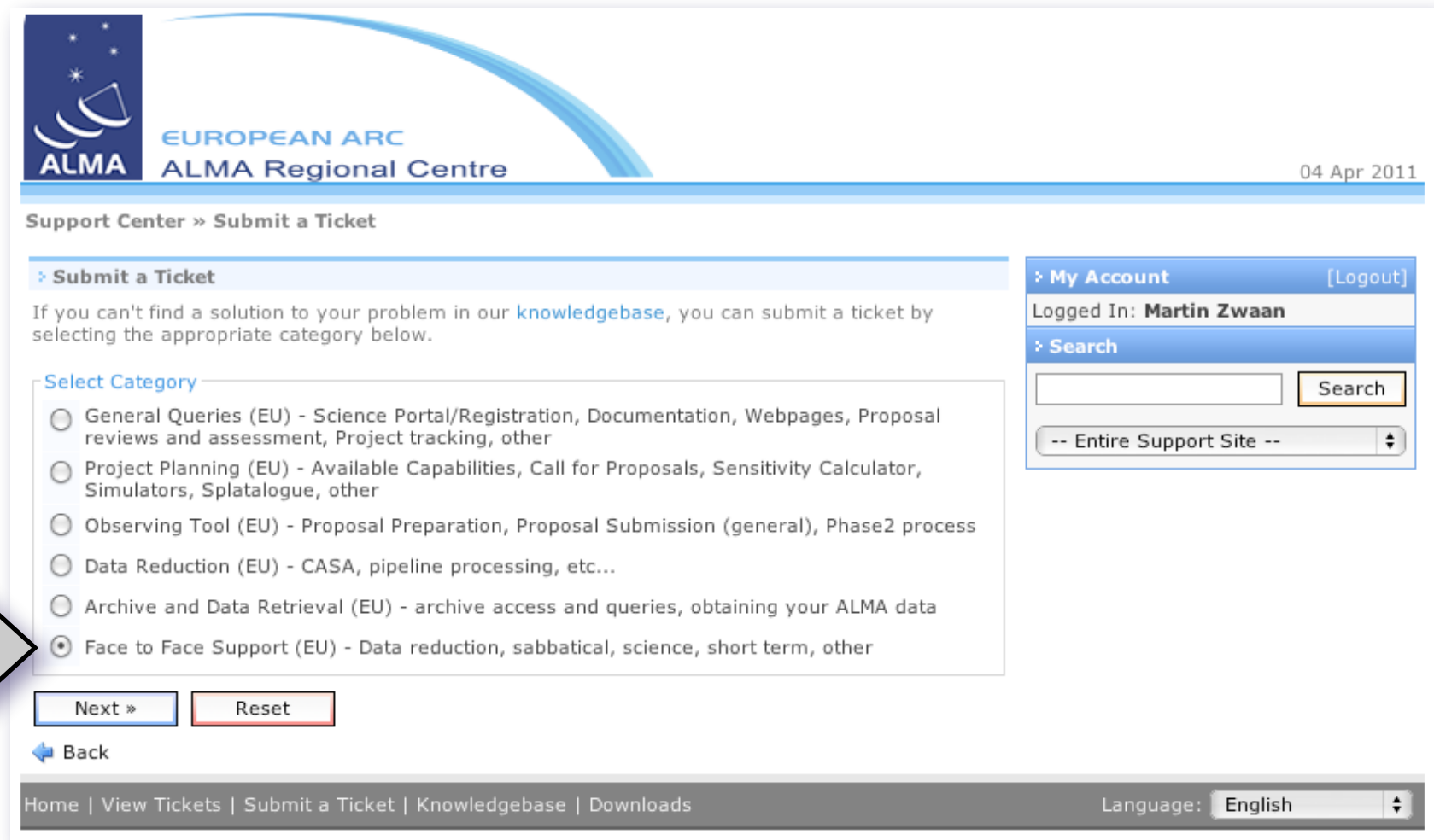


After QA2

- If data pass QA2 (rms meets requirements) data are prepared for delivery
- Otherwise, more executions of SB may be required
- Data delivery
 - Cycle 0: delivered self-consistent tar files that contain the a-priori calibrated MS, the fully calibrated MS and the/some FITS cubes.
 - Cycle 1 onwards: delivery of data through Science Portal
 - One year proprietary time starts after data are available to PI
- ‘Data delegation’ is available
 - PIs can give access rights to the data or a project to any registered ALMA User



Organise face-to-face visit through the Helpdesk



ALMA EUROPEAN ARC
ALMA Regional Centre

04 Apr 2011

Support Center » Submit a Ticket

Submit a Ticket

If you can't find a solution to your problem in our [knowledgebase](#), you can submit a ticket by selecting the appropriate category below.

Select Category

- General Queries (EU) - Science Portal/Registration, Documentation, Webpages, Proposal reviews and assessment, Project tracking, other
- Project Planning (EU) - Available Capabilities, Call for Proposals, Sensitivity Calculator, Simulators, Splatalogue, other
- Observing Tool (EU) - Proposal Preparation, Proposal Submission (general), Phase2 process
- Data Reduction (EU) - CASA, pipeline processing, etc...
- Archive and Data Retrieval (EU) - archive access and queries, obtaining your ALMA data
- Face to Face Support (EU) - Data reduction, sabbatical, science, short term, other

Next » Reset

Back

Home | View Tickets | Submit a Ticket | Knowledgebase | Downloads

Language: English

My Account [Logout]
Logged In: **Martin Zwaan**

Search

Search

-- Entire Support Site --

Organize face-to-face visit through the Helpdesk

Specify the needs of your visit

ALMA EUROPEAN ARC
ALMA Regional Centre

04 Apr 2011

Support Center » Submit a Ticket » Face to Face Support (EU)

Submit a Ticket

If you can't find a solution to your problem in our [knowledgebase](#), you can fill in the fields below with as much detailed information as possible and send it to our agents.

General Information

Priority: Default

EU Visitor

Preferred ARC Node for Support: * No Preference

Type of Support Required: * Proposal Preparation

Project ID:

Number of Visitors: *

Proposed begin and end dates for your visit: *

Areas of expertise: *
Areas of expertise relevant to your visit

Special Computing Requirements:
(disk space, etc.)

Permission To Access Data:
By checking this box, you give the ARC staff permission to access your data prior to the visit for preparation purposes. Yes

Financial Support Required: Yes

Justification for Financial Support:
This field is required if the visitor requests financial support

My Account [Logout]
Logged In: Martin Zwaan

Search

Search

-- Entire Support Site --

Where do I go for face-to-face support?

- Each of the nodes can help with proposal preparation, SB creation, and data reduction for most standard observing modes

→ **Visit your local ARC node**

- For specialised support

→ **May need to travel to an ARC node with a certain specialisation**

Funding through MARCUs

Available until end of this year!



A screenshot of the ESO website. The top banner features the ESO 50th anniversary logo (1962-2012) and the text "European Southern Observatory". Below the banner is a navigation menu with "Public", "Science", and "User Portal" tabs. The "User Portal" tab is active, showing a breadcrumb trail: "Science Users Information > Observing Facilities > ALMA Observatory > ESO ALMA Regional Centre > MARCUS funding request". The main content area is titled "Face-to-Face Visit Request" and contains the following text: "Funding is available through the RadioNet3 MARCUs (Mobility for ARC Users) network for users that do not have access node or for users that will be visiting a node other than their local node. To request MARCUs funding for your prospective visit, please fill the form below." Below this text is a form with five input fields, each with an asterisk: "First and last name", "Email address", "Home institute and country", "ALMA project ID", and a dropdown menu for "Bologna".

Feedback form

- Your feedback is very important!

The screenshot shows a feedback form titled "f2f feedback" with a progress bar at 0%. The main section is "Technical Infrastructure".

Data availability:
Choose one of the following answers

- My data were already available at the ARC node at the time of my arrival
- My data were downloaded in a satisfactory way upon request
- There was an unsatisfactory delay in obtaining the data
- Other:
- No answer

Were the computer facilities adequate?

Yes No No answer

Was the data processing speed good?

Yes No No answer

Was the disk space allocated to your project adequate?

Yes No No answer

Please give us any comments you may have on the technical infrastructure



What the EU ARC network can do for you during Early Science

Face-to-face help with proposal preparation

If observations are approved

Use the helpdesk

Help with Scheduling Block approval

If program has been observed

A Contact Scientist will be assigned

Face-to-face help with data reduction

At any time

Use the helpdesk

Tutorials, community days and school

Newsletter, Science Portal, Web pages



Guide to the European ARC

- The standard introduction into the services provided by the European ARC structure
- Available through the ALMA Science Portal



Doc 2.8, ver. 3.0 | October 2013

Guide to the European ALMA Regional Centre



EUROPEAN ARC
ALMA Regional Centre

-
- The European ARC is there to help you!



EUROPEAN ARC
ALMA Regional Centre

