

ALMA Science Archive Query

Query Form

Results Table

Search

Reset

[Query Help](#)

Position

Source name (Resolver)
Source name (ALMA)
RA Dec
Spatial resolution

Energy

Frequency
Bandwidth
Spectral resolution
Band

Time

Observation date
Integration time

Polarisation

Polarisation type

Observation

Water vapour

Project

Project code
Project title
PI name

Options

View: raw data project
 public data only
 science observations only

Using the ALMA Science Archive data

Marcella Massardi



EUROPEAN ARC
ALMA Regional Centre || Italian



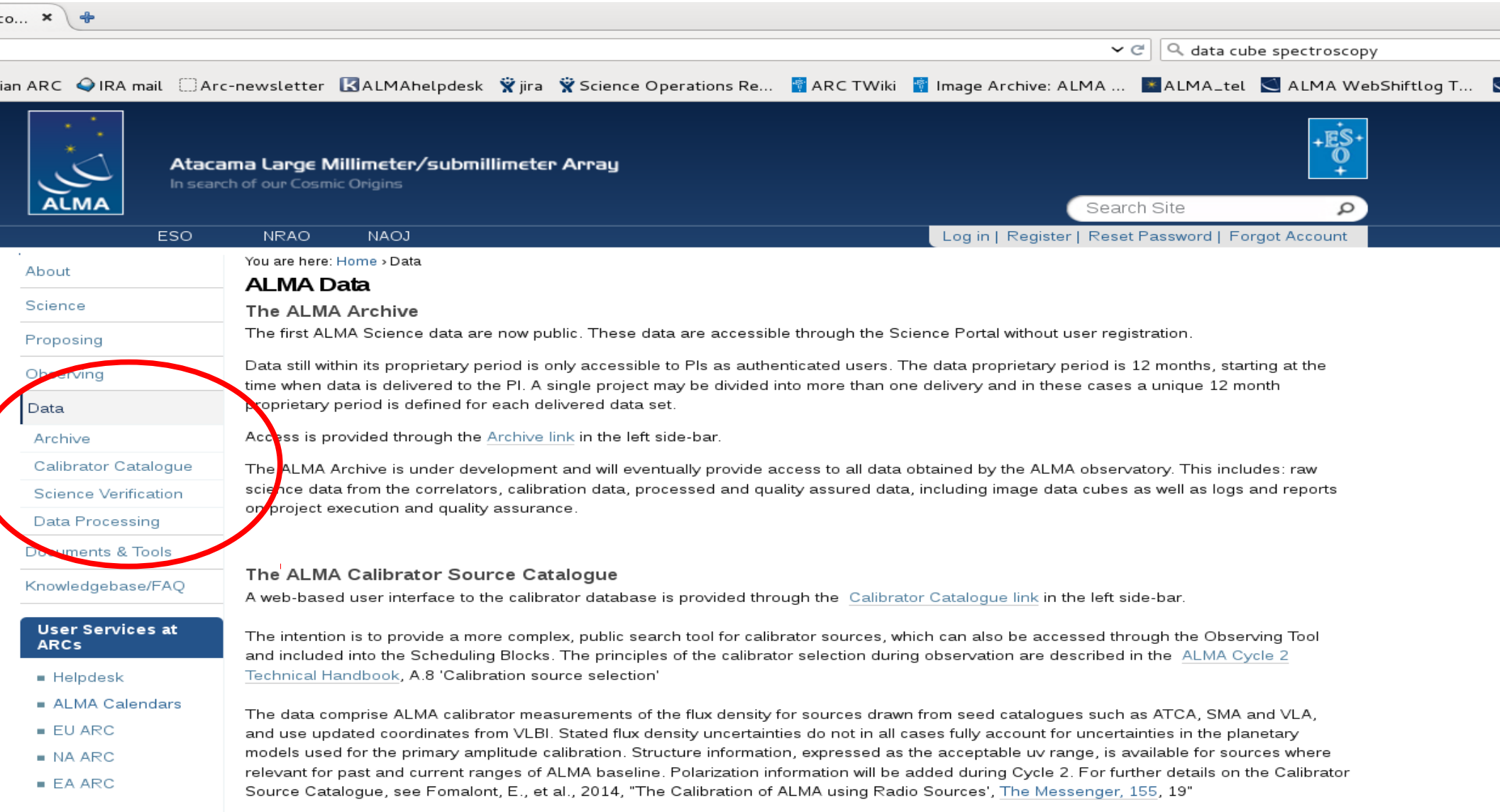
Reasons to use archived data

- Check if data are already available for a target
- Check the feasibility of a project looking for similar targets
- Retrieving information on a large sample of objects (e.g. statistics of populations, stacking, ...)
- Retrieving information on a single object but with different configuration (e.g. multifrequency studies) or in different epochs (e.g. variability studies)
- Extracting unpublished information from existing data (e.g. finding additional spectral lines, targets in the same region/time of other observations,)
- **For ALMA in particular avoid the stress of competition and oversubscription**

	Proposal submission	Archive mining
Time to get data	✗	+
Amount of data	✗	+
Data homogeneity	+	✗
Adherence to idea	+	✗

ALMA data on the Science Portal

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





The screenshot shows the ALMA Science Portal website. The top navigation bar includes links for 'ian ARC', 'IRA mail', 'Arc-newsletter', 'ALMAhelpdesk', 'jira', 'Science Operations Re...', 'ARC TWiki', 'Image Archive: ALMA ...', 'ALMA_tel', and 'ALMA WebShiftLog T...'. The main header features the ALMA logo, the text 'Atacama Large Millimeter/submillimeter Array In search of our Cosmic Origins', and the ESO logo. A search bar is present with the text 'Search Site'. Below the header, there are links for 'ESO', 'NRAO', and 'NAOJ', and a navigation menu with 'Log in | Register | Reset Password | Forgot Account'. The left sidebar contains a list of menu items: 'About', 'Science', 'Proposing', 'Observing', 'Data', 'Archive', 'Calibrator Catalogue', 'Science Verification', 'Data Processing', 'Documents & Tools', and 'Knowledgebase/FAQ'. The 'Data' item is circled in red. The main content area displays the breadcrumb 'You are here: Home > Data', followed by the section 'ALMA Data' and 'The ALMA Archive'. The text describes that the first ALMA Science data are now public and accessible through the Science Portal without user registration. It also mentions that data still within its proprietary period is only accessible to PIs as authenticated users. The 'Data' menu item is circled in red.

co... x +

data cube spectroscopy

ian ARC IRA mail Arc-newsletter ALMAhelpdesk jira Science Operations Re... ARC TWiki Image Archive: ALMA ... ALMA_tel ALMA WebShiftLog T...

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



Search Site

ESO NRAO NAOJ Log in | Register | Reset Password | Forgot Account

About
Science
Proposing
Observing
Data
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Calibrator Catalogue
Science Verification
Data Processing
Documents & Tools
Knowledgebase/FAQ

User Services at ARCs

- Helpdesk
- ALMA Calendars
- EU ARC
- NA ARC
- EA ARC

You are here: [Home](#) > [Data](#)

ALMA Data

The ALMA Archive

The first ALMA Science data are now public. These data are accessible through the Science Portal without user registration.

Data still within its proprietary period is only accessible to PIs as authenticated users. The data proprietary period is 12 months, starting at the time when data is delivered to the PI. A single project may be divided into more than one delivery and in these cases a unique 12 month proprietary period is defined for each delivered data set.

Access is provided through the [Archive link](#) in the left side-bar.

The ALMA Archive is under development and will eventually provide access to all data obtained by the ALMA observatory. This includes: raw science data from the correlators, calibration data, processed and quality assured data, including image data cubes as well as logs and reports on project execution and quality assurance.

The ALMA Calibrator Source Catalogue

A web-based user interface to the calibrator database is provided through the [Calibrator Catalogue link](#) in the left side-bar.

The intention is to provide a more complex, public search tool for calibrator sources, which can also be accessed through the Observing Tool and included into the Scheduling Blocks. The principles of the calibrator selection during observation are described in the [ALMA Cycle 2 Technical Handbook](#), A.8 'Calibration source selection'

The data comprise ALMA calibrator measurements of the flux density for sources drawn from seed catalogues such as ATCA, SMA and VLA, and use updated coordinates from VLBI. Stated flux density uncertainties do not in all cases fully account for uncertainties in the planetary models used for the primary amplitude calibration. Structure information, expressed as the acceptable uv range, is available for sources where relevant for past and current ranges of ALMA baseline. Polarization information will be added during Cycle 2. For further details on the Calibrator Source Catalogue, see Fomalont, E., et al., 2014, "The Calibration of ALMA using Radio Sources", [The Messenger](#), 155, 19"

Science Verification Data

In addition to the archive, there are several datasets available as Science Verification data. These observations are performed in order to

ALMA Calibrators

<https://almascience.eso.org/alma-data/calibrator-catalogue>

The screenshot shows the ALMA Calibrator Catalogue website. The header includes the ALMA logo and the text "Atacama Large Millimeter/submillimeter Array In search of our Cosmic Origins". The navigation menu includes "About", "Science", "Proposing", "Observing", "Data", "Archive", "Calibrator Catalogue", "Science Verification", "Data Processing", "Documents & Tools", and "Knowledgebase/FAQ". The "Data" menu item is circled in red. The main content area is titled "Calibrator Catalogue" and contains the following text:

You are here: [Home](#) > [Data](#) > [Calibrator Catalogue](#)

Calibrator Catalogue

A web-based user interface to the calibrator database is provided through the

[Calibrator Catalogue](#)

The ALMA Calibrator Source Catalogue is a database of astronomical measurements of calibrator sources, mostly bright quasars in the mm and sub-mm regime. It contains about 7000 ALMA measurements of 700 sources. The most important properties are flux density with uncertainty at a given frequency and angular structure information or limits. Information concerning the polarization properties will be added in Cycle 2. External information had been provided via 'seed' catalogues, such as from VLA, SMA, ATCA, CRATES, and coordinates from VLBI. Note that the absolute flux density scale does not include the model uncertainty of the solar system object used as primary amplitude calibrator, and in some cases it can exceed the stated flux density error in the catalogue. Also, the observation and reduction procedures changed in mid-2012, so the measurements before this date may state flux density errors that underestimate the true uncertainty.

A main use of the database is to allow the selection of bandpass and phase calibrators for science observations. It also contains a set of 30 quasars, grid sources evenly distributed over the sky, which are monitored regularly enough to provide amplitude calibration in addition to solar system objects. Calibrator sources are selected either manually during phase 2 preparation or by the astronomer on duty, or automatically via on-line queries during the execution of the observation. In each case suitable criteria regarding visibility, flux density and proximity to the science targets have to be specified.

Calibrator observations, outside of science observations, are currently carried out in a special observing mode and have to be fully integrated into science operations. Equally, data reduction and database ingestion has to be automated via the ALMA Pipeline. Access for users is provided via a web-based user interface through the ALMA Regional Centers, and VO integration of special queries is planned for a future Cycle.

The Query Form allows to specify various search criteria regarding position, frequency, flux density and time of the calibrator measurements. Equatorial coordinates in J2000 can be specified for the positional search. If no time constraint is given, the latest measurements per day, band and source will be returned. If a time constraint is given, all measurements will be shown with the results table sorted hierarchically by sources. Frequencies can be selected by ALMA band and/or with an additional frequency range. A given source name will first be resolved within the ALMA database, but if no match is found, the coordinates will be resolved via Sesame with a suggested search radius for a cross-check with the ALMA catalogue. The ALMA standard name is defined as the truncated 4-digit hexagesimal RA and DEC J2000 coordinates following the IAU standard.

The Result Table can be formatted by adding or removing columns, and each column can be sorted. There is an option to download the result in a file (csv or json format). Uvmin and uvmax columns specify information about the structure of the source. Uvmin gives a detected extent of the

ALMA Calibrators

<https://almascience.eso.org/alma-data/calibrator-catalogue>

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

Search Site

Log in | Register | Reset Password | Forgot Account

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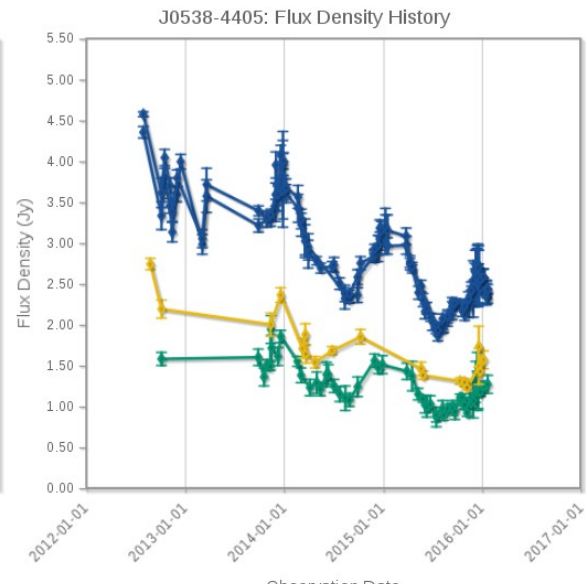
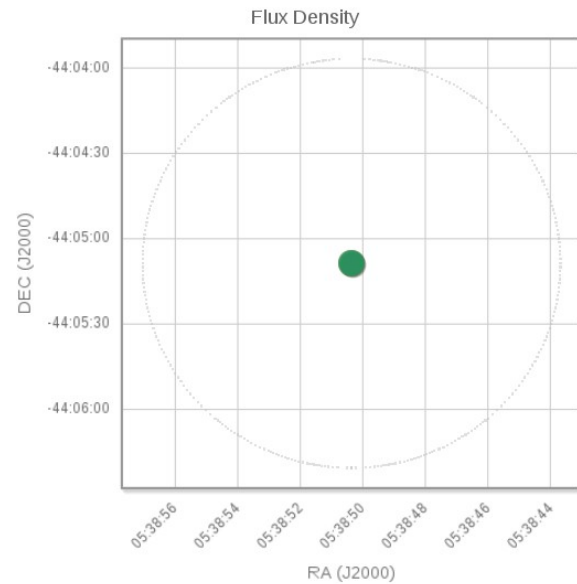
ALMA Calibrators

<https://almascience.eso.org/alma-data/calibrator-catalogue>

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It is possible to download
(csv format)
only the most recent and/or
the data from all the epochs
available for selected
calibrators or in regions.

Query Form Result Table Result Plot



Legend for Flux Density and Observation Date:

- ALMA-Band 3
- ALMA-Band 6
- ALMA-Band 7
- Flux Range Jy: < 0.03 (small dot), [0.03, 0.1] (medium dot), [0.1, 0.3] (large dot)
- Observation Date: ALMA-Band 3 (blue diamond), ALMA-Band 6 (yellow triangle), ALMA-Band 7 (green circle)

ALMA Calibrators

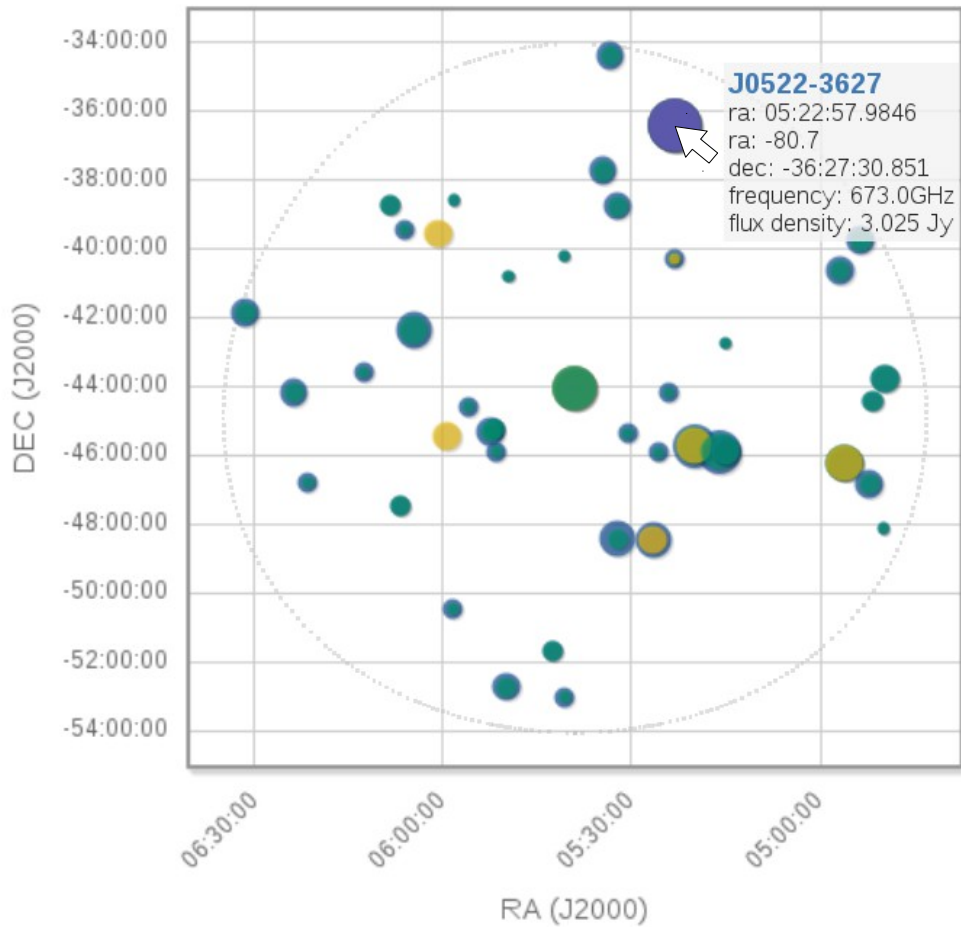
<https://almascience.eso.org/alma-data/calibrator-catalogue>

Query Form

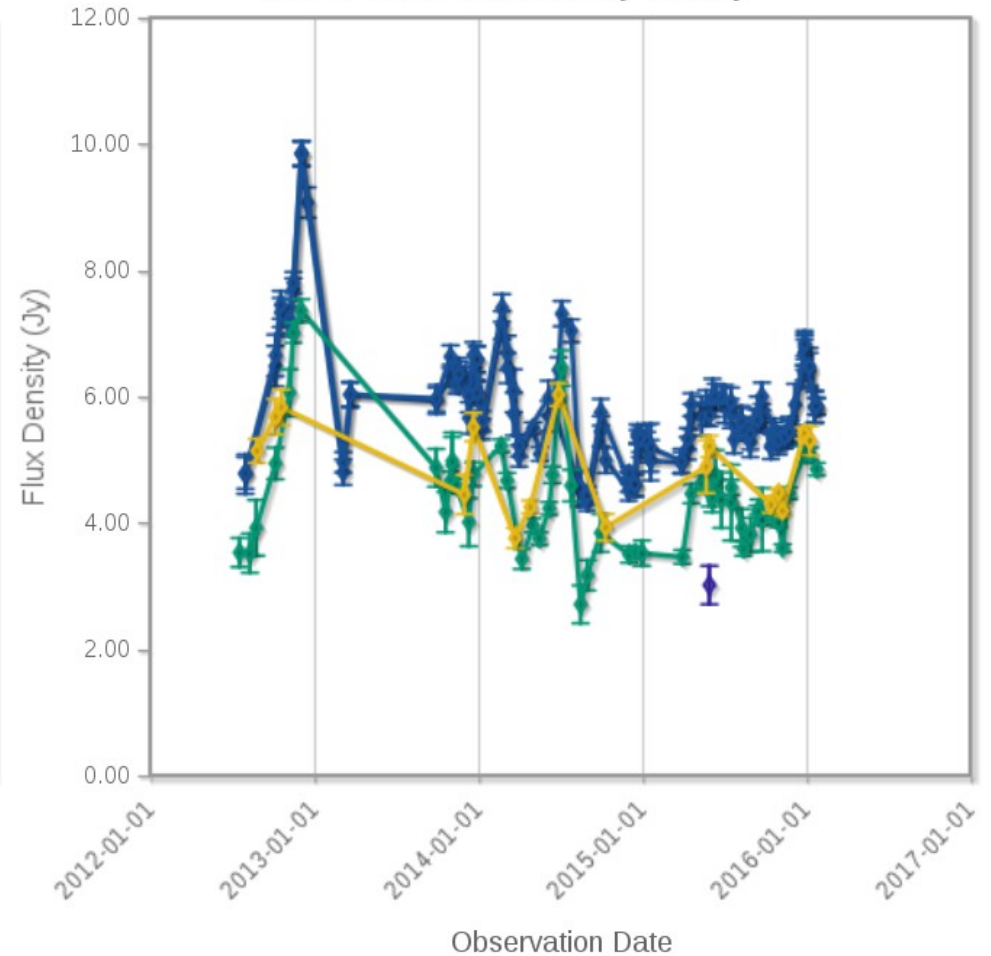
Result Table

Result Plot

Flux Density



J0522-3627: Flux Density History



- ALMA-Band 3
- ALMA-Band 6
- ALMA-Band 7
- ALMA-Band 9

- | Flux Range Jy | Symbol |
|---------------|--------|
| < 0.03 | • |
| [0.03, 0.1) | • |
| [0.1, 0.3) | • |
| [0.3, 1.0) | • |
| [1.0, 3.0) | • |

Observation Date

- ALMA-Band 3
- ALMA-Band 6
- ALMA-Band 7
- ALMA-Band 9

ALMA Science Verification Data

<https://almascience.eso.org/alma-data/science-verification>

The screenshot shows the ALMA Science Verification Data website. The left sidebar contains a navigation menu with items: About, Science, Proposing, Observing, Data (circled in red), Archive, Calibrator Catalogue, Science Verification, ALMA Science, Verification, Data Processing, Documents & Tools, Knowledgebase/FAQ, and User Services at ARCs. The main content area is titled 'Science Verification Data' and includes a breadcrumb trail: 'You are here: Home > Data > Science Verification'. Below the title, there is a section for 'Science Verification Information' and a list of 'Currently Available Science Verification Data'. The list includes four items: 1. TW Hya: Band 7, high spectral resolution; 2. NGC3256: Band 3, low spectral resolution; 3. Antennae galaxies: Band 7, high spectral resolution; 4. M100 Band 3, low spectral resolution. A red text box on the right side of the page contains the following text: 'Click on the dataset you need and/or the CASAGuides. Each dataset might have different distribution packages'. There are also green arrows pointing to the 'Data' menu item and the 'CASAGuide' link in the update section.

Click on the dataset you need and/or the CASAGuides. Each dataset might have different distribution packages

Tha Science ALMA Archive

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



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



ESO NRAO NAOJ Log in | Register | Reset Password | Forgot Account

- About
- Science
- Proposing
- Observing
- Data
 - Archive**
 - Calibrator Catalogue
 - Science Verification
 - Data Processing
- Documents & Tools
- Knowledgebase/FAQ

- User Services at ARCs**
- Helpdesk
 - ALMA Calendars
 - EU ARC
 - NA ARC
 - EA ARC

You are here: [Home](#) > [Data](#) > Archive

Archive

[Archive Query](#)

Public and proprietary data are available from the ALMA archive. Public data can be downloaded anonymously. Proprietary data are available to authenticated users (i.e. those logged in - use the login button at the top right of this page) who have the proper access rights.

Please [go here for a listing of the Cycle 0 deliveries](#) as well as a table of contents of all the Cycle 0 tar files. Cycle 0 deliveries were done differently from later cycles.

Data delegation

PIs can allow access to one or more of their projects to any other registered ALMA user. To do so, PIs need to log into the Science Portal, go to their user profile page in the top right corner of the Science Portal page and then add delegees in the "Project delegation" tab. This delegation is valid for the access to proprietary data.

Data format

Data for a project is delivered to the PI in one or more discrete deliveries. Each delivery corresponds to a related set of observations, and has its own release date. Deliveries are usually split into multiple tar files, all of which need to be downloaded and untarred in the same directory in order to produce the full data directory tree. You can use for example the command `for i in `ls *.tar`; do tar -xvf $i; done`

The tar files of a delivery contain scripts and logs, calibration tables and representative images, as well as one or more README files. In Cycle 0, the delivery tar files also contain raw data as well as the fully calibrated data, both in measurement set (MS) format. In Cycle 1, the raw data is provided in ASDM format and the calibrated MS can be produced by the user by applying the supplied calibration tables to the raw data.

Data access

Two ways to access the data are offered:

1) [Archive query](#)

The Archive Query allows users to identify observations that match given search constraints and to select observations of interest from the

Definitions: SG, SB and EB

At proposal stage the PI makes some choices and requests needed to reach his purposes.
The PI splits the project in

Science Goals

Minimum proposed observational unit including targets in the same sky region that roughly share the same calibration aimed at reaching a requested sensitivity in a given angular (resolution and LAS) and spectral setup

e.g. Different bands on the same target are in different SG

Different configurations of the array to reach a certain angular scale coverage are in the same SG (ACA+main array)

Each SG is converted into a

Scheduling Block

Minimum observational unit including targets in the same sky region and their calibrators to be observed with the same instrumental setup.

They are the minimum set of instructions to perform an observation.

To allow flexibility of scheduling they last ~30min

Different configurations cannot stay in the same SB.

It is possible that an SB has to be repeated to reach the requested sensitivity.

Then **at observative stage** we define

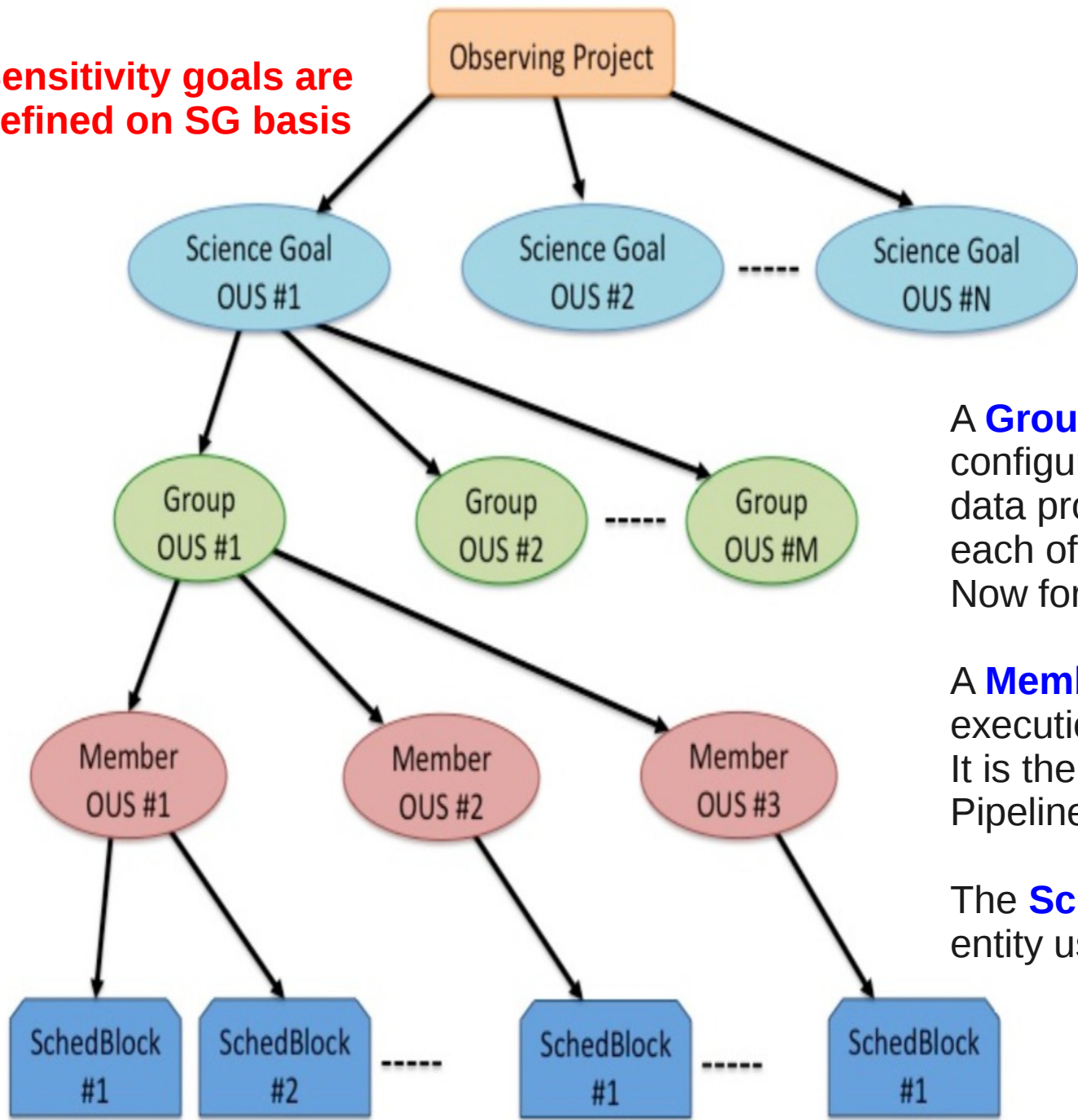
Execution Block

Each repetition of the observation of a SB.

This is the minimum observative unit and the minimum data reduction unit (as they include all the calibrators for an observative session), but might not be enough to reach the PI requests.

It is the minimum archive unit!!!

Data structure



Sensitivity goals are defined on SG basis

Science goal:
Sources in the same sky region that share the same calibration, spectral setup and PI requests

OUS= Observing Unit Set
Smallest unit for data processing

A **Group** can contain several configurations to be combined in data processing (e.g. several arrays), each of them is a Member.
Now for ALMA there is 1 Group/SG

A **Member** can contain multiple executions of Scheduling Blocks. It is the minimum scheduling entity. Pipeline operates at this level

The **Scheduling Block** is the smallest entity used for observing

Each repetition of a SB is an **Execution Block**

Data Quality Assessment

The goal of ALMA Quality Assurance (QA) is to deliver to the PI a reliable final data product that has reached the desired control parameters outlined in the SG, that is calibrated to the desired accuracy and free of calibration or imaging artifacts i.e. ALMA performs **science-goal-oriented service data analysis**

ALMA QA happens on 4 levels:

QA0: near-real time verification of weather and hardware issues carried out on each execution block immediately after the observation.

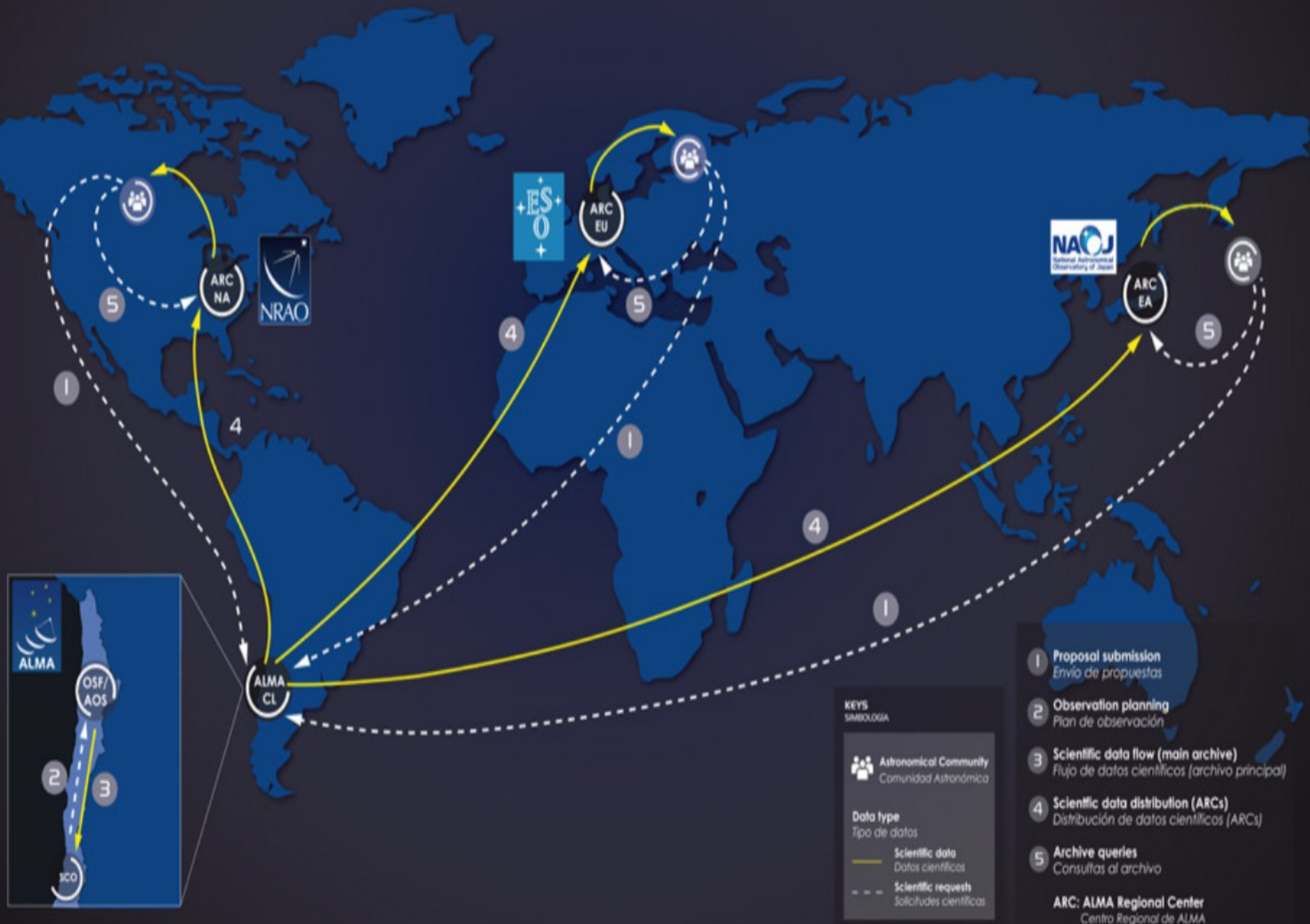
QA1: verification of longer-term observatory health issues like absolute pointing and flux calibration.

QA2: offline calibration and imaging (using CASA) of a completely observed MOUS.

- Performed by expert analysts with the help of a semi-automatic procedures, based on common practice.
- Calibration can be “Manual” or based on the “Pipeline”
- Imaging so far is always manual (partially depends upon the analyst “taste”)
- It is limited to verify the achievement of the PI requests for each MOUS (do not even consider other data possibilities)
- Results are archived and given to the PI.

QA3: (optional) PIs may request rereduction, problem fixes, possibly reobservation

Project travels & archive mirrors



Data format

ALMA Science Data Model (ASDM) **Final archived product from each observation**

Each has an unique hexadecimal name (eg uid://A002/X2fed6/X3f).

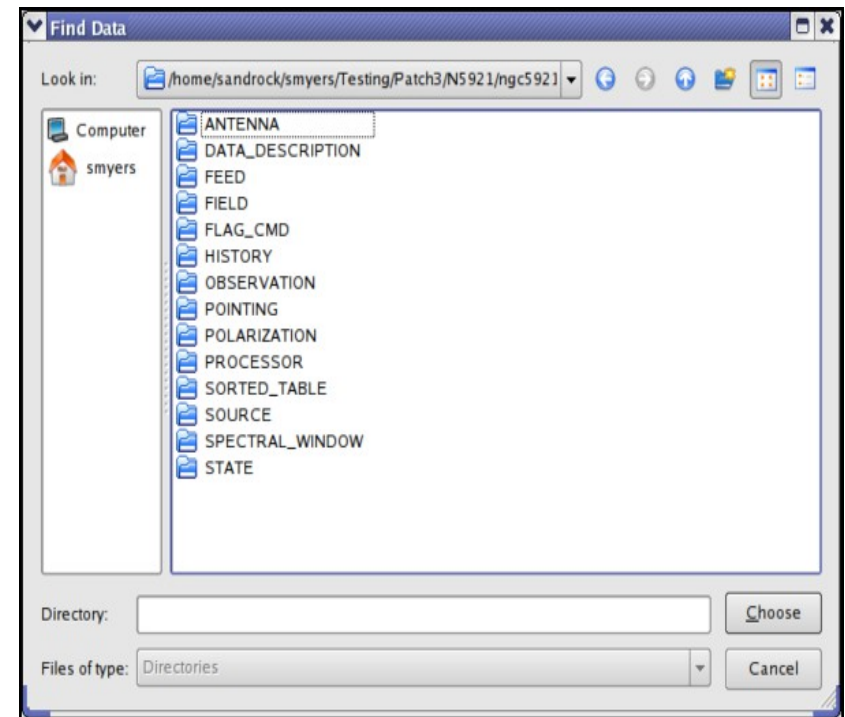
Each contains the meta-data (headers, descriptions of the observation setup, etc), and the binary data (the raw data)

The first step of any data processing is importing the ASDM in the format suitable for the software used

Measurement Set (MS)

Data format used in CASA

Constituted by several tables referring each other and collecting most (not all!) the information in the ASDM



What is in the archive?

**For each project the main deliverables are
Raw Data, Calibration Scripts and Tables**

**Users need to run the proper version of CASA to generate the Calibrated Data.
The resulting calibrated data is considered science-ready.**

**As a consequence of the process only data that passed QA2 (at least in part)
are in the archive**

Some Imaging Products are delivered too, as result of QA2 processing
(in Early Science provided on a best effort basis, not necessarily science-ready)

a) for Line Observations:

- continuum-subtracted (where needed) image cubes at the requested resolution
- a continuum image for all line-free channels (where possible)

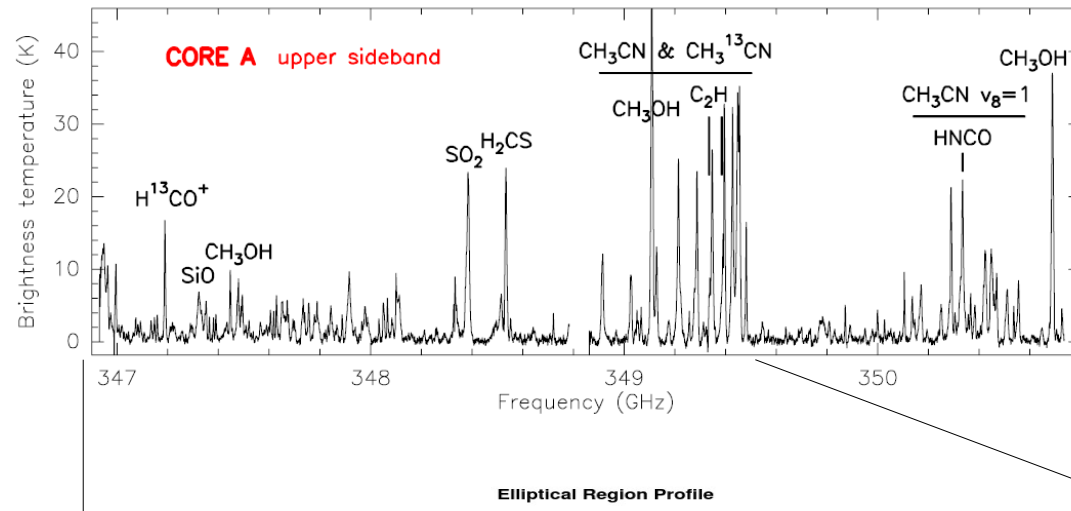
b) for Continuum Observations:

- a continuum image combining all SPWs

**Images in the archive are provided as starting point on the way to obtain the final
images and a valuable basis for archive researchers**

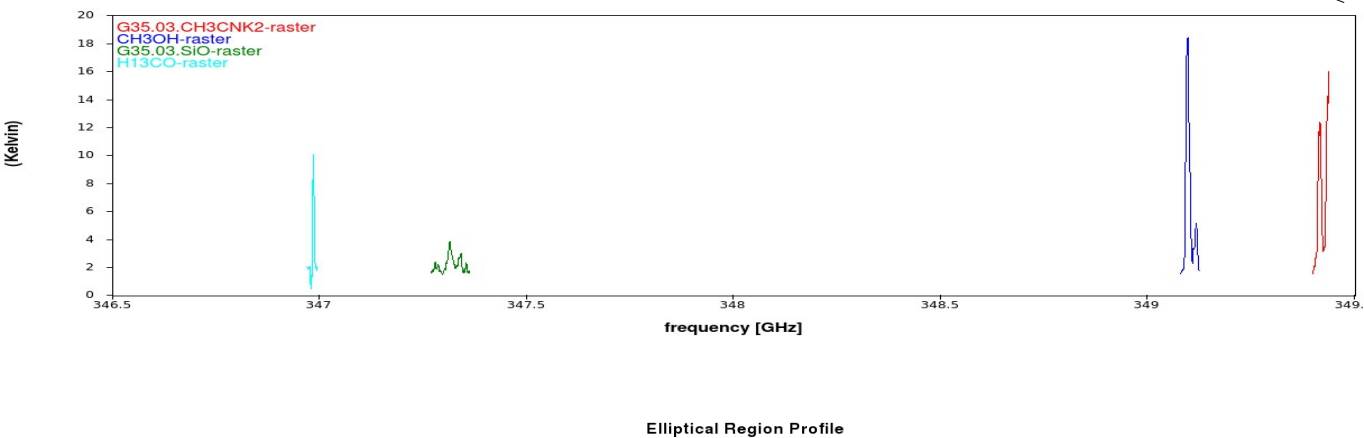
(i.e. they are not considered science-ready!!!)

What is in the archive?

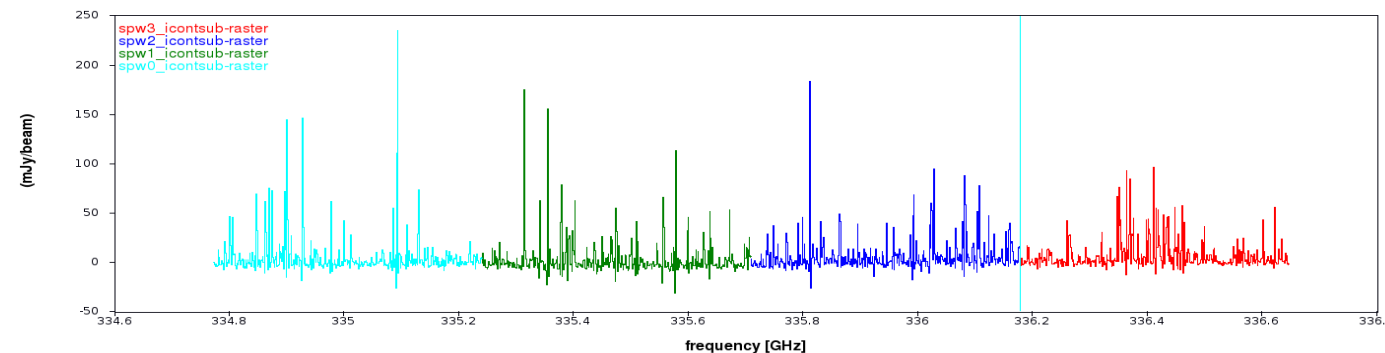


Images in the archive might cover only a fraction of the spectrum available

Spectrum observed (and available in the raw data)



Imaged data for QA2



Different data and PI requests on different sources generate different products. In the archived images but raw data contain the full spectral windows

Differences among the cycles

Early science cycles might differ in product formats, pipeline availability, CASA version to run calibration scripts.

Cycle 0 caveats:

- Packaged differently from other cycles (check “Delivery lists” contents to download only images)
- Archive download does not refer to data tree structure
- Calibrated with CASA 3.2-3.4 (updates since then)
- No pipeline available
- Many Knowledgebase articles available to deal with them
- **Rule of Thumb: download them and reduce them from scratch, if possible with a new CASA version. Rely on experts for it**

Cycle 1 onwards:

- Allow download of “ligh” (<1GB) products (QA2 images and README) and/or “heavy” (>10GB) raw data
- Check in the downloaded README files and script the CASA version used
- **Rule of Thumb: download the product first, check that they are what you need and their quality, then download the raw data. Reproduce the products running the scripts. Change the images modifying the imaging scripts. Rely on experts for changes in the calibration**

The ALMA archive: query

Search per name or position or within a radius

Search the spectral setup

Search the project

Visualization options

ALMA Science Archive Query

Query Form Results Table

Search Reset [Query Help](#)

Position Source name (Resolver) Source name (ALMA) RA Dec Spatial resolution	Energy Frequency Bandwidth Spectral resolution Band	Time Observation date Integration time	Polarisation Polarisation type
Observation Water vapour	Project Project code Project title PI name		Options View: <input checked="" type="radio"/> raw data <input type="radio"/> project <input checked="" type="checkbox"/> public data only <input checked="" type="checkbox"/> science observations only

The query will change to allow more criteria!!!

The ALMA archive: help

1) Search with the criteria you need and click Search

ALMA Science Archive Query

Query Form Results Table

Search Reset [Query Help](#)

Position Source name (Resolver) <input type="text" value="NGC1614"/> ✓ Source name (ALMA) RA Dec Spatial resolution	Energy	Time	Polarisation Polarisation type
Observation Water vapour	Contextual help for the 'Position' tab: Source name (Resolver) Case-insensitive search for source name, to be resolved with Sesame. Wildcard matching is disabled. Usage. Use Sesame (via. NED, Simbad and VizieR) to parse names commonly found throughout literature. A green tick indicates a successful search, otherwise, a red cross is returned. Example Cen A NGC3375 ARP220		Options View: <input checked="" type="radio"/> raw data <input type="radio"/> project <input checked="" type="checkbox"/> public data only <input checked="" type="checkbox"/> science observations only

Contextual help for each tab

The ALMA archive: result table

2) Select the project/execution blocks you need and click “Submit the download request”

ALMA Science Archive Query

Query Form

Results Table

Submit download request

[Results Bookmark](#) [Export Table](#) [Results Help](#)

Showing 7 rows (7 before filtering).

[More columns](#)

<input type="checkbox"/>	Project code	Source name	RA	Dec	Band	Integration	Release date ▲	Velocity resolution	Frequency support
Filter:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> m/s ↕	<input type="text"/>
<input type="checkbox"/>	2011.0.00020.S	NGC 1614	04:34:00.03	-08:34:44.6	7	484.557	2013-01-12	834.09	344.15..357.85GHz
<input type="checkbox"/>	2011.0.00020.S	NGC 1614	04:34:00.03	-08:34:44.6	7	382.854	2013-01-12	851.55	336.17..351.86GHz
<input type="checkbox"/>	2011.0.00768.S	NGC1614	04:34:00.03	-08:34:44.6	7	463.612	2013-10-15	846.76	337.97..353.59GHz
<input type="checkbox"/>	2011.0.00768.S	NGC1614	04:34:00.03	-08:34:44.6	7	464.391	2013-10-15	846.76	337.97..353.59GHz
<input type="checkbox"/>	2011.0.00768.S	NGC1614	04:34:00.03	-08:34:44.6	7	463.991	2013-10-15	846.76	337.97..353.59GHz
<input checked="" type="checkbox"/>	2011.0.00182.S	NGC 1614	04:34:00.03	-08:34:45.2	9	697.859	2013-12-21	13784.20	675.83..683.30GHz
<input checked="" type="checkbox"/>	2011.0.00182.S	NGC 1614	04:34:00.03	-08:34:45.2	9	702.437	2013-12-21	13784.20	675.83..683.30GHz

The query runs on the raw data so returns one entry per target per Execution Block.

It is possible that for a project several rows are displayed for the same source.

Projects that contain many sources, many Sbs or mosaics might returns many lines.

Columns values are only indicative. Data structure can be more complex than what shown.

The ALMA archive: download manager

3) Select the data you want

The screenshot shows the ALMA Request Handler interface. At the top, there's a navigation bar with the title "ALMA Request Handler" and the user name "Marcella Massardi". Below the navigation bar, there's a section for the current request: "Marcella Massardi: Request #998100324" with a green checkmark and a link to "Request Title: Click to edit".

On the left side, there's a "Download Selected" button with a yellow arrow pointing to it. Below that, there's a checkbox labeled "Include Raw".

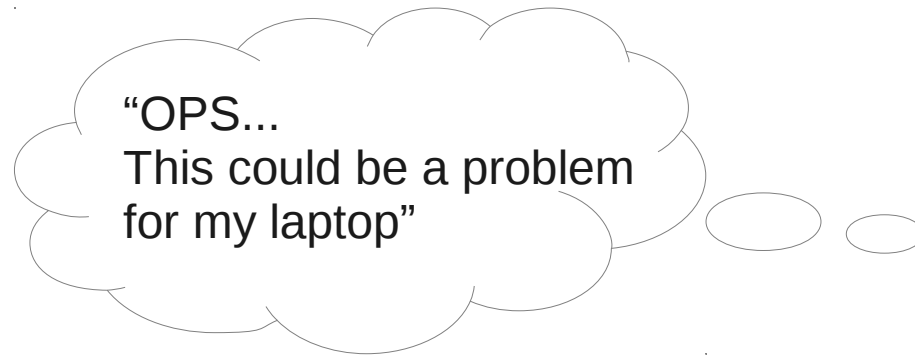
The main part of the interface is a table with columns: "Project / OUSet / Executionblock", "File", "Size", and "Accessible". The table lists several data products, including "product" and "raw" files for different OUSets. A red circle highlights the "Size" and "Accessible" columns for the last two rows, showing sizes of 346.8MB and 1.3GB, and accessibility status (green checkmarks and red X marks).

Project / OUSet / Executionblock	File	Size	Accessible
Request 998100324			
Project 2013.1.00278.S			
Science Goal OUS uid://A001/X120/X100			
Group OUS uid://A001/X120/X101			
Member OUS uid://A001/X120/X102			
<input checked="" type="checkbox"/> product	2013.1.00278.S uid A001 X120 X102 001 of 001.tar	701.3MB	✓
<input type="checkbox"/> raw	2013.1.00278.S uid A002 Xa0b40d X3cb8.asdm.sdm.tar	11.4GB	✓
Member OUS uid://A001/X120/X104			
<input checked="" type="checkbox"/> product	2013.1.00278.S uid A001 X120 X104 001 of 001.tar	346.8MB	✗
<input type="checkbox"/> raw	2013.1.00278.S uid A002 X839000 X122f.asdm.sdm.tar	1.3GB	✗
		Total: 13.8GB	

Download products only for quick view of images
Product data are typically <1GB
Raw data for whole projects are typically >10GB
Processing might increase folder size by factors 2-8

Remember that a Member OUS
is the smaller data processing unit

10 GB or more?????



www.Vecto.rs · 19863

Don't struggle on it!!!

You can ask an account on our ARC cluster to deal with ALMA data!

Just sent an email to help-desk@alma.inaf.it indicating the reason of your request
And visit our webpage http://www.alma.inaf.it/index.php/The_ARC_cluster

The ALMA archive: download manager

4) Choose the download method

Choose one of the following download methods:

Download Script	The downloads are scripted for you. You just need to execute the script from the command line. Help
Download Manager	ALMA's download manager is launched as a browser applet. This is a simpler, more user-friendly way to download files in parallel, allowing you to pause and resume.
Web Start Download Manager	ALMA's download manager is launched as a desktop application via Java Web Start. It will not stop if you close your browser.
File List	View a text file containing a list of URLs. This is useful for using third-party download manager's such as <i>DownThemAll</i> .


File Edit View Go Bookmarks Help

iranet homesarc massardi ALMA scuola2016 project2013_278 proj Search


2013.1.00278.S (2)	2013.1.00278.S	2013.1.00278.S_ uid___A001_X120_ X102_001_of_001. tar	2013.1.00278.S_ uid___A002_ Xa0b40d_X3cb8. asdm.sdm.tar	downloadRequest9 98112925.sh

The ESO telbib

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



European Southern Observatory



ESO Telescope Bibliography

[telbib Statistics](#) | [API](#) | [Help](#) | [Libraries Home](#) | [Archive Home](#) | [ESO Home](#)

REFINE SEARCH

Year

2015 (329)
2014 (934)
2013 (884)
2012 (887)
2011 (802)
[more...](#)

Journal

A&A (5945)
ApJ (2327)
MNRAS (1982)
AJ (494)
A&AS (242)
[more...](#)

Instrument

UVES (1557)
FOR2 (1191)
FOR1 (967)
ISAAC (929)
SOFI (729)
[more...](#)

TELBIb SEARCH

All fields or and

Author 1st auth. +

Title / Abstract / Keywords or and

Journal

Publication year From To

BibCode


ProgramID

Instrument +

Telescope +

Site/Archive

Only papers based on ESO time

 For information about search fields move the mouse over the labels.

The **Telescope Bibliography (telbib)** is maintained by the ESO library. It contains refereed publications that directly use ESO data.

News

telbib can now also be queried via API. For more information, see <http://telbib.eso.org/api-docu.php>.

Explore telbib metrics:

- Click the **VISUALIZE** button on the results page to view **animated charts** of your search results
- Access the **telbib Statistics** area to find **interactive graphs** of selected statistics
- Find publication and citation info in the **Basic ESO Statistics document**
- Use the **overview** of annual publication statistics to access all telbib papers that pertain to a given year

Further info:

Contact the ESO librarians at library@eso.org

Send comments to [ESO library](#)

The ESO telbib



European Southern Observatory



ESO Telescope Bibliography

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REFINE SEARCH

NEW SEARCH

EDIT SEARCH

VISUALIZE

EXPORT

- Year**
- 2015 (40)
 - 2014 (97)
 - 2013 (65)
 - 2012 (20)

- Journal**
- ApJ (121)
 - A&A (54)
 - MNRAS (16)
 - Nature (11)
 - PASJ (6)
- [more...](#)

- Instrument**
- ALMA_Bands (222)
 - LABOCA (14)
 - XSHOOTER (6)
 - FORS2 (5)
 - SHFI (5)
- [more...](#)

Results 1 - 25 of 222 found for (instrument:ALMA_Bands)

« Previous [Next](#) »

YEAR ▼	AUTHOR	TITLE	INSTRUMENTS	ACCESS TO DATA	FULLTEXT ADS
2015	Sakai, Yusuke et al.	An ALMA Imaging Study of Methyl Formate (HCOOCH ₃) in Torsionally Excited States toward Orion KL	ALMA_Bands	2011.0.00009.SV	2015ApJ...803...97S
2015	Brouillet, N. et al.	Antifreeze in the hot core of Orion. First detection of ethylene glycol in Orion-KL	ALMA_Bands	2011.0.00009.SV	2015A&A...576A.129B
2015	Saito, Toshiki et al.	ALMA Multi-line Observations of the IR-bright Merger VV 114	ALMA_Bands	2011.0.00467.S	2015ApJ...803...60S
2015	Olofsson, H. et al.	ALMA view of the circumstellar environment of the post-common-envelope-evolution binary system HD 101584	ALMA_Bands	2012.1.00248.S	2015A&A...576L..15O
2015	Sakai, Takeshi et al.	ALMA Observations of the IRDC Clump G34.43+00.24 MM3: DNC/HNC Ratio	ALMA_Bands	2011.0.00656.S	2015ApJ...803...70S
2015	Gullberg, B. et al.	The nature of the [C II] emission in dusty star-forming galaxies from the SPT survey	ALMA_Bands	2011.0.00957.S, 2011.0.00958.S, 2012.1.00844.S	2015MNRAS.449.2883G
2015	Rathborne, J. M. et al.	A Cluster in the Making: ALMA Reveals the Initial Conditions for High-mass Cluster Formation	ALMA_Bands	2011.0.00217.S	2015ApJ...802..125R

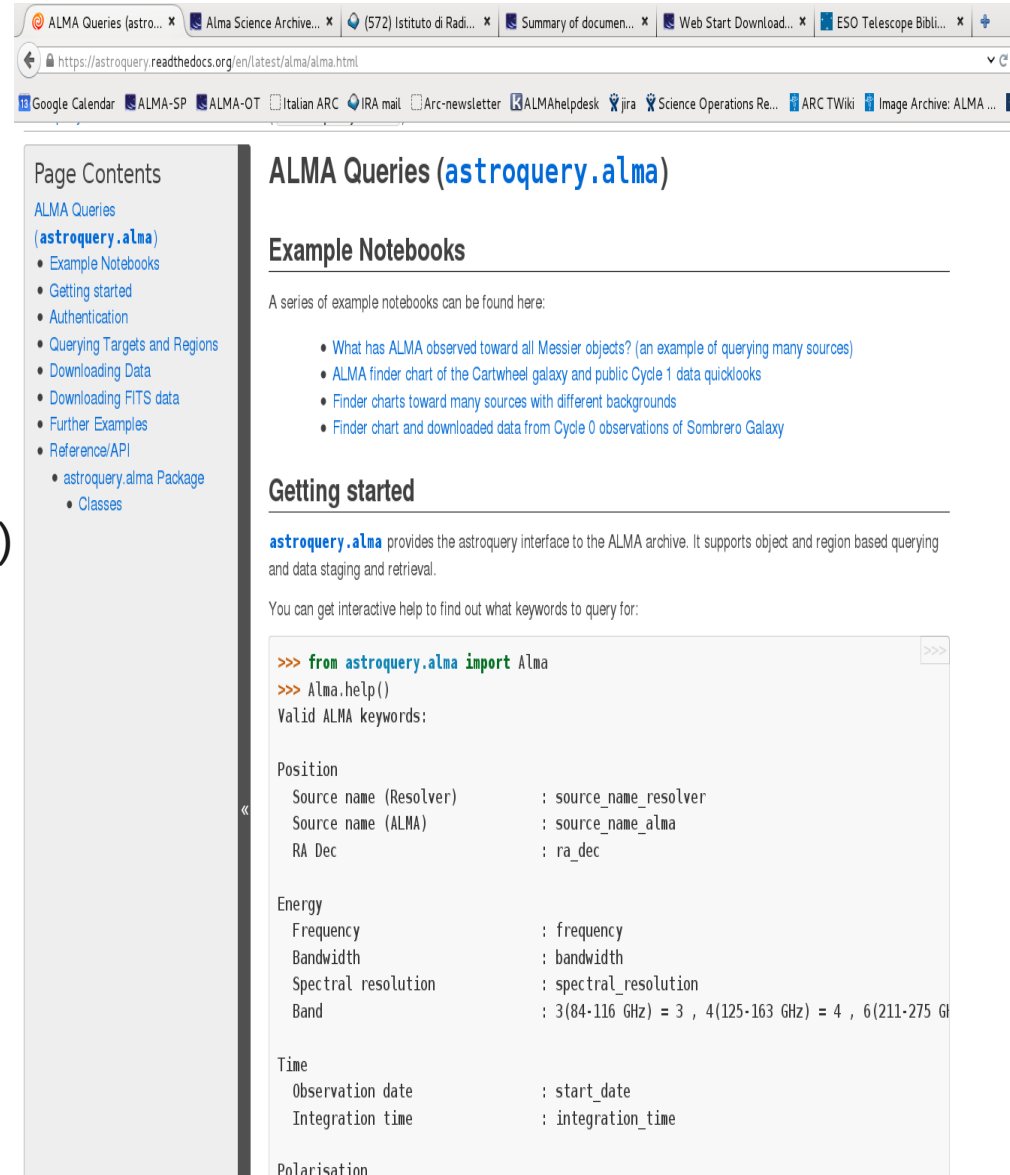


Direct link to the ALMA Archive

ASTROquery.alma

(<https://astroquery.readthedocs.org/en/latest/alma/alma.html>)

- Python library for archival query
(not developed by ALMA)
- Allows batch searches (i.e. lists of sources)
and full download
- Allows the same criteria as the archive
- Allows scripting for downloads
(if anyone needs we can distribute examples)
- However, it is computer sensitive
(download may not work...)



The screenshot shows a web browser window with the URL <https://astroquery.readthedocs.org/en/latest/alma/alma.html>. The page title is "ALMA Queries (astroquery.alma)". The page content includes a "Page Contents" sidebar with links to "ALMA Queries (astroquery.alma)", "Example Notebooks", "Getting started", "Authentication", "Querying Targets and Regions", "Downloading Data", "Downloading FITS data", "Further Examples", and "Reference/API". The main content area is titled "Example Notebooks" and lists several example notebooks, including "What has ALMA observed toward all Messier objects?", "ALMA finder chart of the Cartwheel galaxy and public Cycle 1 data quicklooks", "Finder charts toward many sources with different backgrounds", and "Finder chart and downloaded data from Cycle 0 observations of Sombrero Galaxy". Below this is a "Getting started" section with a description of the astroquery.alma interface and a code block showing a Python shell session with the astroquery.alma module.

```
>>> from astroquery.alma import Alma
>>> Alma.help()
Valid ALMA keywords:

Position
Source name (Resolver)      : source_name_resolver
Source name (ALMA)         : source_name_alma
RA Dec                      : ra_dec

Energy
Frequency                   : frequency
Bandwidth                   : bandwidth
Spectral resolution         : spectral_resolution
Band                        : 3(84-116 GHz) = 3 , 4(125-163 GHz) = 4 , 6(211-275 GHz)

Time
Observation date           : start_date
Integration time           : integration_time

Polarisation
```

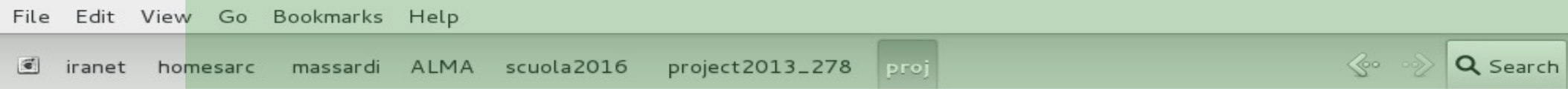
What is in the packages?

When untarred, the Product Package standard directory structure contains

Untarred products only

```
|-- project_id/
| |-- sg_ouss_id/
| | |-- group_ouss_id/
| | | |-- member_ouss_id/
| | | | |-- README .....important summary of the contents
| | | | |-- product/ .....all the imaging products as result of QA2
| | | | |-- calibration/ .....calibration and flagging tables
| | | | |-- qa/ .....diagnostic plots generated during QA2
| | | | |-- script/ .....the scripts necessary to regenerate the products
| | | | |-- log/ .....CASA log files from QA2 calibration and imaging
| | | | |-- raw/ .....for calibration move it in the products folder at the
| | | | | .....right level (follow the README)
```

Untarred ASDM (raw data)



2013.1.00278.S (2)
Untarred ASDM
(Raw data)

2013.1.00278.S
Untarred products

2013.1.00278.S_...
uid_...A001_X120_...
X102_001_of_001.
tar

2013.1.00278.S_...
uid_...A002_...
Xa0b40d_X3cb8.
asdm.sdm.tar

downloadRequest9
98112925.sh

What to do after download?

```
[massardi@arcbl02 member.uid__A001_X120_X102]$ cd script/  
[massardi@arcbl02 script]$ casapy-setup 42.2.30986-pipe-1-64b  
[massardi@arcbl02 script]$ casapy --pipeline  
...  
CASA <2>: execfile('scriptForPI.py')
```

- 1) Untar the packages
- 2) Look at weblog and/or QA reports
- 3) Read the README file and follow the instructions: typically
 - Launch the correct CASA (with pipeline) version in the script folder
 - Run the “Script_for_PI” to generate the calibrated MS
 - Run the “Script_for_Imaging” to regenerate the images
- 4) Edit the scripts where needed according to your purposes

What is in the packages?

After running the ScriptForPI.py

Down
loaded
data

```
|-- project_id/  
| |-- sg_ouss_id/  
| | |-- group_ouss_id/  
| | | |-- member_ouss_id/  
| | | | |-- README ..... important summary of the contents  
| | | | |-- product/ ..... all the imaging products as result of QA2  
| | | | |-- calibration/ ..... calibration and flagging tables  
| | | | |-- qa/ ..... diagnostic plots generated during QA2  
| | | | |-- script/ ..... the scripts necessary to regenerate the products  
| | | | |-- log/ ..... CASA log files from QA2 calibration and imaging  
  
| | | | |-- raw/ ..... moved in the main folder from raw data download  
  
| | | | |-- calibrated/ ..... calibrated ms, flagging and calibration tables
```

New
folder
produced
by script

File Edit View Go Bookmarks Help

< proj 2013.1.00278.S science_goal.uid___A001_X120_X100 group.uid___A001_X120_X101 member.uid___A001_X120_X102 > ⏪ ⏩ 🔍 Search



calibrated



calibration



log



product



qa



raw



script



README

Caveats

- **This is the CURRENT version of the archive**
- **Philosophy will remain the same, access interfaces and information available might change in the future**
- **There are differences between cycles**
- **There are differences between pipeline and manual data reduction, calibration and imaging**
- **Images are not science-ready!!!**

In publications with ALMA data!

Acknowledgement Statement:

“This paper makes use of the following ALMA data:
ADS/JAO.ALMA#2011.0.01234.S. ALMA is a partnership of ESO (representing its member states), NSF (USA) and NINS (Japan), together with NRC (Canada), NSC and ASIAA (Taiwan), and KASI (Republic of Korea), in cooperation with the Republic of Chile. The Joint ALMA Observatory is operated by ESO, AUI/NRAO and NAOJ.”

(Can be found in the SP, on the ‘ALMA-Data’ page or in the Archive)

