

Exploring the ALMA Archive



George C. Privon

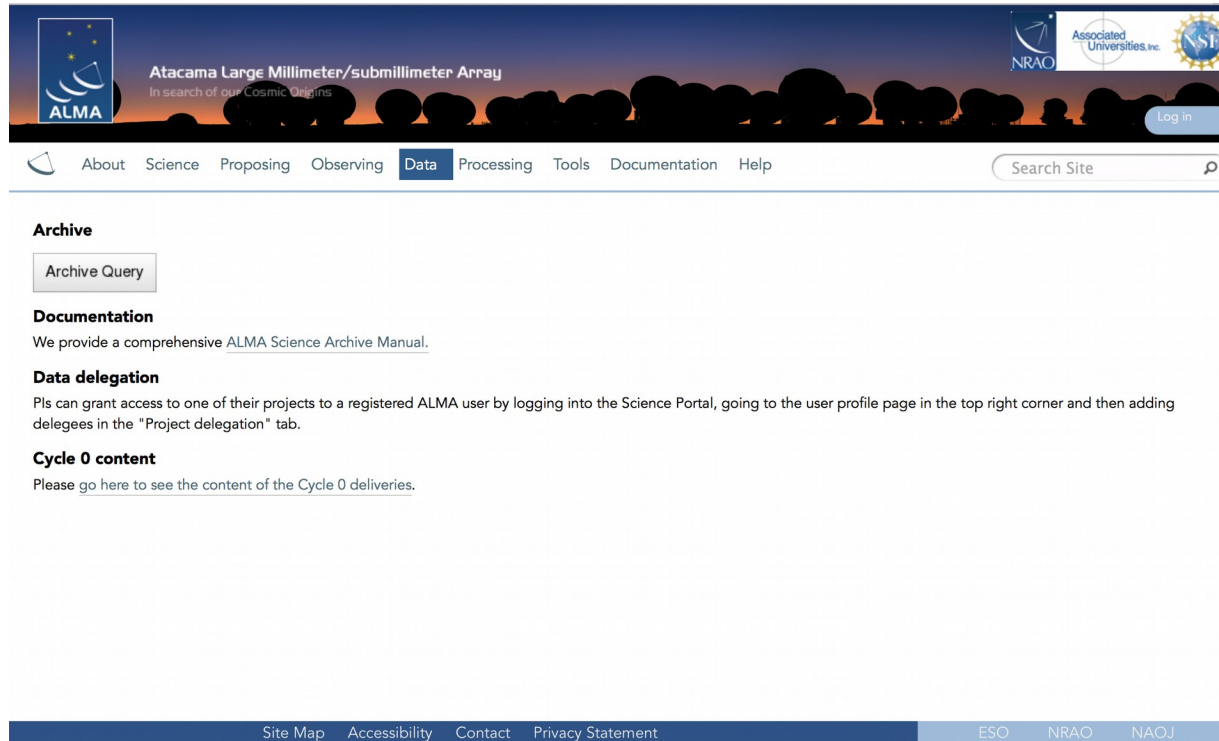
Atacama Large Millimeter/submillimeter Array
Expanded Very Large Array
Very Long Baseline Array



How to find the archive

Go to the science portal: <https://almascience.nrao.edu>

- Click on “Data” and select “Archive”



The screenshot shows the ALMA Science Portal website. The header features the ALMA logo and the text "Atacama Large Millimeter/submillimeter Array" with the tagline "In search of our Cosmic Origins". Logos for NRAO, Associated Universities, Inc., and ST are also present. A navigation menu includes "About", "Science", "Proposing", "Observing", "Data", "Processing", "Tools", "Documentation", and "Help". A search bar is labeled "Search Site". The "Data" menu is highlighted, and the "Archive" section is expanded, showing an "Archive Query" button. Below this, there are sections for "Documentation" (with a link to the "ALMA Science Archive Manual"), "Data delegation" (with instructions on how to grant access to projects), and "Cycle 0 content" (with a link to see the content of the Cycle 0 deliveries). The footer contains links for "Site Map", "Accessibility", "Contact", and "Privacy Statement", along with logos for "ESO", "NRAO", and "NAOJ".

Find data in archive: *Archive Query*



ALMA Science Archive Query

<http://almascience.nrao.edu/aq/>

Query Form Results Table

Search Reset

[Query Help](#)

Position

Source name (Sesame)
Source name (ALMA)
RA Dec

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

Project code
Project code.

Description
Project code, in the form
YYYY.NNNNN.C.AAA, where:

Example
2010.2.00010.N
2010.*
2010.?*.CSV
*.CSV
!(*.CSV | *.SIM)



Archive Query

Query Form **Results Table**

Submit download request

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

Showing 30 rows (30 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" value="m/s"/> ↕	<input type="text"/>
<input checked="" type="checkbox"/>	2012.1.00090.S	S2CLS_UDS110	02:18:48.44	-05:18:05.0	7	9.326	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input checked="" type="checkbox"/>	2012.1.00090.S	S2CLS_UDS156	02:18:24.23	-05:22:53.4	7	8.836	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input checked="" type="checkbox"/>	2012.1.00090.S	S2CLS_UDS160	02:18:23.86	-05:11:36.2	7	8.842	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS168	02:18:20.34	-05:31:41.6	7	8.843	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input checked="" type="checkbox"/>	2012.1.00090.S	S2CLS_UDS199	02:18:07.38	-04:44:11.7	7	8.812	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS204	02:18:03.01	-05:28:39.8	7	8.873	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS216	02:17:56.80	-04:52:39.6	7	8.82	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS252	02:17:37.79	-05:20:10.2	7	8.827	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS286	02:17:25.76	-05:25:36.5	7	9.657	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS292	02:17:21.85	-05:19:03.3	7	8.815	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS298	02:17:19.90	-05:09:36.4	7	9.55	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS334	02:17:02.81	-04:57:24.9	7	8.856	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS408	02:16:22.59	-05:11:06.0	7	8.819	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS421	02:16:17.62	-05:09:02.0	7	8.803	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	S2CLS_UDS47	02:19:24.97	-05:09:19.9	7	8.785	2014-11-07T09:35:00.000	27236.96	336.00..351.99GHz

Archive Query: more columns

<input type="checkbox"/>	Project code			Frequency support
Filter:	<input type="text"/>	<input type="button" value="Show all columns"/> <input type="button" value="Reset column order"/> <input type="button" value="Order alphabetically"/>		<input type="text"/>
<input type="checkbox"/>	2012.1.00090.S	<input checked="" type="checkbox"/>	Project code	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input checked="" type="checkbox"/>	Source name	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input checked="" type="checkbox"/>	RA	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input checked="" type="checkbox"/>	Dec	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input checked="" type="checkbox"/>	Band	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input checked="" type="checkbox"/>	Integration	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input checked="" type="checkbox"/>	Release date	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input checked="" type="checkbox"/>	Velocity resolution	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input checked="" type="checkbox"/>	Frequency support	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	Spatial resolution	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	Frequency resolution	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	Pol products	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	Observation date	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	PI name	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	PWV	335.99..351.99GHz
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	Member ous id	
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	Asdm uid	
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	Project title	
<input type="checkbox"/>	2012.1.00090.S	<input type="checkbox"/>	Project type	

Downloading the data:

Request Handler

- All data downloaded as tar files
- Large data sets may be broken into several pieces
 - Name is [project_code]_[OUS_ID]_m_of_n.tar
 - Raw data packaged as one tar file per execution block (EB)
 - name is [project_code]_[EB_ID].asdm.sdm.tar
- For Cycle 0-5 projects, could not directly download individual data products but now direct access to:
 - FITS images
 - Diagnostic plots, etc.

Request Handler

ALMA Request Handler

[Login](#)

Anonymous User: Request #436233140 ✓

Request Title: [Click to edit](#)



[Download Selected](#)

Include Raw

Project / OUSet / Executionblock	File	Size	Accessible
Request 436233140			
Project 2012.1.00090.S			
Science Goal OUS uid://A002/X5eed86/X25			
Group OUS uid://A002/X5eed86/X26			
Member OUS uid://A002/X5eed86/X27			
<input checked="" type="checkbox"/> product	2012.1.00090.S uid_A002_X5eed86_X27_001_of_001.tar	374.9MB	✓
<input type="checkbox"/> raw	2012.1.00090.S uid_A002_X7143f6_Xca4.asdm.sdm.tar	4.0GB	✓
Science Goal OUS uid://A002/X5eed86/X29			
Group OUS uid://A002/X5eed86/X2a			
Member OUS uid://A002/X5eed86/X2b			
<input checked="" type="checkbox"/> product	2012.1.00090.S uid_A002_X5eed86_X2b_001_of_001.tar	377.8MB	✓
<input type="checkbox"/> raw	2012.1.00090.S uid_A002_X7143f6_Xf9b.asdm.sdm.tar	4.0GB	✓
		Total: 8.7GB	

Request Handler



From do-not-reply@nrao.edu ☆

Subject ALMA Archive at NRAO: Request 223292105

Reply Reply All Forward Archive Junk Delete

1:24 PM

Reply to
To

Other Actions

Dear ,

Thank you for using the ALMA archive.

Your data selection (4.3GB) is available from this link

<https://almascience.nrao.edu/rh/requests/nbrunett/223292105>

We hope they meet your expectations and will lead to a successful completion of your scientific program.

Publications making use of these data must include the following statement in the acknowledgment:

"This paper makes use of the following ALMA data: ADS/JAO.ALMA#2012.1.00090.S. ALMA is a partnership of ESO (representing its member states), NSF (USA) and NINS (Japan), together with NRC (Canada) and NSC and ASIAA (Taiwan), in cooperation with the Republic of Chile. The Joint ALMA Observatory is operated by ESO, AUI/NRAO and NAOJ."

Please submit your requests for help, for a visit to the ARC, or to report any problems discovered in your data through the ALMA Helpdesk at <https://help.almascience.org>.

Best regards,

The North American ALMA Archive at the NAASC

Summary:

Files available: 2 (4.3GB)

Files under proprietary period: 0 (-)

Files not available: 0 (-)

Details:

Files available:

- 2012.1.00090.S_uid__A002_X5eed86_X2b_001_of_001.tar : AUTHORIZED
- 2012.1.00090.S_uid__A002_X7143f6_Xf9b.asdm.sdm.tar : AUTHORIZED

Files under proprietary period:



Request Handler: Download options

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, after making it executable by typing <code>chmod u+x download*.sh</code>
Java 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. You must have Java installed on your computer.
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> .

Request Handler: script

```
#!/bin/bash
#Please use the current script to download the whole content of request
223732763

echo "Please provide a password"
read -s PASSWORD

wget --auth-no-challenge --no-check-certificate --http-user="nbrunett" --
http-password=$PASSWORD
https://almascience.nrao.edu/dataPortal/api/requests/nbrunett/223732763/ALMA/
2012.1.00090.S_uid__A002_X5eed86_X2b_001_of_001.tar/
2012.1.00090.S_uid__A002_X5eed86_X2b_001_of_001.tar
.
.
.
```

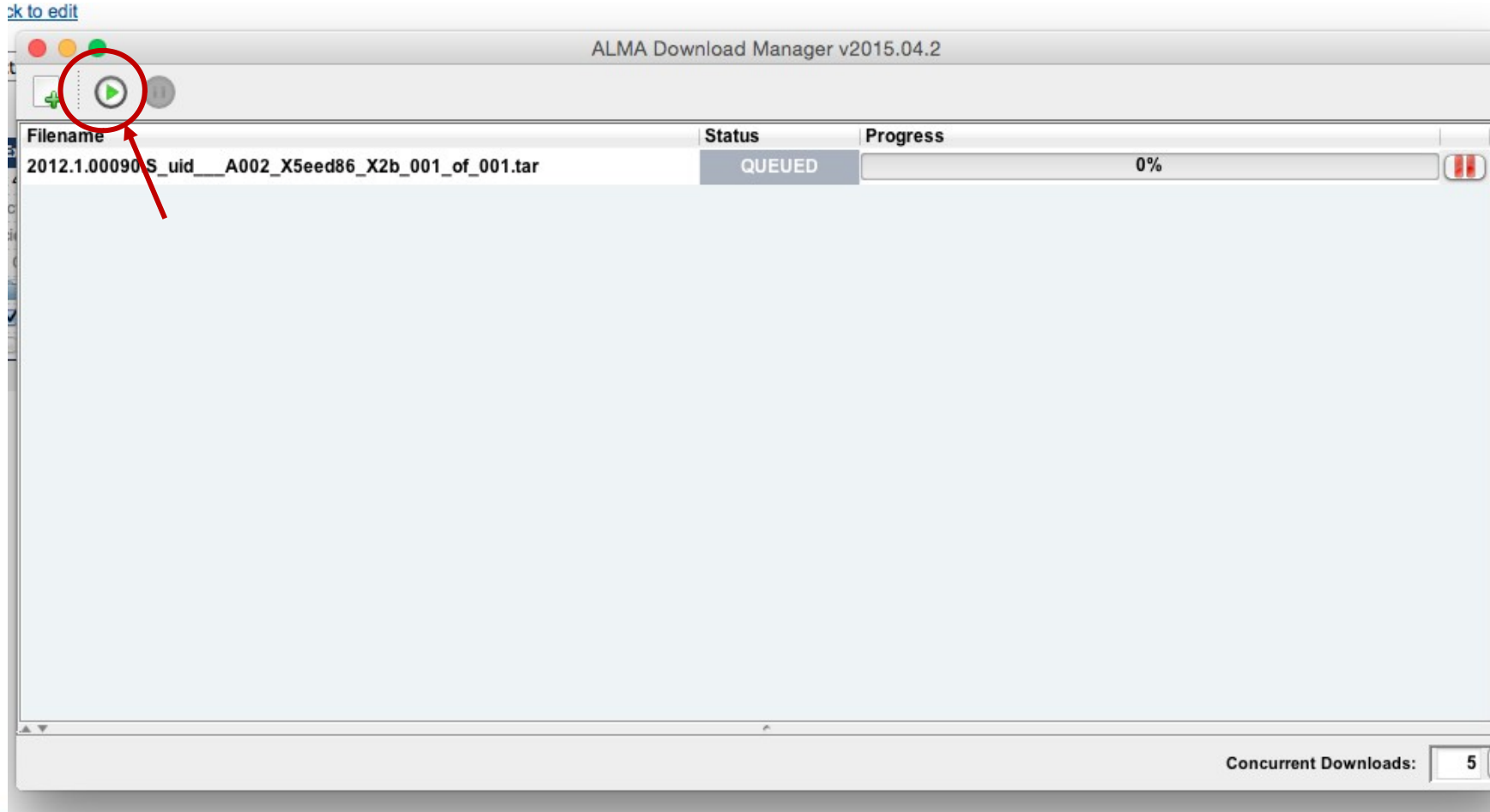
Request Handler: Java Download Manager

[Click to edit](#)

ALMA Download Manager v2015.04.2

Filename	Status	Progress
2012.1.00090_S_uid__A002_X5eed86_X2b_001_of_001.tar	QUEUED	0%

Concurrent Downloads:



Resources

Check the science portal for possible maintenance message. <https://almascience.nrao.edu>

There are 3 versions of the ALMA archive. If one is down, it is possible 1 of the other two are available.

- NRAO: <http://almascience.nrao.edu/aq/>
- ESO: <http://almascience.eso.org/aq/>
- NAOJ: almascience.nao.ac.jp/aq/

Contact your local helpdesk and provide:

- Project ID
- SBname
- ASDM
- What method you are using to download?

Programmatic Queries

The ALMA archive can be accessed with the astroquery python package:

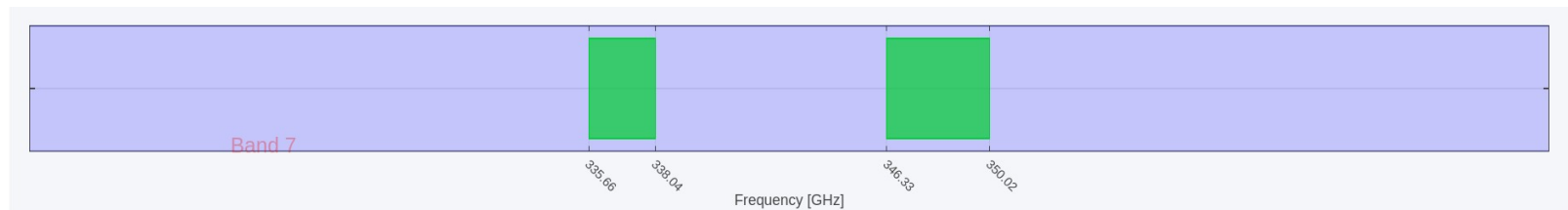
<https://astroquery.readthedocs.io/en/latest/>

```
>>> from astroquery.alma import Alma
>>> m83_data = Alma.query_object('M83')
>>> print(len(m83_data))
830
>>> m83_data.colnames
['Project code', 'Source name', 'RA', 'Dec', 'Band',
'Frequency resolution', 'Integration', 'Release date', 'Frequency support',
'VeLOCITY resolution', 'Pol products', 'Observation date', 'PI name',
'PWV', 'Member ous id', 'Asdm uid', 'Project title', 'Project type',
'Scan intent', 'Spatial resolution', 'QA0 Status', 'QA2 Status']
```

ARTEMIX

The Paris Observatory has developed the ALMA RemoTE Mining eXperiment:

<http://artemix.obspm.fr/>



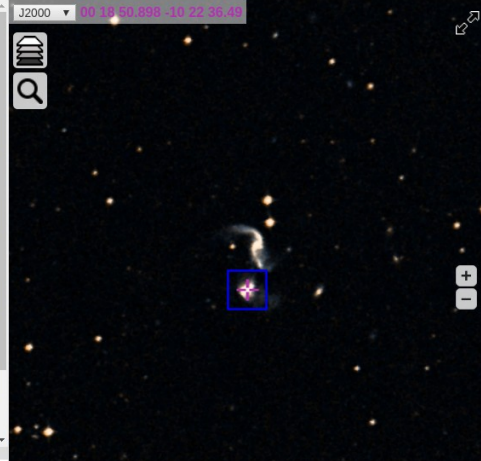
Warning : the collection of FITS files used by ARTEMIX and copied from the Alma Science Archive is already quite large. However, it is incomplete; we strive to improve the situation until we have a full copy of the ensemble of FITS files present in the ASA. Please also notice that only a relatively small fraction of all ALMA raw data are actually turned into images. Please go to the [ALMA archive](#) and download raw data for a complete overview of the data.

All Info Metadata ?

Show 10 entries

Metadata									
#	Target	Band	RA	DEC	Res (")	Res (Hz)	Proj. code	Release Date	PI name
1	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
2	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
3	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
4	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
5	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
6	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
7	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
8	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian

Search:



J2000 00 18 50.898 -10 22 36.49

NB: ARTEMIX is not supported by ALMA or the NAASC.

ADMIT: ALMA Data Mining Toolkit

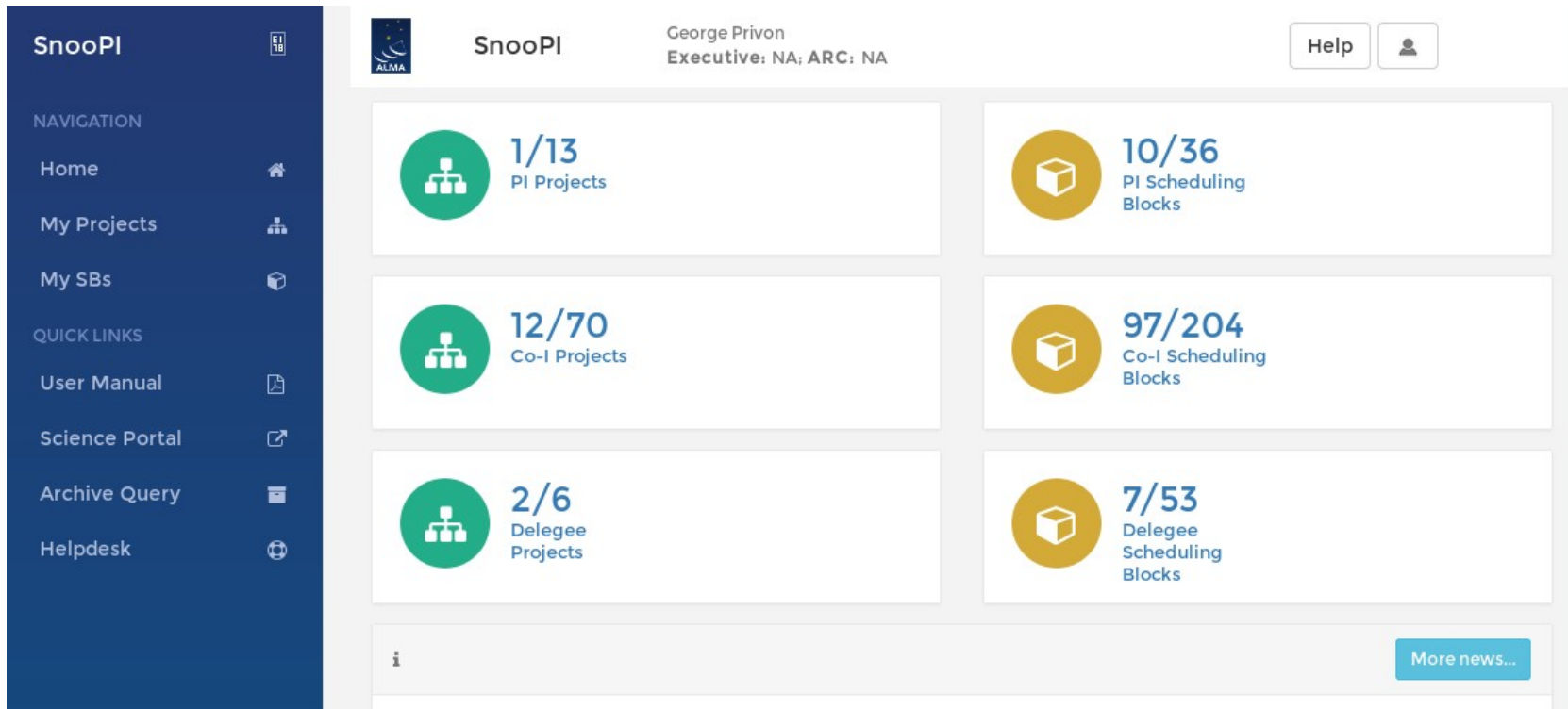
Value-add data products (provided only for NA-delivered data):

<http://admit.astro.umd.edu/admit/>







- Automated line ID
- Moment maps for spectral lines
- Products provided in same email as calibrated MS
- ADMIT can be run offline (CASAGuide in progress)

SnooPI

Monitor the status of your accepted ALMA projects:
<https://asa.alma.cl/snoopi/>



The screenshot shows the SnooPI dashboard. On the left is a dark blue navigation sidebar with the following items: SnooPI, NAVIGATION (Home, My Projects, My SBs), QUICK LINKS (User Manual, Science Portal, Archive Query, Helpdesk). The main content area has a header with the SnooPI logo, the user name 'George Privon', and the role 'Executive: NA; ARC: NA'. There are 'Help' and user profile buttons. The dashboard displays six key metrics in a 3x2 grid:

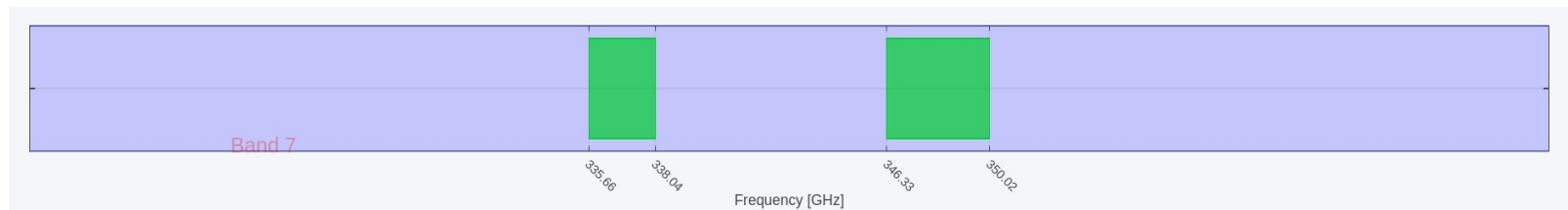
 1/13 PI Projects	 10/36 PI Scheduling Blocks
 12/70 Co-I Projects	 97/204 Co-I Scheduling Blocks
 2/6 Delegee Projects	 7/53 Delegee Scheduling Blocks

At the bottom right of the dashboard is a 'More news...' button.

ARTEMIX

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<http://artemix.obspm.fr/>




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All Info Metadata ?

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Metadata									
#	Target	Band	RA	DEC	Res (")	Res (Hz)	Proj. code	Release Date	PI name
1	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
2	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
3	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
4	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
5	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
6	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
7	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
8	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian

Search:



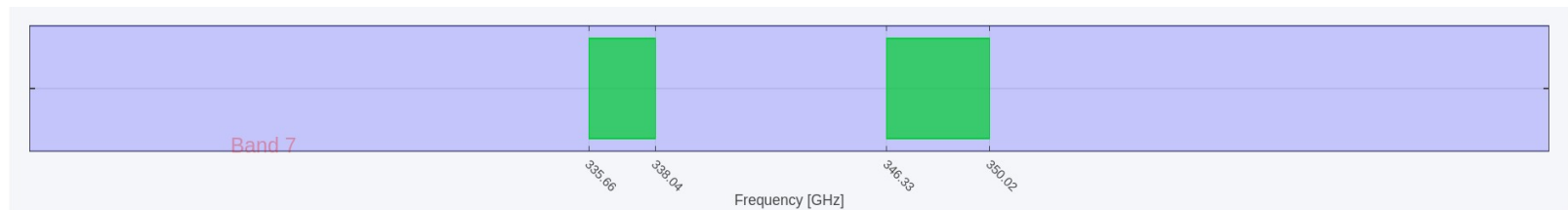
J2000 00 18 50.898 -10 22 36.49

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All Info Metadata ▼ ⓘ

Show 10 entries

Metadata									
#	Target	Band	RA	DEC	Res (")	Res (Hz)	Proj. code	Release Date	PI name
1	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
2	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
3	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
4	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
5	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
6	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
7	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian
8	Arp256	7	00:18:50.87	-10:22:36.55	0.1399	1952.9777	2013.1.00814.S	2016-10-07	Haan, Sebastian

Search:



J2000 ▼ 00 18 50.898 -10 22 36.49

NB: ARTEMIX is not supported by ALMA or the NAASC.



For more info:
<https://almascience.nrao.edu/>

The Atacama Large Millimeter/submillimeter Array (ALMA), an international astronomy facility, is a partnership of Europe, North America and East Asia in cooperation with the Republic of Chile. ALMA is funded in Europe by the European Organization for Astronomical Research in the Southern Hemisphere (ESO), in North America by the U.S. National Science Foundation (NSF) in cooperation with the National Research Council of Canada (NRC) and the National Science Council of Taiwan (NSC), and in East Asia by the National Institutes of Natural Sciences (NINS) of Japan in cooperation with the Academia Sinica (AS) in Taiwan. ALMA construction and operations are led on behalf of Europe by ESO, on behalf of North America by the National Radio Astronomy Observatory (NRAO), which is managed by Associated Universities, Inc. (AUI), and on behalf of East Asia by the National Astronomical Observatory of Japan (NAOJ). The Joint ALMA Observatory (JAO) provides the unified leadership and management of the construction and operation of ALMA.