

# Advanced ways to find and retrieve data in the LTA

There are some useful ways to find and retrieve your data in the LTA that might not be immediately obvious. This page explains some of the more advanced options you have.

## Queries

- You can use colons in numeric queries, to select ranges. This will for example give all observations and pipelines that have a SAS/Observation ID in the range from 432000 to 432190:

Observation Id	432000:432190
Observing or Pipeline Run Date	From 0000-00-00 00:00:00 To 0000-00-00 00:00:00
Project	any
Maximum Number of Rows	

In textual entries, wildcards can be used.

Target Name	3:19*
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- You can put a list of SAS/Observation IDs in the query:

Observation Id	146112,147775,151778
Observing Date	From 0000-00-00 00:00:00 To 0000-00-00 00:00:00

## Viewing data

When you are looking at the results of a query you might see something like this:

Number Of Correlated DataProducts
0 / 488

This means that the observation is known in the LTA, it knows what data was produced, the produced data was not archived, but further processing happened on the raw data and the results of some of those pipelines were archived. If you click on the zero, you will see something like this:

#	<input type="checkbox"/>	DataProduct Identifier	SubArray Pointing Identifier	Subband	Stations	Observations	Pipeline	Derived DataProducts
1	<input type="checkbox"/>	7260485	293855	479	show	1		AveragingPipeline
2	<input type="checkbox"/>	7260483	293855	477	show	1		AveragingPipeline
3	<input type="checkbox"/>	7260488	293855	482	show	1	back to observation	AveragingPipeline
4	<input type="checkbox"/>	7260489	293855	483	show	1		AveragingPipeline
5	<input type="checkbox"/>	7260492	293855	486	show	1		AveragingPipeline
6	<input type="checkbox"/>	7260490	293855	484	show	1		AveragingPipeline
7	Can not be downloaded	7260493	293855	487	show	1		AveragingPipeline
8		7260486	293855	480	show	1		AveragingPipeline
9	<input type="checkbox"/>	7260487	293855	481	show	1	To pipeline	AveragingPipeline
10	<input type="checkbox"/>	7260482	293855	476	show	1		AveragingPipeline
11	<input type="checkbox"/>	7260491	293855	485	show	1		AveragingPipeline
12	<input type="checkbox"/>	7260484	293855	478	show	1		AveragingPipeline
13	<input type="checkbox"/>	7260436	293854	430	show	1		AveragingPipeline

This allows you to navigate from a pipeline back to the original observation, or from the observation to any pipelines that have run on the raw data.

## Retrieving data

- You can retrieve data on the Observation and Pipeline level, you don't have to select all files individually.

#	<input type="checkbox"/>	Observation Id	Observing Mode	Antenna Set	Instrun Filter
1	<input checked="" type="checkbox"/>	146448	Interferometer	HBA Dual Inner	110-190
2	<input type="checkbox"/>	146447	Interferometer	HBA Dual Inner	110-190
3	<input checked="" type="checkbox"/>	146446	Interferometer	HBA Dual Inner	110-190
4	<input type="checkbox"/>	146445	Interferometer	HBA Dual Inner	110-190
5	<input checked="" type="checkbox"/>	146444	Interferometer	HBA Dual Inner	110-190
6	<input checked="" type="checkbox"/>	146443	Interferometer	HBA Dual Inner	110-190
7	<input type="checkbox"/>	146442	Interferometer	HBA Dual Inner	110-190
8	<input checked="" type="checkbox"/>	146441	Interferometer	HBA Dual Inner	110-190
9	<input checked="" type="checkbox"/>	146456	Interferometer	HBA Dual Inner	110-190
10	<input checked="" type="checkbox"/>	146455	Interferometer	HBA Dual Inner	110-190
11	<input type="checkbox"/>	146454	Interferometer	HBA Dual Inner	110-190
12	<input type="checkbox"/>	146453	Interferometer	HBA Dual Inner	110-190
13	<input type="checkbox"/>	146452	Interferometer	HBA Dual Inner	110-190

- If you have a query with more than 1000 results, you can open the multiple pages each in a separate tab/window.

Observation 1001 to 1100 (showing 100 of total 1156) ▾

[edit columns](#) | [stage selected](#)

[first](#) | [previous](#) | ... | [2](#) | [3](#) | [4](#) | [5](#) | [6](#) | [7](#) | [8](#) | [9](#) | [10](#) | [11](#) | [12](#) | [next](#) | [last](#)

nr Of SubArray	Start Time	Duration	Nr Stations	Nr Stations
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- With the small triangle next to a list, you can fold or unfold the list to get a better overview.

### Folded entries

Observation 1 to 100 (showing 100 of total 1156) ▲

**Averaging Pipeline 1 to 100 (showing 100 of total 4060)**

### Calibration Pipeline (total 30) ▲

### Imaging Pipeline (total 0) ▲

UnspecifiedProcess 1 to 100 (showing 100 of total 125) ▲

## Unfolded entries

Calibration Pipeline (Total 30) ↕

add column | drop column

#	Positive Name	Pipeline Identifier	Process Identifier	Observation ID	Start Time	Duration (s)	End Time	Strategy Name	Strategy Description	Frequency (Observations/sec)	Time Integration (sec)	Flag Rate (Events/sec)	Upgraded Features	Scoring	Number of Observed Events	Number of Generated Subevents	Source Identification
1	PHO_AutoCalibration_V1	ACA	2019-05-01	001001	2019-05-01 00:01:00	0.5	2019-05-01 00:01:05	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
2	PHO_AutoCalibration_V2	ACA	2019-05-01	001002	2019-05-01 00:01:05	0.5	2019-05-01 00:01:10	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
3	PHO_AutoCalibration_V3	ACA	2019-05-01	001003	2019-05-01 00:01:10	0.5	2019-05-01 00:01:15	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
4	PHO_AutoCalibration_V4	ACA	2019-05-01	001004	2019-05-01 00:01:15	0.5	2019-05-01 00:01:20	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
5	PHO_AutoCalibration_V5	ACA	2019-05-01	001005	2019-05-01 00:01:20	0.5	2019-05-01 00:01:25	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
6	PHO_AutoCalibration_V6	ACA	2019-05-01	001006	2019-05-01 00:01:25	0.5	2019-05-01 00:01:30	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
7	PHO_AutoCalibration_V7	ACA	2019-05-01	001007	2019-05-01 00:01:30	0.5	2019-05-01 00:01:35	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
8	PHO_AutoCalibration_V8	ACA	2019-05-01	001008	2019-05-01 00:01:35	0.5	2019-05-01 00:01:40	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
9	PHO_AutoCalibration_V9	ACA	2019-05-01	001009	2019-05-01 00:01:40	0.5	2019-05-01 00:01:45	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
10	PHO_AutoCalibration_V10	ACA	2019-05-01	001010	2019-05-01 00:01:45	0.5	2019-05-01 00:01:50	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
11	PHO_AutoCalibration_V11	ACA	2019-05-01	001011	2019-05-01 00:01:50	0.5	2019-05-01 00:01:55	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
12	PHO_AutoCalibration_V12	ACA	2019-05-01	001012	2019-05-01 00:01:55	0.5	2019-05-01 00:02:00	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
13	PHO_AutoCalibration_V13	ACA	2019-05-01	001013	2019-05-01 00:02:00	0.5	2019-05-01 00:02:05	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
14	PHO_AutoCalibration_V14	ACA	2019-05-01	001014	2019-05-01 00:02:05	0.5	2019-05-01 00:02:10	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
15	PHO_AutoCalibration_V15	ACA	2019-05-01	001015	2019-05-01 00:02:10	0.5	2019-05-01 00:02:15	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
16	PHO_AutoCalibration_V16	ACA	2019-05-01	001016	2019-05-01 00:02:15	0.5	2019-05-01 00:02:20	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
17	PHO_AutoCalibration_V17	ACA	2019-05-01	001017	2019-05-01 00:02:20	0.5	2019-05-01 00:02:25	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
18	PHO_AutoCalibration_V18	ACA	2019-05-01	001018	2019-05-01 00:02:25	0.5	2019-05-01 00:02:30	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
19	PHO_AutoCalibration_V19	ACA	2019-05-01	001019	2019-05-01 00:02:30	0.5	2019-05-01 00:02:35	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
20	PHO_AutoCalibration_V20	ACA	2019-05-01	001020	2019-05-01 00:02:35	0.5	2019-05-01 00:02:40	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
21	PHO_AutoCalibration_V21	ACA	2019-05-01	001021	2019-05-01 00:02:40	0.5	2019-05-01 00:02:45	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
22	PHO_AutoCalibration_V22	ACA	2019-05-01	001022	2019-05-01 00:02:45	0.5	2019-05-01 00:02:50	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
23	PHO_AutoCalibration_V23	ACA	2019-05-01	001023	2019-05-01 00:02:50	0.5	2019-05-01 00:02:55	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
24	PHO_AutoCalibration_V24	ACA	2019-05-01	001024	2019-05-01 00:02:55	0.5	2019-05-01 00:03:00	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
25	PHO_AutoCalibration_V25	ACA	2019-05-01	001025	2019-05-01 00:03:00	0.5	2019-05-01 00:03:05	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
26	PHO_AutoCalibration_V26	ACA	2019-05-01	001026	2019-05-01 00:03:05	0.5	2019-05-01 00:03:10	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
27	PHO_AutoCalibration_V27	ACA	2019-05-01	001027	2019-05-01 00:03:10	0.5	2019-05-01 00:03:15	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
28	PHO_AutoCalibration_V28	ACA	2019-05-01	001028	2019-05-01 00:03:15	0.5	2019-05-01 00:03:20	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
29	PHO_AutoCalibration_V29	ACA	2019-05-01	001029	2019-05-01 00:03:20	0.5	2019-05-01 00:03:25	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA
30	PHO_AutoCalibration_V30	ACA	2019-05-01	001030	2019-05-01 00:03:25	0.5	2019-05-01 00:03:30	Preprogrammed Pipeline (auto)	Preprogramming for detector	10	0	0	0	0	0	0	ACA

Imaging Pipeline (Total 0) ↕

add column | drop column

#	Observation ID	Observing Mode	Process Identifier	Start Time	Duration (s)	Number of Observed Subevents
1	1276701	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
2	1276702	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
3	1276703	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
4	1276704	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
5	1276705	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
6	1276706	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
7	1276707	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
8	1276708	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
9	1276709	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
10	1276710	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
11	1276711	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
12	1276712	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
13	1276713	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
14	1276714	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
15	1276715	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
16	1276716	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
17	1276717	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
18	1276718	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
19	1276719	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
20	1276720	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
21	1276721	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
22	1276722	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
23	1276723	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
24	1276724	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
25	1276725	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
26	1276726	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
27	1276727	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
28	1276728	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
29	1276729	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
30	1276730	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0

UnspecifiedProcess 5 to 100 (showing 100 of total 120) ↕

add column | drop column

#	Observation ID	Observing Mode	Process Identifier	Start Time	Duration (s)	Number of Observed Subevents
5	1276705	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
6	1276706	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
7	1276707	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
8	1276708	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
9	1276709	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
10	1276710	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
11	1276711	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
12	1276712	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
13	1276713	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
14	1276714	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
15	1276715	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
16	1276716	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
17	1276717	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
18	1276718	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
19	1276719	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
20	1276720	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
21	1276721	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
22	1276722	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
23	1276723	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
24	1276724	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
25	1276725	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
26	1276726	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
27	1276727	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
28	1276728	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
29	1276729	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
30	1276730	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
31	1276731	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
32	1276732	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
33	1276733	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
34	1276734	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
35	1276735	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
36	1276736	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
37	1276737	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
38	1276738	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
39	1276739	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
40	1276740	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
41	1276741	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
42	1276742	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
43	1276743	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
44	1276744	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
45	1276745	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
46	1276746	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
47	1276747	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
48	1276748	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
49	1276749	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
50	1276750	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
51	1276751	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
52	1276752	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
53	1276753	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
54	1276754	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
55	1276755	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
56	1276756	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
57	1276757	unknown	unknown process, information generated by trigger	2019-01-01 00:00:00	0.0	0
58	127					

## DBView

There is a server that gives the option to run your own queries on the database

<http://lofar-dbview.target.rug.nl/>

A useful query might be this one, that gives you all files for a certain Obs Id (SAS VIC tree ID).

```
SELECT fo.URI, dp."dataProductType", dp."dataProductIdentifier",
       dp."processIdentifier"
FROM AWOPER."DataProduct+" dp,
      AWOPER.FileObject fo,
      AWOPER."Process+" pr
WHERE dp."processIdentifier" = pr."processIdentifier"
      AND pr."observationId" = '123456'
      AND fo.data_object = dp."object_id"
```

```
AND dp."isValid" > 0
```

In this '123456' should be replaced with the Obs Id of an Observation/Pipeline you're looking for.

## AstroWise Python Interface

There is also a python interface to the LTA. With this, you can also script some advanced queries. To have this working, you first need to install the [LTA client](#) in your machine. Once you have installed the client, set up your user name and password. These are the same as for MoM. Remember that this is just a different interface to the LTA catalogue: you will need the same credentials as for the web interface.

In your home directory, add the following to the file .awe/Environment.cfg

```
database_user : <your username>
database_password : <your password>
```

then create the variable awetarget and set it to awlofar. In a bash shell, you can add the following to your .profile file:

```
export AWETARGET=awlofar
```

Finally, your hostname may cause an error, if it does not contain a full domain. In this case, check your /etc/hosts file. You should find a line that looks like this

```
127.0.0.1 localhost
```

Change that line into

```
127.0.0.1 localhost <your_host_name>
```

If you do not know your hostname, just type hostname in a shell and you will get it as an output.

Now, you can use the following script as a test. It may still give you some warnings, but if it works fine, it will print out all the observations in a certain patch of the sky archived in the LTA:

```
# python code
from pprint import pprint
from common.database.Context import context
from awlofar.main.aweimports import Observation, Pointing, SubArrayPointing
result = {}
for project in sorted(context.get_projects()) :
    print "Project %(project)s" % vars()
    ok = context.set_project(project)
    # do your query
    obs_ids = set()
    query = (Pointing.rightAscension > 95) & \
            (Pointing.rightAscension < 105) & \
            (Pointing.declination > 20) & \
```

```
(Pointing.declination < 30)
print "Total Pointings %d" % len(query)
for pointing in query :
    print "Pointing found RA %f DEC %f" % (pointing.rightAscension,
pointing.declination)
    query_subarr = SubArrayPointing.pointing == pointing
    for subarr in query_subarr:
        query_obs = Observation.subArrayPointings.contains(subarr)
        for obs in query_obs :
            obs_ids.add(obs.observationId)
result[project] = sorted(list(obs_ids))
print result[project]

pprint(result)
```

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Last update: **2016-03-07 20:43**

