How to use ALMA Science Archive

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(KASI)

Why archival data?

- Check if data are already available for a target
- Check the feasibility of a project by looking for similar targets
- Extract unpublished information from existing data (e.g., finding additional spectral lines)
- Retrieve information on a single object but with different configurations (e.g., multi-frequency studies) or in different epochs (e.g., variability studies)
- Retrieve information on a larger sample of objects (e.g., statistical studies)

Data Quality Assessment (QA)

- ALMA QA is carried out on 4 levels

  QA0: Near-real time verification of weather and hardware issues carried out immediately after the observation

  QA1: Verification of longer-term observatory issues such as pointing and flux calibration

  QA2: Offline calibration and imaging
  - Performed by ARC members with the help of a semi-automatic procedure
  - Calibration/imaging can be done by pipeline or manually
  - Limited to verify the achievement of PI requests
  - Outputs are archived and sent to PI

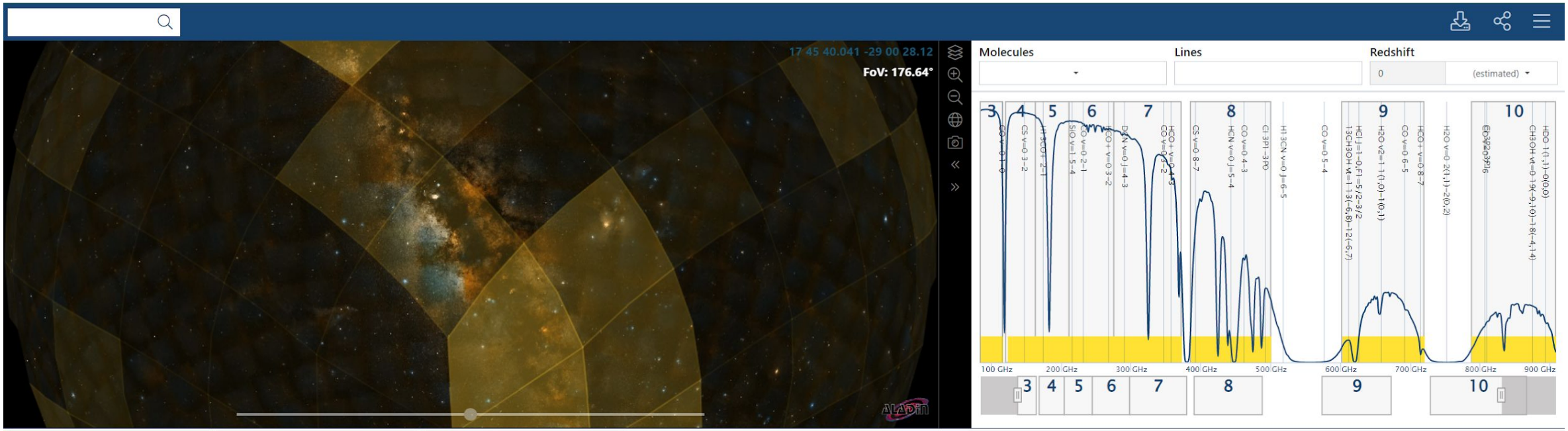
  QA3: (Optional) PI may request re-reduction

What is in the archive?

- For each project, raw data, calibration/imaging scripts, and tables are delivered
  - Only data that passed QA2 are in the archive
  - Imaging products are delivered in some cases, as result of QA2 processing
- Imaging products in the archive could be used for science if they meet your requirements
- To prepare data that are best-suited for your science, running customized calibration and imaging scripts is recommended

ALMA Science Archive

Science Archive: https://almascience.nrao.edu/aq/?result_view=observation



Project code	ALMA source name	Ra (h:m:s)	Dec (d:m:s)	Band	Cont. sens. (mJy/beam)	Frequency support	↑ Release date	Publications	Ang. res. (arcsec)	Min. vel. res. (km/s)	Array	Mosaic	Max. reco. scale (arcsec)	FOV (arcsec)	Scientific category	Science keyword
2011.0.00191.S	Fomalhaut b	22:57:38.685	-29:37:12.616	7	0.1181	343.08..358.84GHz	2012-12-06	2	1.047	0.816	12m		10.640	16.592	Disks and planet formati...	Debris disks, Ex
2011.0.00131.S	R Scl	01:26:58.079	-32:32:36.424	7	0.9115	330.25..346.11GHz	2012-12-06	5	1.043	0.846	12m	mosaic	11.517	62.007	Stars and stellar evolution	Asymptotic Gia
2011.0.00101.S	GRB021004	00:26:54.680	+18:55:41.600	7	0.1136	337.01..353.00GHz	2012-12-06	2	1.107	26.541	12m		9.257	16.878	Active galaxies	Starburst galaxi
2011.0.00397.S	J035448.24-330827.2	03:54:48.240	-33:08:27.200	7	0.4848	337.03..353.01GHz	2012-12-20	3	1.128	26.541	12m		7.950	16.877	Active galaxies	Active Galactic
2011.0.00397.S	J041754.10-281655.9	04:17:54.100	-28:16:55.900	7	0.4848	337.02..353.01GHz	2012-12-20	3	1.118	26.541	12m		7.842	16.877	Active galaxies	Active Galactic
2011.0.00397.S	J063027.81-212058.6	06:30:27.810	-21:20:58.600	7	0.5346	337.01..352.99GHz	2012-12-20	3	1.183	26.541	12m		8.015	16.878	Active galaxies	Active Galactic
2011.0.00397.S	J061200.23-062209.6	06:12:00.230	-06:22:09.600	7	0.5346	337.00..352.99GHz	2012-12-20	3	1.183	26.541	12m		7.819	16.878	Active galaxies	Active Galactic
2011.0.00397.S	J070257.20-280842.3	07:02:57.200	-28:08:42.300	7	0.5346	337.01..352.99GHz	2012-12-20	3	1.154	26.541	12m		8.053	16.878	Active galaxies	Active Galactic
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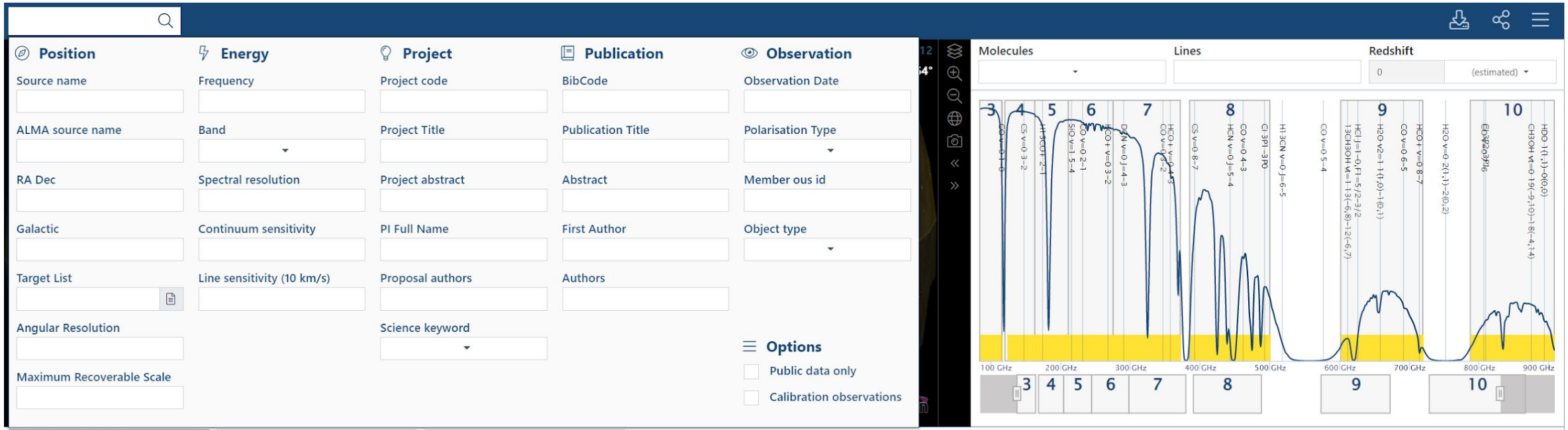
Science Archive: https://almascience.nrao.edu/aq/?result_view=observation



Observations (54762) | Projects (3797) | Publications (2712)

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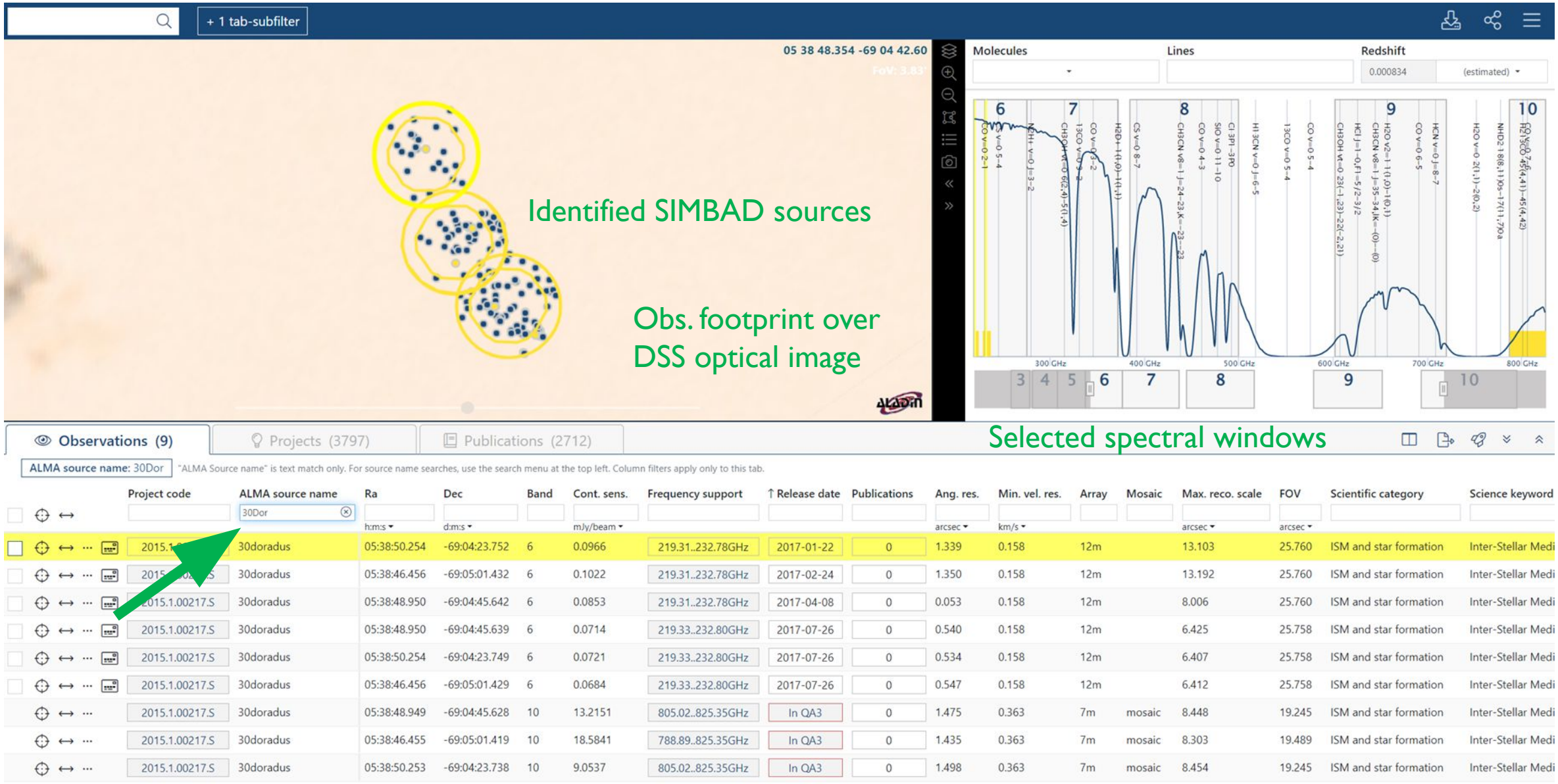
30 Doradus in the LMC

- Most extreme starburst in the local universe (more than 1000 OB and Wolf-Rayet stars)
- Observed in 2015 (2015.1.00217.S; PI: Melanié Chevance)

Search data of your interest



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	30Dor	h:m:s	d:m:s		mJy/beam				arcsec	km/s			arcsec	arcsec		
2015.1.[illegible]	30doradus	05:38:50.254	-69:04:23.752	6	0.0966	219.31..232.78GHz	2017-01-22	0	1.339	0.158	12m		13.103	25.760	ISM and star formation	Inter-Stellar Medi
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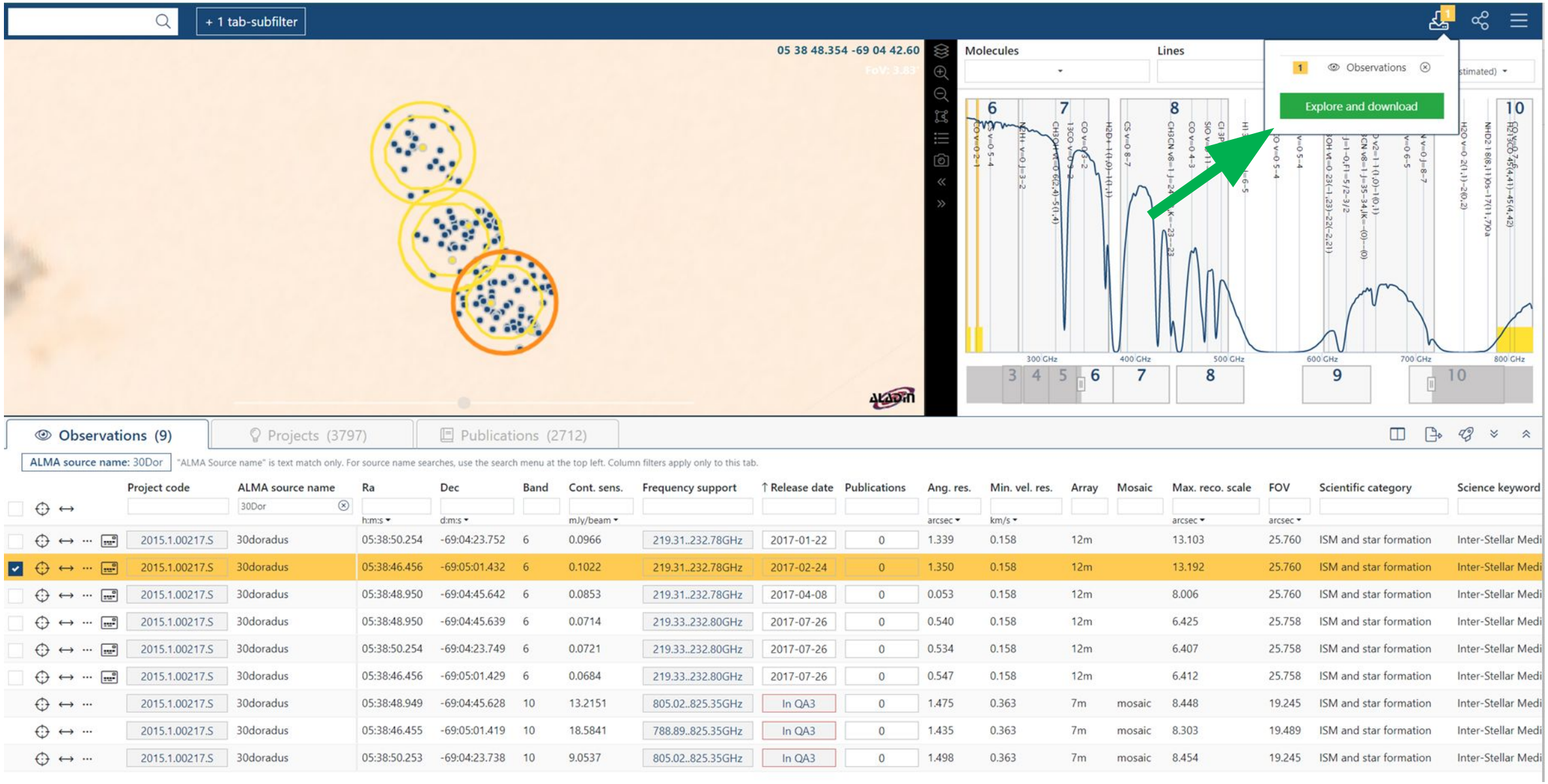
Explore and download the data



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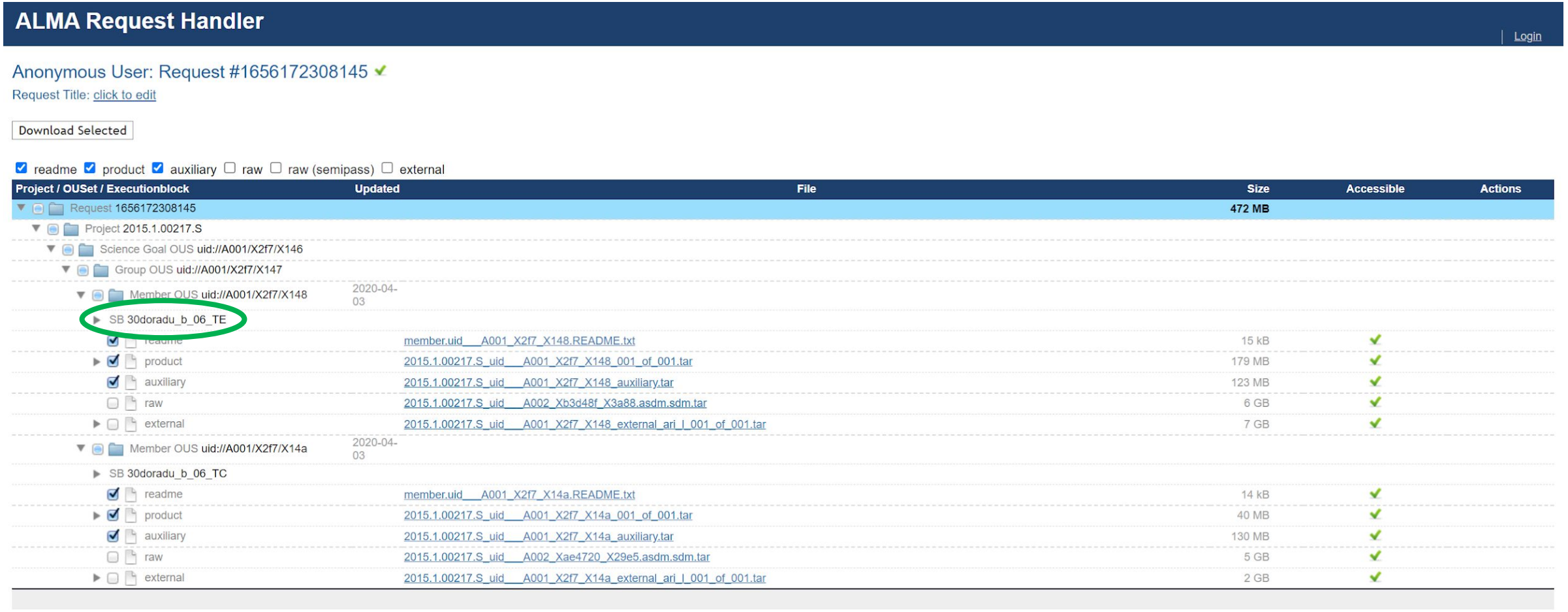
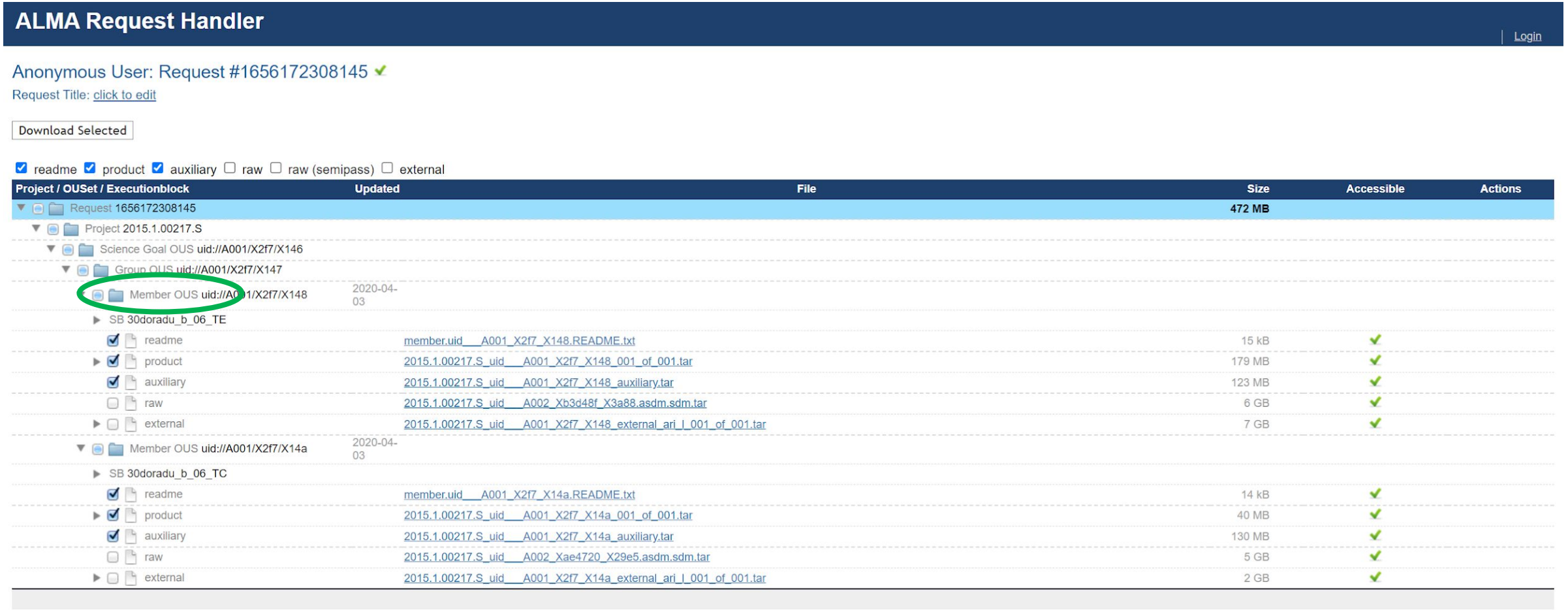
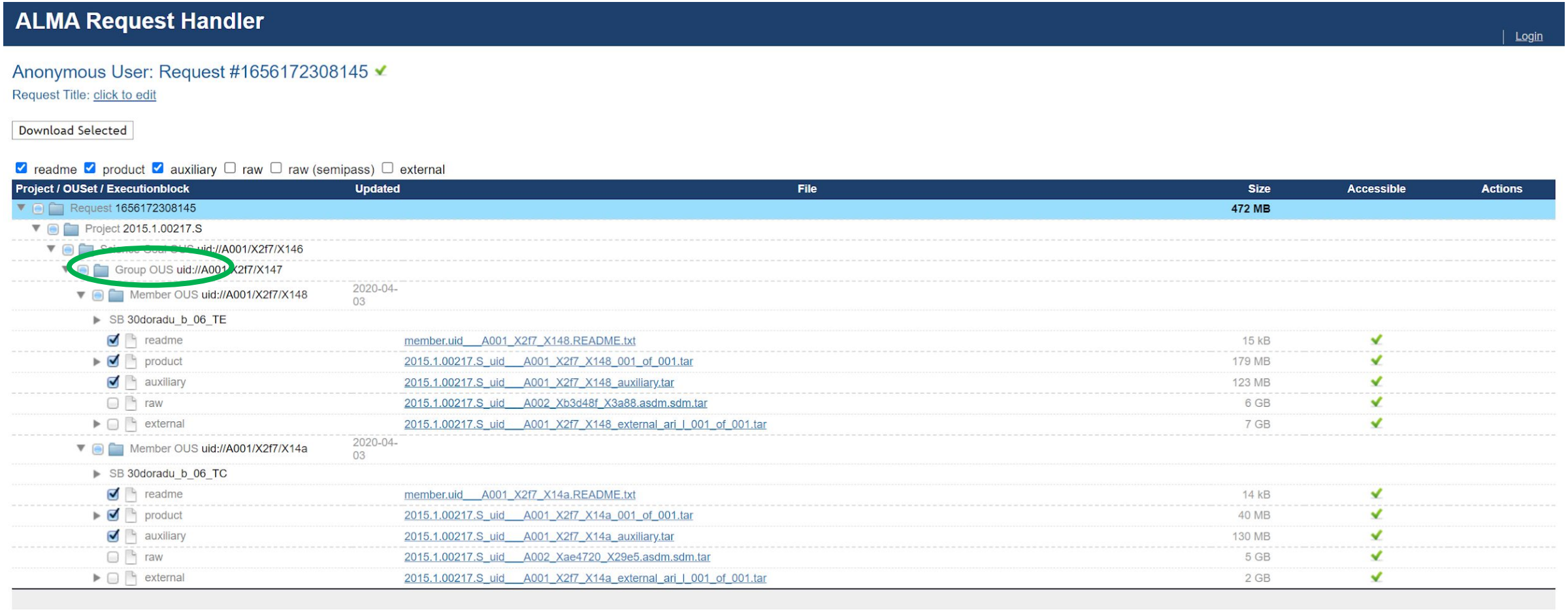


Scheduling Block (SB): Minimum unit of observation



Member: Can contain multiple Scheduling Block (SB)

Scheduling Block (SB): Minimum unit of observation



Group: Can contain several configurations to be combined in data processing

Member: Can contain multiple Scheduling Block (SB)

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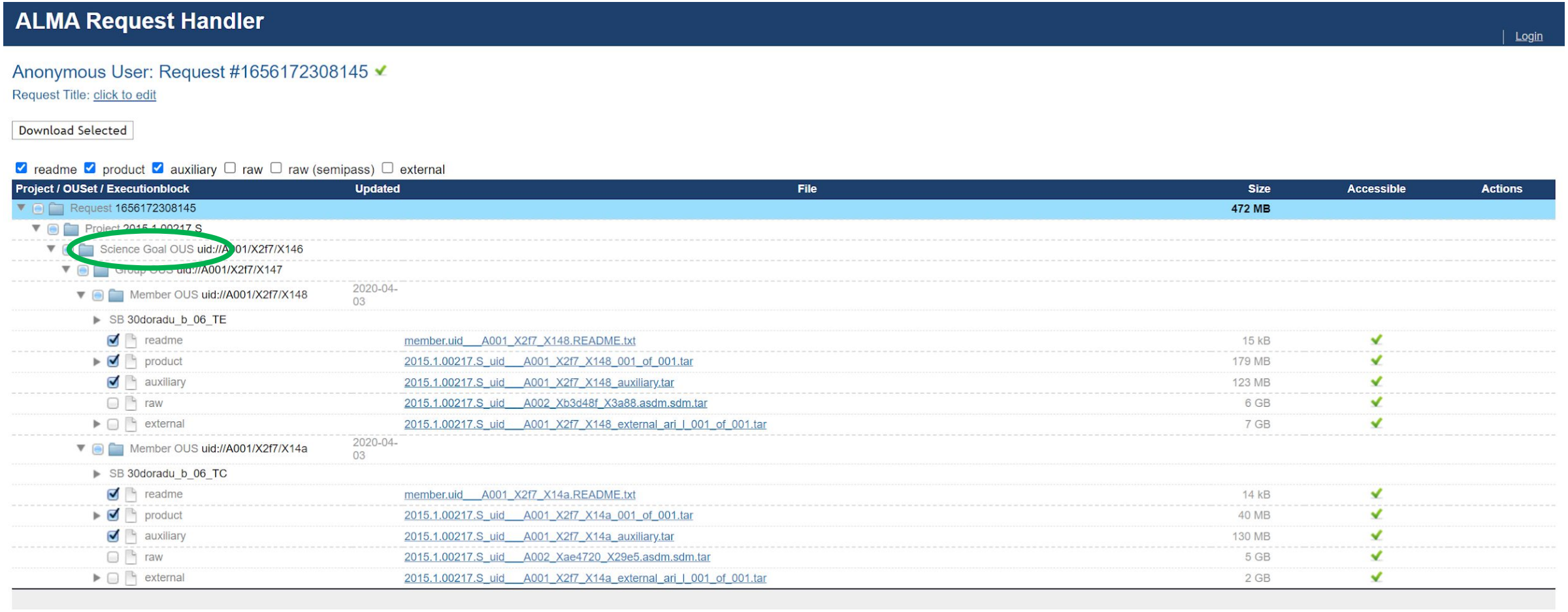

Science Goal: Sources in the same sky region that share the same calibration, spectral setup

Group: Can contain several configurations to be combined in data processing

Member: Can contain multiple Scheduling Block (SB)

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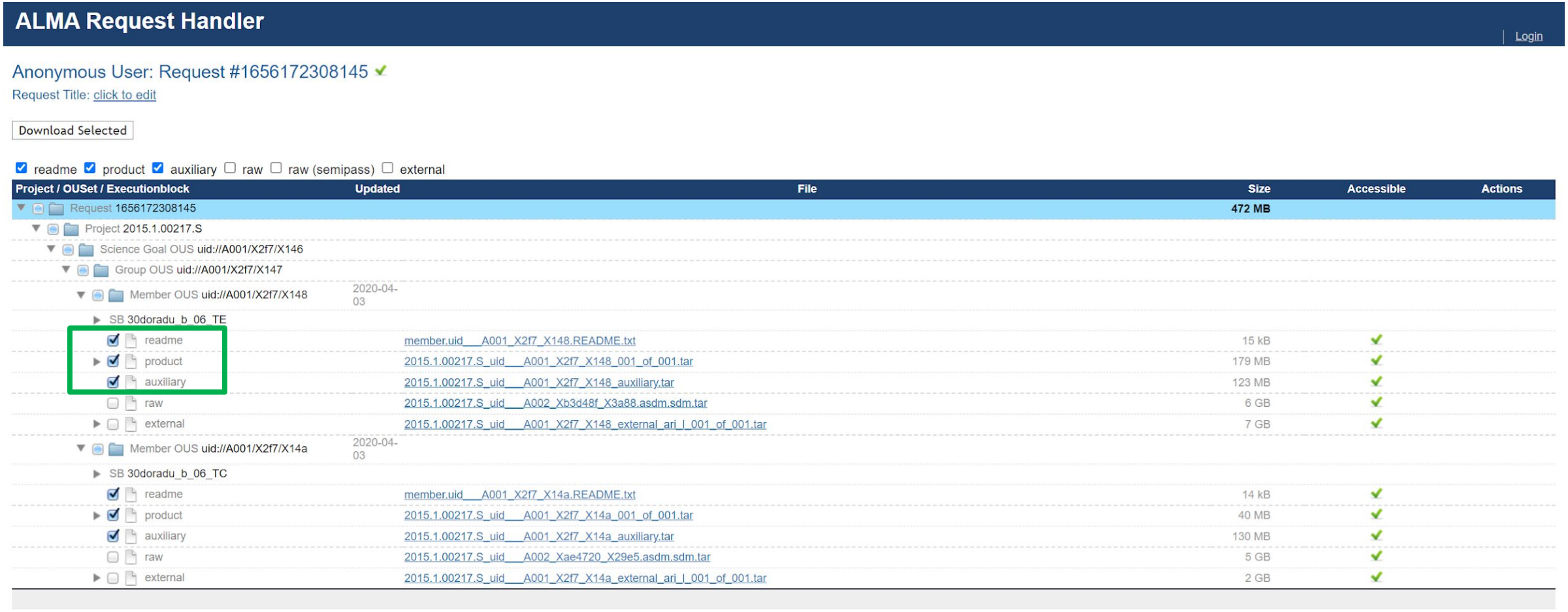
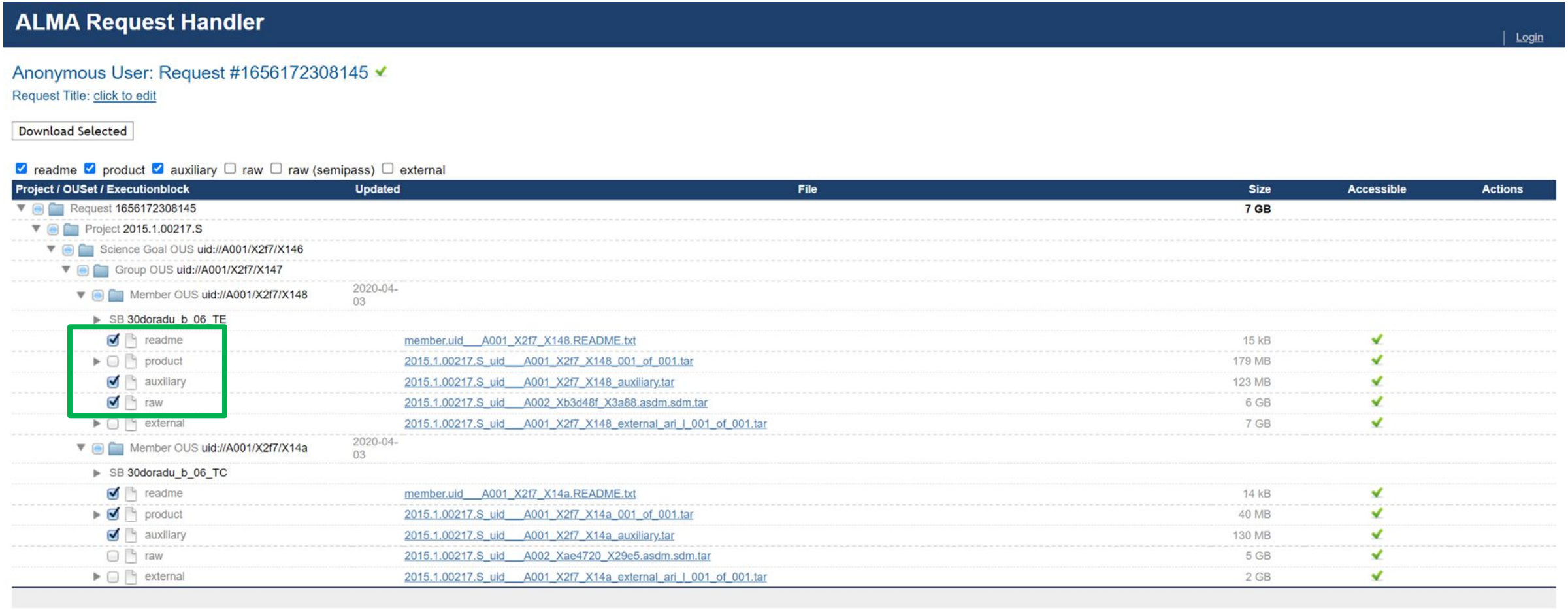
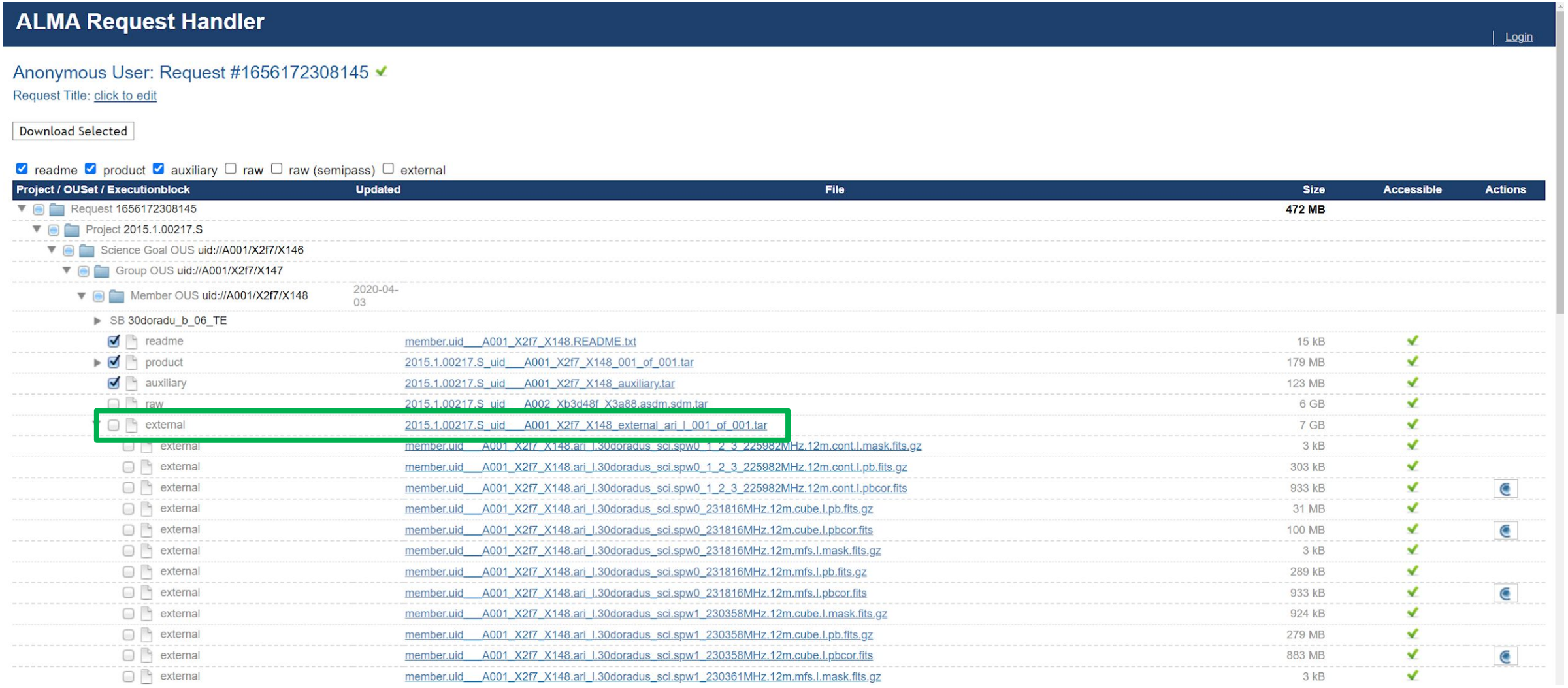


- Default includes README, FITS files, quality assessment results, scripts, log files, calibration and flagging tables, etc.
- If you are interested in FITS products only, just download *readme* and *product*.



- If you want to re-create calibrated Measurement Sets (MS) from raw data, download *readme*, *auxiliary*, and *raw*.



- Additional Representative Images for Legacy (ARI-L) aims to bring the reduction level of Cycles 2-4 data to that of what is processed with the recent ALMA Imaging Pipeline

Download Selected

readme product auxiliary raw raw (semipass) external

Project / OUSet / Executionblock	Updated	File	Size	Accessible	Actions
Request 1656172308145			472 MB		
Project 2015.1.00217.S					
Science Goal OUS uid://A001/X2f7/X146					
Group OUS uid://A001/X2f7/X147					
Member OUS uid://A001/X2f7/X148	2020-04-03				
SB 30doradu_b_06_TE					
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external		2015.1.00217.S_uid___A001_X2f7_X148_external_ari_l_001_of_001.tar	7 GB	✓	

CARTA

(Cube Analysis and Rendering Tool for Astronomy)