LOFAR data: from the telescope to the archive

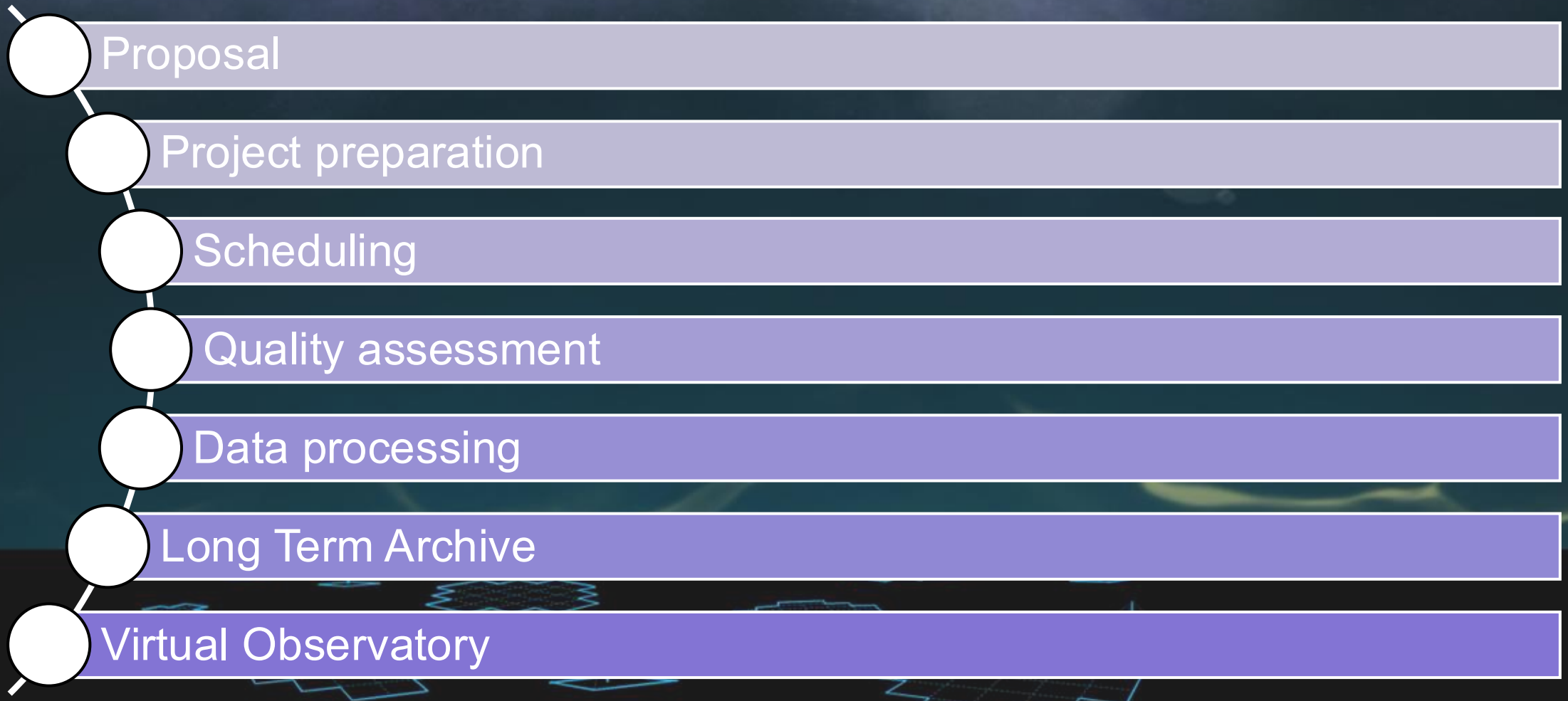
LOFAR Data School 2026

Noa Peters - SDCO

peters@astron.nl



LOFAR Data Lifecycle

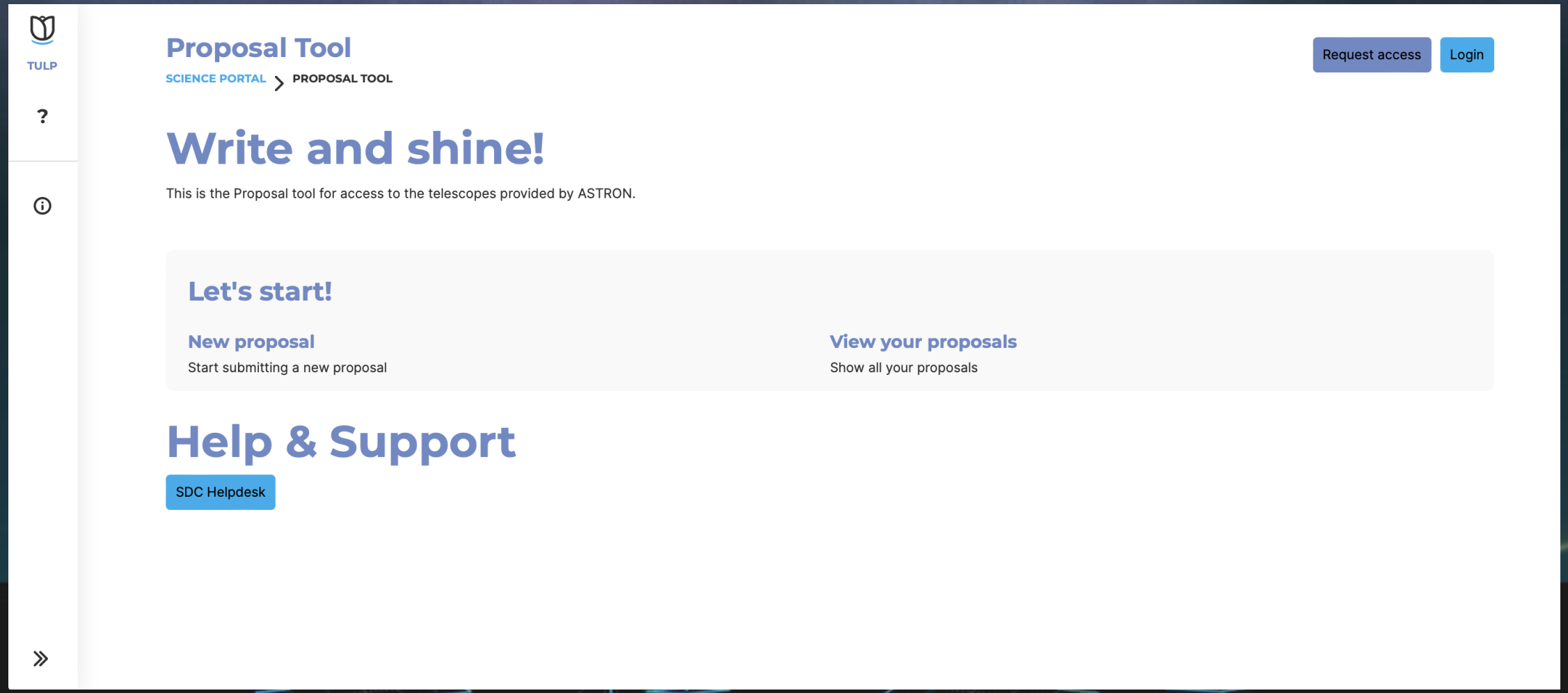


Proposals

- Proposal calls will include and request information on resources for the cycle:
  - Total number of observing hours
  - Total number of processing hours
  - Total archive storage volume
  - Data product type
  - Pipeline processing



Tool for Unifying LOFAR Proposals (TULP)

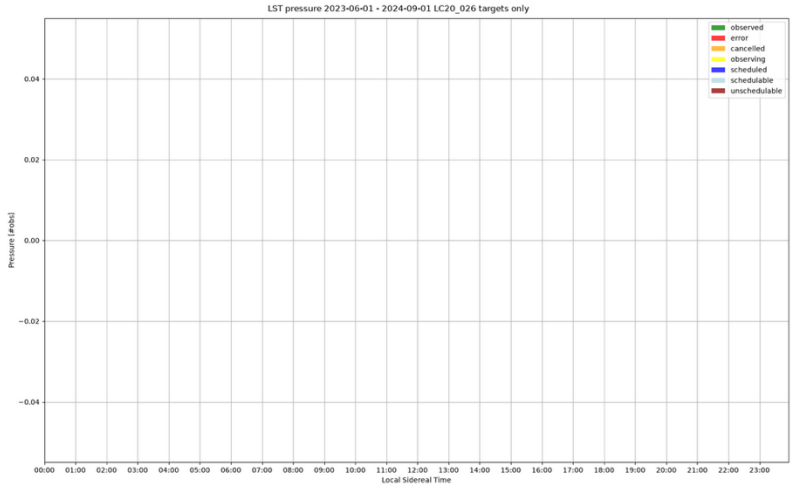


Project preparation

TMSS by ASTRON

Project - Details

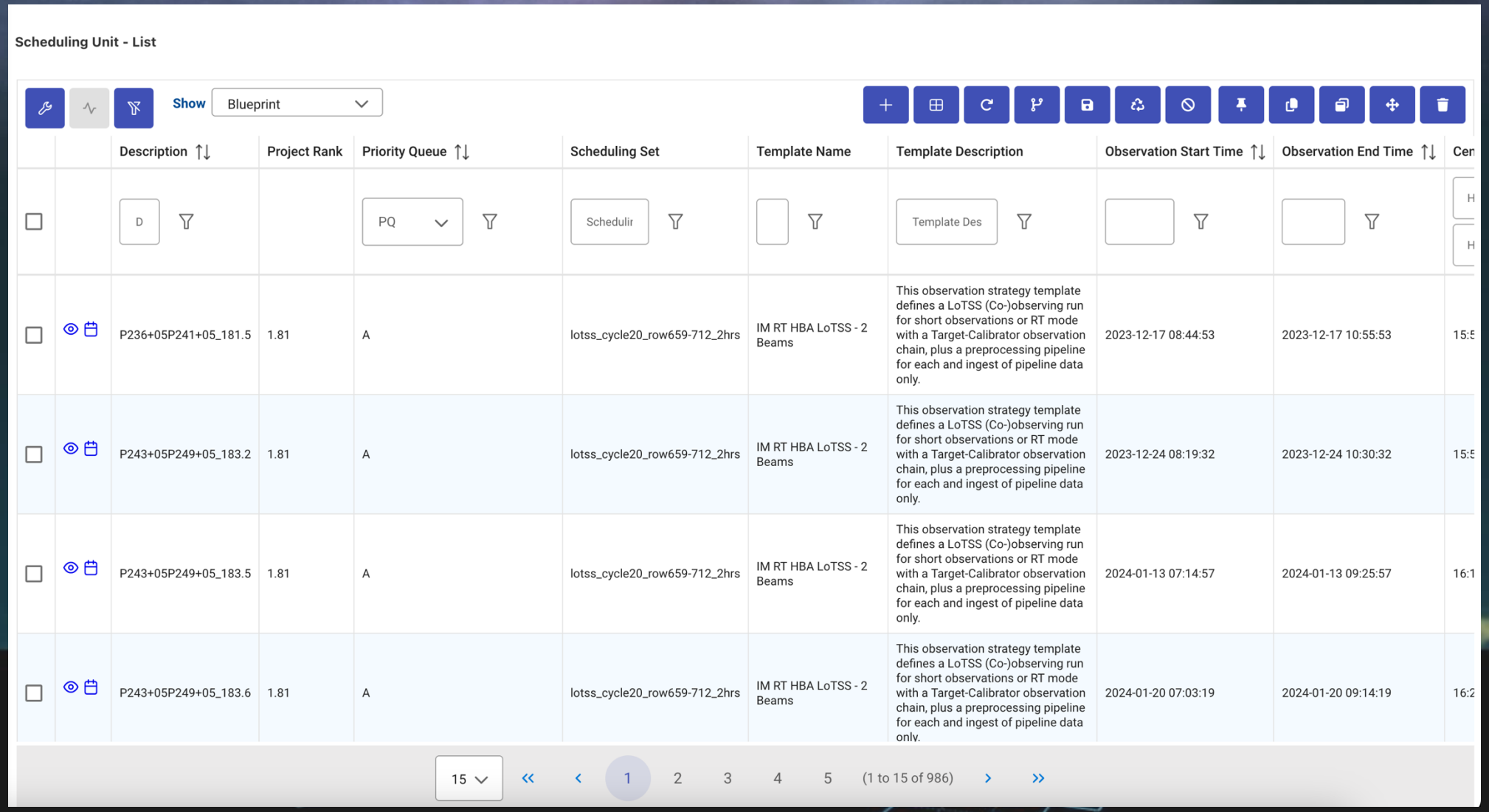
Name	LC20_026	**Description**	The LOFAR Two-metre Sky Survey: Opening up a new window on the Universe
Created At	2023-05-26 13:14:53	**Updated At**	2024-09-02 14:07:16
Trigger Priority	1000	**Allows Trigger Submission**	☐
Project Category	user_shared_support	**Period Category**	single_cycle
Cycles	Cycle 20, Cycle 20B	**Project Rank**	1.81
Project Status	finished	**LTA Storage Location**	Jülich - Lofar Storage (Jülich)
Prevent Automatic Deletion After Ingest	☐	**Ingest Automatically**	☑
Allow commensal TBB	☑	**Allow commensal AARTFAAC**	☑
Enable QA Workflow	☑		



Resource Allocations

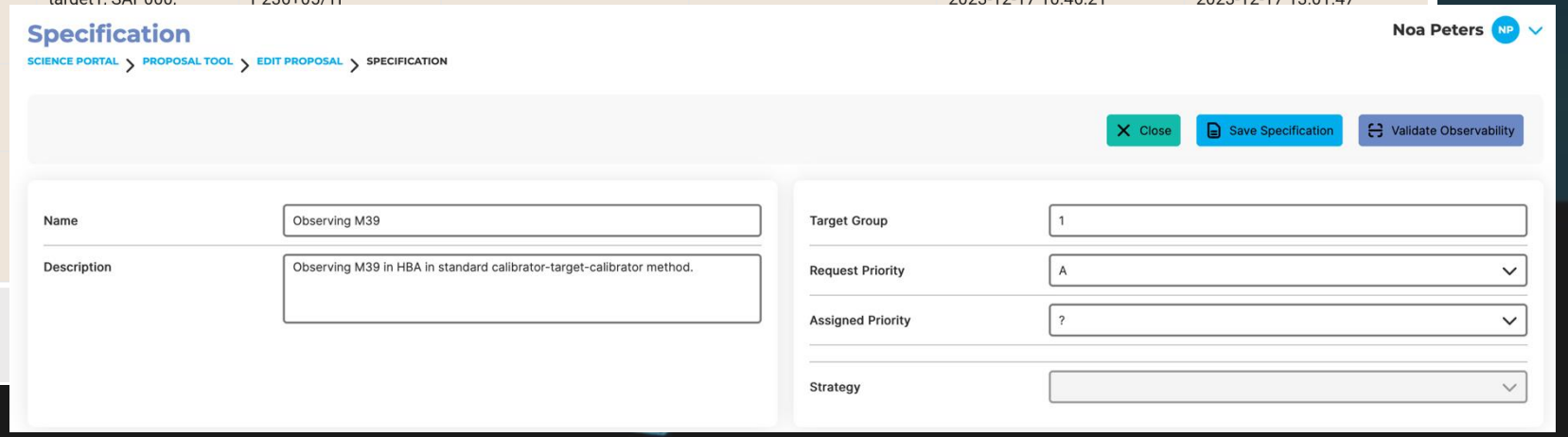
Number of triggers	0 Numbers	**LOFAR Observing Time prio A**	1727.8 Hours
LOFAR Observing Time prio B	687.1 Hours	**LOFAR Support Time**	318.8 Hours
LTA Storage	3234.2134531031 TB	**CEP Processing Time**	2101 Hours
LOFAR Observing Time	2414.9 Hours		

Project preparation

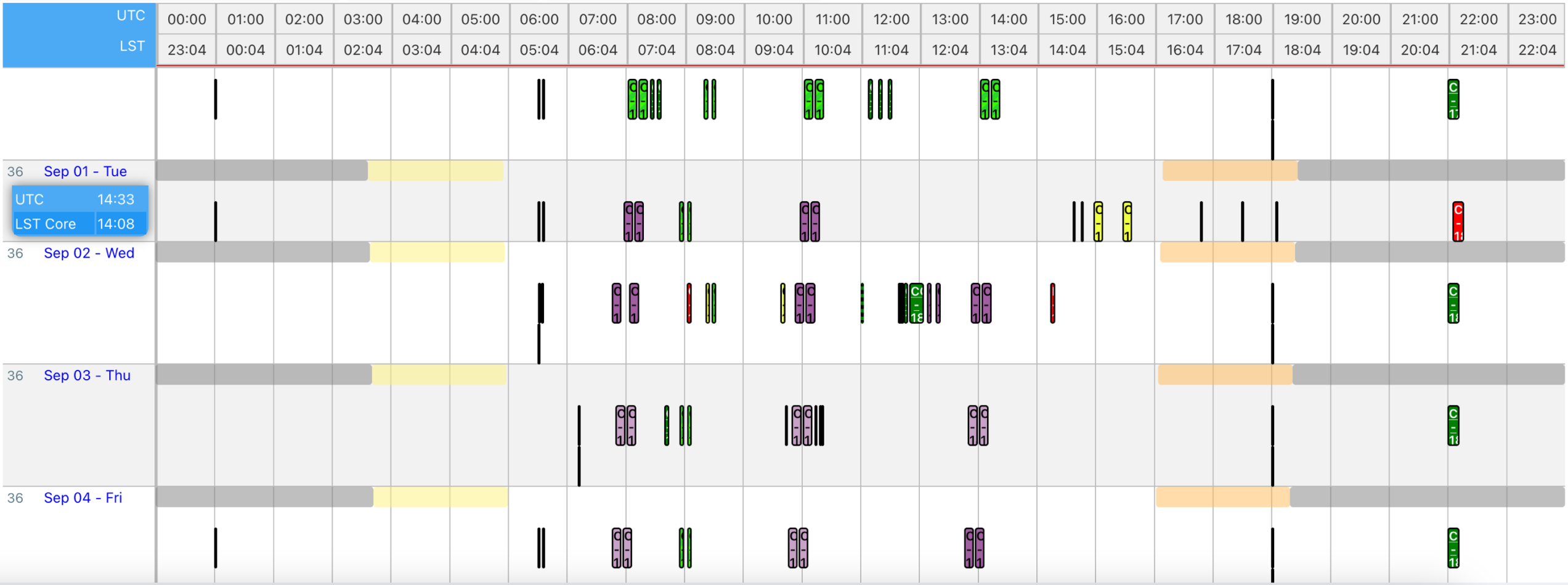


Project preparation

		ID	Control ID	Name	Description	Short Description	Observation Start Time	Observation End Time	Process Start Time	Process End Time
☐	👁	31882	2032327	Cleanup	Clean up all dataproducts from disk after ingest				2023-12-17 14:33:32	2023-12-17 14:36:33
☐	👁	31883	2032326	Ingest	Ingest all preprocessed dataproducts				2023-12-17 13:36:58	2023-12-17 14:33:26
☐	👁	31877	2032323	Target Observation	Target Observation for LoTSS scheduling unit. HBA_DUAL_INNER, 120-168 MHz, 1s, 64ch/sb	P236+05P241+05	2023-12-17 08:44:53	2023-12-17 10:44:53	2023-12-17 08:44:53	2023-12-17 10:44:53
☐	👁	31878	2032321	Calibrator Observation	Calibrator Observation. After the Target Observation	3C295	2023-12-17 10:45:53	2023-12-17 10:55:53	2023-12-17 10:45:53	2023-12-17 10:55:53
☐	👁	31879	2032324	Pipeline target1	Preprocessing Pipeline for Target Observation target1. SAP000.	P236+05/TP			2023-12-17 10:46:21	2023-12-17 13:01:47
☐	👁	31880	2032322	Calibrator Pipeline						
☐	👁	31881	2032325	Pipeline target2						



Scheduling


UTC
LST
00:00 01:00 02:00 03:00 04:00 05:00 06:00 07:00 08:00 09:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00
23:04 00:04 01:04 02:04 03:04 04:04 05:04 06:04 07:04 08:04 09:04 10:04 11:04 12:04 13:04 14:04 15:04 16:04 17:04 18:04 19:04 20:04 21:04 22:04
36 Sep 01 - Tue
UTC 14:33
LST Core 14:08
36 Sep 02 - Wed
36 Sep 03 - Thu
36 Sep 04 - Fri

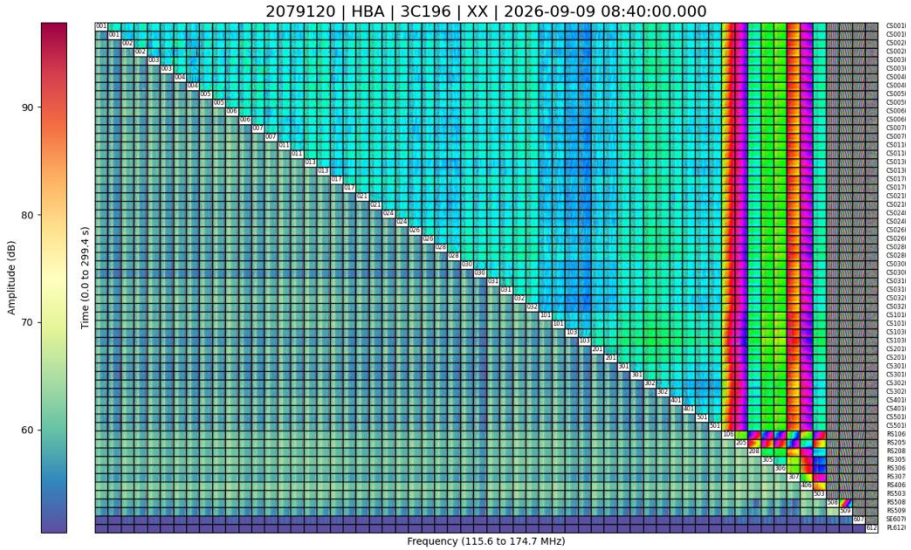
Quality assessment

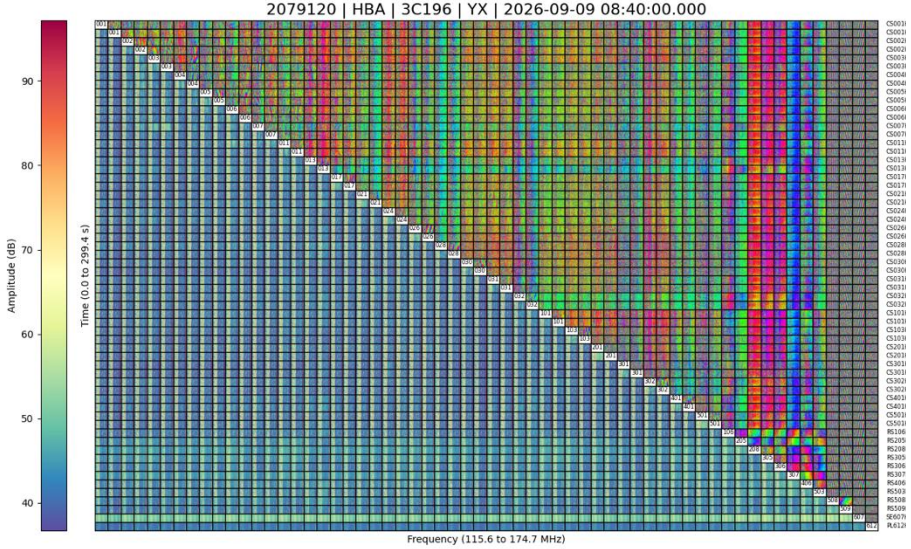
- New methods of QA are being commissioned
- At each stage of the data collection and processing will come a quality metric
- Some metrics include
  - Phase coherency
  - RFI flagging
  - Signal-to-noise ratios per station

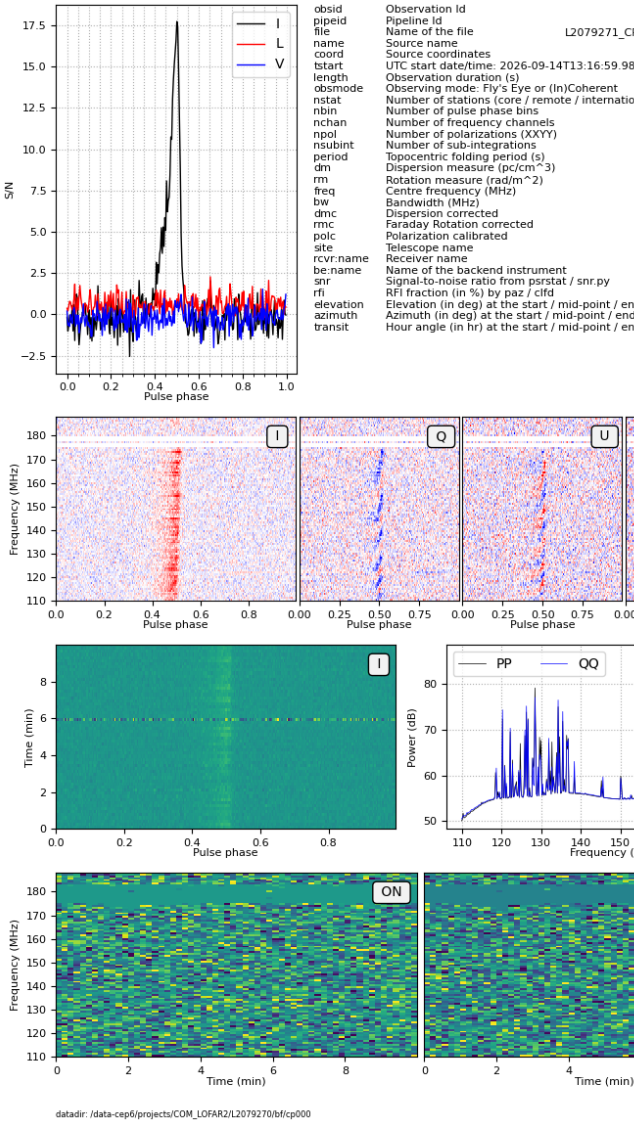


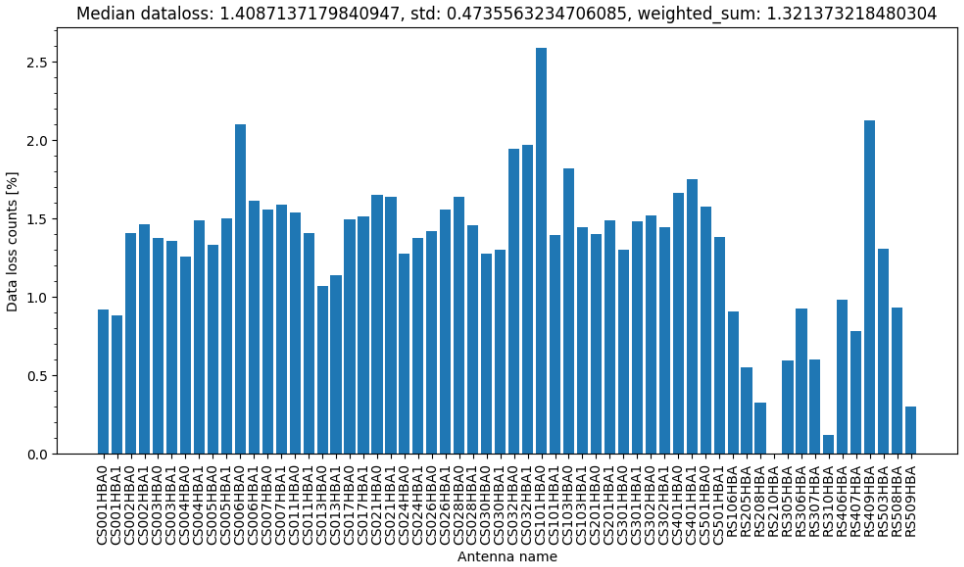
Quality assessment

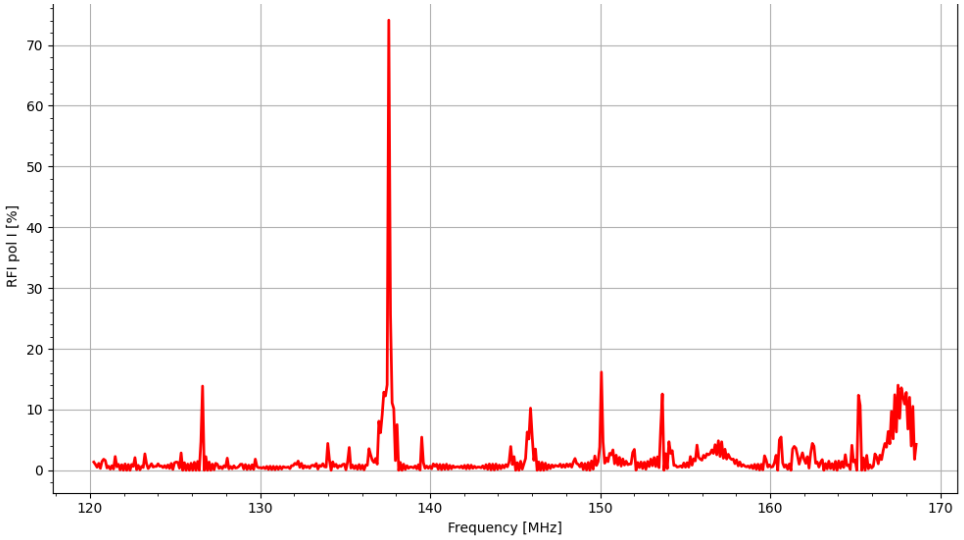
More on this on **Thursday!**



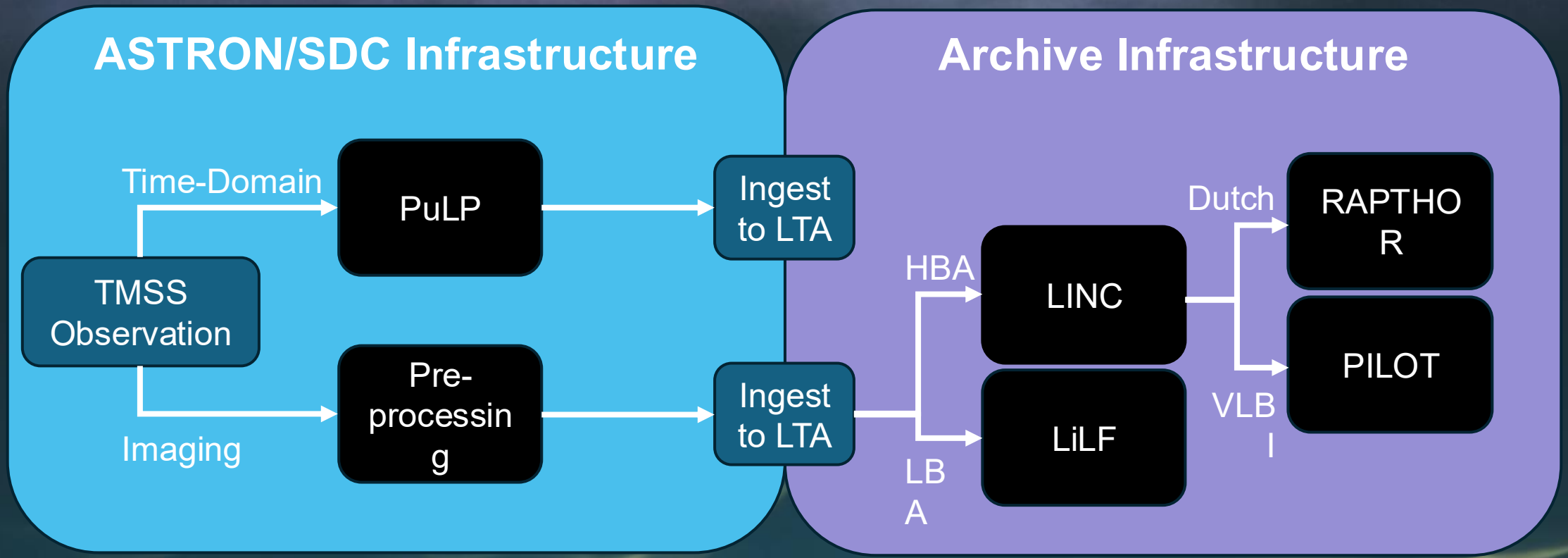






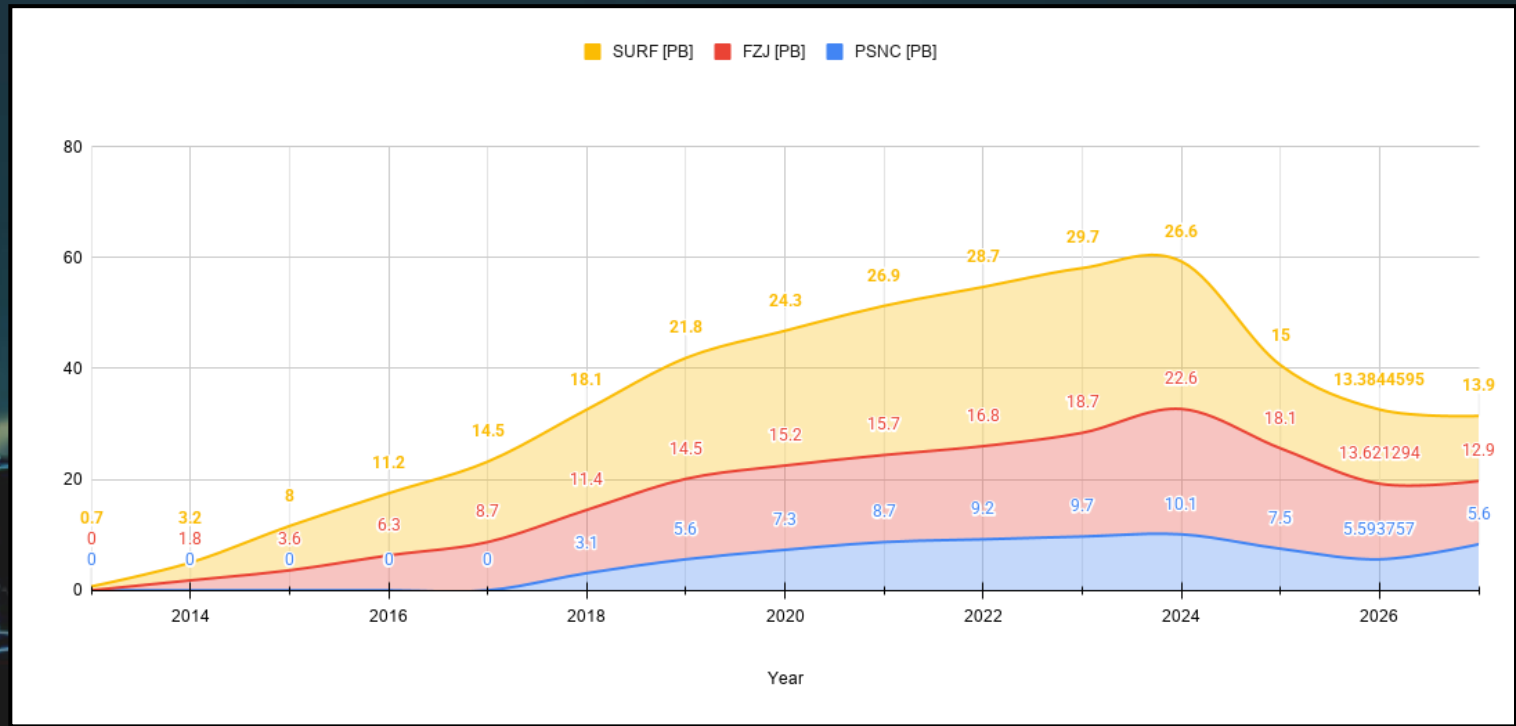


Data Processing



Long Term Archive

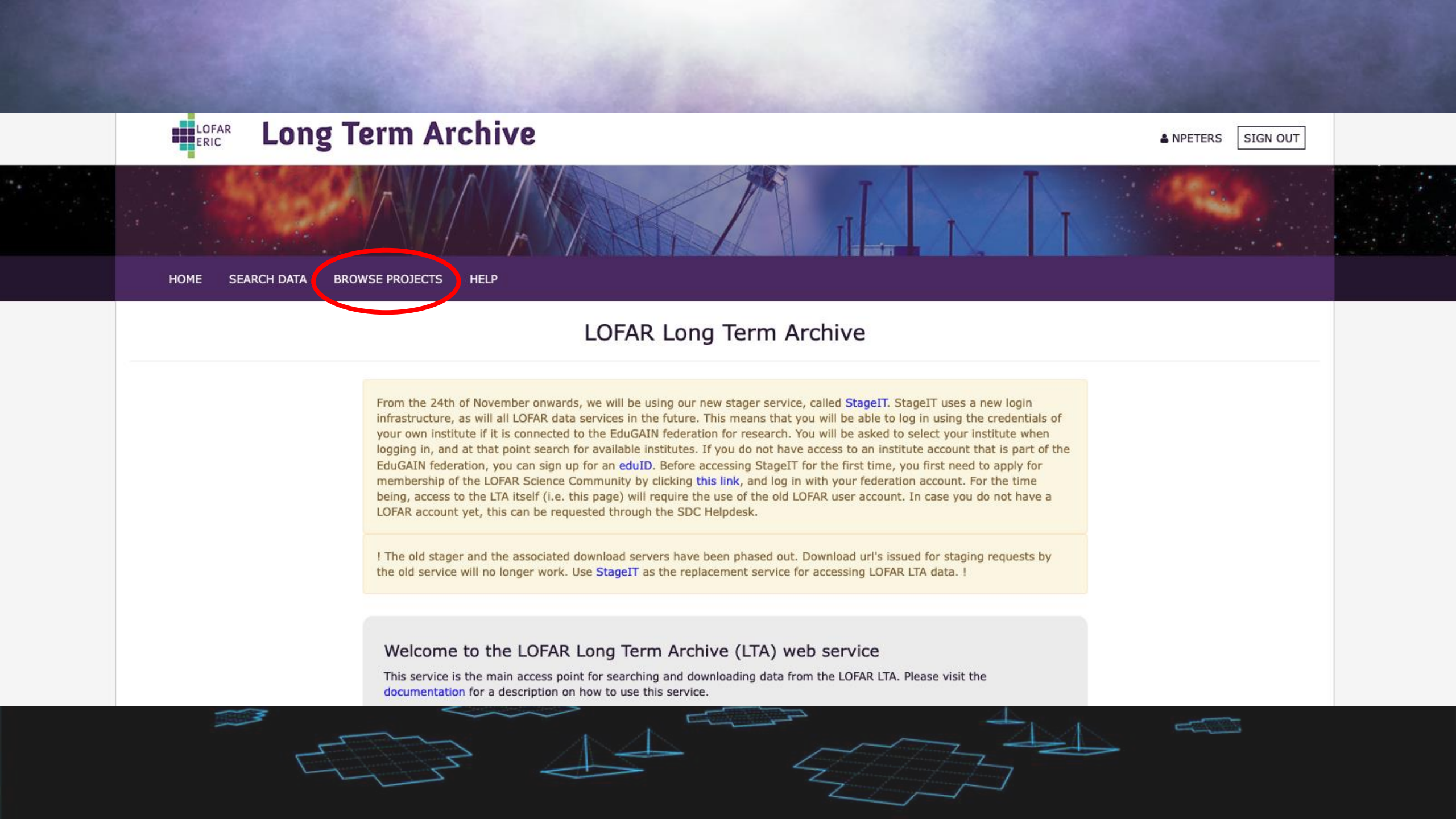
- Amsterdam, Jülich, and Poznan.
- Peak storage usage at 60 PB!
- Effort to save space, compress and process data reduced volume by 25 PB!




SURF SARA
Dutch stations
Norderstedt
Bałdy
Potsdam
Borówiec
Jülich
Effelsberg
Tautenburg
Łazy
Unterweilenbach
Medicina
JÜLICH Forschungszentrum
JUNIQ
QUANTUM USER FACILITY
PCSS

Long Term Archive

- Browse and find data
- Stage the data
- Copy from tape to disk
- Wait…
- Download data


LOFAR ERIC
Long Term Archive
NPETERS
SIGN OUT
HOME
SEARCH DATA
BROWSE PROJECTS
HELP
LOFAR Long Term Archive
From the 24th of November onwards, we will be using our new stager service, called StageIT. StageIT uses a new login infrastructure, as will all LOFAR data services in the future. This means that you will be able to log in using the credentials of your own institute if it is connected to the EduGAIN federation for research. You will be asked to select your institute when logging in, and at that point search for available institutes. If you do not have access to an institute account that is part of the EduGAIN federation, you can sign up for an eduID. Before accessing StageIT for the first time, you first need to apply for membership of the LOFAR Science Community by clicking this link, and log in with your federation account. For the time being, access to the LTA itself (i.e. this page) will require the use of the old LOFAR user account. In case you do not have a LOFAR account yet, this can be requested through the SDC Helpdesk.
! The old stager and the associated download servers have been phased out. Download url's issued for staging requests by the old service will no longer work. Use StageIT as the replacement service for accessing LOFAR LTA data. !
Welcome to the LOFAR Long Term Archive (LTA) web service
This service is the main access point for searching and downloading data from the LOFAR LTA. Please visit the documentation for a description on how to use this service.

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Long Term Archive

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HOME SEARCH DATA BROWSE PROJECTS HELP

Search

- Basic search
- Advanced search
- Browse projects
  - All projects
  - Commissioning
  - Cycle 0
  - Cycle 1
  - Cycle 10
  - Cycle 11
  - Cycle 12
  - Cycle 13
  - Cycle 14

Cycle 20 projects Number of projects: 46

In the table below a project can selected to restrict all data searches to that project only. Use the 'search' button to select the project and go to the search page, use the 'show data' button to select the project and to show all data in it. Alternatively click on the project name to view the project details.

The first column shows a when you are a member of the project or a for public projects.

M	Project	Description	Release date	Actions
	DDT20_001	The LOFAR view of a z=7 blazar	2024-11-23	set search show data
	DDT20_002	LOFAR monitoring of supernova 2023ixf in M101 (resubmission)	2024-11-02	set search show data
	DDT20_003	Catching the BOAT at low frequencies: the first explosive transient detected by LOFAR	2024-12-07	set search show data
	DDT20_004	Low-frequency observations of new candidate black hole X-ray binary	2025-09-11	set search show data
	DDT20_005	Follow-up of a transient source identified in LoTSS	2025-01-19	set search show data
	DDT20_006	Constraining the ultra-wide orbit and evolution of PSR J0210+5845	2025-06-01	set search show data
	DDT20_007	Decametric Jupiter VLBI	2025-07-10	set search show data
	DDT20_008	LOFAR monitoring of supernova 2023ixf in M101 one year post-explosion	2025-05-01	set search show data
	DDT20_009	LOFAR long-baseline observations of Taurus A	2025-04-30	set search show data
	DDT20_010	Follow-up of an ultra-long period transient source identified in LoTSS	2025-05-17	set search show data
	LC20_001	Observations of the Sun and Heliosphere Using LOFAR for a Coordinated Ground- and Space-Based Approach to Space-Weather Research.	2026-10-23	set search show data

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HOME SEARCH DATA BROWSE PROJECTS HELP DDT20_009

Show data for DDT20_009

Show the latest Observations and Pipelines:

- All Observations and Pipelines
- Observation
- Sub-Array Pointing
- Averaging Pipeline
- Calibration Pipeline
- Imaging Pipeline
- LongBaseline Pipeline
- Pulsar Pipeline
- Unspecified Process

Show the latest Data Products: (this can be slow)

- All DataProducts
- Beam Formed Data
- Interferometric Data
- Pulsar Data
- Pulsar Summary Data
- Sky Image Data
- Unspecified Data

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Long Term Archive

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HOME SEARCH DATA BROWSE PROJECTS HELP DDT20_009

Observation (total 3)

edit columns stage selected show dataproducts show pipelines

#	Project	Release Date	SAS Id	Antenna Set	Instrument Filter	Channel Width [MHz]	Number Of SubArray Pointings	Nr Stations Core	Nr Stations Remote	Nr Stations International	Number Of Stations	Number Of Correlated DataProducts	Number Of BeamFormed DataProducts	Quality	Ancillary
1	DDT20_009	2025-04-30	2039591	HBA Dual Inner	110-190 MHz	0.000000	1	22	13	14	49	400	0	unknown	show ancillary
2	DDT20_009	2025-04-30	2039589	HBA Dual Inner	110-190 MHz	0.000000	1	22	13	14	49	400	80	unknown	show ancillary
3	DDT20_009	2025-04-30	2039587	HBA Dual Inner	110-190 MHz	0.000000	1	22	13	14	49	400	0	unknown	show ancillary

Averaging Pipeline (total 3)

edit columns stage selected show dataproducts show pipelines

#	Project	Release Date	Pipeline Name	Pipeline Version	SAS Id	Measurement Type	Frequency Integration Step	Time Integration Step	Strategy Name	Flag Auto Correlations	Demixing	Number Of Correlated DataProducts	Source DataProduct	All Dataproducts	Quality	Ancillary
1	DDT20_009	2025-04-30	Tau A/TP	unknown	2039593		4	1	preprocessing pipeline	1	0	400	show	show	unknown	show ancillary
2	DDT20_009	2025-04-30	Cal 3C196/ PP	unknown	2039592		4	1	preprocessing pipeline	1	0	400	show	show	unknown	show ancillary
3	DDT20_009	2025-04-30	Cal 3C48/PP	unknown	2039588		4	1	preprocessing pipeline	1	0	400	show	show	unknown	show ancillary

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Long Term Archive

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HOME SEARCH DATA BROWSE PROJECTS HELP DDT20_009

Interferometric Data (total 400)

edit columns stage selected filter dataproducts

#	Project	Release Date	Target Name	Right Ascension [degrees]	Declination [degrees]	Central Frequency [MHz]	Channel Width [Hz]	Channels Per Subband	Integration Interval [s]	Start Time	Duration [s]	SubArray Pointing Identifier	Subband	Stations	Observations	Pipeline	Derived DataProducts	Storage Writer
1	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	109.9609	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	0	show	1	Tau A/TP		DyscoStorageMa
2	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	110.1562	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	1	show	1	Tau A/TP		DyscoStorageMa
3	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	110.3516	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	2	show	1	Tau A/TP		DyscoStorageMa
4	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	110.5469	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	3	show	1	Tau A/TP		DyscoStorageMa
5	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	110.7422	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	4	show	1	Tau A/TP		DyscoStorageMa
6	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	110.9375	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	5	show	1	Tau A/TP		DyscoStorageMa
7	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	111.1328	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	6	show	1	Tau A/TP		DyscoStorageMa
8	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	111.3281	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	7	show	1	Tau A/TP		DyscoStorageMa
9	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	111.5234	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	8	show	1	Tau A/TP		DyscoStorageMa
10	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	111.7188	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	9	show	1	Tau A/TP		DyscoStorageMa
11	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	111.9141	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	10	show	1	Tau A/TP		DyscoStorageMa
12	DDT20_009	2025-04-30	Tau A	83.6331	22.0145	112.1094	12207.031250	16	1.00663	2024-04-28 10:41:00	28800.0	92101117	11	show	1	Tau A/TP		DyscoStorageMa

LOFAR ERIC **Long Term Archive**

NPETERS SIGN OUT

HOME SEARCH DATA BROWSE PROJECTS HELP DDT20_009

Staging Service

One or more datasets you requested has been compressed using the Dysco storage manager. In order to process dysco compressed data you will need to run the LOFAR software version 3.1 or a more recent version.

To understand if the data have been compressed with Dysco do the following: after you have selected a pipeline ID, you can click on "show dataproducts" and then select the data products you are interested in. At this point you can click on "edit columns" and add the column "Storage Writer". This column will have value "DyscoStorageManager" when the data was compressed with Dysco. For uncompressed data it will show "CasaStorageManager".

Dear LOFAR LTA user, we are using a new stager service now; StageIT. As a result you need to confirm/claim your staging request with the button below which will redirect you to the StageIT User Interface. You may be asked to login again.

Please Note that before logging in for the first time, you should register to the LOFAR Science Community via this link. You will be asked to select your institute when logging in, and at that point search for available institutes. If you do not have access to an institute account that is listed, you can sign up for an eduID.

Cancel Confirm

Size	MD5 Checksum	Filename
15.9 GB	8048a3945e0246ff24edec784accc398	L2039593_SAP000_SB000_uv.MS_70ae4d3b.tar
15.9 GB	d6c7e406689c05bc6c9d9981ead4215b	L2039593_SAP000_SB001_uv.MS_2b5932b7.tar
15.9 GB	652c01ed6b88b3bca6f9797527c081a6	L2039593_SAP000_SB002_uv.MS_e68ef210.tar
15.9 GB	dcc6a94759145439fa3171415ab5b567	L2039593_SAP000_SB003_uv.MS_7e9a2f7e.tar
15.9 GB	691bcf9904aaca3e6245dc71ba544162	L2039593_SAP000_SB004_uv.MS_d9b8af83.tar
15.9 GB	980c9068912044c5ba54da0da1802cda	L2039593_SAP000_SB005_uv.MS_7ac3c616.tar
15.9 GB	793f8c3fd1904fb3f58fa6a9d11bf992	L2039593_SAP000_SB006_uv.MS_a25c77ba.tar
15.9 GB	c55c6e946f034007a1782f57cef3f17b	L2039593_SAP000_SB007_uv.MS_38f2b302.tar
15.9 GB	e0104a4a966e9db6c1df23591d9609b2	L2039593_SAP000_SB008_uv.MS_93dee6b2.tar

STAGE - IT

User Guide | + | Logged in as: npeters | Logout | Admin panel

Information on 944938

Restart | Release

PROPERTY	VALUE
Action	stage
Last status change	July 9, 2026, 4:30 p.m.
Request status	success
Notify	True
E-mail	peters@astron.nl

DETAILS

RUNNING (0/243)	
ONLINE (243/243)	Download URL List | With macaroons
https://webdav.grid.surfsara.nl:2883/lt10_010/772419/L772419_SB000_uv.MS_8fce1bee.tar	Direct download link
https://webdav.grid.surfsara.nl:2883/lt10_010/772419/L772419_SB001_uv.MS_869337f9.tar	Direct download link
https://webdav.grid.surfsara.nl:2883/lt10_010/772419/L772419_SB002_uv.MS_256113d2.tar	Direct download link
https://webdav.grid.surfsara.nl:2883/lt10_010/772419/L772419_SB003_uv.MS_6b15aed4.tar	Direct download link

Other LTA search methods

Basic search

The Basic Search module allows searching for data within a specified pointing (
and/or pipelines.
Several reference systems are available. In particular: to search for Solar datas
type of process of interest (e.g. Observation and/or Averaging Pipeline) before
Note that when a project has been preselected, the search will be confined to o
"Advanced search".

Data product types ⓘ

- [x] **Observation**
- [ ] **Averaging Pipeline**
- [ ] **Calibration Pipeline**
- [ ] **Imaging Pipeline**
- [ ] **Long Baseline Pipeline**
- [ ] **Pulsar Pipeline**
- [ ] **Pulsar Folding Pipeline**

Pointing ⓘ

Object [ ] resolve

Reference System: ( ) J2000 ( ) B1950 ( ) SUN ( ) JUPITER

Units: ( ) rad ( ) deg (•) hex

RA [ ]

DEC [ ]

Calculate angular distance:

Units: ( ) rad (•) deg ( ) min ( ) sec

Radius [1]

Quality selection ⓘ

- [ ] **Good**
- [ ] **Moderate**
- [ ] **Poor**

Search All Observations and Pipelines

The Advanced Search modules allow you to specify coordinates and specific parameters
To discover Solar datasets, users should select the Sun reference system, together with
Search button.
A search on observations will return the setup of the telescope at the time of observing,
pipeline products are archived and these can be directly searched for by selecting the Pi
possible to find and selected related pipelines on the results page.

SAS Id ⓘ [ ]

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 ⓘ [ ]

Search

Virtual Observatory

- https://vo.astron.nl/
- ” A comprehensive set of data and services relevant to astronomy accessible from clients of your choice regardless of where you are.”
- It hosts:
  - Westerbork
    - SAURON
    - Apertif DR1, DR Bootes, ARTS
  - LOFAR
    - LoTSS PDR, DR1, DR2
    - LoLSS
    - LBCS Calibrator Search
  - GMRT
    - TGSS ADR

The VO @ ASTRON

Welcome to the ASTRON VO data center.

In addition to the services listed below, on this site you probably can access numerous tables using TAP or form-based ADQL.

Please check out our site help.

Services available here

Services marked by [P] require authorisation to access the data.

By Title | By Subject | By Author

- ADQL Query
- Apertif DR1 - Continuum images
- Apertif DR1 - Field calibrated visibilities
- Apertif DR1 - Field raw visibilities
- Apertif DR1 - Flux calibrator raw visibilities
- Apertif DR1 - HI spectral cubes
- Apertif DR1 - Polarization calibrator raw visibilities
- Apertif DR1 - Polarization cubes
- Apertif DR1 - Source catalogue
- Apertif DR2 - Continuum images
- Apertif DR2 - Field calibrated visibilities
- Apertif DR2 - Field raw visibilities
- Apertif DR2 - Flux calibrator raw visibilities
- Apertif DR2 - HI spectral cubes
- Apertif DR2 - Polarization calibrator raw visibilities
- Apertif DR2 - Polarization cubes

LoTSS-DR3 Gaussian catalog cone search

Help

Service info

Metadata

Identifier
ivo://astron.nl/lotss_dr

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Description
In this data release fro

Keywords
radio continuum: gene

Creator
Shimwell, T. W.

Created
2026-02-19T00:00:00

Data updated
2026-08-11

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LoTSS Data Release 3

Source
Shimwell et al. 2026

Reference URL
Service info

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In this data release from the LOw-Frequency ARray (LOFAR) Two-metre Sky Survey (LoTSS) we present 120-168 MHz images covering 88% of the northern sky. The individual pointing images (at 6'' and 20'' resolution) were derived from 12,950 hrs (18.6 PB) of LOFAR High Band Antenna data which were processed through fully automated direction-independent and direction-dependent calibration pipelines that correct for instrumental effects as well as spatially and temporally varying ionospheric distortions. The Stokes I images were then combined, accounting for the rms noise level and telescope beam, to form the final Stokes I mosaic images at 6'' and 20'' resolution, with a central frequency of 144MHz. From the 6'' resolution Stokes mosaics we derived a catalogue of 13,664,379 radio sources (consisting of 16,943,656 Gaussian components), the majority of which have never been detected at radio wavelengths before. These mosaics have a median rms sensitivity of 92 μJy/beam; a random and systematic flux density scale accuracy of approximately 6% and 2%, respectively; an astrometric accuracy of 0.24''; and we estimate that we detect more than 95% of sources with integrated flux densities exceeding nine times the local root mean square noise. To enable thorough scientific exploitation of this unique dataset, we have published two sub-collections. The first contains all the Stokes I mosaic products described above. The second contains the individual pointing products, including calibrated uv data (measurement sets and direction-dependent calibration solutions) to allow for re-imaging or post-processing; Stokes I images at 6' ' and 20'' resolution (with associated scaling factors required to reproduce the mosaic images); Stokes V images at 6'' resolution for each observing epoch; and Stokes Q and U image cubes at 20'' and 4' resolution. This service queries the Stokes I continuum mosaic gaussian component catalogue.

Position/ Name: B0128+437
Coordinates (as h m s, d m s or decimal degrees), or SIMBAD-resolvable object

Search radius: 30
Search radius in arcminutes

Table: Sort by Dist. ASC
Limit to 100 items.

Output format: HTML

Go

[Result link]

LoTSS-DR2 mosaics

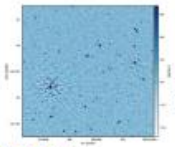
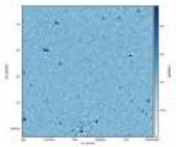
Parameters

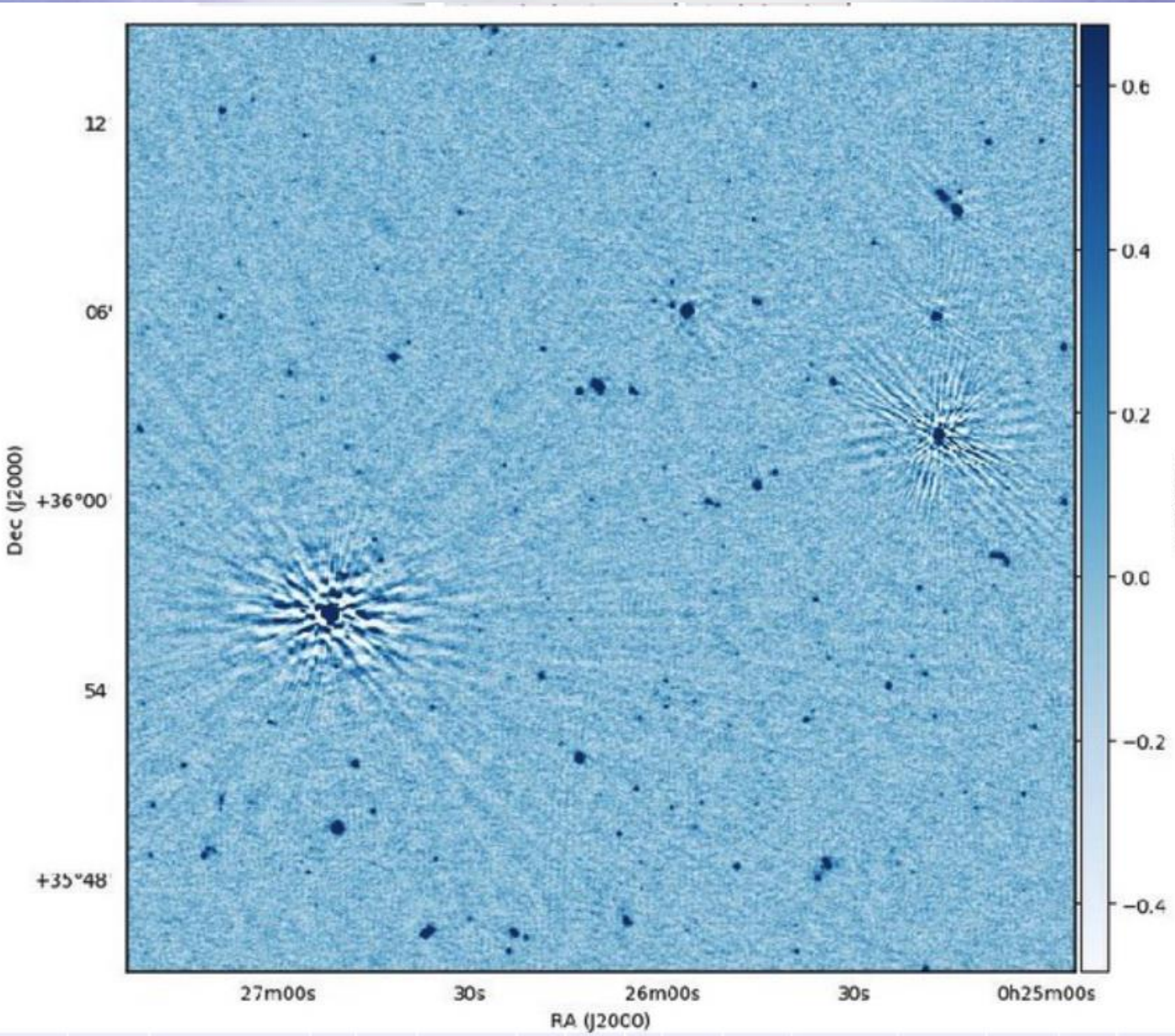
- Field size: 2
- Output format: image/fits
- Position: 9.74, 36.03

Result

Matched: 7

Send via SAMP | Quick Plot

Product key	Type	File size [byte]	Ctr. RA [deg]	Ctr. Dec [deg]	Title	d er	P. Flags	Coverage [deg]	Mosaic ID	Related products	Persistent Identifier
 P006 36	image/ fits	571.9MiB	6.54	36.00	P006+ blanke	448	Z	[8.7205622862 34.178187287 8.82263048312 37.7849217912 4.25732218491 37.7849120264 4.3594139403 34.1781779587]	P006+36	dlmeta	21.12136/b415f250-b6a8-b01df794c8fb
P007 33	image/ fits	589.5MiB	7.39	33.50	P007+ blanke	448	Z	[9.53644837127 31.6492732869 9.62942327562 35.3111598669 5.14056597742 35.3111508514 5.23356202229 31.6492646448]	P007+33	dlmeta	21.12136/fce7b494-367f-4ae99085aec30
 P007 39	image/ fits	675.9MiB	7.56	38.52	P007+ blanke	448	Z	[10.002932398 36.5339775432 10.1396022574 40.4545359062 4.98457005459 40.4545242225 5.12126891851 36.5339664788]	P007+39	dlmeta	21.12136/e340fec7-d091-4d995594e482a
P009 36	image/ fits	589.5MiB	9.74	36.03	P009+ blanke	448	Z	[11.9543384768 34.1778388794 12.0596909495 37.8395551189 7.42130132499 37.839545191 7.52667774818 34.1778294023]	P009+36	dlmeta	21.12136/31c5461c-ed91-4b3b-91be-0e633a



LOFAR Surveys

LOFAR Surveys



LOFAR's design makes it a uniquely good survey instrument. The individual dipoles are sensitive to most of the visible sky; the dipole arrays have a field of view of hundreds of square degrees at the lowest frequencies accessible to LOFAR.

LOFAR has carried out, or is in the process of carrying out, a number of sky surveys:

MSSS

The LOFAR Multifrequency Snapshot Sky Survey (MSSS) was the first wide-area northern-sky survey to be carried out with LOFAR. Its first data release is described by Heald et al. (2015). It surveyed the whole northern sky to a depth of around 10 mJy/beam with a resolution of 2 arcmin.

LoTSS wide area

The ongoing LOFAR HBA 120-168MHz wide-area survey is referred to as the LOFAR Two-metre Sky Survey (LoTSS) and is described by Shimwell et al. (2017). It aims to survey the whole northern sky at the full resolution of Dutch LOFAR (6 arcseconds) and a declination-dependent sensitivity which will typically be around 100 µJy/beam. This is a factor 10 more sensitive than the current best high-resolution sky survey, FIRST, and will detect over 10 million radio sources, mostly star-forming galaxies but with a large proportion of active galactic nuclei. A stretch goal is to image large areas with the resolution of the International LOFAR Telescope, around 0.5 arcsec, which will give a combination of resolution and sensitivity that will be unsurpassed well into the SKA era. More information about the long-baseline survey is available.

Data from the parts of the wide-area survey that have currently been made public are available to download through the data releases page of this site. The public can get involved in classification of LoTSS sources through the Zooniverse Radio Galaxy Zoo (LOFAR) project.

Data from two special LOFAR HBA surveys are released separately here:

- The DR2 Planck cluster survey which presents images from DR2, together with ancillary data, for the Planck clusters in the LoTSS DR2 sky
- The VICTORIA HBA survey of the Virgo cluster

LoTSS deep fields

LoTSS is also taking repeated observations of northern hemisphere fields with the highest-quality multi-wavelength data over several-degree scales. These observations, taken with the same frequency coverage as the all-sky survey, will offer much higher sensitivity. The first three fields being studied are Boötes, Elais-N1 and Lockman Hole, for each of which at least 100 hours of HBA data are already available; additional fields are planned. The first data release from the deep fields project is now available. The ultimate aim is to reach depths approaching 10 µJy/beam (~5 times deeper than the best all-sky LoTSS pointings) over combined sky areas of many tens of square degrees, enough to probe the full range of cosmic environments at high redshift. Combined with the high-quality ancillary data, this will allow the study of star formation and AGN activity across cosmic time. The HBA deep surveys will be complemented by LBA observations and the first release of data from this project is also available on the deep fields page.

LoLSS wide-area

LOFAR is currently the only instrument capable of deep, high-resolution imaging at frequencies below 100 MHz. Even into the SKA era, this capability will remain unique to LOFAR. With the LOFAR LBA Sky Survey (LoLSS) we plan to cover the entire northern sky in the frequency range 42-66 MHz. We aim to achieve a resolution of 15 arcsec at an average rms noise of 1 mJy/beam. LoLSS will be a revolutionary tool to discover new ultra-steep spectrum sources, from high redshift radio galaxies, to dying radio emitting plasma, to radio-emitting exoplanets.

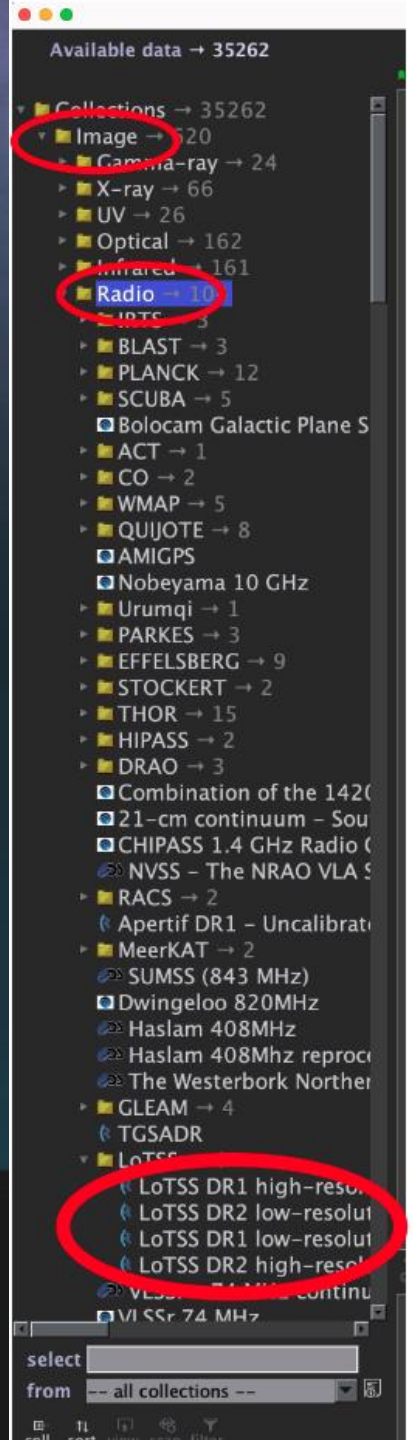
The first full-quality LoLSS data release is available for download through its data release page.

WEAVE-LOFAR

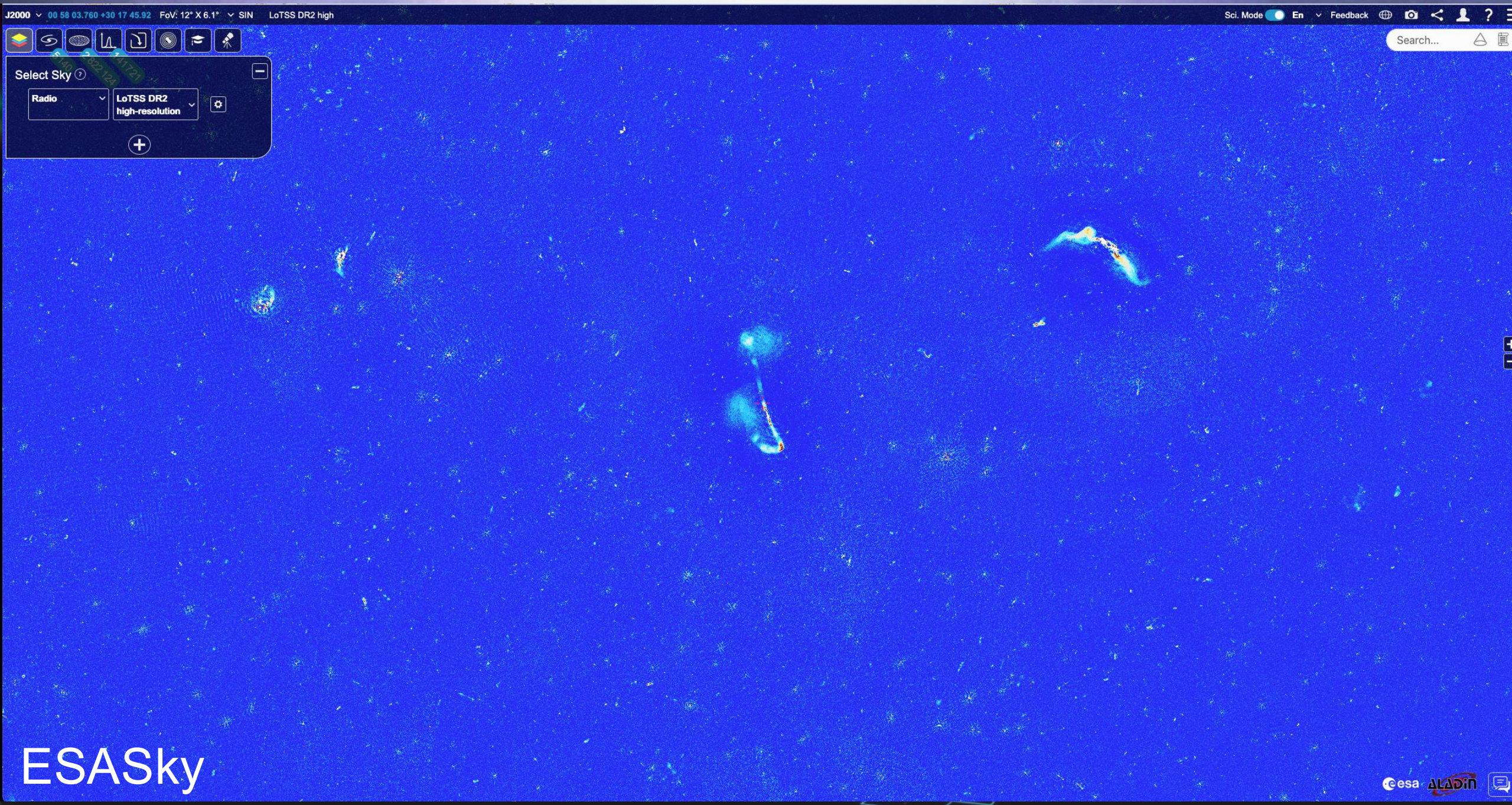
WEAVE-LOFAR is a spectroscopic survey of the LOTSS sky with the WEAVE fibre spectrograph on the William Herschel Telescope. It will provide redshifts for the wide and deep tiers of LOTSS. More information can be found on the project webpages.

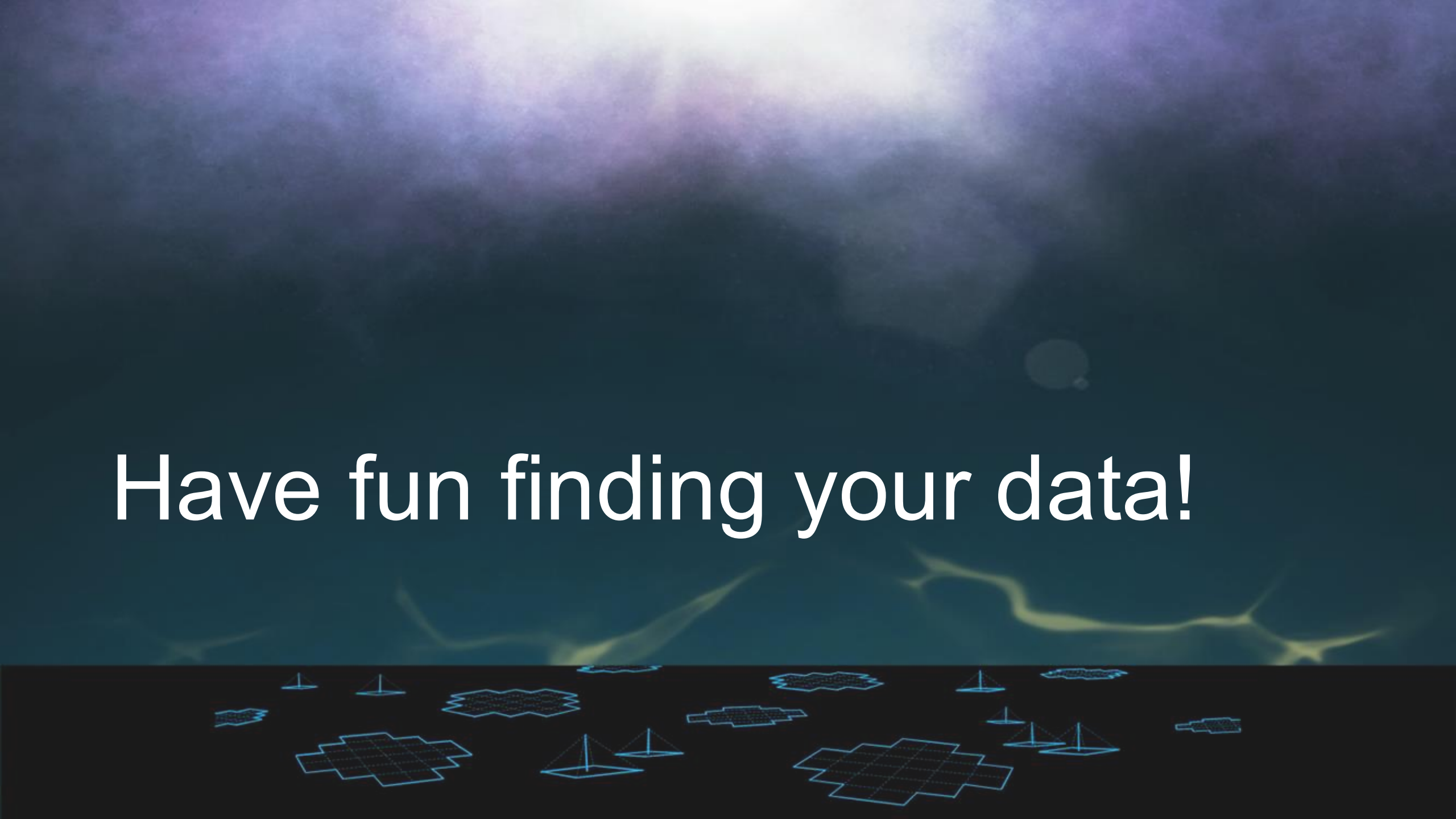
ILoTSS

ILoTSS is the proposed LOFAR 2.0 followup to LoTSS. You can find out more about it and the team involved on its dedicated page.


Available data → 35262
Image → 520
Gamma-ray → 24
X-ray → 66
UV → 26
Optical → 162
Radio → 10
BLAST → 3
PLANCK → 12
SCUBA → 5
Bolocam Galactic Plane S
ACT → 1
CO → 2
WMAP → 5
QUIJOTE → 8
AMIGPS
Nobeyama 10 GHz
Urumqi → 1
PARKES → 3
EFFELSBERG → 9
STOCKERT → 2
THOR → 15
HIPASS → 2
DRAO → 3
Combination of the 142(
21-cm continuum - Sou
CHIPASS 1.4 GHz Radio (
NVSS - The NRAO VLA S
RACS → 2
Apertif DR1 - Uncalibrat
MeerKAT → 2
SUMSS (843 MHz)
Dwingeloo 820MHz
Haslam 408MHz
Haslam 408Mhz reproc
The Westerbork Norther
GLEAM → 4
TGSADR
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LoTSS DR2 low-resolut
LoTSS DR1 low-resolut
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Radio
LoTSS DR2 high-resolution
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Have fun finding your data!