



# ATNF Data Archives

For ATUC

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Australia's National Science Agency





# Recent CASDA Developments

- **Server Migration**
  - Database moved to new NIMBUS virtual machines
  - Move Data Access and VO Tools to new NIMBUS virtual machines
- **New UI cutout service for curated survey data (beginning with RACS)**
  - Added support for Simple Image Access 1 VO protocol (SIA1, previously only SIA2)
- **Observation search cutout service**
  - fix error when creating cutout from a cone search result
  - update to take RA, Dec and cutout radius (not box corners)
- **Provide extra metadata to DataCite when registering DOI**



# New Cutout Service

data.csiro.au

- Search by Domain

The screenshot shows the CSIRO Data Access Portal website. The browser address bar displays <https://data.csiro.au>. The page header includes the CSIRO logo and navigation links for Contact, Help, and API. The main banner features the text: "Access research data, software and other digital assets across a range of disciplines." Below the banner, there are tabs for "Search" and "Browse", and a "Sign in" button. The "Search by domain" section is active, listing several search options:

- [ACDP Virus Image Search >](#)  
Query microscopy images from Australian Centre for Disease Preparedness.
- [ATNF Pulsar Observation Search >](#)  
Query pulsar observations taken at the Parkes radio telescope.
- [CASDA Observation Search >](#)  
Query the CSIRO ASKAP Science Data Archive (CASDA) for observations taken by the ASKAP radio telescope.
- [CASDA Skymap Search >](#)  
Query the CSIRO ASKAP Science Data Archive (CASDA) using an interactive sky map.
- [CASDA Cutout Service >](#)  
Generate cutout from surveys in the CSIRO ASKAP Science Data Archive (CASDA).

The "CASDA Cutout Service >" link is circled in red in the original image.



# New Cutout Service

Serves curated survey data:

- RACS-Low currently
- Other survey datasets to be added in consultation with AKSAP SSTs

CSIRO Data Access Portal

Search Browse

Home / Search by domain / CASDA Cutout Service

### CASDA Cutout Service

Clear form Generate cutout

Position:  Single

Object name:  Resolve

Right ascension:

Declination:

Survey:  Rapid ASKAP Continuum Survey (RACS)  RACS-low DR1

Cutout Radius (arcmin):

#### Generate cutouts from curated survey datasets:

You can use this service to create cutouts around target objects from image data sets curated by survey science teams.

##### Enter cutout parameters

Either resolve an object name or enter the target coordinates. Decimal coordinates need to have at least one decimal place. Multiple surveys may be selected.

When you click "Generate cutout" the surveys' images will be queried to find those overlapping the region of interest.

#### CASDA Cutout Service Results

A tab is shown for each selected survey which has data for the region.

The list of potential cutouts are shown sorted in increasing distance of the centre of the source image from the target, but the results can be sorted. Click the button to download the cutout in FITS format.

#### New Cutout

Click "Options" and then "Refine cutout" from the cutout results page to change the existing cutout parameters.

Click on "Clear form" to clear all parameters after you have returned to the cutout page.

#### Cutouts from specific image cubes

CASDA is also able to produce cutouts from specific image cubes of interest. You can use the [CASDA Observation Search](#) to find the right image cube and then use the icon to request a cutout.



# Future CASDA Work: Big Ticket Items

- Migrate deposit modules to new servers
- UI-UX refresh (*analysis project underway*)
- Installation and integration with CARTA (*proof of concept begun*)
- ATOA analysis and migration to CASDA (*start analysis Q4 2022, development in 2023*)



## Future CASDA Work: Other Requests

- Delete function for deposits before data is released (*nearly complete*)
- Improve validation workflow (*analysis underway*)
- Custom DOIs
- Derived data/L7: Ability to deposit FITS tables and other file types
- UI search: show integration time and ability to filter by Stokes/pol



# Parkes Pulsar DAP

- UX/UI usability study of Pulsar domain also underway
- Move to S3+tape storage planned
  - Better access to data across collections
  - Accommodate large UWL+CryoPAF data rates
- Question of what to archive with CryoPAF? (max data rates of up to ~9TB/hour in extreme search mode)



# ATOA

- BIGCAT and CryoPAF will increase data rates in 2023+
  - ATCA BIGCAT up to 0.5 PB per year, nominal max rate 100Mb/sec
  - Parkes UWL and CryoPAF continuum/spectral data 50 to 100 TB(?) per year
    - UWL is currently ~20 TB per semester
- BIGCAT data format: ALMA Science Data Model (ASDM) is likely
  - Easily imported into CASA
  - Will need a module to import into MIRIAD
  - Support both CASA and MIRIAD reduction
- **Plan to migrate to CASDA in late 2023**





# Thank you

**CSIRO Astronomy and Space Science**

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# ATOA Metrics

Volume of data in  
ATOA<sup>+</sup>

0.49 PB

No. of queries  
received by ATOA<sup>\*</sup>

540 searches per  
month in Apr

Requests successfully  
delivered<sup>\*</sup>

4200, 4.3 TB per  
month

<sup>+</sup> As at Nov 30 2022

<sup>\*</sup> For Q2 2022



# Parke Pulsar DAP Metrics

Volume of data in  
DAP<sup>+</sup>

3.4 PB

No. of queries  
received by DAP\*

520 search sessions  
per month

Requests successfully  
delivered\*

13 TB per month

\* For Q3 2022

+ as of 30 Sep 2022



# CASDA Metrics

Volume of data in  
CASDA#

2.7 PB

No. of queries  
received by CASDA\*+

~644 web sessions,  
~115,000 VO  
queries per month

Requests successfully  
delivered\*

~31,000, ~61 TB per  
month

# At 30 Sep 2022

\* For Q3 2022

+ VO includes aggregators and HIPS sessions