



Archives and Legacy Data

Marcello Giroletti
INAF, Istituto di Radioastronomia

with updated links!!!

ERIS 2017, Astron/JIVE Dwingeloo, 2017 Oct 20

RadioNet has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730562

...after L15 (“proposals & scheduling”)

- literature and archives useful to
 - provide context for your proposal
 - design the observations cleverly
 - bypass the proposal entirely!!!
- not necessarily limited to “radio interferometry”

Outline

- Literature search
- Images from **public** continuum radio **surveys**
- Data release policy and **public archives**
- Large projects and **legacy programs**
- Imaging and data archives in other bands
- Use of public surveys and/or archive data in the proposal preparation and writing papers

Definitions

- Images from **public** continuum radio **surveys**
 - observations of large areas of the sky aimed at producing a catalogue of sources, in one or more bands
- Data release policy and **public archives**
 - the place where all the (*non calibrated*) data from observatories are made available to investigators - initially proprietarily, then publicly
- Large projects and **legacy programs**
 - targeted projects, delivering *calibrated* data and other final products

Literature

giroletti@ira.inaf.it | [my Account](#) | [Sign off](#)

[SAO/NASA ADS](#) Astronomy Query Form for marcello

[Sitemap](#) [What's New](#) [Feedback](#) [Basic Search](#) [Preferences](#) [FAQ](#) [HELP](#)

Need a more powerful search? Try [ADS Bumblebee!](#)

Send Query

Return Query Form

Store Default Form

Clear

Databases to query: [Astronomy](#) [Physics](#) [arXiv e-prints](#)

Authors: (Last, First M, one per line) [SIMBAD](#) [NED](#) [ADS Objects](#)

[Exact name matching](#)

Require author for selection

(OR AND [simple logic](#))

[Object name/position search](#)

Require object for selection

(Combine with: OR AND)

SAO/NASA Astrophysics Data System (ADS)

http://adsabs.harvard.edu/abstract_service.html

Line) **SIMBAD** **NED** **ADS Objects**

[Object name/position search](#)

Require object for selection
(Combine with: OR AND)

Retrieved **200** abstracts, starting with number **1**. Total number selected: **2881**. Sort options ▾

#	Bibcode Authors	Score	Date	List of Links Access Control Help
1	<input type="checkbox"/> 2017MNRAS.472..475L Lamb, Gavin P.; Kobayashi, Shiho; Pian, Elena	1.000	11/2017	A Z E X R U
2	<input type="checkbox"/> 2017MNRAS.471.2703E Egron, E.; Pellizzoni, A.; Giroletti, M.; Righini, S.; Stagni, M.; Orlati, A.; Migoni, C.; Melis, A.; Concu, R.; Barbas, L.; and 27 coauthors	1.000	11/2017	A Z E X R U
3	<input type="checkbox"/> 2017arXiv170907441B Bhargava, Yash; Rao, A. R.; Singh, K. P.; Choudhury, Manojendu; Bhattacharyya, S.; Chandra, S.	1.000	09/2017	A Z X D U

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Query Form for marcello

[myADS](#): Personalized notification service

[Private Library](#) and [Recently read articles](#) for marcello

[Send Query](#) [Return Query Form](#) [Store Default Form](#) [Clear](#)

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Personal Libraries for marcello

You can access your personal libraries here. "Update Library" allows to to remove several entries in your library at once. It also allows you to attach notes to entries in your private library.

Library Name	# Entries	Description	Last Modified	
0229propo	15		02-Jan-2014	Update library Delete library

Need a more powerful search? Try [ADS Bumblebee!](#)

astrophysics data system

Classic Form **Modern Form** Paper Form

QUICK FIELD: Author First Author Abstract Year Fulltext All Search Terms

Advanced

author	author:"huchra, john"	citations	citations(author:"huchra, j") ?
first author	author:"^huchra, john"	references	references(author:"huchra, j") ?
abstract + title	abs:"dark energy"	reviews	reviews("gamma-ray bursts") ?
year	year:2000		
year range	year:2000-2005	refereed	property:refereed ?
full text	full:"gravitational waves"	astronomy	database:astronomy ?
publication	bibstem:ApJ ?	OR	abs:(planet OR star) ?

QUICK FIELD: Author First Author Abstract Year Fulltext All Search Terms

Advanced

Your search returned **46** results

sort: Date desc

Show abstracts

26	<input type="checkbox"/>	2016A&A...593L..16G	2016/09	cited: 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FRB 150418: clues to its nature from European VLBI Network and e-MERLIN observations							
Giroletti, M.; Marcote, B.; Garrett, M. A. <i>and 5 more</i>							
27	<input type="checkbox"/>	2016PASP..128h4502T	2016/08	cited: 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very Long Baseline Interferometry Experiment on Giant Radio Pulses of Crab Pulsar toward Fast Radio Burst Detection							
Takefuji, K.; Terasawa, T.; Kondo, T. <i>and 6 more</i>							
28	<input type="checkbox"/>	2016MNRAS.460.3370C	2016/08	cited: 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A search for highly dispersed fast radio bursts in three Parkes multibeam surveys							
Crawford, F.; Rane, A.; Tran, L. <i>and 3 more</i>							

not just about papers...

astronomical databases for images, spectra,
notes, etc.

NED

SIMBAD



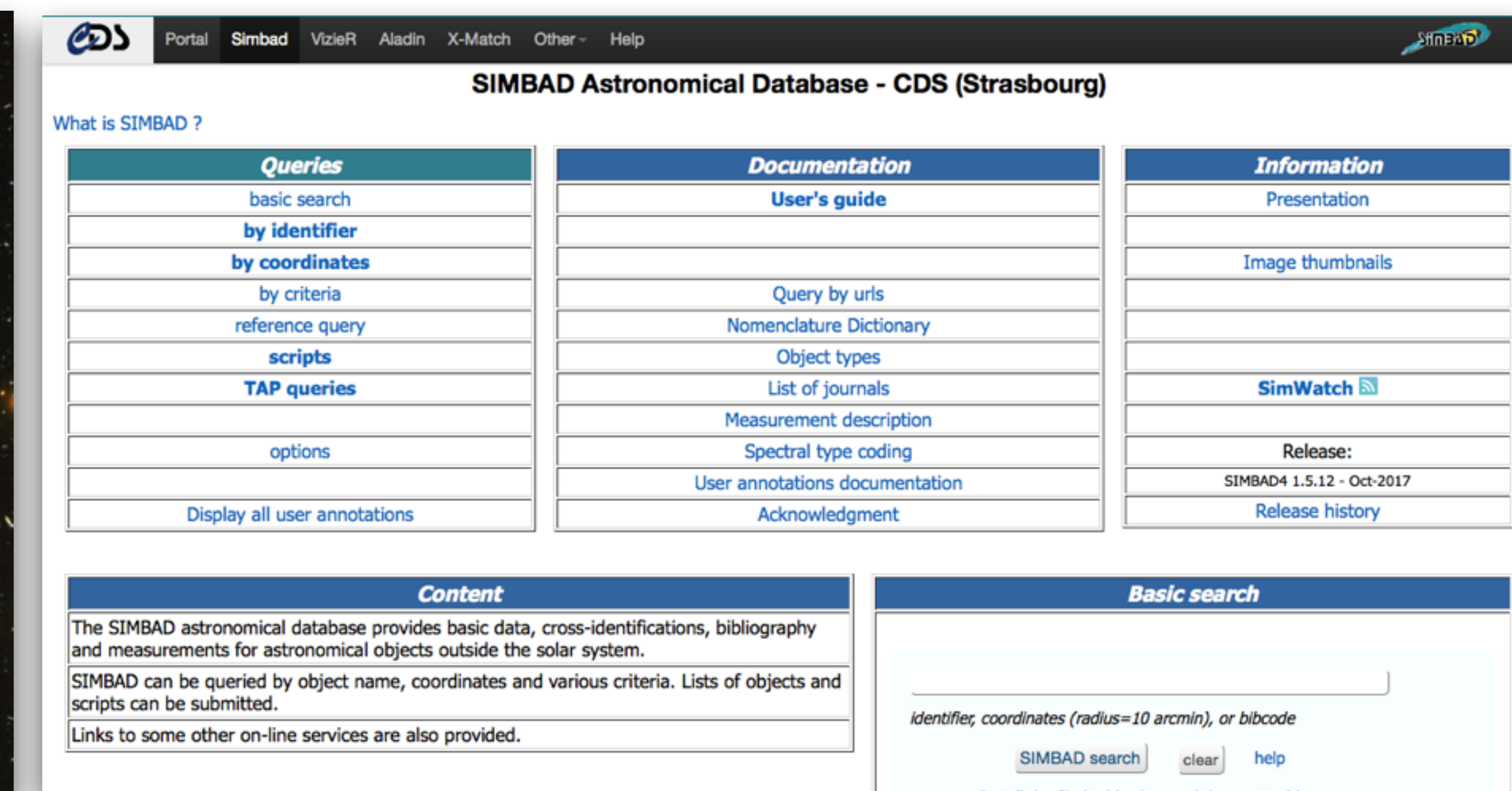
NED

News & Featured Updates - June-July 2017

- 1,805,722 redshifts from the SDSS DR13 Optical Spectra Catalog added
- Galaxy environment queries updated with SDSS DR13 spectroscopic redshifts
- 81,001 spectra from the WiggleZ Dark Energy Survey added
- 3,231 new photometric data points integrated into SEDs

OBJECTS	DATA	LITERATURE	TOOLS	INFO
By Name	Images by Object Name Region	References by Object Name	Coordinate Transformation & Extinction Calculator	Introduction Latest News/Updates
Near Name	Photometry & SEDs	References by Author Name	Velocity Calculator	Features FAQ
Near Position	Spectra	Text Search	Cosmology Calculators	Brochure (pdf) Best Practices (pdf)
IAU Format	Redshifts	Knowledgebase	Extinction-Law Calculators	Source Nomenclature
By Parameters	Redshift-Independent Distances	Galaxy Distance Tabulations (NED-D)	Galaxy Environment by Precomputed Parameters Radial Velocity Constraint	Web Links New Interface
By Classifications Types, Attributes	Classifications by Object Name	Abstracts	X/Y offset to RA/DEC	Glossary & Lexicon
By Refcode	Positions		Batch Help	Team Users Committee
Object Notes	Diameters		Build Data Table from Input List By Name Near Name/Position (Cross-Matching)	Contact Us

<http://ned.ipac.caltech.edu>



SIMBAD Astronomical Database - CDS (Strasbourg)

What is SIMBAD ?

Queries	Documentation	Information
basic search	User's guide	Presentation
by identifier		
by coordinates		Image thumbnails
by criteria	Query by urls	
reference query	Nomenclature Dictionary	
scripts	Object types	SimWatch
TAP queries	List of journals	
	Measurement description	
options	Spectral type coding	Release: SIMBAD4 1.5.12 - Oct-2017
	User annotations documentation	Release history
Display all user annotations	Acknowledgment	

Content

The SIMBAD astronomical database provides basic data, cross-identifications, bibliography and measurements for astronomical objects outside the solar system. SIMBAD can be queried by object name, coordinates and various criteria. Lists of objects and scripts can be submitted. Links to some other on-line services are also provided.

Basic search

Identifier, coordinates (radius=10 arcmin), or bibcode

SIMBAD search clear help

<http://simbad.u-strasbg.fr/simbad/>



News & Featured Updates - July 2015

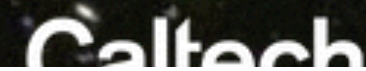
- [Tabular and graphical summaries of NED holdings](#)
- [Updated links to SDSS Skyserver in object search results](#)
- [GALEX photometry now available in customized output tables](#)
- [278,729 new object links to 830 references](#)
- [9,733 new redshift-independent distances](#)
- [Hundreds of new images and spectra](#)
- [Latest articles in Level 5](#)

Literature search

Try the new smart box on the main screen of the [new user interface](#), which greatly simplifies common queries. Using a single text entry field, you can search by: object name, object name and search radius, coordinates and search radius, refcode, or (NBASQ) ticket number.

OBJECTS	DATA	LITERATURE	TOOLS	INFO
By Name	Images by Object Name Region	References by Object Name	Coordinate Transformation & Extinction Calculator	Introduction Latest News/Updates
Near Name	Photometry & SEDs	References by Author Name	Velocity Calculator	Features FAQ
Near Position	Spectra	Text Search	Cosmology Calculators	Brochure (pdf) Best Practices (pdf)
IAU Format	Redshifts	Knowledgebase	Extinction-Law Calculators	Source Nomenclature
By Parameters	Redshift-Independent Distances	Galaxy Distance Tabulations (NED-D)	Galaxy Environment by Precomputed Parameters Radial Velocity Constraint	Web Links New Interface
By Classifications Types, Attributes	Classifications by Object Name	Abstracts	X/Y offset to RA/DEC	Glossary & Lexicon
By Refcode	Positions	Thesis Abstracts	Batch Help	Team
Object Notes	Diameters		Build Data Table from Input List By Name Near Name/Position (Cross-Matching)	Contact Us or Comment

If your research benefits from the use of NED, we would appreciate the following acknowledgement in your paper: *This research has made use of the NASA/IPAC Extragalactic Database (NED) which is operated by the Jet Propulsion Laboratory, California Institute of Technology, under contract with the National Aeronautics and Space Administration.*



NED results for object MRK 0421

1 objects found in NED.

SOURCE LIST

Row No.	Object Name (* => Essential Note)	EquJ2000.0 RA DEC	Object Type	Velocity/Redshift km/s z	Mag./ Filter	Separ. arcmin	Refs	Notes	Phot	Posn	Vel/z	Diam	Assoc	Images	Spectra	Row No.
1	MRK 0421	11h04m27.3s +38d12m32s	G	9000 0.030021	12.8V	...	1150	17	291	55	43	10	0	Retrieve	Retrieve	1

Detailed information for each object

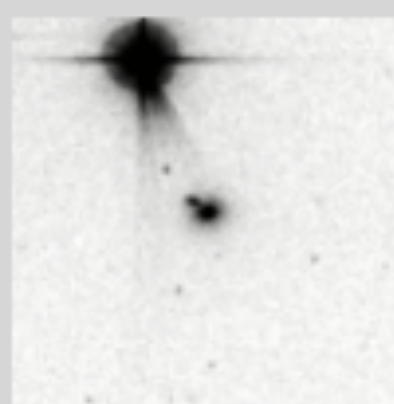
Object No. 1 - MRK 0421

INDEX for MRK 0421

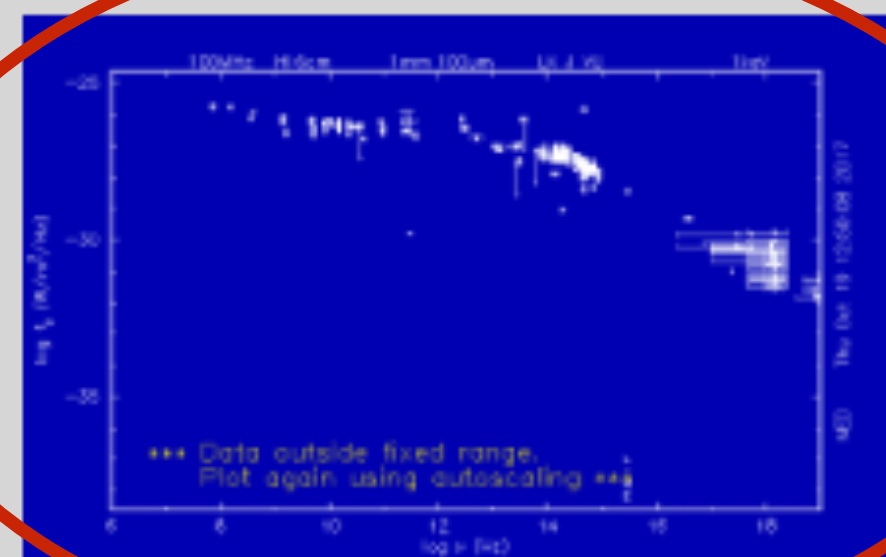
Essential Data (jump to sub-section of this query report):

- [Essential Note](#)
- [Cross-IDs](#)
- [Coordinates](#)
- [Basic Data](#)
- [Quantities Derived from Redshift](#)
- [Redshift-Independent Distances](#)
- [Quick-Look Photometry and Luminosities](#)
- [Quick-Look Angular and Physical Sizes](#)
- [Classifications](#)

Detailed Data (NED queries):



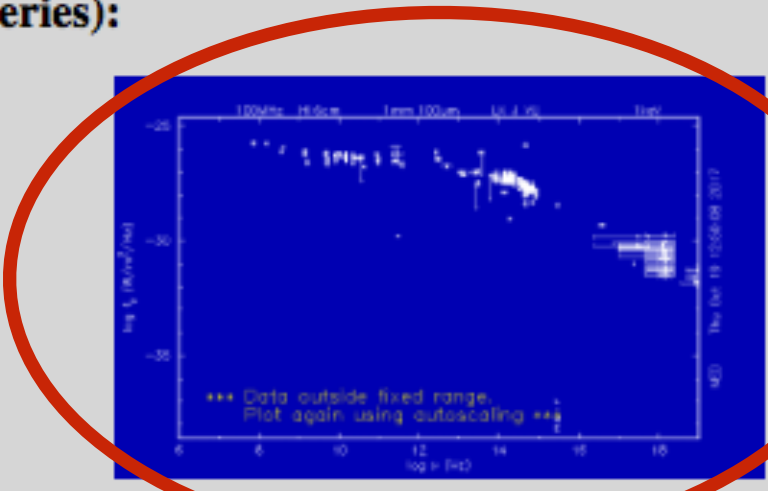
Images



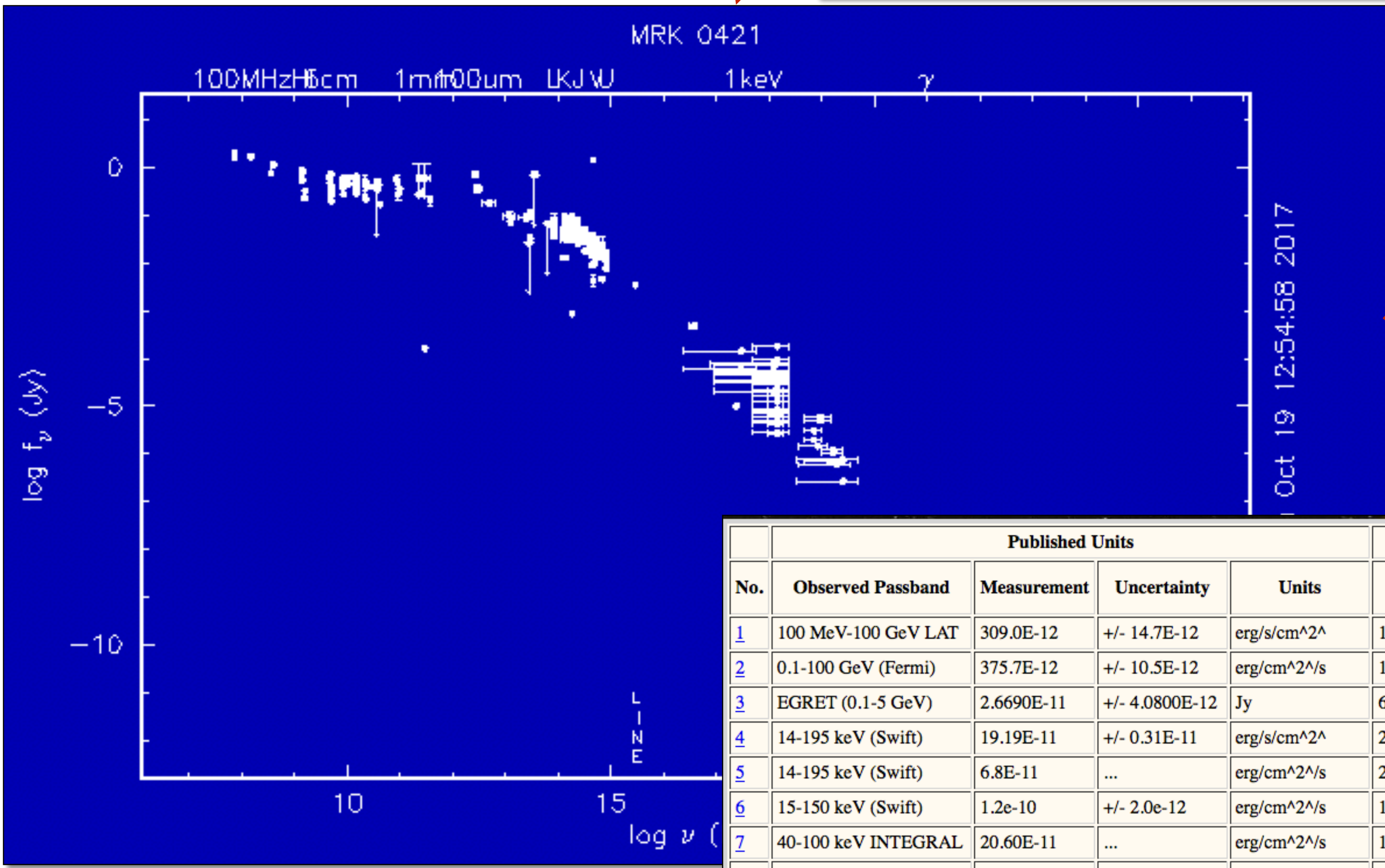
291 Photometric data point(s) and SED

- [Spectra](#)
- [Redshift-Independent Distances](#)
- [1150 Reference\(s\)](#)
- [55 Position data point\(s\)](#)
- [43 Redshift data point\(s\)](#)
- [10 Diameter data point\(s\)](#)
- [17 Note\(s\)](#)
- [UGC data](#)
- [RC3 data](#)
- [HB89 data](#)

queries):



[Spectra](#)
[Redshift-Independent Distances](#)
[150 Reference\(s\)](#)
[55 Position data point\(s\)](#)
[43 Redshift data point\(s\)](#)
[10 Diameter data point\(s\)](#)
[17 Note\(s\)](#)
[UGC data](#)
[RC3 data](#)
[HB89 data](#)
[291 Photometric data point\(s\) and SED](#)



New options **Format tabular data as:**

HTML Table

Change Table Format

No.	Published Units				Homogenized Units [Frequency, Flux Density]						
	Observed Passband	Measurement	Uncertainty	Units	Freq (Hz)	Measurement	Uncertainty	Units	Mode	Aperture/Qualifiers	
1	100 MeV-100 GeV LAT	309.0E-12	+/- 14.7E-12	erg/s/cm^2	1.21E+25	2.55E-12	+/- 1.21E-13	Jy	Broad-band	2010	
2	0.1-100 GeV (Fermi)	375.7E-12	+/- 10.5E-12	erg/cm^2/s	1.21E+25	3.10E-12	+/- 8.68E-14	Jy	Broad-band	Variable 2012	
3	EGRET (0.1-5 GeV)	2.6690E-11	+/- 4.0800E-12	Jy	6.17E+23	2.67E-11	+/- 4.08E-12	Jy	Broad-band	1995	
4	14-195 keV (Swift)	19.19E-11	+/- 0.31E-11	erg/s/cm^2	2.53E+19	7.58E-07	+/- 1.23E-08	Jy	Broad-band	2010	
5	14-195 keV (Swift)	6.8E-11	...	erg/cm^2/s	2.53E+19	2.69E-07	...	Jy	Broad-band	2008	
6	15-150 keV (Swift)	1.2e-10	+/- 2.0e-12	erg/cm^2/s	1.99E+19	6.03E-07	+/- 1.01E-08	Jy	Broad-band	2010	
7	40-100 keV INTEGRAL	20.60E-11	...	erg/cm^2/s	1.69E+19	1.22E-06	...	Jy	Broad-band	2009	
8	40-100 keV INTEGRAL	17.456E-11	+/- 0.773E-11	erg/s/cm^2	1.69E+19	1.03E-06	+/- 4.57E-08	Jy	Broad-band	2010	

...scrolling down...

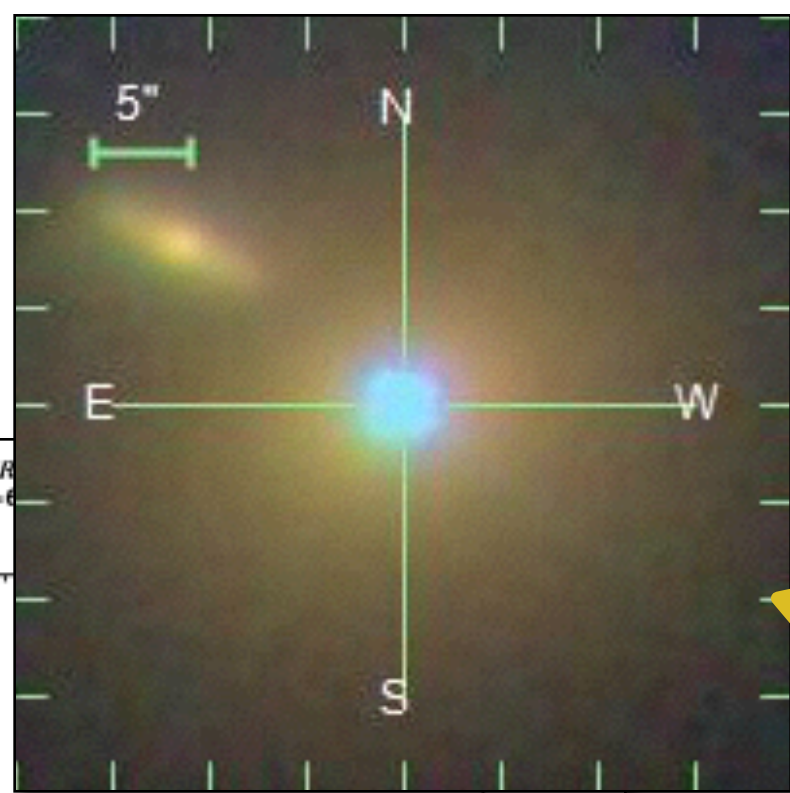
Cosmology-Corrected Quantities [$H_0 = 73.00$ km/sec/Mpc, $\Omega_{\text{matter}} = 0.27$, $\Omega_{\text{vacuum}} = 0.73$]
[Redshift 0.030893 as corrected to the Reference Frame defined by the 3K Microwave Background Radiation]

Luminosity Distance	: 130 Mpc	(m-M) = 35.57 mag
Angular-Size Distance	: 122 Mpc	(m-M) = 35.44 mag
Co-Moving Radial Distance	: 126 Mpc	(m-M) = 35.50 mag
Co-Moving Tangential Dist.	: 126 Mpc	(m-M) = 35.50 mag
Co-Moving Volume	: 0.00839 Gpc ³	
Light Travel-Time	: 0.405 Gyr	
Age at Redshift 0.030893	: 12.894 Gyr	
Age of Universe	: 13.299 Gyr	
Scale (Cosmology Corrected):	593 pc/arcsec = 0.593 kpc/arcsec = 35.57 kpc/arcmin = 2.13 Mpc/degree	
Surface Brightness Dimming :	Flux Density per Unit Area = 0.88541; Magnitude per Unit Area = 0.1321 mag	

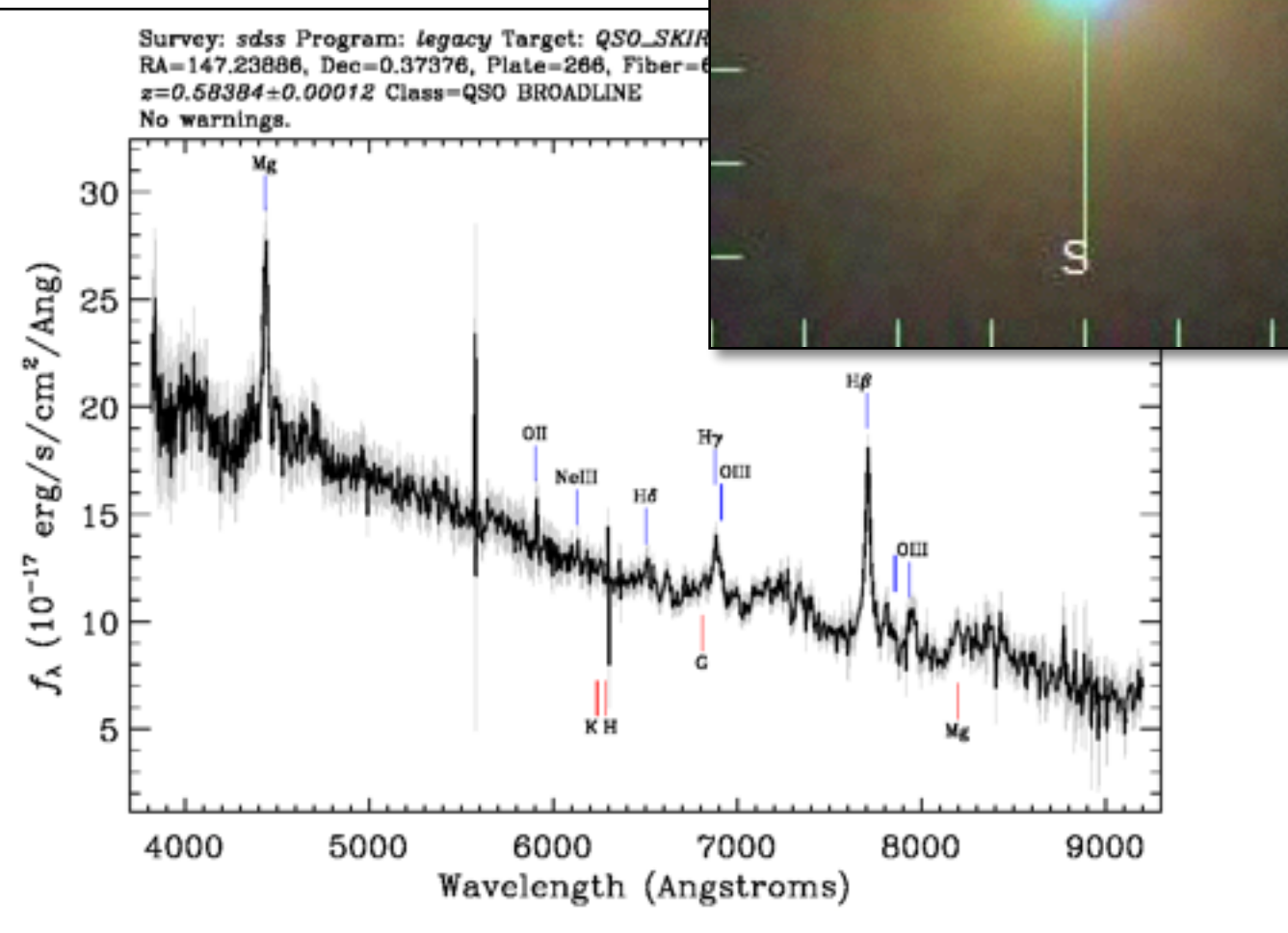
To change Cosmological Input Parameters for Derived Quantities: Enter Your Preferred Values and click on "Submit Changed Hubble Parameters for this object" button

H_0 Ω_{matter} Ω_{vacuum}

Correct Redshift To the Reference Frame defined by: as Input for Calculation of the Distances and Cosmology-Corrected Quantities



SDSS



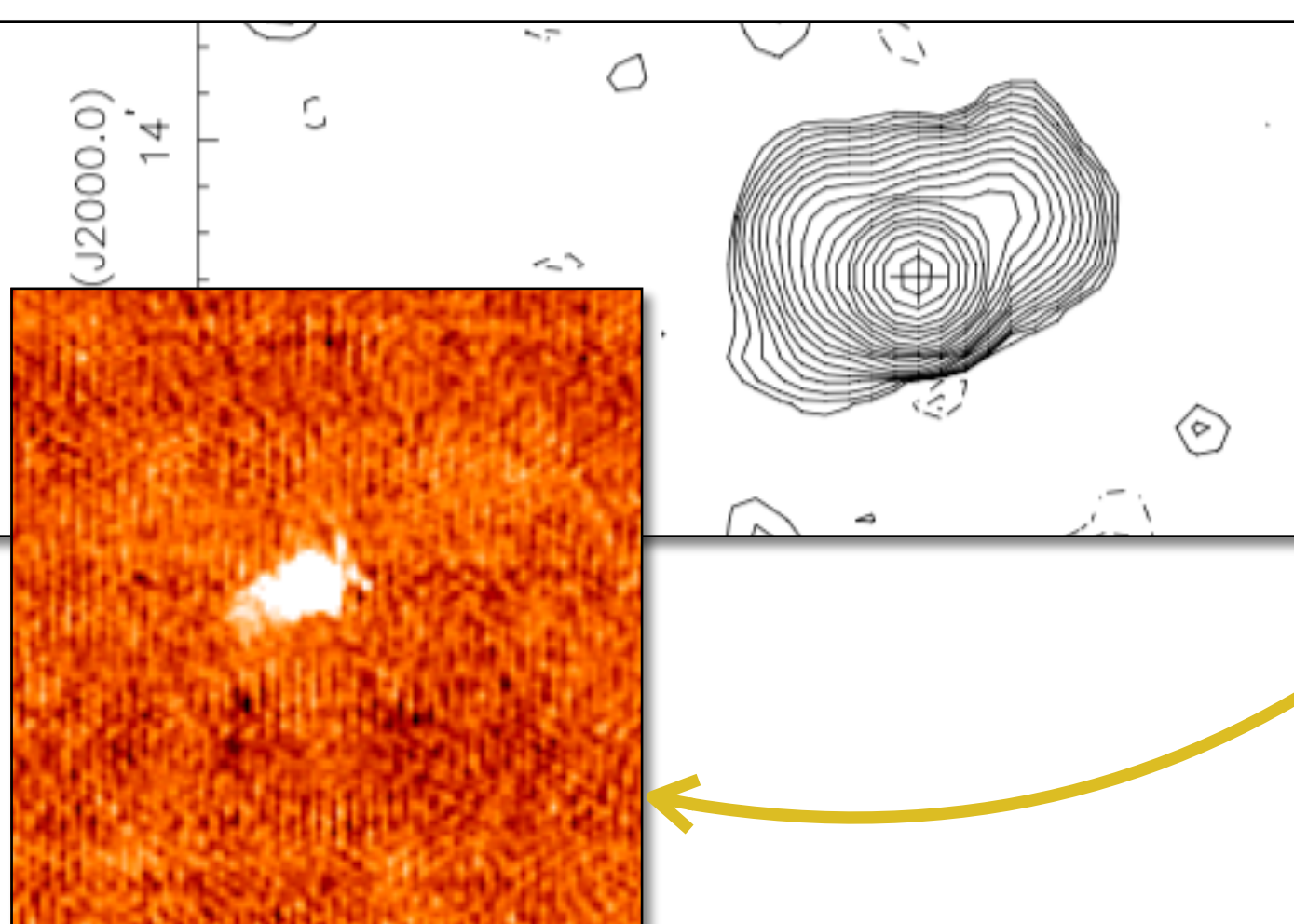
EXTERNAL ARCHIVES AND SERVICES for MRK 0421 [Help](#) ([Back to INDEX](#))

Resources for Object Names	Site/Service
Query SIMBAD by primary NED object name -- MRK 0421	SIMBAD (CDS, Strasbourg, France)
FBS Catalogue of Markarian Galaxies -- MRK 0421	VizieR Catalog Query (U.S. mirror, CfA/Harvard)
Uppsala General Catalog -- UGC 06132	VizieR Catalog Query (U.S. mirror, CfA/Harvard)
Original Zwicky Catalog -- CGCG 184-050	VizieR Catalog Query (U.S. mirror, CfA/Harvard)
Query UZC Spectral Archive (60 arcsec search radius)	Updated Zwicky Catalog Data (Harvard/SAO)
The Second Bologna Survey -- B2 1101+38	VizieR Catalog Query (U.S. mirror, CfA/Harvard)
The Third Bologna Survey -- B3 1101+384	VizieR Catalog Query (U.S. mirror, CfA/Harvard)
2MASS Extended Source Images (JHKs) -- 2MASX J11042732+3812320	NASA/IPAC Infrared Science Archive (IRSA)
<input type="text" value="Query SDSS SkyServer versions DR6-DR9, DR12"/> <input type="text" value="version"/> <input type="text" value="DR9"/>	SDSS Sky Server

<input type="text" value="Query SDSS SkyServer versions DR6-DR9, DR12"/> <input type="text" value="version"/> <input type="text" value="DR9"/>	SDSS Sky Server
Query IRSA for WISE images (10' search radius)	NASA/IPAC Infrared Science Archive (IRSA)
<input type="text" value="Retrieve 2MASS Atlas Images"/> <input type="text" value="Band(s): Ks"/> <input type="text" value="Size: 2'"/>	NASA/IPAC Infrared Science Archive (IRSA)
<input type="text" value="Retrieve IRAS ISSA Images"/> <input type="text" value="Band(s): 60um"/> <input type="text" value="Size: 30'"/>	NASA/IPAC Infrared Science Archive (IRSA)
<input type="text" value="1-D Coadd of IRAS Scans (ADDSCAN/SCANPI)"/>	NASA/IPAC Infrared Science Archive (IRSA)
<input type="text" value="Retrieve NVSS Image"/> <input type="text" value="Size: 15'"/> <input checked="" type="radio"/> Contours (PS) <input type="radio"/> JPEG <input type="radio"/> FITS File	NRAO/VLA Sky Survey (NVSS)
<input type="text" value="Retrieve FIRST Image"/> <input type="text" value="Size: 15'"/> <input checked="" type="radio"/> GIF <input type="radio"/> FITS File	Faint Images of the Radio Sky at Twenty-Centimeters
<input type="text" value="NRAO Archive 1 arcminute search radius (EVLA, VLA and VLBA)"/>	The NRAO Data Archive System

NVSS

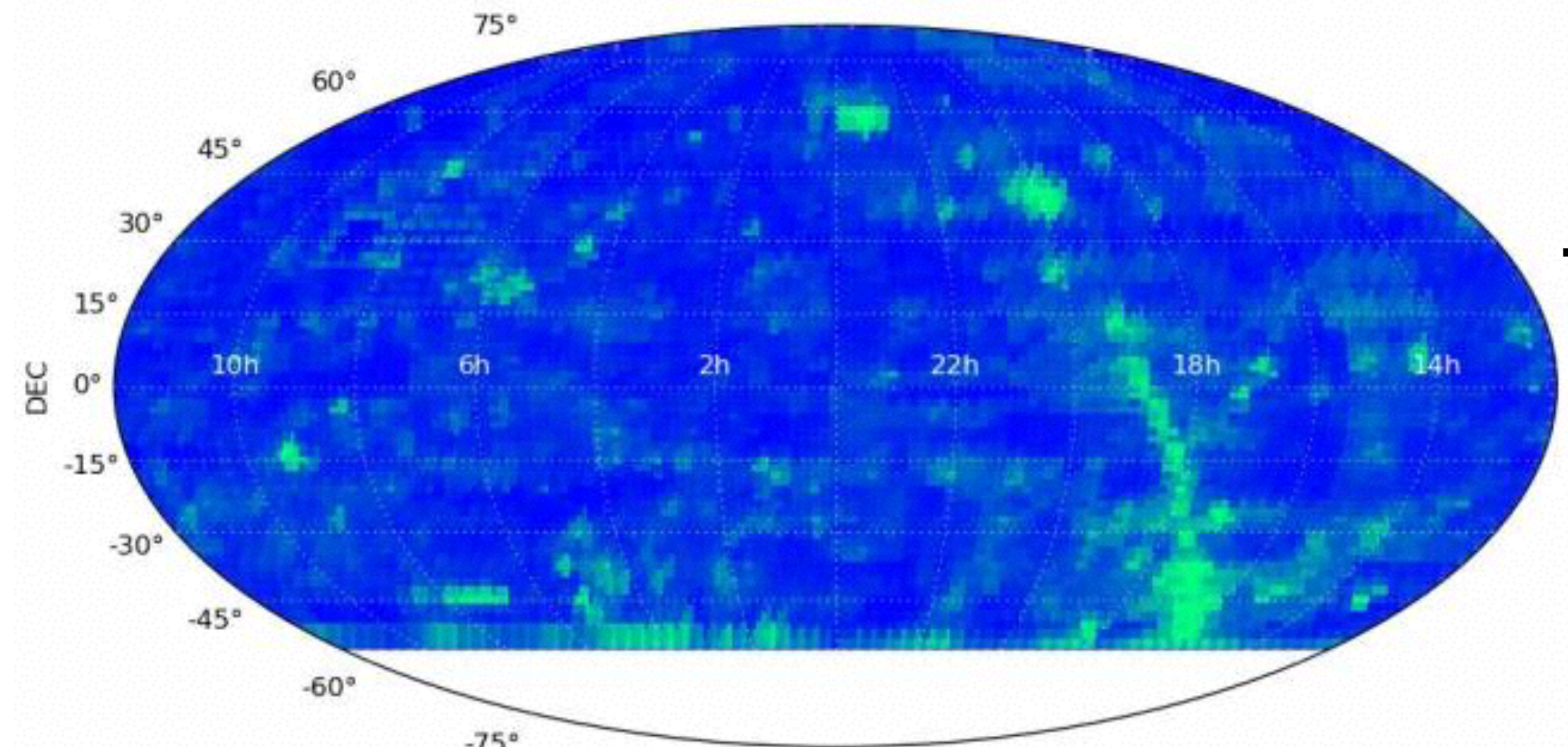
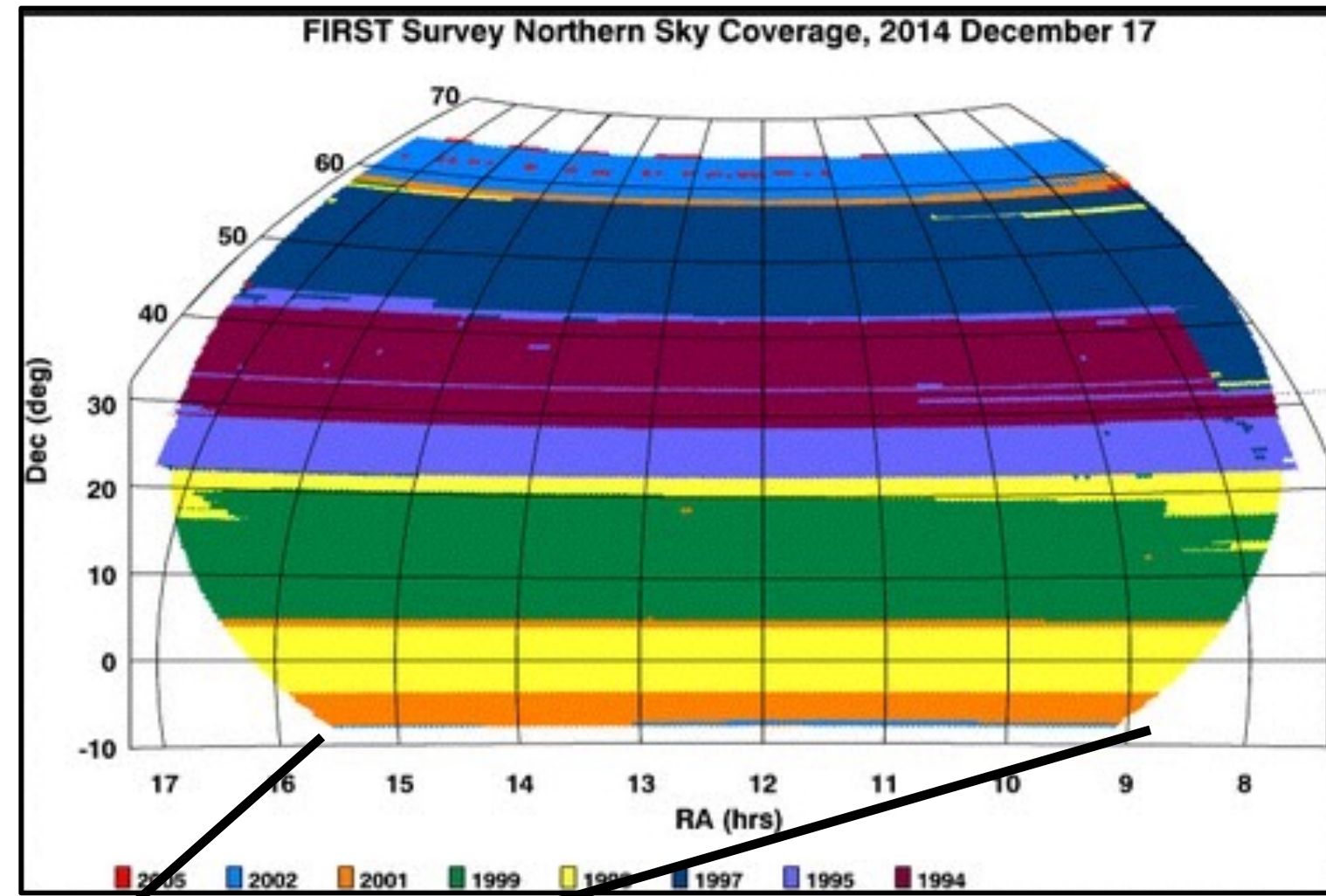
FIRST



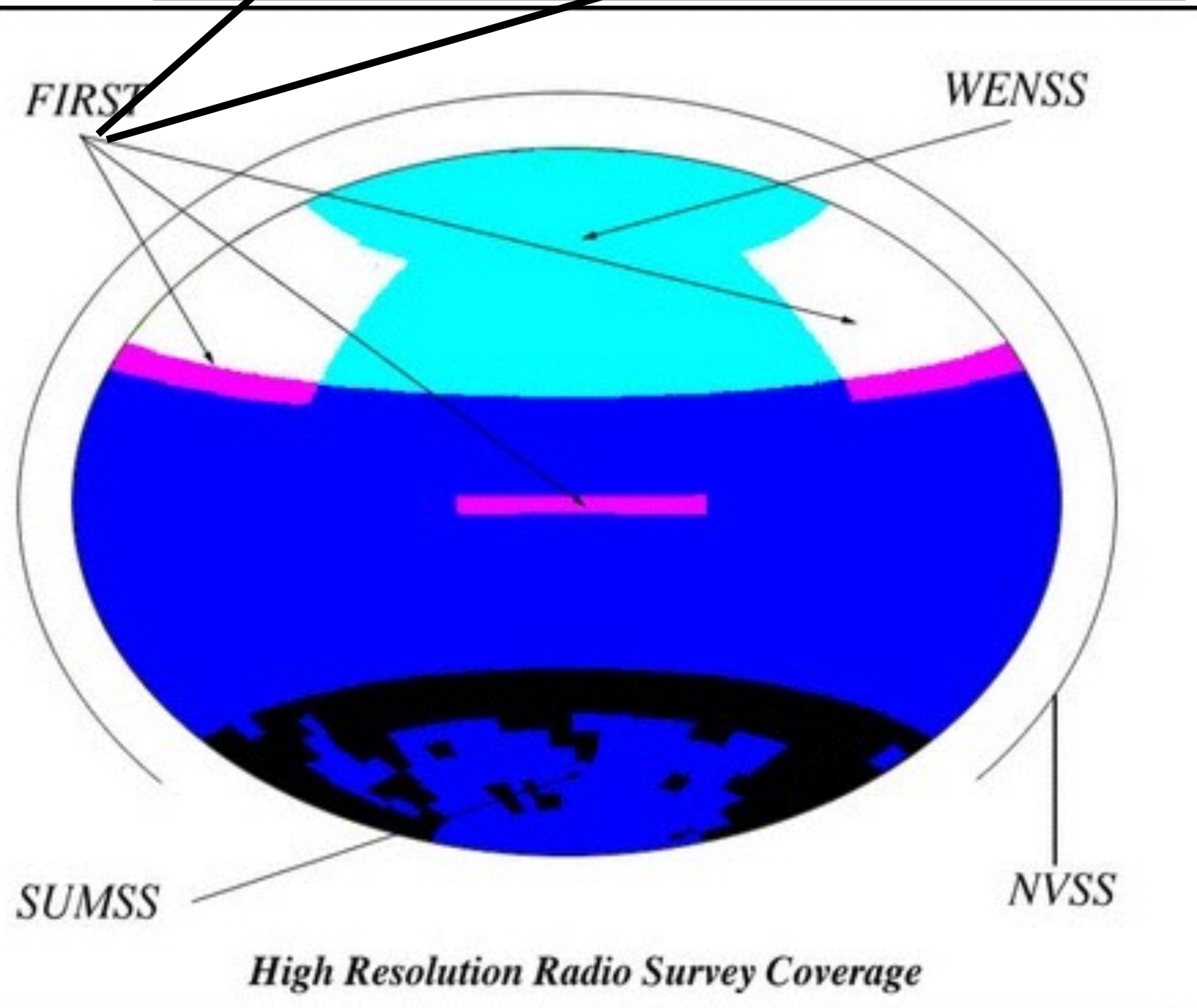
(incomplete) table of public interferometric radio surveys
[with working links](#)

Survey	ν MHz	Ang. Res. arcsec x arcsec	Sensitivity 1σ , mJy/b	Area deg ²
<u>NVSS VLA-D</u>	1400	40 x 40	0.45	$\delta > -40^\circ$, 35000
<u>FIRST VLA-B</u>	1400	5 x 5	0.15	$\delta > -10^\circ$, 10000
<u>SUMSS Molonglo</u>	843	45 x 45 cosec δ	~ 6 - 10	$\delta < -30^\circ$, 11600
<u>WENSS WSRT</u>	327	54 x 54 cosec δ	3.6	$\delta > 30^\circ$, 10000
<u>TGSS-ADR GMRT</u>	150	20 x 20	3.5	$\delta > -53^\circ$, 36900
<u>VLSSr VLA-B</u>	74	80 x 80	100	$\delta > -30^\circ$, 30000
<u>GLEAM MWA</u>	72-231	120 x 120	10-15	$\delta < +30^\circ$, 24400
<u>LoTSS (goal)</u>	150	5 x 5	0.1	$\delta > 0^\circ$, 9000

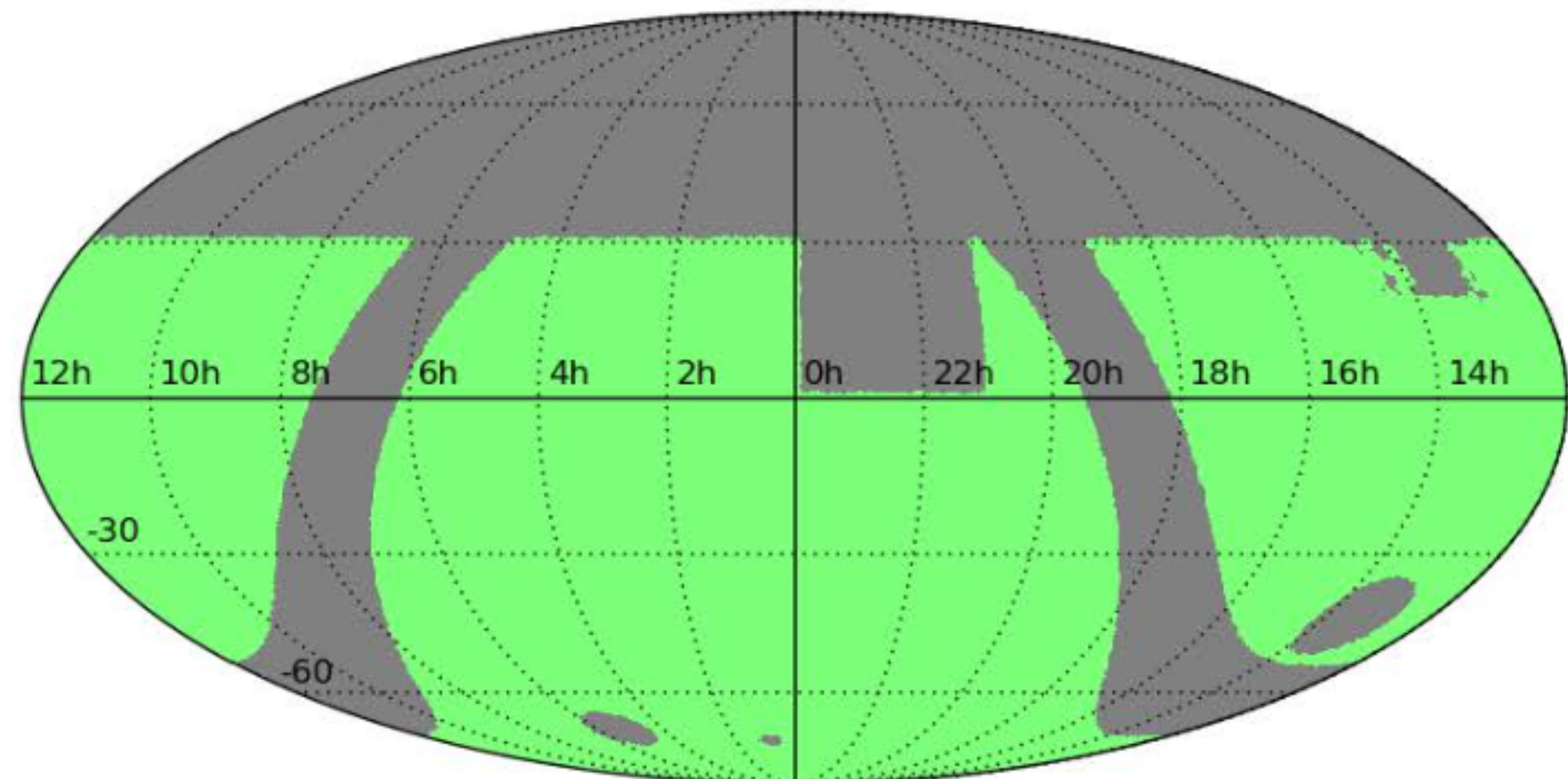
Sky coverage of the available public surveys

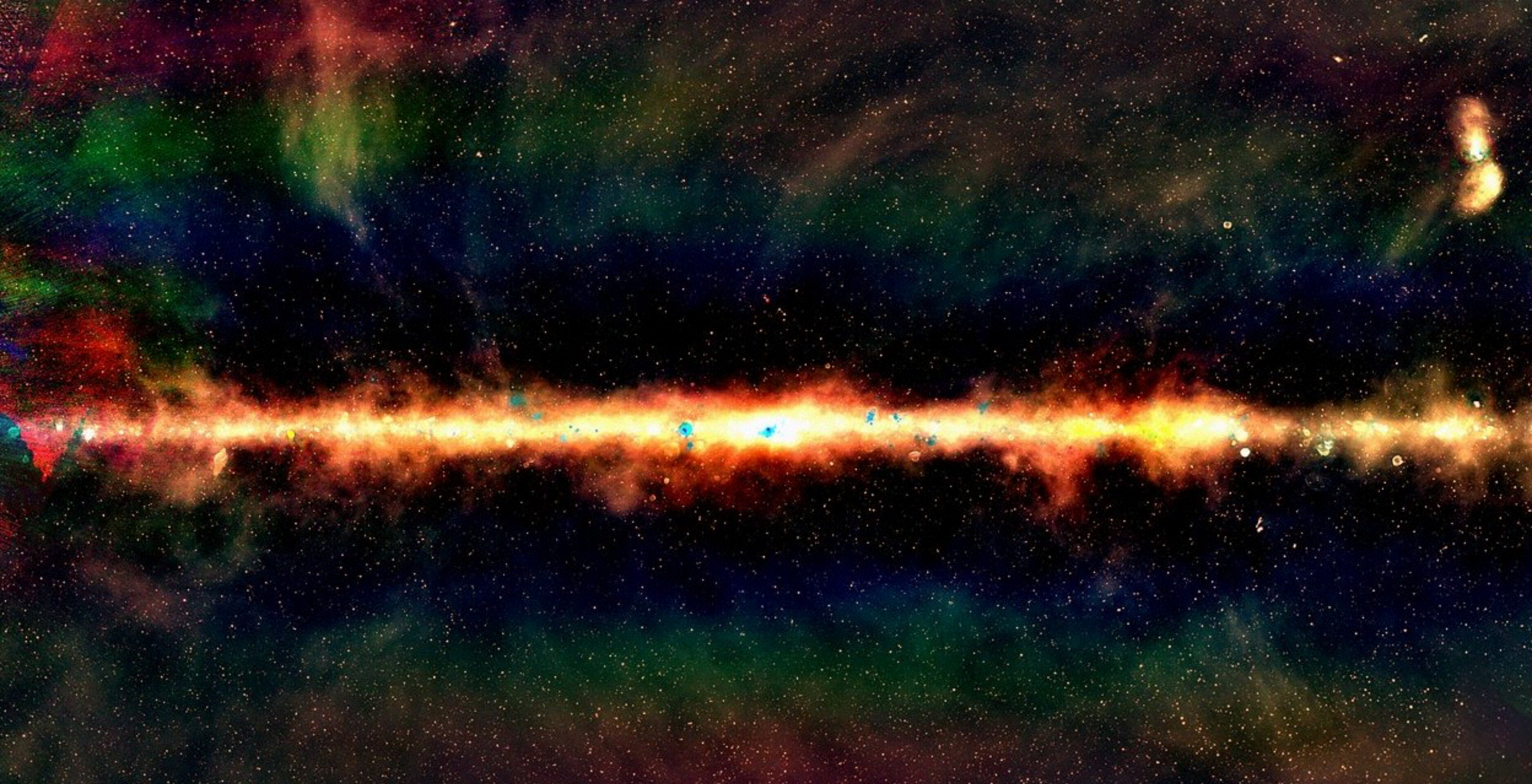


TGSS



GLEAM






Credit: Natasha Hurley-Walker (Curtin / ICRAR) and the GLEAM Team

Public continuum radio surveys

- A real treasure!!!
- Now cover wide sky areas at different frequencies
- Most can be accessed as a full catalogue
- ...or searched for actual images to do your own analysis

 National Radio Astronomy Observatory

Thursday, September 3, 2015

NVSS Postage Stamp Server → www.cv.nrao.edu/nvss/postage.shtml

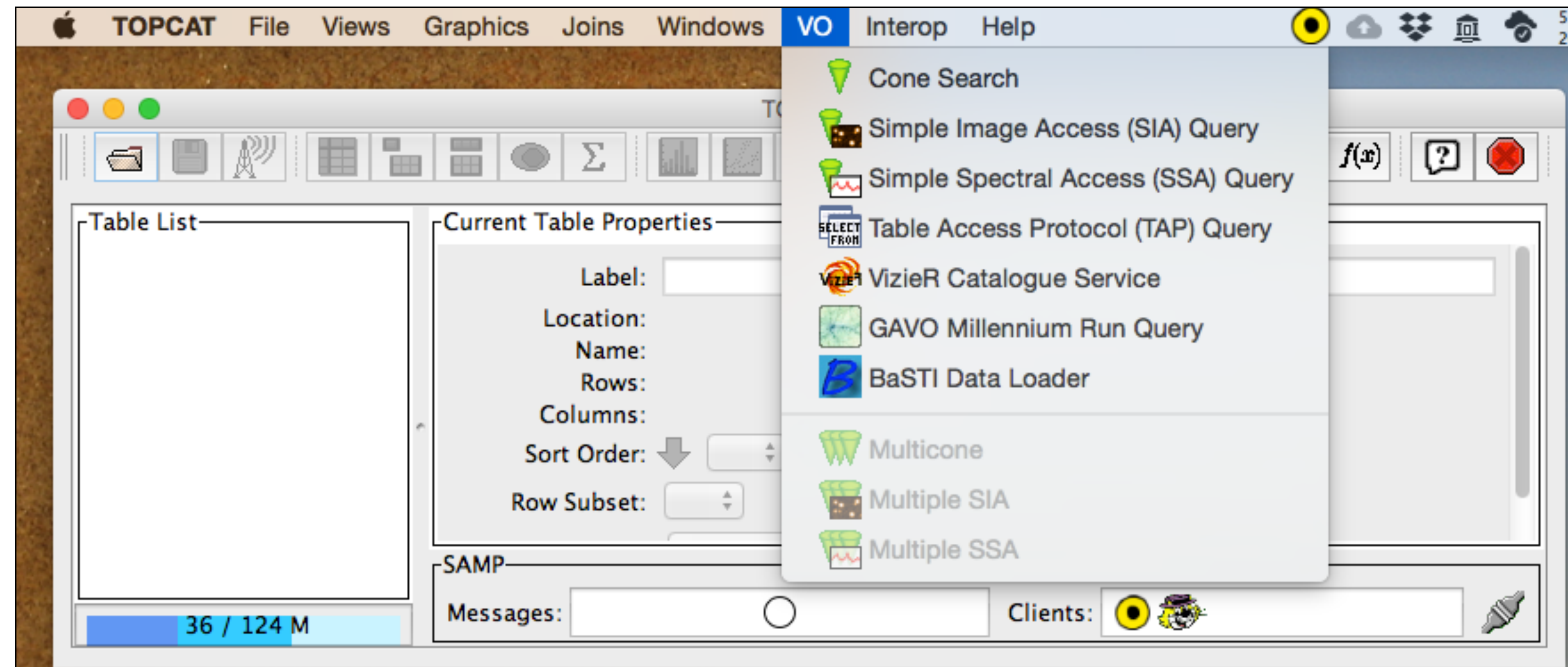
This postage Stamp server for NRAO/VLA Sky Survey (NVSS) returns radio images of the sky in [FITS](#) or JPEG format, or as a contour plot. For detailed general instructions or information about this survey, see the [Help File under "general"](#); or use the links on the forms for help about each item.

<u>Equinox:</u>	J2000
<u>Polarization:</u>	Stokes I
<u>Object name [optional]:</u>	
<u>Central Right Ascension:</u>	00 00 00.00
<u>Central declination:</u>	+00 00 00.00
<u>Desired image size (degrees):</u> See Pixel Spacing for size limit.	0.25 0.25
<u>Pixel spacing:</u> Desired pixel size in arcseconds (Min 0.001; max image size 262144 pixels, e.g. 512 x 512)	15.0 15.0
<u>Projection:</u>	Sine
<u>Desired rotation</u> (N through E) on the sky in degrees. (Use 0.0 for contour plots)	0.0
<u>Image Type:</u> Don't use "FITS Image" unless you have an external viewer configured to activate for fits files in your browser. Also, for JPEG images, you may need to "reload" the image if you've fetched more than one.	JPEG Image
<input type="submit" value="Submit!"/>	<input type="button" value="Clear Form (ALL!)"/>

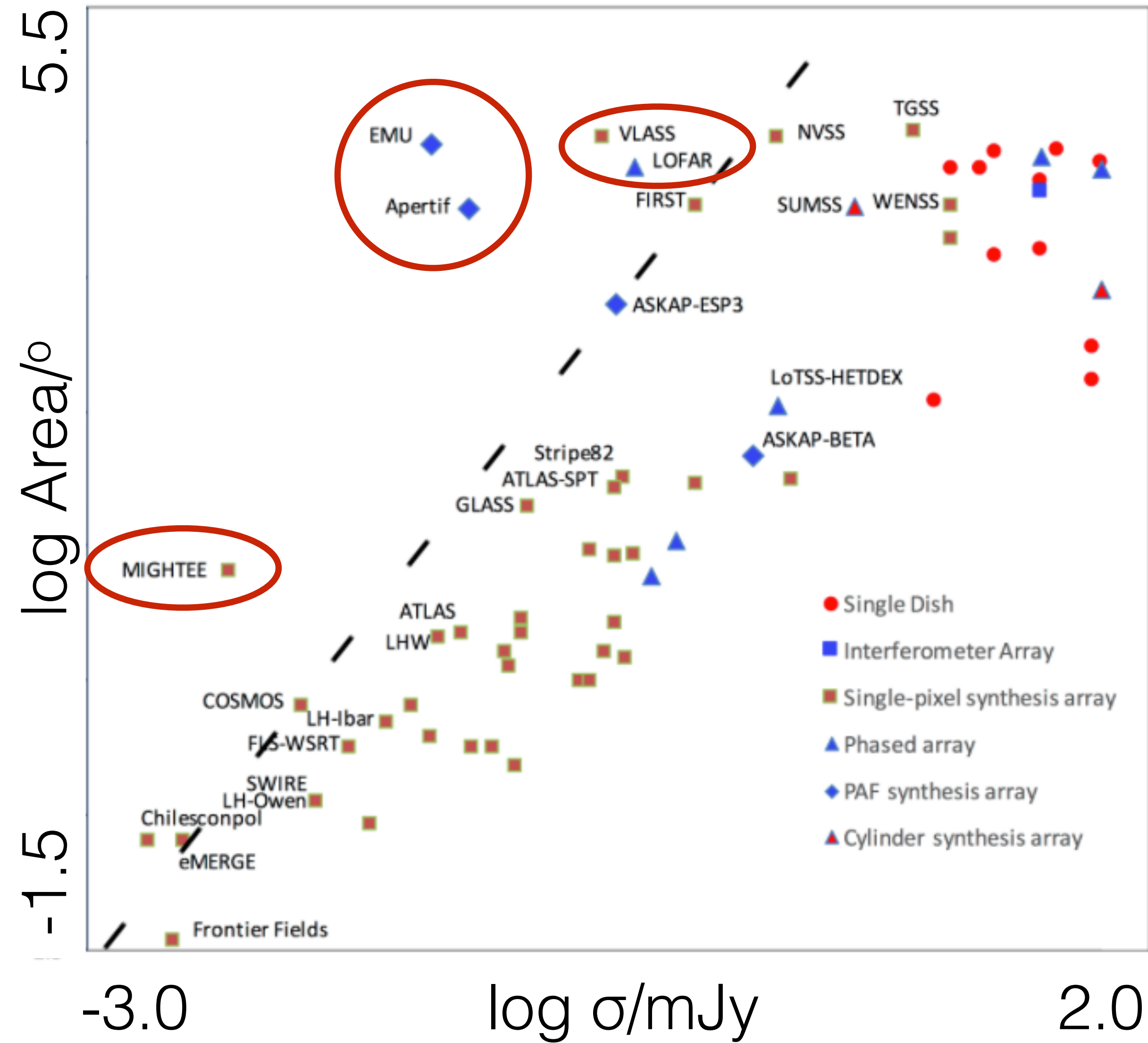
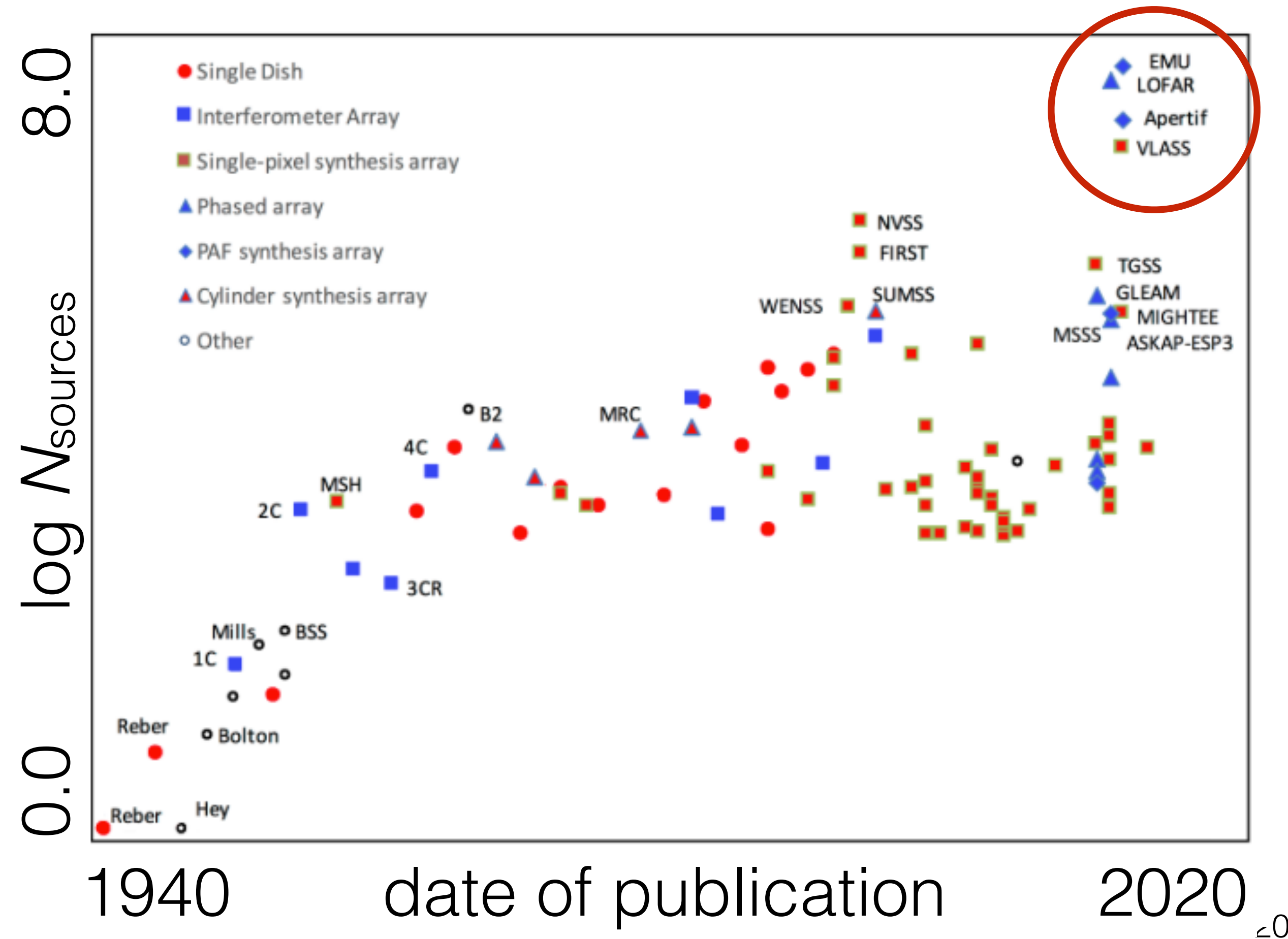


Tool for Operations on Catalogues And Tables

- <http://www.star.bris.ac.uk/~mbt/topcat/>
- an interactive graphical viewer and editor for tabular data
- but also a convenient interface to **lots** of MWL archives and databases
- well documented, very powerful and easy to use



Norris et al. (2017)
 EMU, Apertif, MIGHTEE, VLASS, ...



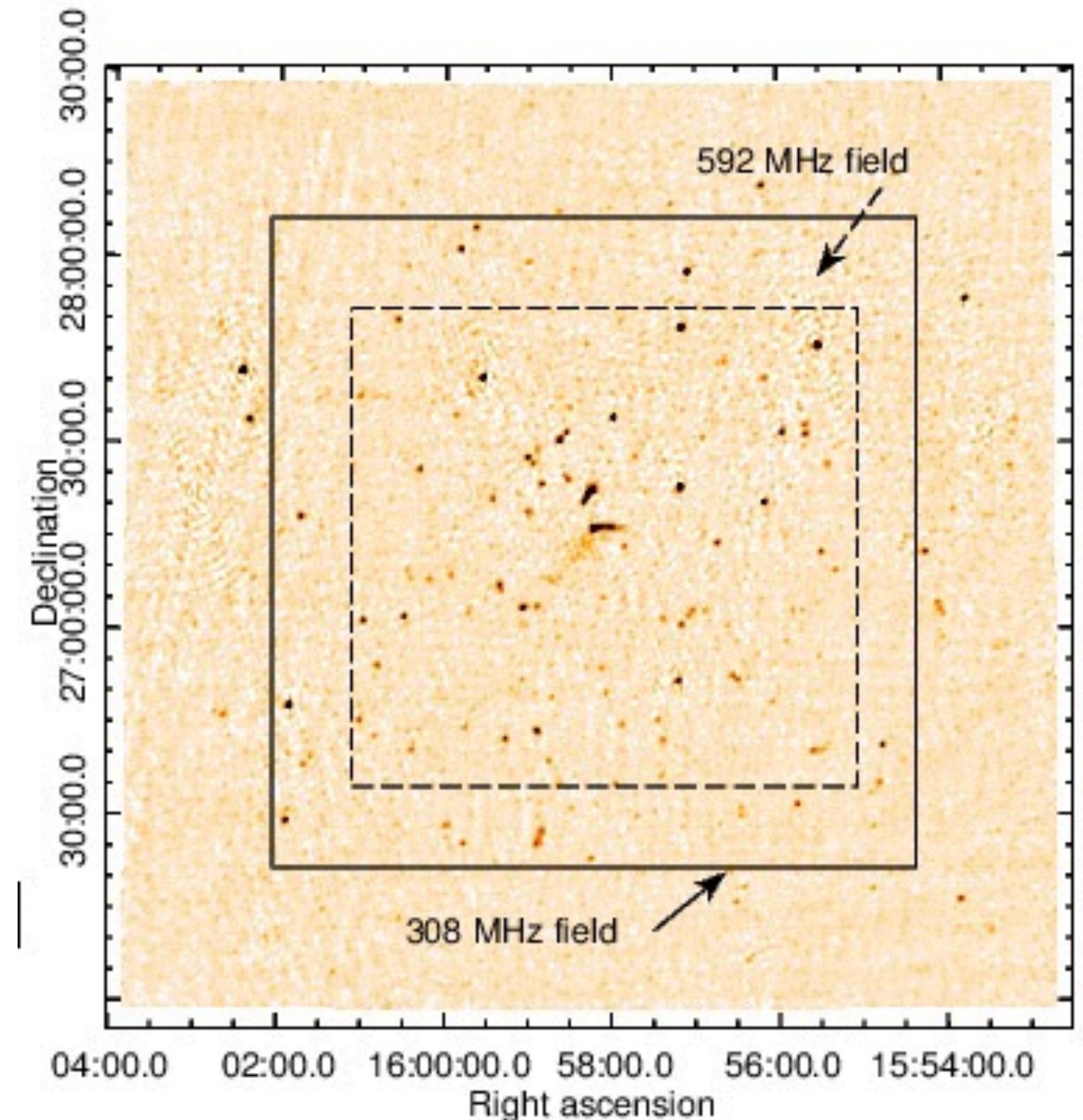
Data release policy and public archives

EVN, NRAO (JVLA, VLBA), (e)MERLIN, WSRT, GMRT, ATCA, IRAM LPA, ALMA, LOFAR...

- Ground and space observatories (not only in the radio band) usually adopt a data release policy: Approved observations are accessible to the proposing team for a limited period (proprietary period), after which the data become public.
- The proprietary period is usually of the order of 12 – 18 months, and can be negotiated only under exceptional circumstances.
- Data archives have a web interface and can be easily accessed
- Depending on the facility, raw or pipelined u-v data are made available

Data release policy and public archives

- Most likely, a wealth of data for your target is available and accessible even without an observing time request
 - your target could be in the field of a different source, or a calibrator, ...
- Can this be useful/is it what you need?
 - Frequency, resolution, sensitivity, u-v coverage (LAS), FoV ...




Data release policy and public archives

Retrieve NVSS Image Size: 15' Contours (PS) JPEG FITS

Retrieve FIRST Image Size: 15' GIF FITS File

NRAO Archive 1 arcminute search radius (E)

<input type="checkbox"/> ABB303_16	public	ABB303	16	14-Mar-20 10:46:03	14-Mar-20 18:57:29	136.05MB	GBT:GBT:0	K	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> VLBA_BR198K2_br198k2_BIN0_SRC0_0_140410T153035.idifits -- correl:14-Apr-10 15:30:36 job:1	public	BR198K	x	14-Mar-31 09:52:41	14-Mar-31 16:34:42	276.32MB	VLBA::0	K	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> VLBA_BR198L2_br198l2_BIN0_SRC0_0_140417T162606.idifits -- correl:14-Apr-17 16:26:08 job:1	public	BR198L	x	14-Apr-07 09:25:09	14-Apr-07 16:11:01	214.60MB	VLBA::0	K	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> VLBA_BR198R1_br198r1_BIN0_SRC0_0_140429T142603.idifits -- correl:14-Apr-29 14:26:04 job:1	public	BR198R	x	14-Apr-19 09:07:53	14-Apr-19 15:52:28	279.22MB	VLBA::0	C	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> VLBA_BR149R5_br149r5_BIN0_SRC0_0_140512T155040.idifits -- correl:14-May-12 15:50:42 job:1	public	BR149R	x	14-Apr-29 08:58:29	14-Apr-29 16:02:20	222.76MB	VLBA::0	C	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> AGBT14A_100_02	public	AGBT14A_100	02	14-May-03 03:41:38	14-May-03 06:24:13	135.14MB	GBT:GBT:0	L	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> VLBA_BR198X1_geox1_BIN0_SRC0_0_140516T164026.idifits -- correl:14-May-16 16:40:27 job:1	public	BR198X	x	14-May-08 09:15:00	14-May-08 13:13:40	122.04MB	VLBA::0	K	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> SE0851.sb29206851.eb29214361.56806.16586359954	public	SE0851	x	14-May-29 03:59:02	14-May-29 05:28:47	19.27GB	VLA:A:0	L S	SDMset	raw	OK	Scans	Logs
<input type="checkbox"/> VLBA_BZ046A3_bz046a3_BIN0_SRC0_0_140701T170155.idifits -- correl:14-Jul-01 17:01:56 job:1	public	BZ046A	x	14-Jun-17 00:01:47	14-Jun-17 05:03:03	194.38MB	VLBA::0	K	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> VLBA_BM353W_bm353w_BIN0_SRC0_0_140707T170420.idifits -- correl:14-Jul-07 17:04:22 job:1	public	BM353	x	14-Jun-20 21:39:23	14-Jun-21 21:41:26	26.83GB	VLBA::0	Q	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> VLBA_BR198K3_br198k3_BIN0_SRC0_0_140728T170611.idifits -- correl:14-Jul-28 17:06:13 job:1	public	BR198K	x	14-Jul-19 02:40:11	14-Jul-19 09:22:12	150.96MB	VLBA::0	K	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> VLBA_BR198L3_br198l3_BIN0_SRC0_0_140728T194550.idifits -- correl:14-Jul-28 19:45:52 job:1	public	BR198L	x	14-Jul-20 02:36:14	14-Jul-20 09:22:05	198.41MB	VLBA::0	K	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> VLBA_BZ046A4_bz046a4_BIN0_SRC0_0_140826T153212.idifits -- correl:14-Aug-26 15:32:14 job:1	public	BZ046A	x	14-Aug-15 20:05:52	14-Aug-16 01:07:10	193.88MB	VLBA::0	K	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> ABB303_19	public	ABB303	19	14-Sep-04 23:43:04	14-Sep-05 05:54:41	64.39MB	GBT:GBT:0	K	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> ABB303_20	public	ABB303	20	14-Sep-11 23:10:29	14-Sep-12 05:57:39	74.15MB	GBT:GBT:0	K	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> VLBA_BR198K4_br198k4_BIN0_SRC0_0_140922T153854.idifits -- correl:14-Sep-22 15:38:56 job:1	public	BR198K	x	14-Sep-13 22:56:05	14-Sep-14 05:38:06	276.46MB	VLBA::0	K	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> VLBA_BR198L4_br198l4_BIN0_SRC0_0_140926T144919.idifits -- correl:14-Sep-26 14:49:21 job:1	public	BR198L	x	14-Sep-14 22:52:08	14-Sep-15 05:37:59	275.79MB	VLBA::0	K	FITS-IDI	raw	OK	Scans	Logs
<input type="checkbox"/> ABB303_21	public	ABB303	21	14-Oct-06 21:24:36	14-Oct-07 05:26:48	119.27MB	GBT:GBT:0	K	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> AGBT14B_123_54	public	AGBT14B_123	54	14-Dec-23 08:37:04	14-Dec-24 03:37:07	1.29MB	GBT:GBT:0	L	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> AGBT14B_123_55	public	AGBT14B_123	55	14-Dec-24 03:38:23	14-Dec-24 04:44:40	7.74MB	GBT:GBT:0	L	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> 15A-069.sb30390595.eb30496796.57104.40696197917	public	15A-069	x	15-Mar-23 09:46:03	15-Mar-23 12:45:32	122.16GB	VLA:B:0	X K U Ka Q	SDMset	raw	OK	Scans	Logs
<input type="checkbox"/> ABB303_22	public	ABB303	22	15-Apr-05 13:24:22	15-Apr-07 01:08:51	393.48MB	GBT:GBT:0	K	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> TCAL0008.sb30937294.eb30938265.57187.071095266205	public	TCAL0008	x	15-Jun-14 01:42:23	15-Jun-14 03:42:19	42.39GB	VLA:BnA->A:0	C	SDMset	raw	OK	Scans	Logs
<input type="checkbox"/> TCAL0008.sb30943954.eb30944474.57187.99348474537	public	TCAL0008	x	15-Jun-14 23:50:46	15-Jun-15 02:20:27	47.83GB	VLA:BnA->A:0	Ka C X	SDMset	raw	OK	Scans	Logs
<input type="checkbox"/> AVLB15B_162_01	locked	AVLB15B_162	01	15-Dec-21 11:30:13	15-Dec-21 17:13:48	191.76MB	GBT:GBT:0	K	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> AVLB15B_162_02	locked	AVLB15B_162	02	15-Dec-27 05:15:28	15-Dec-27 16:55:32	170.13MB	GBT:GBT:0	K	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> 15B-247.sb31916705.eb31920756.57459.08328766204	public	15B-247	x	16-Mar-12 01:59:57	16-Mar-12 02:59:46	8.12GB	VLA:C:0	C	SDMset	raw	OK	Scans	Logs
<input type="checkbox"/> AVLB15B_162_03	locked	AVLB15B_162	03	16-Dec-09 11:30:24	16-Dec-09 16:56:43	185.90MB	GBT:GBT:0	K	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> AVLB15B_162_04	locked	AVLB15B_162	04	16-Dec-15 11:30:15	16-Dec-15 17:43:19	114.38MB	GBT:GBT:0	K	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> AGBT16B_199_64	locked	AGBT16B_199	64	16-Dec-21 03:38:24	16-Dec-21 04:39:37	8.56MB	GBT:GBT:0	L	FITS-GBT	raw	OK	Scans	na
<input type="checkbox"/> TSKY0001.sb33279756.eb33329507.57768.41469556713	public	TSKY0001	x	17-Jan-15 09:57:11	17-Jan-15 14:19:56	91.62GB	VLA:A:0	L S	SDMset	raw	OK	Scans	Logs
<input type="checkbox"/> AGBT16B_199_91	locked	AGBT16B_199	91	17-Feb-01 02:36:49	17-Feb-01 03:41:37	8.30MB	GBT:GBT:0	L	FITS-GBT	raw	OK	Scans	na



**EVN
Catalogues
Info**


**Working
Directory**

evn

Select

**Select by
center**

**EUROPEAN
NETWORK**

European  Network

Catalogue VLBINET2

Catalogue of sources observed with EVN and Global array from 1999 (Records: 5628)

Catalogue fields

NAME : Iau Name	NAME2 : Other Name
RA : Right Ascension J2000	DEC : Declination J2000
PI : Principal Investigator	AFFL : Affiliation (of P.I.)
PROJECT : Project number	WL : Wavelength
ARRAY : Array of observation	MODE : Mode of observation
TIME : Duration of the observation	DATE : Observation DATE
CORRELAT : Correlator name	.

You can impose constraints in selection or get all the table

Selection on Coordinate window ?

Lon.: RA ▾ From : To :

Lat.: DEC ▾ From : To :

Constraints on field values ?

where:

Select Data

Example: EVN data archive

EVN Data Archive at JIVE

Availability of standard plots, pipeline and fitsfiles.

Select Sort order: Observation period: -

Experiment	Std	Pipe	Fits	P. Investigator	Stations	Obs. Date	Distr. Date	Publ. Date	Support Scientist
EA053A	x	x	x	Akiyama	JbWbEfMcNtOnShUrTrYsSvZcBdHh	140304	140626	150626	Duev
EA053B	x	x	x	Akiyama	JbWbEfMcNtOnShUrTrYsSvZcBd	140305	140626	150626	Duev
EA053C	x	x	x	Akiyama	JbWbEfMcNtOnShUrTrYsSvZcBdHh	140305	140626	150626	Duev
EA053D	x	x	x	Akiyama	JbWbEfMcNtOnShUrTrYsSvZcBdHh	140306	140626	150626	Duev
EA053E	x	x	x	Akiyama	JbWbEfMcNtTrYsHh	140308	140626	150626	Duev
EA055A	x	x	x	Argo	EfWbJbOnNtTrSvZcBd	141030	150203	160203	Surcis
EA056A	x	x	x	Akiyama	JbWbEfNtOnShTrSvZcBdHhYs	141026	150306	160306	Duev
EA056B	x	x	x	Akiyama	JbWbEfNtOnShTrSvZcBdHh	141102	150306	160306	Duev
EB052E				Bartkiewicz	YsJbEfMcOnTrNtHhWbSr	150315			Duev
EB052F	x	x	x	Bartkiewicz	YsJbEfMcOnTrNtHhWbSr	150317	150901	160901	Duev
EB052G	x	x	x	Bartkiewicz	YsJbEfMcOnTrNtHhWbSr	150318	150901	160901	Duev
EB052H	x	x	x	Bartkiewicz	YsJbEfMcOnTrNtHhWbSr	150319	150901	160901	Campbell/Mao
EB056				Biggs	JbWbEfMcO8TrSvBdZcYsHhT6NtAr	150608			
EC044	x	x	x	Cui	EfWbJbOnNtTrYsT6	140616	140926	150926	Goddi
EC045	x	x	x	Cseh	EfJbWbOnMcNtTr	140114	140116	150116	Paragi
EC047A	x	x	x	Castangia	EfWbOnJbNtSvMcTrZcUrBdSrSh	150228	150624	160624	Surcis
EC047B	x	x	x	Castangia	EfWbOnJbNtSvMcTrZcUrBdYsSh	150311	150624	160624	Surcis
EC048	x	x	x	Caccianiga	EfNtOnTrShWbSvBdZcJb	140601	141022	151022	Goddi
EC052A	x	x	x	Cseh	EfHhJbNtOnTrWbSh	141008	141014	160626	Paragi
EC052B	x	x	x	Cseh	EfHhJbNtOnTrYsWbSh	141118	141120	160626	Paragi
EC052C	x	x	x	Cseh	EfHhJbMcNtOnTrWbSh	150210	150213	160626	Paragi
EC052D	x	x	x	Cseh	EfJbNtOnTrYsWbHhSh	150324	150326	160626	Surcis
EC052E	x	x	x	Cseh	EfHhJbMcNtO8TrWbSh	150623	150626	160626	Paragi
EC053	x	x	x	Coppejans	EfHhJbMcNtOnShTrWb	150114	150115	160115	Paragi
EF025	x	x	x	Frey	EfWbOnMcNtTrShJb	140221	140304	150304	Paragi

Contents of EVN archive at JIVE for experiment EA053A

Archive Info

Station Feedback

Station Logfiles

Standard plots

Pipeline calibration

Fitsfiles

Products

- The feedback page was filled in by the stations and gives information about local circumstances during the observation.
- The station logfiles, schedfiles etc. point directly to the Bologna archive. They reflect in detail the instrumental settings during the observation.
- Standard plots preliminary show the quality of the correlated experiment. The standard plots are produced close after the correlation the experiment is finished. The page also contains a link to the P.I. letter, which tells how the correlation was done. The standard plots are public.
- The pipeline gives a more detailed impression of the quality of the correlation. It contains also plots for each source separately. It is possible that certain plots are set to private on demand of the P.I.
- The fitsfiles are the final product and are private to the P.I. during a period of 12 months. When a fast internet connection is available the fitsfiles can be downloaded by the owner of the experiment or by everyone after the expiration date of the protection.

Archiving Policy

P.I.s have sole right of access to data for their project for a period of 12 months after the distribution to the P.I. During this period data can only be accessed using a username and password provided by the project support scientist. The full EVN Data Access Policy can be found [here](#).

Archive Info

Station Feedback

Station Logfiles

Standard plots

Pipeline calibration

Fitsfiles

EVN User Experiment Pipeline Feedback of EA053A

A description of the pipeline is available from the [pipeline homepage](#).
The links will direct you to webpages containing:

- A series of plots produced by the pipeline which should be useful in assessing the antenna performance and data quality in each experiment. (see [pipeline description](#) for details).
- A set of calibration tables (in FITS format) produced by the pipeline. These can be down-loaded and applied to the data provided by the EVN correlator. (see the EVN Data analysis guide, available from the [EVN user guide](#), for details).
- A history file associated with the data processed by the pipeline and a summary of what the CL/SN tables contain (typically CL table 2 provides the apriori amplitude calibration and CL table 3 provides phase, phase-rate, delay and amp gain solutions from the calibrators).
- The parseltongue pipeline script can be found [here](#) .
- In addition, the original pipeline script is made available, together with final versions of the ancilliary data (ANTAB, UVFLG files etc).

To download all the pipeline products use: [GNU wget](#). ([manual](#)).

It can be obtained from the web, if not available.

To get all pipeline products, copy next line to your commandwindow:

```
wget -t45 -l1 -r -nd http://archive.jive.nl/exp/EA053A_140304/pipe -A "ea053a**"
```

Pipeline products of experiment EA053A

[Pipeline plots](#)

[AIPS calibration. tables \(FITS Format\)](#)

[AIPS history file.](#)

[Short summary of CL/SN table contents.](#)

[Input parameters for script.](#)

[Associated EVN calibration.](#)

[Associated VLBA / VLA / GBT file.](#) (Not available)

Example: ALMA archive

ALMA Science Archive Query

Query Form Results Table

Search Reset

Position

Source name (Resolver)
Source name (ALMA)
RA Dec
Galactic
Target list
Angular resolution
Largest angular scale
Field of view

Energy

Frequency
Bandwidth
Spectral resolution
Band

Time

Observation date
Integration time

Polarisation

Polarisation type

Observation

Line sensitivity (10 km/s)
Continuum sensitivity
Water vapour

Project

Project code
Project title
PI name
Proposal authors
Project abstract
Publication count
Science keyword

Publication

Bibcode
Title
First author
Authors
Abstract
Year

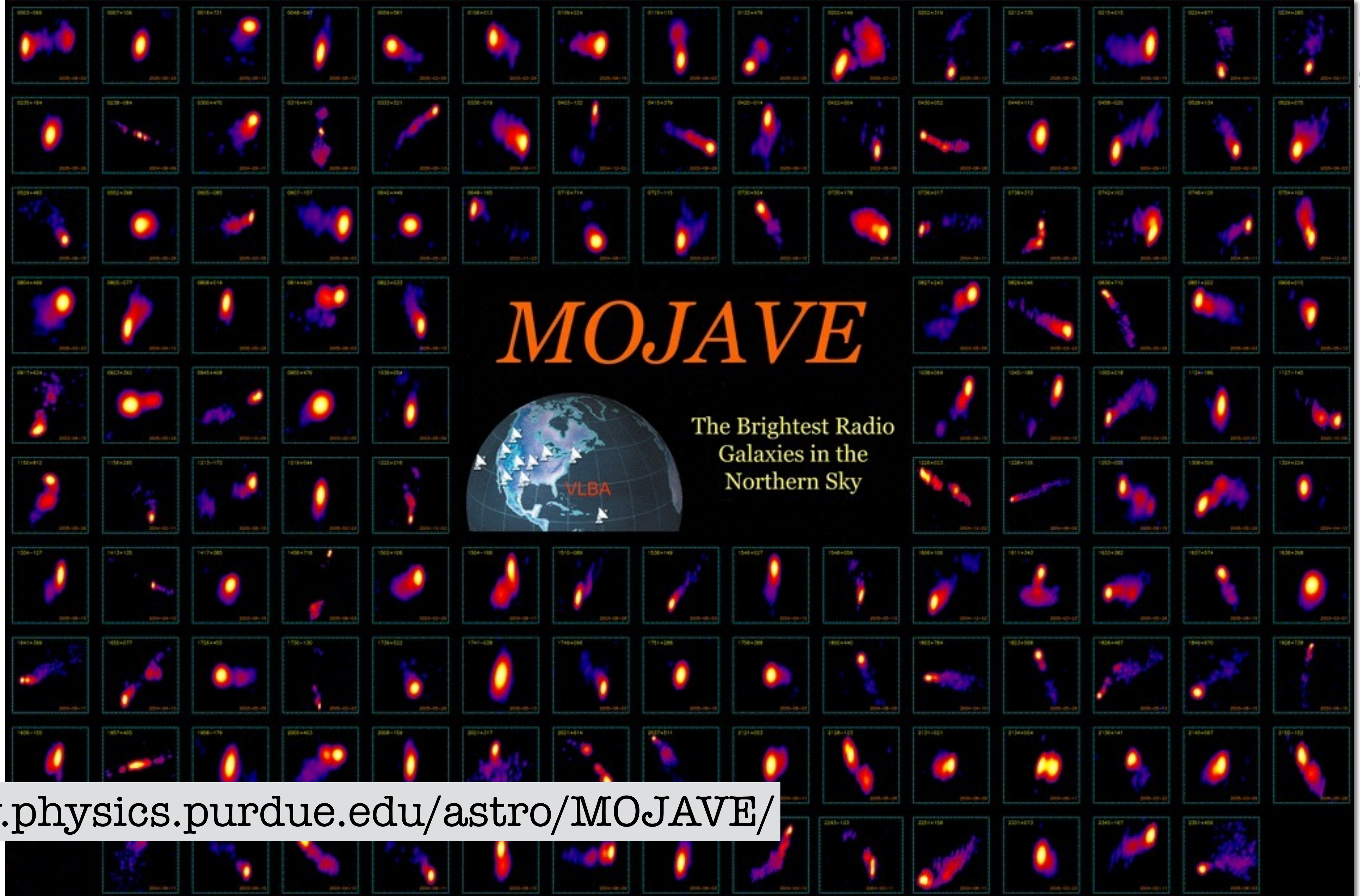
Options

View:
 observation
 project
 publication
 public data only
 science observations only

- <http://almascience.org/aq/>
- contains all public and proprietary data
- all public data can be accessed
- calibration data are public immediately
- science ready data products or ALMA raw data can be downloaded

Large projects and legacy programs

- Very large observatory programs, or individual large projects, which are granted observing time under the agreement that the data (usually final data products) will be made available within a short timescale from the observations
- Check if your target belongs to/is included in a legacy program
 - for context, if not for your immediate science goals
- Mind that if you are thinking of a very large proposal, your chances of being given observing time may increase if you add a legacy value



<http://www.physics.purdue.edu/astro/MOJAVE/>

Multi- λ & multiepoch monitoring of radio loud AGNs with the VLBA at 15 GHz, huge database, whose value has become even more relevant in the Fermi-LAT era.



Home

Team

Observations

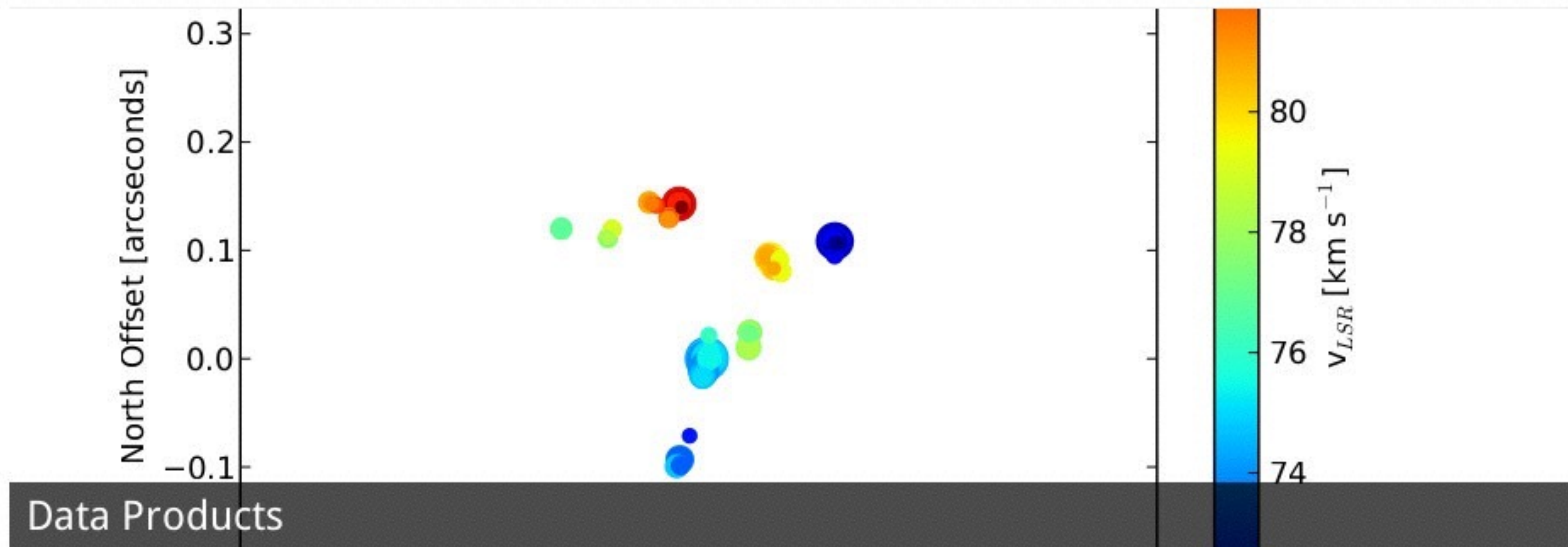
Results

Data Products

Publications

Internal

<http://bessel.vlbi-astrometry.org>



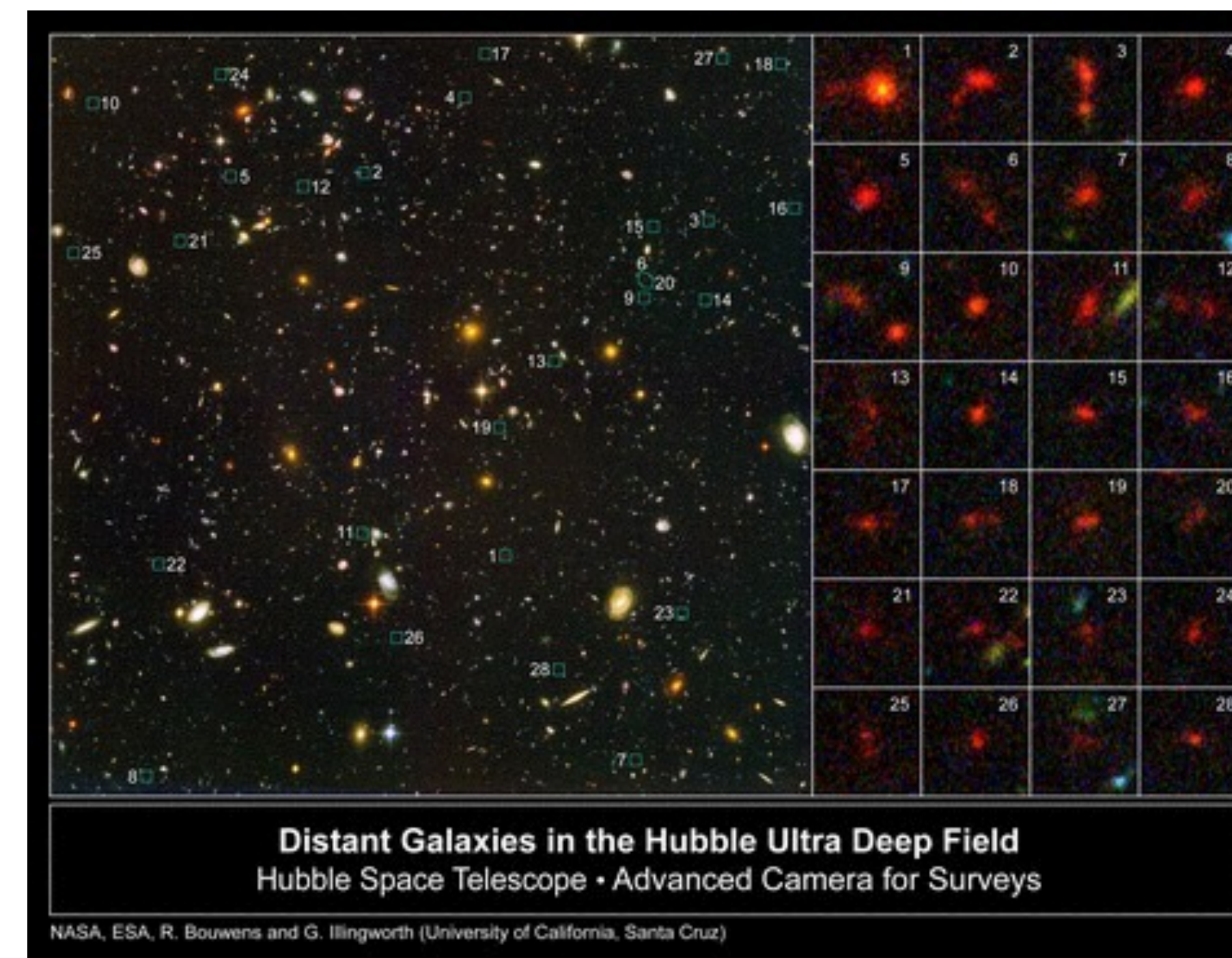
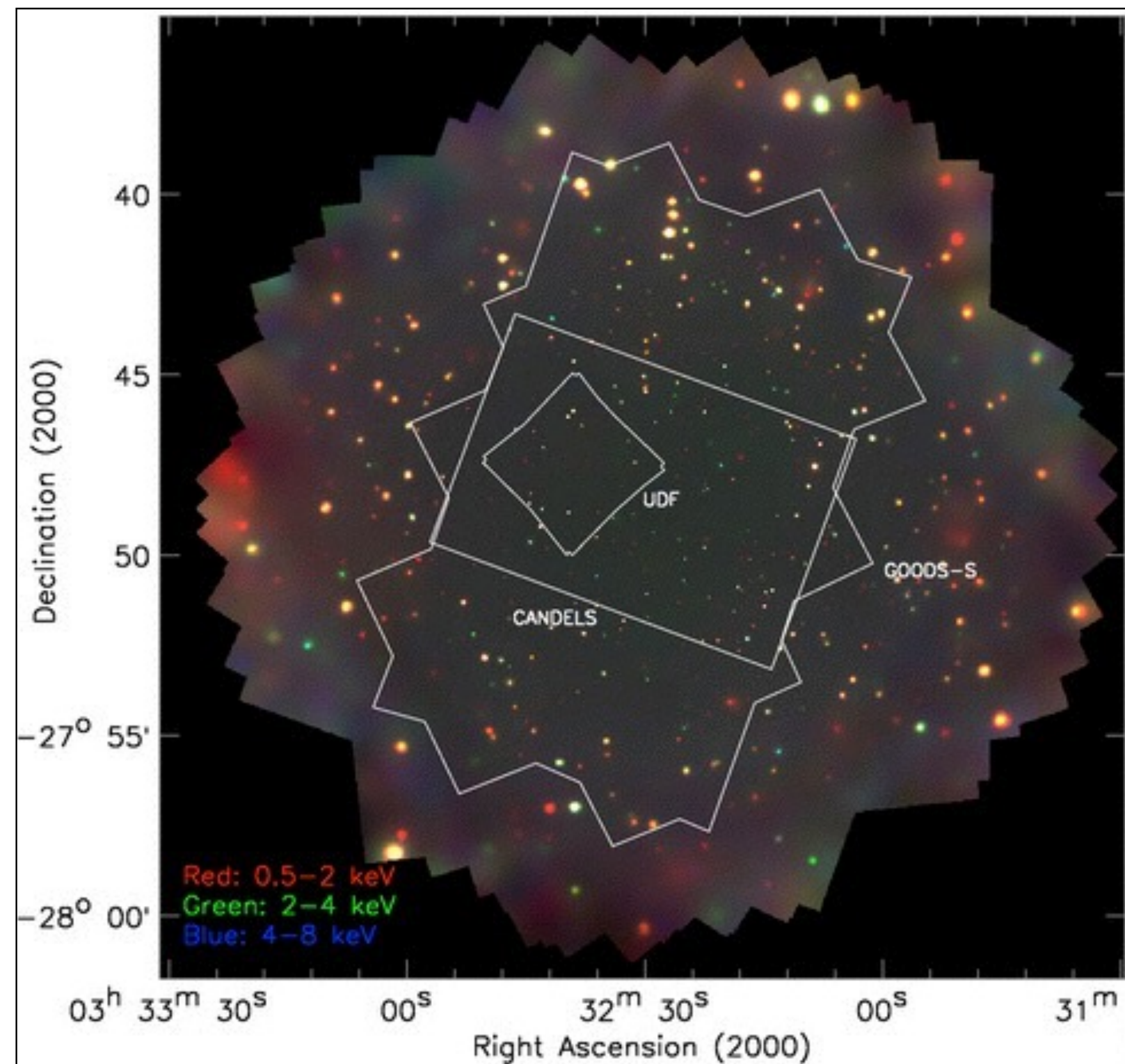
The Bar And Spiral Structure Legacy (BeSSeL) Survey

The **BeSSeL** Survey (Bar and Spiral Structure Legacy Survey) is a VLBA Key Science project. The survey is named in honor of Friedrich Wilhelm Bessel who measured the first stellar parallax in 1838. The goal of the survey is to study the spiral structure and kinematics of the Milky Way.

Legacy programs are being carried out with all facilities

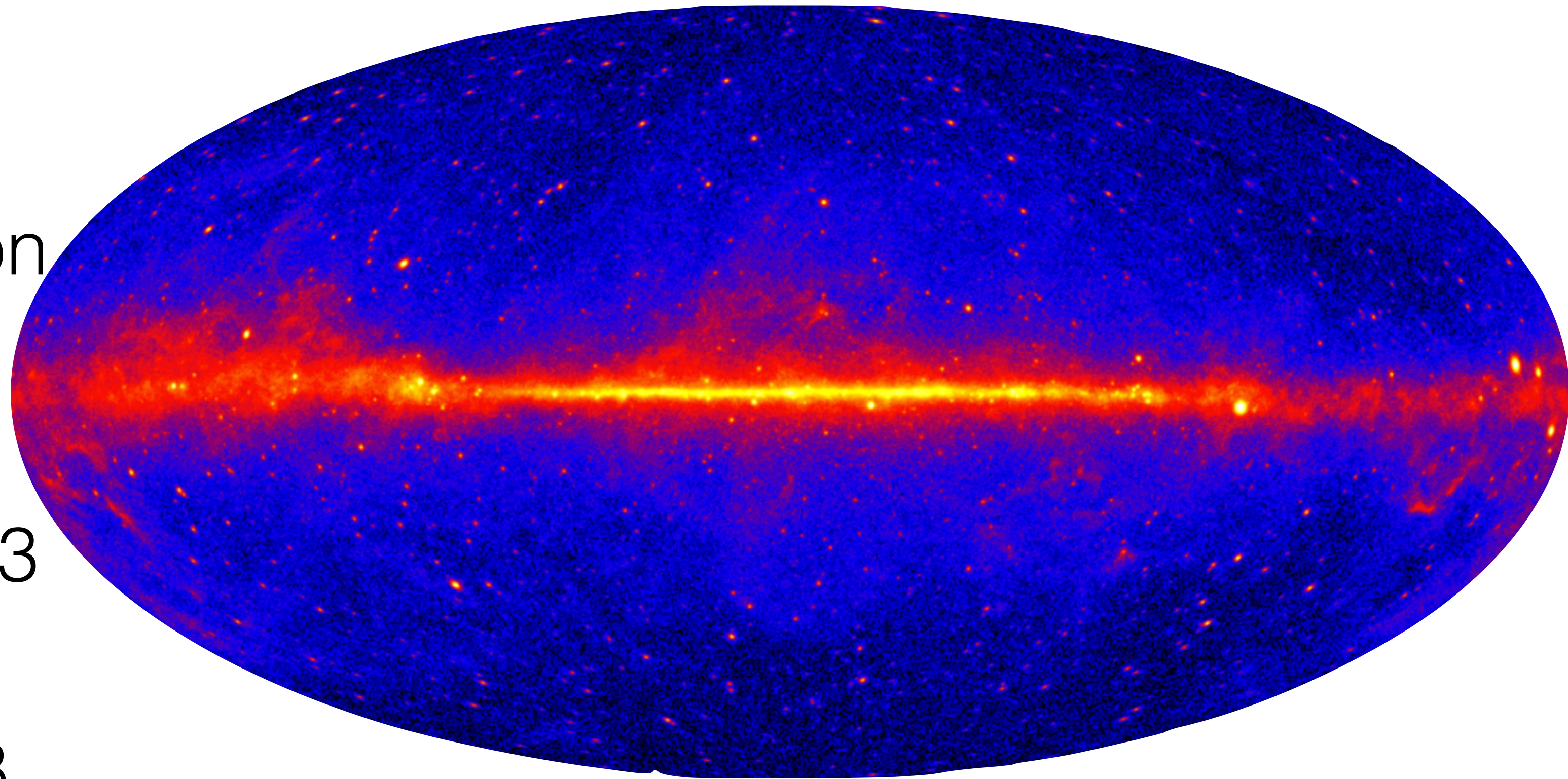
Chandra Deep Field South - 4 Ms

Hubble Ultra Deep Field - 23 days

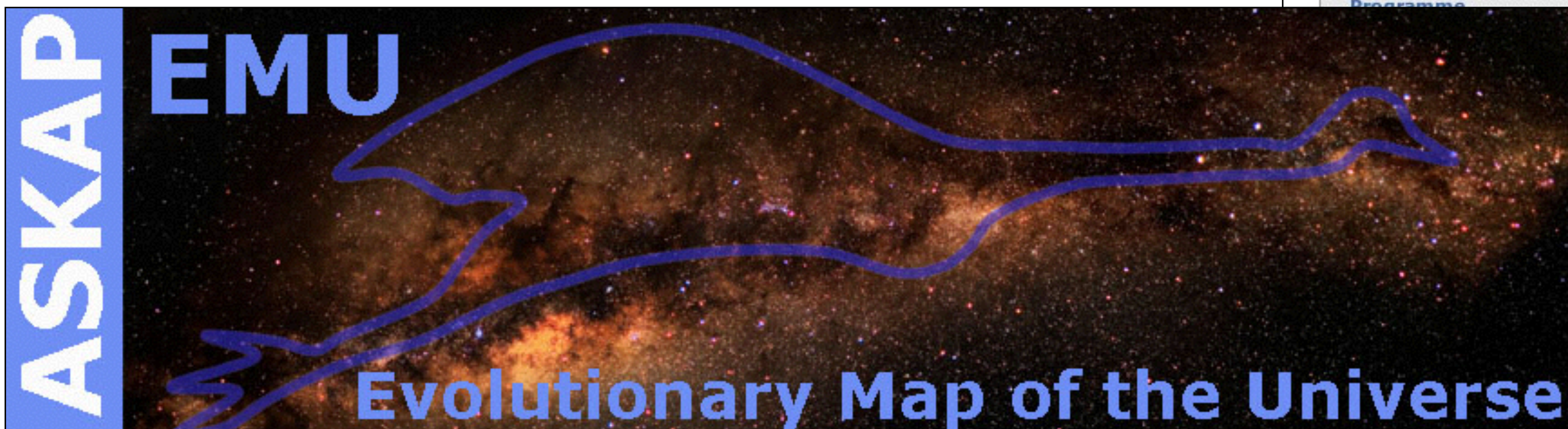


Fermi Large Area Telescope

- Scanning the sky every three hours since June 2008
- Both catalogue and photon data can be accessed
 - latest catalogue: 3FGL, Acero et al. (2015), 3033 sources
 - next release, early 2018
 - *Fermi* blog and ATels for flaring/new/peculiar sources



Forthcoming legacy projects with new facilities



MeerKAT science projects

Priority Group 1

Radio Pulsar Timing: Testing Einstein's theory of gravity and gravitational radiation - Investigating the physics of enigmatic neutron stars through observations of pulsars.

LADUMA (Looking at the Distant Universe with the MeerKAT Array) - An ultra-deep survey of neutral hydrogen gas in the early universe.

e-MERLIN science Legacy programme

Approved Legacy Programme

- ▶ Technical Working Group
- ▶ Science capabilities
- ▶ Technical Capabilities

The e-MERLIN Legacy programme

Approved Legacy projects

	Full Proposal*	Team Webpage**
<u>Astrophysics of Galaxy Transformation and Evolution (AGATE)</u> <i>Chris Simpson (Liverpool John Moores, UK)</i> <i>Ian Smail (Durham, UK)</i>	●	
<u>The e-MERLIN Cyg OB2 Radio survey: Massive and Young stars in the Galaxy (COBRaS)</u> <i>Raman Prinja (UCL, UK)</i>	●	●
<u>e-MERLIN Galaxy Evolution Survey (eMERGE)</u> <i>Tom Muxlow (Manchester, UK)</i> <i>Ian Smail (Durham, UK)</i> <i>Ian McHardy (Southampton, UK)</i>	●	
<u>e-MERLIN Pulsar Interferometry Project (e-PI)</u> <i>Wouter Vlemmings (University of Bonn, Germany)</i> <i>Ben Stappers (Manchester, UK)</i>	●	●
<u>Feedback Processes in Massive Star Formation</u> <i>Melvin Hoare (Leeds, UK)</i> <i>Wouter Vlemmings (University of Bonn, Germany)</i>	●	
<u>Gravitational Lensing and galaxy evolution with e-MERLIN</u> <i>Neal Jackson (Manchester, UK)</i> <i>Stephen Serjeant (Open University, UK)</i>	●	
<u>Legacy e-MERLIN Multi-Band Imaging of Nearby Galaxies (LeMMINGs)</u> <i>Rob Beswick (Manchester, UK)</i> <i>Ian McHardy (Southampton, UK)</i>	●	●
<u>Luminous Infra-red Galaxy Inventory (LIRGI)</u> <i>John Conway (Onsala Space Observatory, Sweden)</i> <i>Miguel Perez-Torres (IAA-CSIC, Spain)</i>	●	
<u>Morphology and Time Evolution of Thermal Jets Associated with Low Mass Young Stars</u> <i>Luis Rodriguez (UNAM, Mexico)</i>	●	
<u>Planet Earth Building Blocks - a Legacy e-MERLIN Survey (PEBBLES)</u> <i>Jane Greaves (St Andrews, UK)</i>	●	
<u>Resolving Key Questions in Extragalactic Jet Physics</u> <i>Robert Laing (ESO, Garching, Germany)</i> <i>Martin Hardcastle (Hertfordshire, UK)</i>	●	
<u>Super-CLASS: the Super-CLuster Assisted Shear Survey - a weak lensing deep field survey using e-MERLIN</u> <i>Richard Battye (JBCA, Manchester)</i>	●	

Use of public data

- In a **proposal** - to provide context, to show spectrum or reference epochs, or multi-scale images
 - Collect as much as you can from the literature, and from the public continuum radio surveys and data archives relevant to your project
- In a **paper**, for actual science, standalone, or combined with new data

Restarting activity in the nucleus of PBC J2333.9-2343

An extreme case of jet realignment

L. Hernández-García¹, F. Panessa¹, M. Giroletti², G. Ghisellini³, L. Bassani², N. Masetti^{2,4}, M. Pović^{5,6}, A. Bazzano¹,

NVSS
image

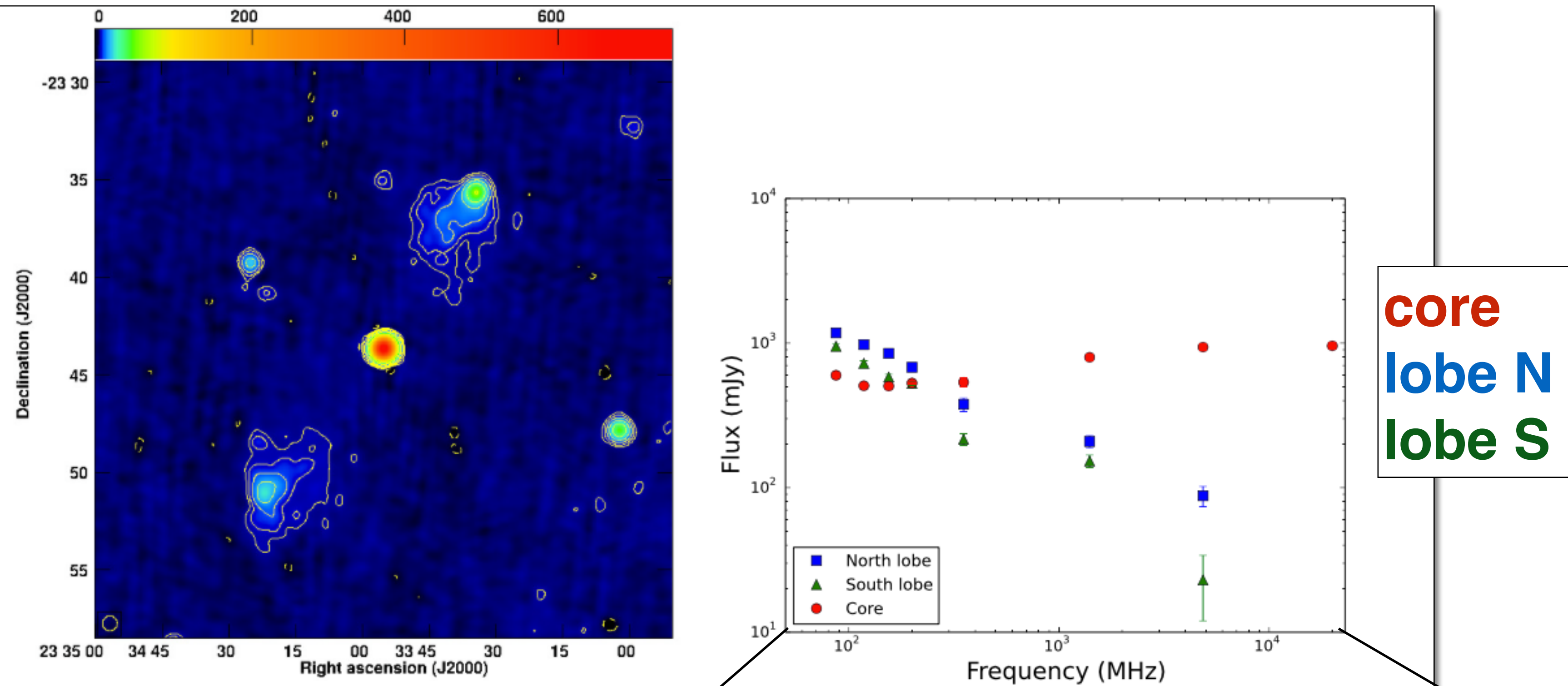


Fig. 6. *Left:* NVSS image at 1.4 GHz of the field of PBC J2333.9-2343. Contours are traced at $(-1, 1, 2, 4, 8, 16, 32) \times 1.7 \text{ mJy beam}^{-1}$. The peak

GLEAM + WENSS + NVSS + AT20G

and reach out to the general public!

- We love this “work” and we believe it is important for humanity - but we are also “civil servants”
- We need to make people aware of how beautiful and important this “work” is and how well their money (instruments and personnel) is spent
- If you have a cool result, a pretty picture, an intriguing story... your media office will surely be happy to help

Summary

- Archives, surveys, and legacy projects can be really useful for your science
- It takes patience and investigation but it could be worth a lot
- Your data may become legacy too... but you should be the one to want it!
- *RadioNet has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730562*