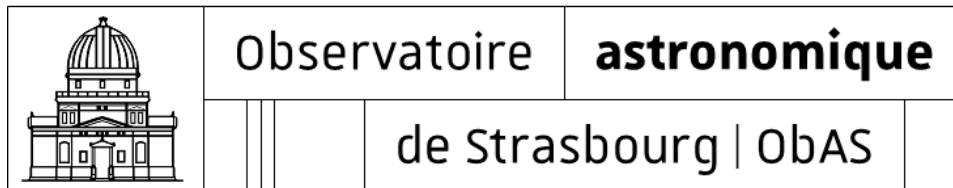


# Atelier services CDS : SIMBAD, Aladin...

Ecole photométrie - 24 juin 2023

Sébastien Derriere



# □ CDS : 50 ans d'histoire



- **1972** : création du **CDS**  
→ Centre de Données **Stellaires**
- **1981** : SIMBAD
- **1983** : extension aux galaxies et autres objets non-stellaires  
→ Centre de Données astronomiques de **Strasbourg**
- **1996** : VizieR
- **1999** : Aladin
- **2001** : le CDS participe aux projets d'observatoire virtuel.
- **2011** : Service xMatch
- **2015** : relevés HiPS (Fernique et al., 2015, A&A 578, A114)



**SiMBAD**

The logo for SiMBAD features the word in a bold, black, sans-serif font. Behind the text is a large, expressive brushstroke graphic. The stroke starts with teal and blue at the bottom left, curves upwards and to the right, and then curves back down and to the right. A bright yellow section is integrated into the middle of the stroke, behind the letters 'M' and 'B'. The overall style is dynamic and artistic.

# □ SIMBAD

- **SIMBAD** = **S**et of **I**dentifications, **M**easurements and **B**ibliography for **A**stronomical **D**ata.
- <http://simbad.cds.unistra.fr/simbad/>
- Objets astronomiques 16 millions d'objets
  - Noms des objets
  - Mesures : Coordonnées, mvt propres, taille, magnitudes, redshift, Type (spectral, morphologique), parallaxe, Températures, métallicités, diamètres, ...
  - Bibliographie !

# ☐ Attention avec SIMBAD

- Contenu hétérogène !
  - Compilation bibliographique, complétée par des catalogues de référence (mais ne contient pas les grands catalogues en entier !!)
- Contenu en évolution permanente
  - Nouveaux objets
  - Nouvelles mesures
- Nombreux modes d'interrogation
  - Page web : 1 objet, région du ciel (Cone Search), par liste d'objets
  - Par critères
  - Usages avancés : TAP (Table Access Protocol), Python
  - Catalogue progressif
  - « Pointeur SIMBAD »



# SIMBAD

## SIMBAD Astronomical Database - CDS (Strasbourg)

What is SIMBAD ?

Queries
<a href="#">basic search</a>
<a href="#">by identifier</a>
<a href="#">by coordinates</a>
<a href="#">by criteria</a>
<a href="#">reference query</a>
<a href="#">scripts</a>
<a href="#">TAP queries</a>
<b><a href="#">Output options</a></b>

Documentation
<a href="#">Object types</a>
<a href="#">Nomenclature &amp; Dictionary</a>
<a href="#">Recommendations for Data Publication</a>
<a href="#">User's guide</a>
<a href="#">Measurement description</a>
<a href="#">List of journals</a>
<a href="#">User annotations documentation</a>
<a href="#">Query by urls</a>
<a href="#">Acknowledgment</a>

Information
<a href="#">Presentation</a>
<a href="#">Image thumbnails</a>
<a href="#">Mobile version</a>
<a href="#">SimWatch</a>
<a href="#">Release:</a>
<a href="#">SIMBAD4 1.8 - 2023-06</a>
<a href="#">Release history</a>

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
<input type="text"/>
<i>identifier, coordinates (radius=10 arcmin), or bibcode</i>
<input type="button" value="SIMBAD search"/> <input type="button" value="clear"/> <a href="#">help</a>
<a href="#">Install the Simbad basic search in your tool bar</a>

Acknowledgment
If the Simbad database was helpful for your research work, the following acknowledgment would be appreciated:
<i>This research has made use of the SIMBAD database, operated at CDS, Strasbourg, France</i>
<a href="#">2000,A&amp;AS,143,9</a> , "The SIMBAD astronomical database", Wenger et al.

Statistics
Simbad contains on <b>2023.06.23</b>
16,691,751 objects
59,410,871 identifiers
419,423 bibliographic references
34,544,335 citations of objects in papers
15,339 acronyms described for Simbad

# M51

other query modes : [Identifier query](#) [Coordinate query](#) [Criteria query](#) [Reference query](#) [Basic query](#) [Script submission](#) [TAP](#) [Output options](#) [Help](#)

Query: M51

C.D.S. - SIMBAD rel 1.7 - 2019.03.15CET11:48:01

Available data : [Basic data](#) • [Identifiers](#) • [Plot & images](#) • [Bibliography](#) • [Measurements](#) • [External archives](#) • [Notes](#) • [Annotations](#)

## Basic data :

### M 51 -- Galaxy in Pair of Galaxies

Other object types: **FG** ( ), **Sy2** ( ), **G** (**Ref.**, **APG**, ...), **Rad** (**B3**, **BME**, ...), **AGN** ([**V2000c**], [**V2003c**], ...), **X** (**RX**, **IRXS**, ...), **IR** (**IRAS**, **ISOSS**, ...), \* (**BD**, **PLX**), **G1P** (**KPG**, [**T76**]), **IG** (**VV**), **G1G** ([**CH2007**])

KRS coord. (epj=2000): **13 29 52.698 +47 11 42.93 (Infrared) [ ] C 2006AJ....131.11635**

KRS coord. (epj=2000): **202.469575 +47.195258 [ ]**

KRS coord. (epj=2015.5): **202.469575 +47.195258 [ ]**

Gal coord. (epj=2000): **104.851585 +68.560700 [ ]**

Radial velocity / Redshift / cz: **V (km/s) 465 [61] / z(-) 0.00155 [0.00020] / cz 465.0 [61.0]**  
**D 1999PASP...111..438F**

Parallaxes (mas): **7.8 [16.9] E 1995GCTP...C.....0V**

Morphological type: **SABbc C 2015ApJS...217...27A**

Fluxes (6): **B (AB) 9.26 [0.03] C 2014MNRAS...445..881C**  
**V 8.36 [0.06] D 2007ApJS...173..185G**  
**R (AB) 8.40 [0.03] C 2014MNRAS...445..881C**  
**J 6.401 [0.019] C 2006AJ....131.11635**  
**H 5.653 [0.020] C 2006AJ....131.11635**  
**K 5.496 [0.025] C 2006AJ....131.11635**

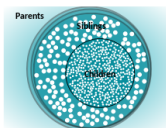
## notes:

- NGC 5195 is a possible companion
- M 51a in [SDSSApj...602..231C](#)
- See [GALEX UV data in GALEX data](#)
- See also [Specfind radio flux densities](#).

## Hierarchy : number of linked objects

whatever the membership probability is (see description here) :

parents : 2 children : 2341 siblings : 130 Display criteria: All



## Identifiers (58) :

An access of full data is available using the icon Vizier near the identifier of the catalogue

<b>M 51</b>	<b>IRAS 13277+4727</b>	<b>IRXS J132953.8+471143</b>	<b>[DML87] 671</b>
<b>APG 85A</b>	<b>ISOSS J13299+4714</b>	<b>TC 827</b>	<b>[H92] 27</b>
<b>APG 85</b>	<b>KHG 1-C 5</b>	<b>UGC 8493</b>	<b>[LPS2002] 16</b>
<b>B3 1327+474C</b>	<b>KPG 379a</b>	<b>UZC J132952.1+471144</b>	<b>[M98C] 132746.9+472716</b>
<b>BD+47 2063</b>	<b>LEDA 47404</b>	<b>VV 403</b>	<b>[SLK2004] 853</b>
<b>BME 1327+4727</b>	<b>ZMASX J13295269+4711429</b>	<b>VV 1a</b>	<b>[T76] 85A</b>
<b>4C 47.36A</b>	<b>MCG+08-25-012</b>	<b>VV 1</b>	<b>[VD093] 187A</b>
<b>6C 132748+472801</b>	<b>NAME Whirlpool</b>	<b>WS 1327+4727</b>	<b>[VV2000C] J132952.4+471141</b>
<b>7C 132735.60+472604.00</b>	<b>NAME Question Mark Galaxy</b>	<b>WN B1327.8+4727</b>	<b>[VV2003C] J132952.4+471141</b>
<b>7C 132746.79+472722.00</b>	<b>NAME Whirlpool Galaxy</b>	<b>XXM J132952.5+471144</b>	<b>[VV2006C] J132952.4+471141</b>
<b>7C 132753.10+473032.00</b>	<b>NGC 5194</b>	<b>XXMU J132952.9+471140</b>	<b>[VV2010C] J132952.4+471141</b>
<b>GB1 1327+475</b>	<b>PLX 3084</b>	<b>Z 246-0</b>	<b>[VV98C] J132952.7+471143</b>
<b>GB6 B1327+4727</b>	<b>PLX 3084.00</b>	<b>Z 1327.8+4727</b>	<b>[ZEH2003] RX J1329.8+4711 1</b>
<b>87GB 132747.8+472723</b>	<b>PLX 3084.00</b>	<b>[CAB95] IRAS F13277+4727</b>	
<b>IRAS F13277+4727</b>	<b>RX J1329.8+4711</b>	<b>[CHW2007] LDC 867 J132952.69+4711429</b>	

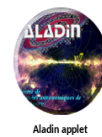
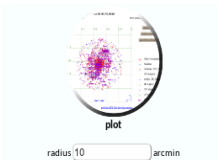
## Plots and Images

SIMBAD [query around](#) with radius  arcmin

Interactive Aladin Lite View

VizieR photometry viewer

Search  within radius  arcsec



### References (3610 between 1850 and 2019) (Total 3610)

SIMBAD bibliographic survey begun in 1850 for stars (at least bright stars) and in 1983 for all other objects (outside the solar system).

[Follow](#) new references on this object

Reference summaries:

from: 1850 to:

[Display](#) or select by: [\(not exhaustive, explanation here\)](#) [In table](#) [Title|Abstract|Keyword](#) [Score](#)

### Collections of Measurements

distance : 7  velocities : 14  PLX : 1

[display selected measurements](#) [display all measurements](#) [clear](#)

### Observing logs

ISO : 28  XMM : 1  herchel : 12  IUE : 7

[display selected measurements](#) [display all measurements](#) [clear](#)

### External archives :

Archive data at [HEASARC - High-Energy Astrophysics Science Archive Research Center](#)

Data at NED - [NASA/IPAC Extragalactic Database](#) : M51

Link by name to the catalogue in [VizieR](#) :

APG 85A  
IRAS F13277+4727  
PLX 3084

APG 85  
IRAS 13277+4727  
IRXS J132953.8+471143

BD+47 2063  
KPG 379a  
UGC 8493

BME 1327+4727  
2MASX J13295269+4711429  
WN B1327.8+4727

4C 47.36A  
NGC 5194  
[DML87] 671

Search by coordinates in [VizieR](#) (radius: 5 arcsec)

### Annotations :

Annotations allow a user to add a note or report an error concerning the astronomical object and its data. It requires registration to post a note. See [description](#).

The list of all annotations to SIMBAD objects can be found [here](#).

Currently no annotations available

[add an annotation to this object](#)

[report an error concerning the data of this object](#)

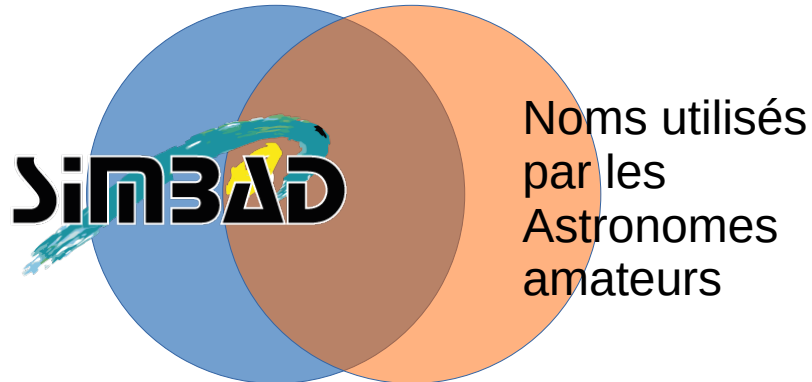
Show this result in [Votable](#), in [Ascii](#), or in the [CDS portal](#)

To bookmark this query, right click on this link: [simbad:M51](#) and select 'bookmark this link' or equivalent in the popup menu



# □ Noms d'objets astronomiques

- SESAME est un service de « name resolver »
  - Renvoie les positions (époque 2000.0) de tous les noms d'objets connus dans SIMBAD (et/ou VizieR, NED)
  - Mais il faut qu'ils soient correctement écrits !!
    - Dictionnaire de nomenclature
- Bonnes pratiques pour les noms astronomiques

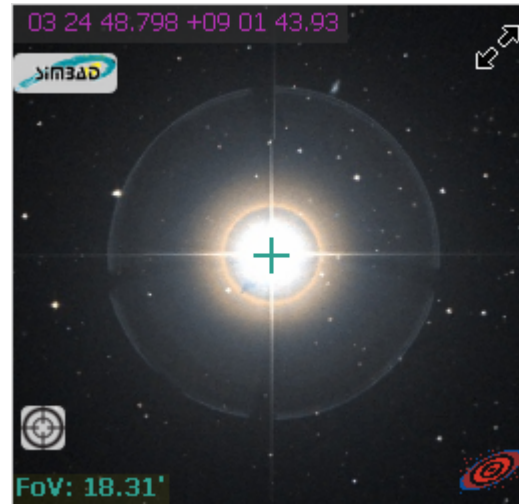
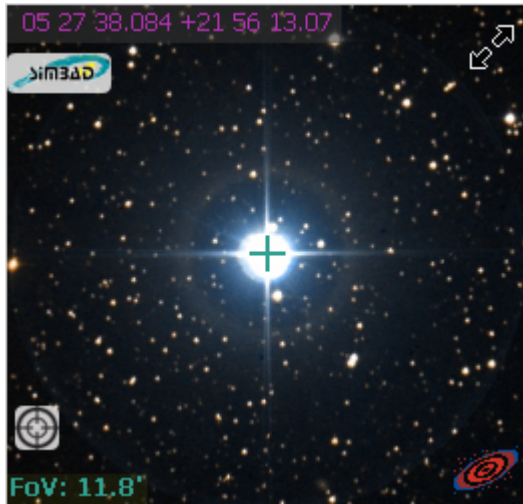


# □ Noms d'objets astronomiques

- SIMBAD : objets hors système solaire uniquement !
- Plusieurs milliers d'acronymes différents
- Exemples de noms courants reconnus
  - Beaucoup de noms « vernaculaires », mais **en anglais** : NAME Trifid nebula
  - Etoiles brillantes : lettre grecque (code 3 lettres) + Constellation (code 3 lettres)  
alf Lyr, bet Pic
  - Catalogues HR, HD, SAO, ...
  - Galaxies ou objets étendus : Messier (ex : M104), NGC, IC, ...

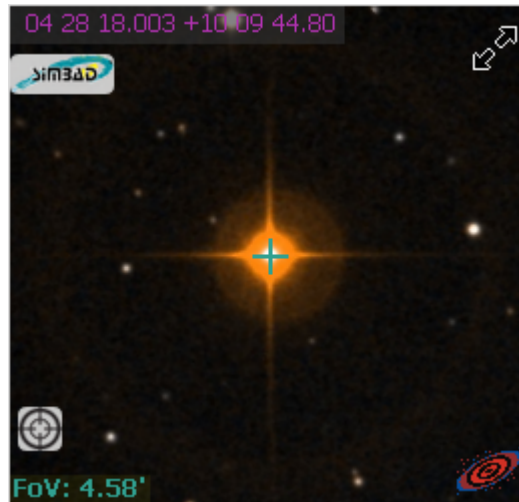
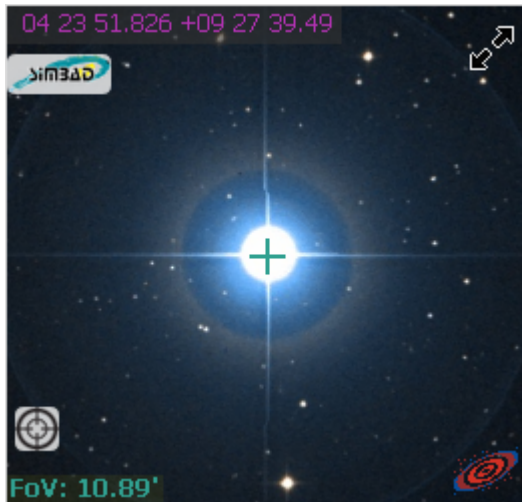
# □ Noms d'objets astronomiques

- Attention aux pièges !
- $\circ$  Tau  $\neq$   $\circ$  Tau  
( $\ast$   $\circ$  Tau,  $\ast$  114 Tau)  $\neq$  ( $\ast$   $\omicron$  Tau,  $\ast$  1 Tau)



# □ Noms d'objets astronomiques

- Sensible à la casse !
- r Tau  $\neq$  R Tau
- \* r Tau (HD 27820)  $\neq$  V\* R Tau (HD 28309)



A large, stylized graphic composed of thick, flowing, brushstroke-like lines in shades of orange, red, and yellow. The lines swirl and loop around the central text, creating a sense of motion and energy. The overall shape is roughly circular but with dynamic, irregular edges.



# VIZIER



# VizieR

- Service de **catalogues astronomiques**
- 23,000 catalogues disponibles
  - +1200 / an
- 1 catalogue = ensemble de tables (contenant des mesures)
  - Pas toujours des positions sur le ciel
  - Longueur = qq dizaines à qq milliards de lignes
- Grande diversité de : taille (profondeur), systèmes photométriques, types d'objets, couvertures spatiales, ...
- Contenu évolue : ajouts, nouvelles versions, ...
- Données associées : spectres, courbes de lumière/vitesse

# La « Mine » VizieR

Portal Simbad **VizieR** Aladin X-Match Other Help

[VizieR home](#) · [Photometry viewer](#) · [Query VizieR using TAP](#) · [X-match tables](#) · [Query Images/spectra](#)

### Find catalogs among 18334 available

Clear  [Find...](#) Expand search

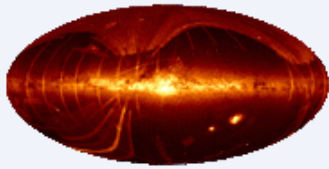
**?** *Catalog, author's name, word(s) from title, description, etc. e.g.: AGN, Veron, I/239, or bibcodes...*


▶ [Search for catalogs by column descriptions \(UCD\)](#) **?**  
▶ [Search for catalogs containing additional data](#)

### Search by Position across 19848 tables

Target Name (resolved by [Sesame](#)) or Position:  J2000  Target dimension:   [Go!](#)

Radius  Box size








[Find Catalogs](#) 

**i** [More about VizieR](#)

#### Tools related to VizieR

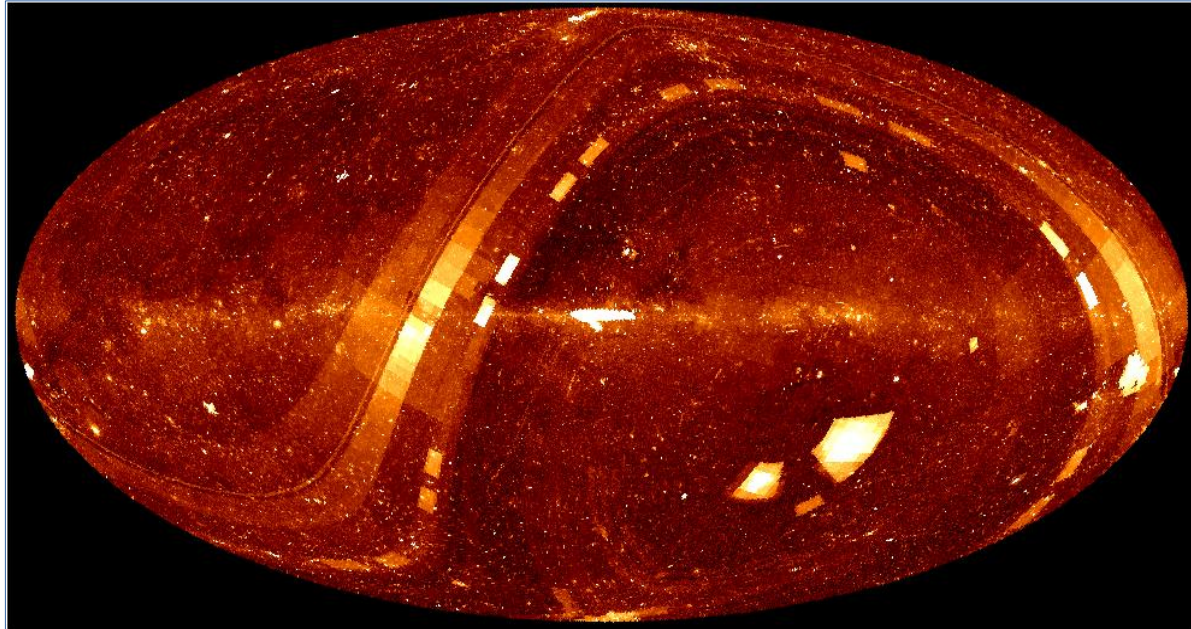
- [CDS Portal](#) : Access CDS data including VizieR, Simbad and Aladin using the CDS portal
- [Spectra, Images in VizieR](#) : Search Spectra, images in VizieR
- [Photometry viewer](#) : Plot photometry (sed) including all VizieR
- [TAP VizieR](#) : query VizieR using ADQL (a SQL extension dedicated for astronomy)
- [CDS cross-match service](#) : fast cross-identification between any 2 tables, including VizieR catalogues, SIMBAD

→ [Thanks for acknowledging the VizieR Service](#)  
→ [Rules of usage of VizieR data](#)

© Université de Strasbourg/CNRS  
    [Contact](#) 

# □ La « Mine » VizieR

- Publication électronique de tables des journaux
- Catalogues de référence

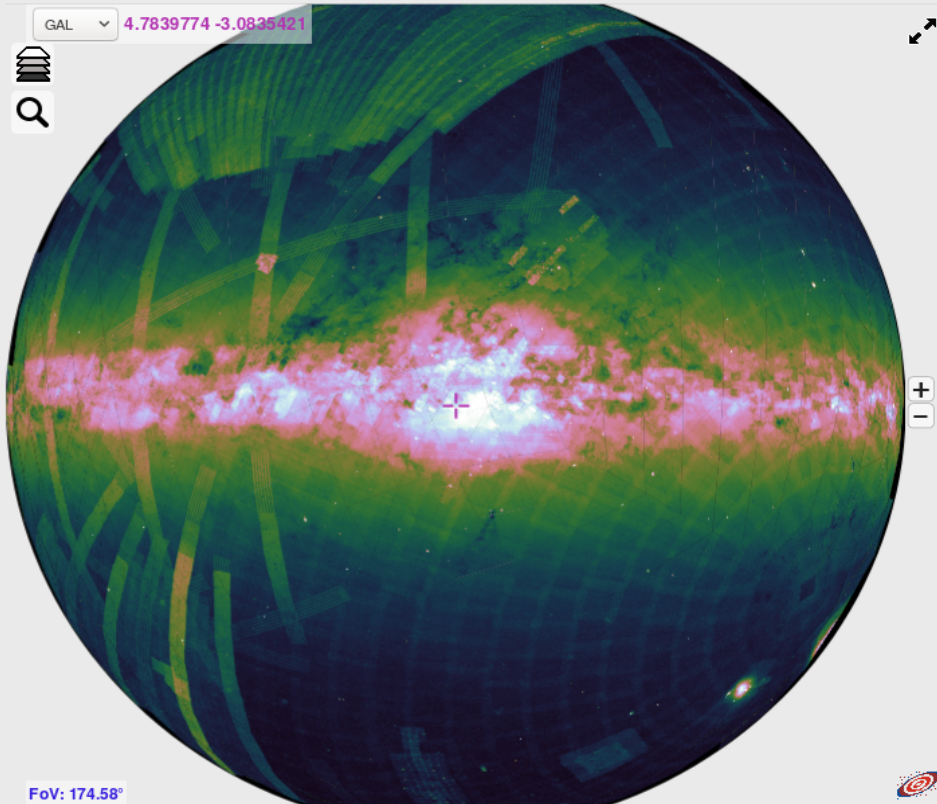




# La « Mine » VizieR

## VizieR footprint

Show [interactive VizieR coverage](#) . static VizieR coverage



Catalogues list around position 222.7111514527781 -59.89762491256597

Show 25 entries

Search:

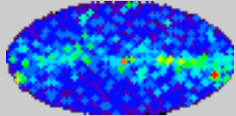
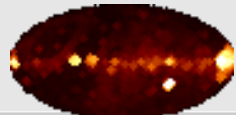
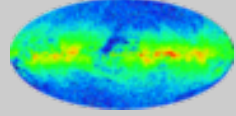
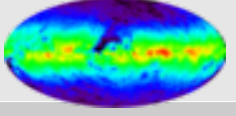
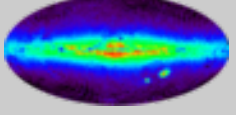
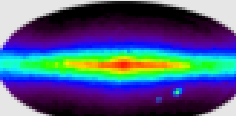
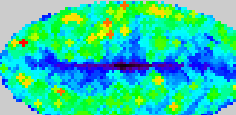
Name	Title
<a href="#">B/assocdata</a> 3 moc	Associated data in VizieR (G.Landais, 2016)
<a href="#">B/chandra</a> 3 moc	The Chandra Archive Log (CXC, 1999-2014)
<a href="#">B/denis</a> 3 moc	The DENIS database (DENIS Consortium, 2005)
<a href="#">B/eso</a> 3 moc	ESO Science Archive Catalog (ESO, 1991-2019)
<a href="#">B/gcvs</a> 3 moc	General Catalogue of Variable Stars (Samus+, 2007-2017)
<a href="#">B/gemini</a> 3 moc	The Gemini Observation Log (CADC, 2001-)
<a href="#">B/mk</a> 3 moc	Catalogue of Stellar Spectral Classifications (Skiff, 2009-2016)
<a href="#">B/swift</a> 3 moc	Swift Master Catalog (HEASARC, 2004-)
<a href="#">B/vsx</a> 3 moc	AAVSO International Variable Star Index VSX (Watson+, 2006-2014)
<a href="#">B/wds</a> 3 moc	The Washington Visual Double Star Catalog (Mason+ 2001-2014)
<a href="#">B/xmm</a> 3 moc	XMM-Newton Observation Log (XMM-Newton Science Operation Center, 2012)
<a href="#">I/108</a> 3 moc	Cape Photographic Durchmusterung (Gill+ 1895-1900)
<a href="#">I/114</a> 3 moc	Cordoba Durchmusterung (Thome 1892-1932)
<a href="#">I/116</a> 3 moc	Cape Photographic Catalog 1950.0 (CPC) (Jackson+ 1954-1968)
<a href="#">I/131A</a> 3 moc	SAO Star Catalog J2000 (SAO Staff 1966; USNO, ADC 1990)
<a href="#">I/171</a> 3 moc	Astrographic Catalog Reference Stars (ACRS) (Corbin+ 1991)
<a href="#">I/193</a> 3 moc	Positions and Proper Motions - South (Bastian+ 1993)
<a href="#">I/195</a> 3 moc	FOCAT-S Catalogue (Bystrov+ 1994)
<a href="#">I/197A</a> 3 moc	Tycho Input Catalogue, Revised version (Egret+ 1992)
<a href="#">I/208</a> 3 moc	The 90000 stars Supplement to the PPM Catalogue (Roeser+, 1994)
<a href="#">I/230</a> 3 moc	Southern Hemisphere Catalogue of Bordeaux (Rousseau+ 1996)
<a href="#">I/239</a> 3 moc	The Hipparcos and Tycho Catalogues (ESA 1997)
<a href="#">I/246</a> 3 moc	The ACT Reference Catalog (Urban+ 1997)
<a href="#">I/250</a> 3 moc	The Tycho Reference Catalogue (Hog+ 1998)
<a href="#">I/254</a> 3 moc	The HST Guide Star Catalog, Version 1.2 (Lasker+ 1996)

Showing 1 to 25 of 200 entries

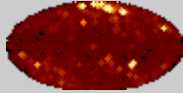
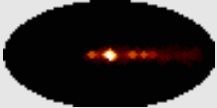

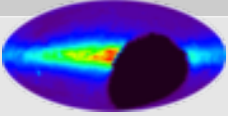
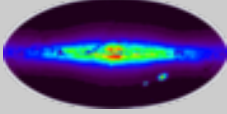
Previous **1** 2 3 4 5 ... 8

Next

# Exemples de catalogues

Nom	VizieR	Couverture	# sources	Contenu
HR	V/50		9110	Vmag<7, B-V, SpType
HD	III/135A/ catalog		272,150	PhotMag<10-11, SpType
Hipparcos	I/239/ hip_main		118,218	Vmag<9-10, B-V, V-I, PM, Plx
Tycho2	I/259/tyc2		2,539,913	Bmag<14, Vmag<13, PM
USNO B1	I/284/out		1,045,913,66 9	Bmag, Rmag<21, PM
2MASS PSC	II/246/out		470,992,970	J<18, H<17, K<16
2MASS-X	II/ 281/2mass6x		24,023,702	Galaxies, sources étendues

# ☐ Exemples de catalogues

Nom	VizieR	Couverture	# sources	Contenu
NGC	VII/118/ ngc2000		13226	Type, taille, magnitude
MASH	V/127A		903+335	Nébuleuses planétaires
SDSS 16	V/154/ sdss16		469,050,976 + 325,277,739	Magnitudes u, g, r, I, z
Pan- STARRS 1	II/349/ps1		1,919,106,885	Magnitudes g, r, I, z, y
Gaia DR3	I/355/gaiadr3		1,811,709,771	Mag BP, RP, G + Plx, PM...

# □ Accès à VizieR

- Page web : téléchargement, recherche par Cone, par liste
- Via Aladin
  - Filtrage dédié Gaia
- Version progressive des grands catalogues
- Avancé : TAP, Python
- Via TOPCAT

# ☐ Identifications croisées

## CDS X-Match Service

[X-match](#)[Tables management](#)[Documentation](#)[Login](#) [Preferences](#) [Register](#)

### Choose tables to cross-match

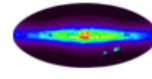
LMCPS  Gaia DR2

[VizieR](#)[SIMBAD](#)[My store](#)[VizieR](#)[SIMBAD](#)[My store](#)

[Magellanic Clouds  
Photometric Survey: the  
LMC \(Zaritsky+, 2004\)](#)  
24,107,002 rows







[Gaia DR2 \(Gaia  
Collaboration, 2018\)](#)  
1,692,919,135 rows

[Show options](#)[Begin the X-Match](#)

### Visualize and manage your cross-match jobs

#### List of X-match jobs

Table 1	Table 2	Options	Begin	Status	Actions	<input type="checkbox"/>
LMCPS	Gaia DR2	fixed radius 	15/06/2018 at 16:46	completed  	 <a href="#">Get result</a>	<input type="checkbox"/>

Job executed in **2min7s**  
**29s** to correlate  
**1min38s** to generate file  
Result: **15,602,356** rows (4.8 GB)

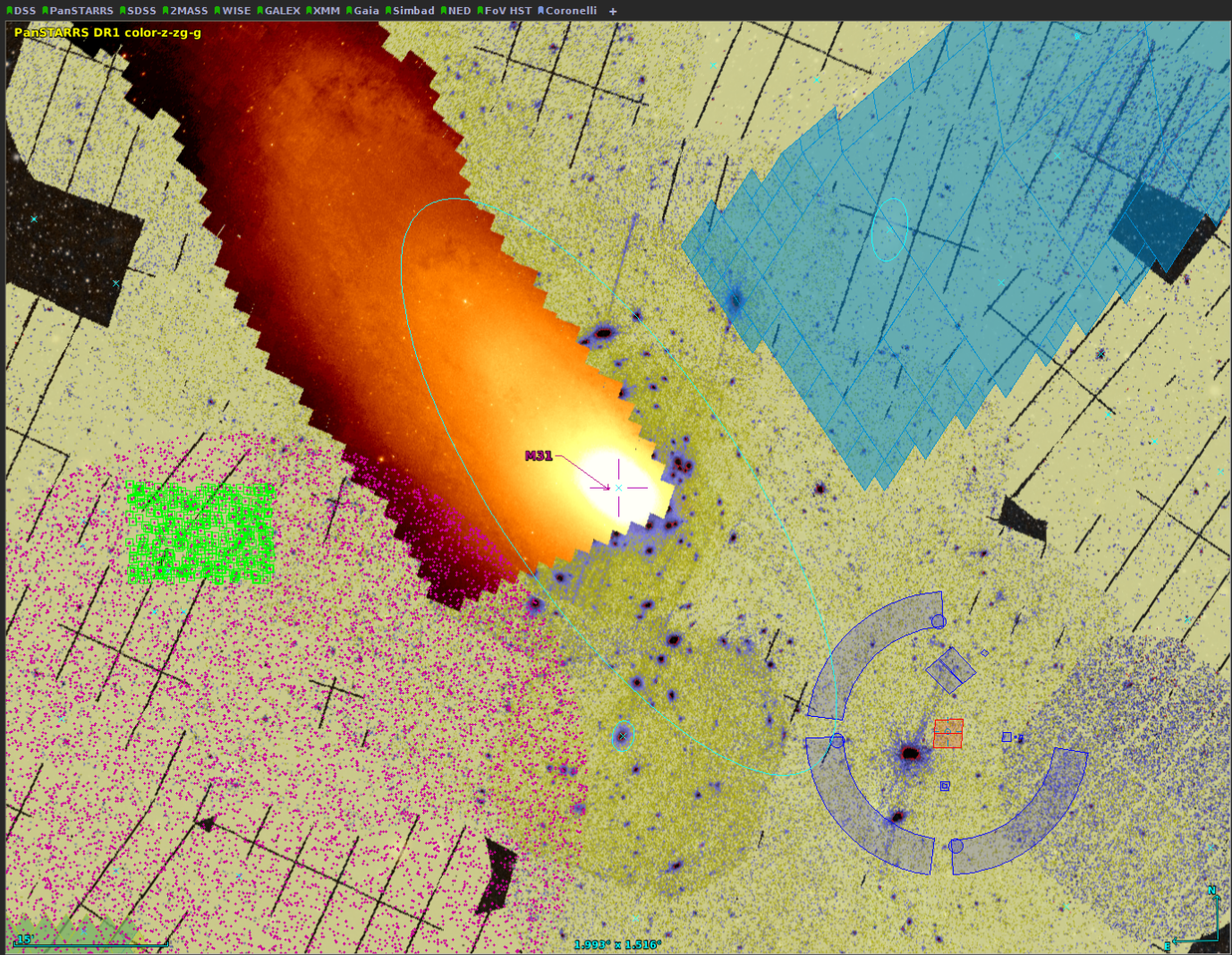
A stylized, thick graphic element resembling a ribbon or a path, rendered in shades of red, purple, and blue. It curves across the middle of the image, passing behind the text.

# ALADIN

# □ Aladin – portail de l'Observatoire Virtuel

- Aladin Desktop v12
  - A installer sur votre machine
- Aladin Lite v3
  - Dans votre navigateur web

- Collections → 27169
  - Image → 492
    - Gamma-ray → 24
    - X-ray → 42
      - Swift → 9
      - INTEGRAL → 12
        - Swift-BAT 70-month all-sray hard X
        - Hitomi HX public data image
      - XMM → 4
      - ASCA → 3
      - ROSAT → 5
    - Images from the EXOSAT Low Energy
      - Hitomi SXI public data image
      - Hitomi SXS public data image
      - Suzaku public data image
    - CXC → 1
    - MAXI → 2
    - UV → 27
    - Optical → 132
      - HST → 28
        - Skymapper → 7
        - SDSS → 7
        - Subaru → 14
        - CFHTLS → 12
        - Swift → 6
        - MAMA → 3
        - DECaPS → 2
        - DES → 6
        - MATLAS → 4
        - PanSTARRS → 7
        - HSC → 12
        - DSS → 4
        - ZTF → 4
        - DECaLS → 4
      - Mellinger color optical survey
      - IPHAS → 3
      - TESS 2yr
        - J-PLUS-DR1 (July, 2018)
        - J-PLUS-DR2 (July, 2020)
        - MINI-PAS-PDR201912 (December, 20
      - BASS → 2
        - DES DR1 LineA color
        - GTC Public Archive
    - Infrared → 136
    - Radio → 87
    - Gas-lines → 44
    - Data base → 4
    - Catalog → 25285
      - VizieR → 23806
        - I-Astrometric Data → 278
          - Gaia DR2 (Gaia Collaboration, 2018)
          - Gaia EDR3 (Gaia Collaboration, 2020)
          - Gaia - Distances to 1.47 billion star
          - Distances to 1.33 billion stars in Ge
          - NIOMAD Catalog
          - HSDY - Hot Stuff for One Year (HS
          - Gaia DR1 (Gaia Collaboration, 2016)
          - GSL3 - The Initial Gaia Source List
          - PPMXL Catalog
          - GSC2.3 - The Guide Star Catalog, v
          - USNO-B1.0 Catalog
          - USNO-A2.0 Catalogue
          - USNO-A1.0 - The PMM USNO-A1.0



select  
depl.  
dist  
phot  
dessin  
marq  
moc  
sppct  
filtre  
corr.  
rvo  
assoc  
coupe  
cont  
pixel  
prop  
suppr

Fold  
Filter1  
CDS/VII/237  
Drawing  
CDS/I/350/g  
ivo/P/spcam  
ivo/P/spcar  
ivo/P/spcar  
HST  
CDS/Simbad  
CDS/P/HST  
xcatdb/P/XI  
ivo/P/spcar  
CDS/P/GAL  
CDS/I/Pari

épo...  
taille  
dens.  
zoom

M31  
L1:6:07.5  
x 1.516''

sélect. dans -- toutes les collections --

Des données sont en cours de chargement... voir la "pile"

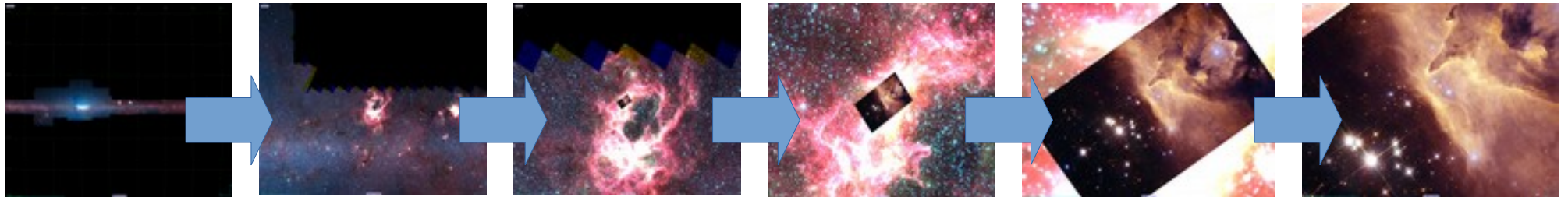
Chercher

V	RA ICRS	e RA ICRS	DE ICRS	e DE ICRS	Source	Plx	e Plx	PM	pmRA	e pmRA
VizieR	11.44172569285	0.1901	41.26755131461	0.1333	369268987326157952	0.9265	0.2141	6.056	-3.474	0.212
VizieR	11.4382720459	2.7223	41.26547939034	1.108	369268987331277184	-0.7865	2.2003	10.614	9.629	2.728
VizieR	11.43367979832	0.0294	41.25459044535	0.0204	3692689891622543360	0.798	0.0323	11.095	6.488	0.031



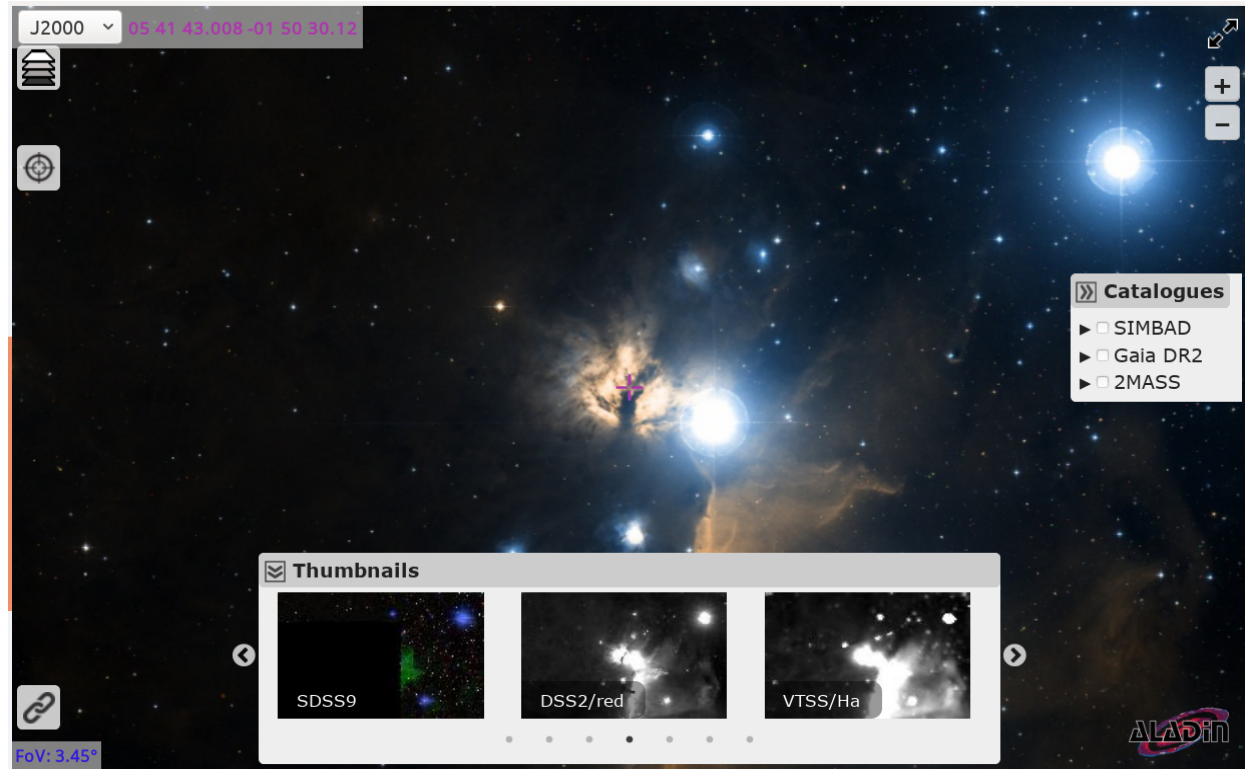
# □ Ciel complet, HiPS

- **Hierarchical Progressive Survey**
  - *“Plus on zoome localement, plus on récupère des données précises”*
- Structure de données multi-résolution **HEALPix** pour **Images**, **Catalogues**, et **cubes 3D**, ...
- Comme Google Earth pour le ciel... en mieux !
- +1200 relevés différents disponibles !!



# □ Aladin Lite

- Aladin Lite est une version simplifiée d'Aladin qui permet de l'intégrer dans n'importe quelle page Web
  - Portail CDS
  - SIMBAD
  - ESA Sky
  - ...





# Portail CDS

- Un point d'entrée unique pour tous les services du CDS

The screenshot displays the CDS Portal interface. At the top, there is a navigation bar with the CDS logo and links to Portal, Simbad, VizieR, Aladin, X-Match, Other, and Help. On the right side of the navigation bar, there are links for Login, My data, Preferences, and Register.

The main content area is divided into several sections:

- Search Bar:** A search bar containing "M 51" with a search icon. Below it, a dropdown menu shows "J2000" and the position "13 29 52.698 +47 11 42.93".
- Object (Simbad):** A green header section displaying object details for M 51. It includes the Main ID (M 51), Object type (Galaxy in Pair of Galaxies), Morphological type (SABbc), and a unique identifier (z: 0.001551073042671407). It also lists magnitudes in various filters (B, V, R, I, H, K) and a link to "More info in Simbad".
- Object (NED):** A blue header section displaying object details for MESSIER 051. It includes the Main ID (MESSIER 051), Object type (Galaxy pair), and a unique identifier (z: 0.002). It also has a link to "More info in NED".
- Images:** A red header section with a sub-header "Images". It shows "291 HIPs images available 0.20° around 13 29 52.698 +47 11 42.93". Below this, there are filters for Wavelength (Gamma-ray, X-ray, UV, Optical, Infrared, Radio, Gas-line) and Resolution (Low, Medium, High). A table lists 2 entries filtered from 291 total records, including "Swift-BAT 70-month all-sray hard X-ray survey image" and "False color X-ray images".
- Aladin Lite:** A red header section with a sub-header "Aladin Lite". It shows a large image of the galaxy M 51, colored in DSS (Digitized Sky Survey) colors. The image has a red crosshair in the center and a "Share" button below it.



# Portal CDS

## ↓ Catalogues

816 VizieR Catalogs within radius 0.20°

Wavelength Popularity Search: Title

Wavelength: Infrared (191), Gamma-ray (31), X-ray (122), UV (61), Optical (451), Radio (148)

Astronomy keywords: Galaxies (113), Photometry (90), Photometry-wide-band (98), Resonants (75), Positional\_data (75), Spectroscopy (75), AZI (75)

Rows: 1 20 50 100 150 200 250 300 350

Search: 2MASS All-Sky Catalog of Point Sources (Cutri+ 2003), Gaia DR2 (Gaia Collaboration, 2018) (gaia2), Distances to 1.33 billion stars in Gaia DR2 (Bafer-Jones+, 2018) (gaia2dis), The SDSS Photometric Catalogue, Release 12 (Abolfathi+, 2015) (sdss12), UCAC5 Catalogue (Zacharias+ 2017) (ucac5), The Tycho-2 Catalogue (Hoeg+ 2000) (tyc2), AllWISE Data Release (Cutri+ 2013) (allwise), The Guide Star Catalog, Version 2.3.2 (GSC2.3) (STScI, 2006), The USNO-B1.0 Catalog (Monet+ 2003), AAVSO Photometric All Sky Survey (APASS) DR9 (Henden+, 2016) (pass9), UCAC4 Catalogue (Zacharias+, 2012), Gaia DR1 (Gaia Collaboration, 2016) (gaia), Gaia DR1 (Gaia Collaboration, 2016) (gdr1), Gaia DR1 (Gaia Collaboration, 2016) (gdr1tyc), UCAC3 Catalogue (Zacharias+ 2009), NOMAD Catalog (Zacharias+ 2005), The Pan-STARRS release 1 (PS1) Survey - DR1 (Chambers+, 2016) (ps1), The PMXL Catalog (Roesser+ 2010), WISE All-Sky Data Release (Cutri+ 2012) (wise), XPM Catalog of positions and proper motions (Fedorov+ 2011) (xpm)

Mission: XMM, ROSAT, IRAS, Gaia

Associated data: spectrum, image, timeSeries, cube

Journal: ASAS, ApJ, ApJS, MNRAS

Sky fraction

Year: 1900 1905 1910 1915 1920 1925 1930 1935 1940 1945 1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 2000 2005 2010 2015 2020

## ↓ Tabular data

SIMBAD 2MASS Gaia TGAS SDSS DR9 VizieR images VizieR spectra

Filter: 1,000 entries within radius 0.20° (limited to 1000)

J	MAIN_ID	OTYPE	RA ("h:m:s")	DEC ("d:m:s")	COO_ERR_MAJA (mas)	COO_ERR_MINA (mas)	COO_ERR_ANGLE (deg)	PMRA (mas/yr)	PMDEC (mas/yr)	B (mag)	V (mag)	R (mag)	I (mag)	H (mag)	K (mag)	SP_TYPE	GALDIM_MAXIX (arcmin)	GALDIM_MINIX (arcmin)	GALDIM_ANGLE (deg)	BIBLIST	RAdeg (deg)	DEdeg (deg)
0.0	M 51	GinPar	13 29 52.698	+47 11 42.93						9.26	8.36	8.4	6.401	5.653	5.496					ref [1]	202.469575	47.195258
0.1	RX J132952+471117	X	13 29 52.7	+47 11 43	5200	5200	90													ref [2]	202.469583	47.195278
0.2	H18GT J132952.6+471140	Radio	13 29 52.71020	+47 11 42.7465																ref [1]	202.469626	47.195207
0.2	LMCQ007133	Radio	13 29 52.710	+47 11 42.73																ref [1]	202.469625	47.195203
0.3	TH941 M 51.3	Radio	13 29 52.711	+47 11 42.61																ref [1]	202.469629	47.195169
0.4	PHB9G1.212	HII	13 29 52.677	+47 11 42.60																ref [1]	202.469488	47.195167
2.2	CPFB8 J132746.2+472710.0	Maser	13 29 52.5	+47 11 42																ref [4]	202.46875	47.195
2.7	LP5200214	Star	13 29 52.8049	+47 11 45.383																ref [1]	202.47002	47.19594
3.2	CXOU J132952.7+471119	HMXB	13 29 52.78	+47 11 39.8																ref [1]	202.469917	47.194389
3.3	LP5200211	Star	13 29 52.8024	+47 11 46.045																ref [1]	202.47001	47.196124
3.4	LP52002115	Star	13 29 52.3624	+47 11 42.759																ref [1]	202.468177	47.195211
4.4	LP52002117	HMXB	13 29 52.3030	+47 11 44.586																ref [2]	202.467929	47.195718
4.4	LP52002114	Star	13 29 52.2687	+47 11 43.675																ref [1]	202.467786	47.195465
4.8	LP52002118	Star	13 29 53.0396	+47 11 46.165																ref [1]	202.470998	47.196157
4.8	LP5200215	Star	13 29 53.1731	+47 11 42.811																ref [1]	202.471555	47.195225
5.0	LP5200219	Star	13 29 53.1562	+47 11 41.141																ref [1]	202.471484	47.194761
5.0	LP5200211	Star	13 29 52.2747	+47 11 45.516																ref [1]	202.467811	47.195977

1,000 entries within radius 0.20° (limited to 1000)

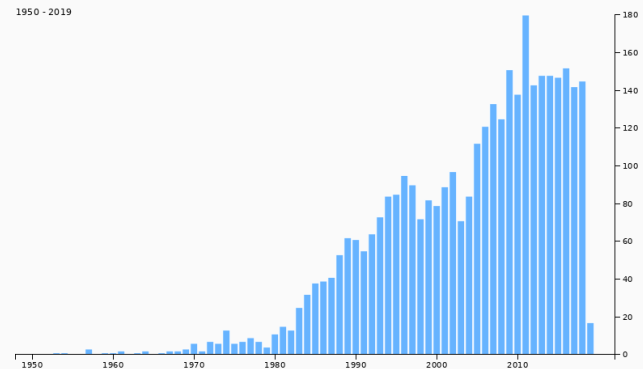


# Portail CDS

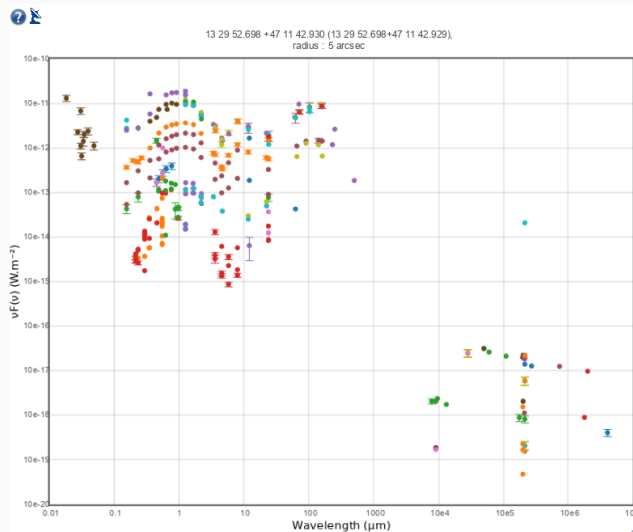
## Bibliography

Filter:	Bibcode	Year	Journal	Title	Authors
	<a href="#">2019MNRAS.483.2641S</a>	2019	MNRAS	Hierarchical Bayesian approach for estimating physical properties in nearby galaxies: Age Maps (Paper I).	SANCHEZ-GIL M.C., ALFARO E.J., CERINO M. et. al
	<a href="#">2019MNRAS.483.2547B</a>	2019	MNRAS	WARPFIELD 2.0: feedback-regulated minimum star formation efficiencies of giant molecular clouds.	RAHNER D., PELLEGRINI E.W., GLOVER S.C.O. et. al
	<a href="#">2019MNRAS.483.2424R</a>	2019	MNRAS	Evolution of galactic magnetic fields.	RODRIGUES L.F., CHAMANDY L., SHUKUROV A. et. al
	<a href="#">2019MNRAS.483.2398M</a>	2019	MNRAS	Angular momentum regulates H I gas content and H I central hole size in the discs of spirals.	MURUGESHAN C., KILBORN V., OBRESCHKOW D. et. al
	<a href="#">2019MNRAS.482L_9B</a>	2019	MNRAS	Clouds in arms.	BELOKUROV V.A., ERKAL D.
	<a href="#">2019MNRAS.482.4763L</a>	2019	MNRAS	Millimetre line observations towards four local galaxies.	LI F., WANG J., KONG M. et. al
	<a href="#">2019MNRAS.482.3989B</a>	2019	MNRAS	Gravitoturbulent dynamos in astrophysical discs.	RIOLS A., LATTER H.
	<a href="#">2019MNRAS.482.3394M</a>	2019	MNRAS	Radio broad-band visualization of global three-dimensional magnetohydrodynamical simulations of spiral galaxies - II. Faraday depolarization from 100 MHz to 10 GHz.	MACHIDA M., AKAHORI T., NAKAMURA K.E. et. al
	<a href="#">2019ApJ...871.122J</a>	2019	Apj	Does high-density or mass help star clusters produce X-ray binaries in star-forming galaxies?	JOHNS MULIA P., CHANDAR R., RANGELOV B.
	<a href="#">2019ApJ...871.115Z</a>	2019	Apj	Evidence for optically thick, Eddington-limited winds driven by supercritical accretion.	ZHOU Y., FENG H., HO L.C. et. al
	<a href="#">2019ApJ...871.106D</a>	2019	Apj	The Galactic Magneto-Ionic Medium Survey: moments of the Faraday spectra.	DICKEY J.M., LANDECKER T.L., THOMSON A.J. et. al
	<a href="#">2019ApJ...871.181C</a>	2019	Apj	How initial size governs core collapse in globular clusters.	KREMER K., CHATTERJEE S., YE S. et. al

[Open this list in SIMBAD](#)



## Photometric points





# Demo

- Aladin Desktop
  - Comparaison images pro / amateur
  - Catalogues de référence
  - Extraction de source / cross-match / calibration photométrique
  - Identification d'astéroïdes / comètes
  - Mouvement propre des étoiles

# □ Démo



Ben j'comprends pas, ça marchait il y a encore deux minutes...



# ☐ Liens utiles

- <https://cds.unistra.fr//>
- <http://simbad.cds.unistra.fr/simbad/>
- <https://vizier.cds.unistra.fr/viz-bin/VizieR>
- <http://aladin.cds.unistra.fr/java/nph-aladin.pl?frame=downloading>  
<https://aladin.cds.unistra.fr/java/AladinManuel.pdf>
- <https://www.star.bris.ac.uk/~mbt/topcat/>
- <https://nova.astrometry.net/>
- <https://ruuth.xyz/AstroMosaic.html>

[cds-question@unistra.fr](mailto:cds-question@unistra.fr)

[sebastien.derriere@astro.unistra.fr](mailto:sebastien.derriere@astro.unistra.fr)