

# Hiérarchie des types d'objets dans SIMBAD



OV FRANCE

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# Types d'objets SIMBAD

## HD 86161 -- Wolf-Rayet Star

Other object types: [EL\\*](#) ([\(\)](#), [\\*](#) ([1971PW&SO](#), [HD](#), ...), [Em\\*](#) ([Hen](#), [WRAY](#)), [WR\\*](#) ([MR](#), [WR](#)), [IR](#) ([IRAS](#), [2MASS](#)), [Ro\\*](#) ([2012AGA](#)), [V\\*](#) ([V\\*](#)), [UV](#) ([TD1](#)))

**ICRS** coord. (*ep*=J2000) : [09 54 52.9034376427 -57 43 38.273623332](#) (Optical) [ [0.0294 0.0271 90](#) ] A [2018yCat.1345....0G](#)

**FK4** coord. (*ep*=B1950 *eq*=1950) : [09 53 14.2412045150 -57 29 23.637109435](#) [ [0.0294 0.0271 90](#) ]

**Gal** coord. (*ep*=J2000) : [281.0797982091532 -02.5509239651613](#) [ [0.0294 0.0271 90](#) ]

Proper motions *mas/yr* : [-9.476 4.975](#) [ [0.063 0.052 90](#) ] A [2018yCat.1345....0G](#)

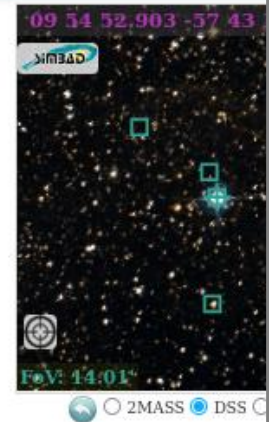
Parallaxes (*mas*): [0.3488](#) [ [0.0317](#) ] A [2018yCat.1345....0G](#)

Spectral type: [WN8h C 2009AJ...138..402S](#)

Fluxes (8) :

<a href="#">U</a>	<a href="#">7.94</a>	[ <a href="#">~</a> ]	<a href="#">D</a>	<a href="#">2003AJ...125.2531R</a>
<a href="#">B</a>	<a href="#">8.65</a>	[ <a href="#">0.99</a> ]	<a href="#">D</a>	<a href="#">2012yCat.1322....0Z</a>
<a href="#">V</a>	<a href="#">8.36</a>	[ <a href="#">0.99</a> ]	<a href="#">D</a>	<a href="#">2012yCat.1322....0Z</a>
<a href="#">R</a>	<a href="#">8.93</a>	[ <a href="#">0.05</a> ]	<a href="#">E</a>	<a href="#">2012yCat.1322....0Z</a>
<a href="#">G</a>	<a href="#">8.0496</a>	[ <a href="#">0.0010</a> ]	<a href="#">C</a>	<a href="#">2018yCat.1345....0G</a>
<a href="#">J</a>	<a href="#">6.968</a>	[ <a href="#">0.026</a> ]	<a href="#">C</a>	<a href="#">2003yCat.2246....0C</a>
<a href="#">H</a>	<a href="#">6.714</a>	[ <a href="#">0.040</a> ]	<a href="#">C</a>	<a href="#">2003yCat.2246....0C</a>
<a href="#">K</a>	<a href="#">6.380</a>	[ <a href="#">0.026</a> ]	<a href="#">C</a>	<a href="#">2003yCat.2246....0C</a>

SIMBAD [Query around](#) [wi](#)



All  (CDS)

Plusieurs origines :

- Acronymes
- Référence bibliographique
- () sans trace d'origine

Type principal + Types secondaires

# □ Hiérarchie / classification

Nouveaux noms,  
nouvelle hiérarchie,  
nouvelle architecture,  
nouveaux outils ....

otype	old_label	new_label
Ir*	Irregular_V*	IrregularV*
LXB	LMXB	LowMassXBin
No*	Nova	Nova
El*	EllipVar	EllipVar
HH	HH	HerbigHaroObj
Mi*	Mira	Mira
SX*	pulsV*SX	SXPheV*
cC*	deltaCep	ClassicalCep
bC*	PulsV*bCep	bCepV*
RR*	RRLyr	RRLyrae
Psr	Pulsar	Pulsar
a2*	RotV*alf2CVn	alf2CVnV*
Or*	Orion_V*	OrionV*
Be*	Be*	Be*
WR*	WR*	WolfRayet*
RG*	RGB*	RGB*
BD*	brownD*	BrownD*
s*r	RedSG*	RedSG
HXB	HMXB	HighMassXBin
EB*	EB*	EclBin
Er*	Eruptive*	Eruptive*
RC*	Erupt*RCrB	RCrBV*
*	Star	Star
TT*	TTau*	TTauri*
HS*	HotSubdwarf	HotSubdwarf
BS*	BlueStraggler	BlueStraggler
sg*	SG*	Supergiant
s*y	YellowSG*	YellowSG
Y*0	YSO	YSO
s*b	BlueSG*	BlueSG
N*	Neutron*	Neutron*
Ro*	RotV*	RotV*
SB*	SB*	SB*
HB*	HB*	HorBranch*

# □ Hiérarchie / classification

- Code unique sur 3 caractères + label plus libre  
ex : '\*' → *Star* ; 'G' → *Galaxy* ; 'ClG' → *Cluster of Galaxies*
- Hiérarchie physique simple selon un graph :  
Parent → enfants
- Hiérarchie supplémentaire pour résoudre les types pouvant appartenir à plusieurs catégories
- Les « Candidats » sont une propriété d'un type

# □ Hiérarchie / classification

Séparé en catégories (distinctes):

– Taxonomy of Stars

– Sets of Stars

– Interstellar Medium

– Taxonomy of Galaxies

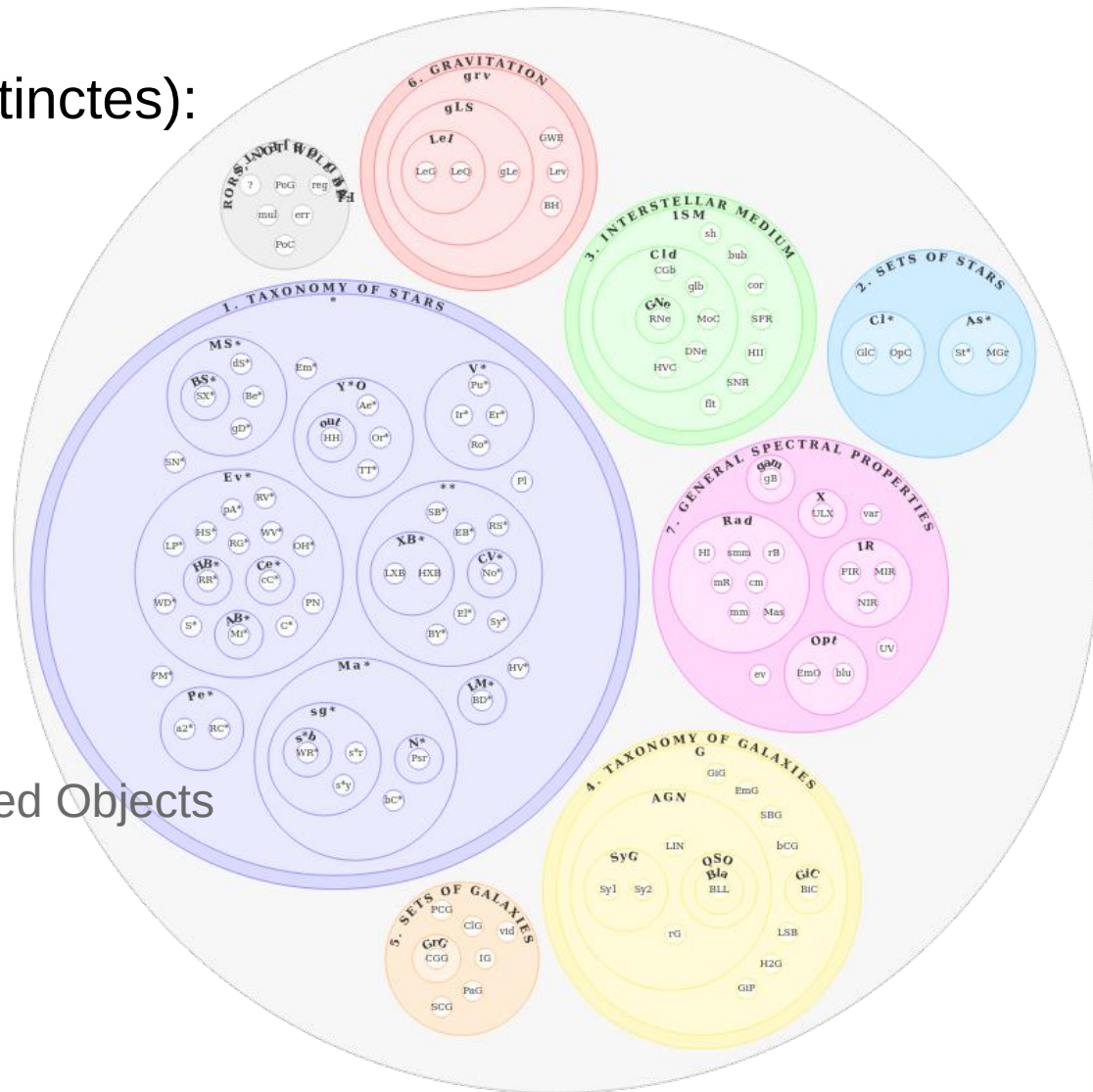
– Sets of Galaxies

– Gravitation

– General Spectral Properties

– Blends, Errors, Not Well Defined Objects

**TOTAL : 225 types**



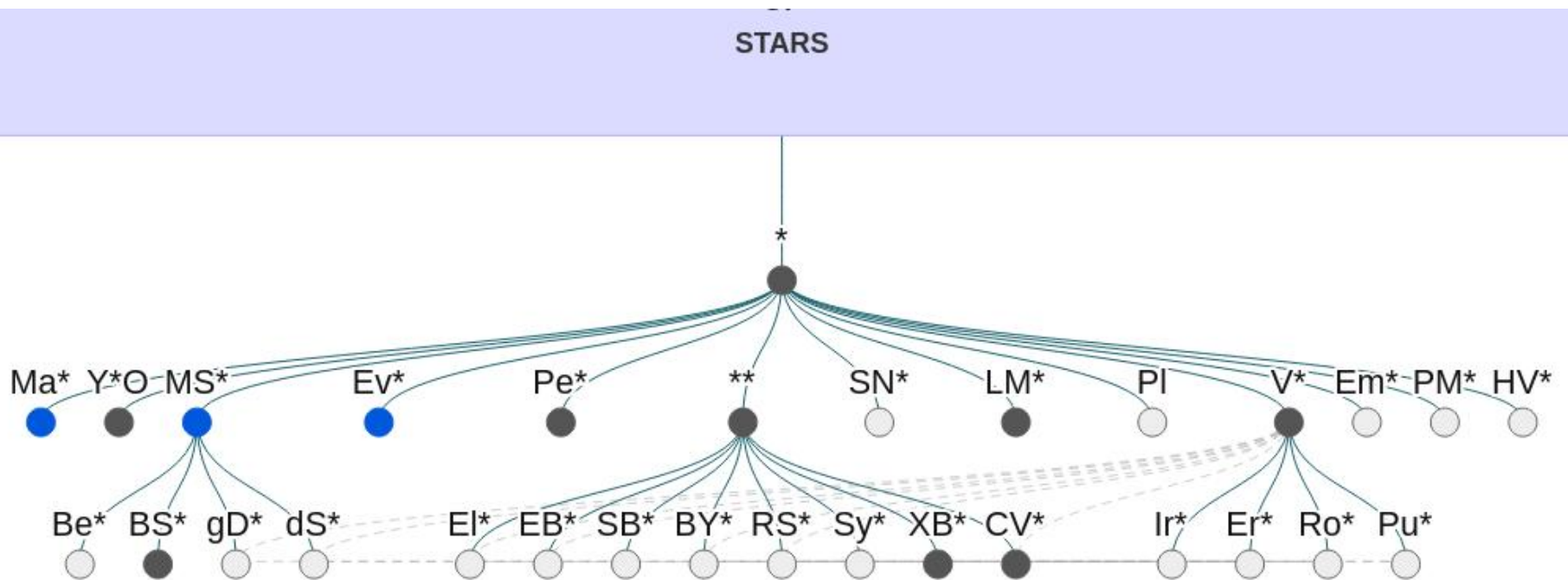
# □ Hiérarchie / classification

Représentation des types d'objets, proportionnellement aux nombres d'objets dans SIMBAD



# □ Hiérarchie / classification

<https://simbad.cds.unistra.fr/guide/otypes>



# □ Exemple TAP

Utilisation de la hiérarchie comme critère de sélection possible dans TAP via des fonctions spéciales dédiées

```
SELECT
  otypedef.path,description,COUNT(*)
FROM ident,basic
JOIN otypedef ON basic.otype=otypedef.otype
JOIN h_link ON (oid=child AND parent=ident.oidref)
WHERE id = 'Hyades Moving Group' AND (membership >=90)
  AND is_candidate = 0 AND otypedef.otype='V*..'
GROUP BY otypedef.path,description
```

path	description	COUNT_ALL
** > ** > BY**	"BY Dra Variable"	66
** > ** > EB**	"Eclipsing Binary"	2
** > ** > RS**	"RS CVn Variable"	3
** > MS* > dS**	"delta Sct Variable"	1
** > V**	"Variable Star"	4
** > V* > Er**	"Eruptive Variable"	13
** > V* > Ro**	"Rotating Variable"	1



# □ Proposition vocabulaire IVOA

<https://www.ivoa.net/documents/Notes/AstrObjectOntology/>

International Virtual Observatory Alliance

**IVOA Documents**



## **Ontology of Astronomical Object Types Version 1.3**

**IVOA Note 03 March 2010**

Interest/Working Group:

<http://www.ivoa.net/twiki/bin/view/IVOA/IvoaSemantics>

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# □ Proposition vocabulaire IVOA

<http://www.ivoa.net/rdf/object-type>

## IVOA Vocabulary: Object Types

This is the description of the vocabulary <http://www.ivoa.net/rdf/object-type> as of 2020-10-06.

**This vocabulary is not yet approved by the IVOA. This means that terms can still disappear without prior notice.**

A vocabulary of types of astronomical objects, ranging from stars to galaxies. This vocabulary is in use at Simbad, but it is also intended for use in Obscore's target\_class and similar fields.

Term	Label	Description	Parent	More
ae-star (Preliminary)	Ae*	Herbig Ae/Be Star	<a href="#">#yso</a>	Same As
agb-star (Preliminary)	AGB*	Asymptotic Giant Branch Star	<a href="#">#ev-star</a>	Same As Narrower
agn (Preliminary)	AGN	Active Galaxy Nucleus	<a href="#">#galaxy</a>	Same As Narrower
assoc-star (Preliminary)	Assoc*	Association of Stars		Same As Narrower
bcl-g (Preliminary)	BClG	Brightest Galaxy in a Cluster (BCG)	<a href="#">#gin-cl</a>	Same As
be-star (Preliminary)	Be*	Be Star	<a href="#">#ms-star</a>	Same As
bh (Preliminary)	BH	Black Hole	<a href="#">#gravitation</a>	

**Attention à la casse !**

**HI/h-i - IR/ir – Ir\*/irregular-v-star**

# □ Proposition vocabulaire IVOA

- Nouvelle fonction TAP générique qui renvoie Vrai/Faux (1/0) si le texte donné peut être identifié comme le même type que SIMBAD de la colonne donnée (quelque soit l'écriture):

**simbad\_otype\_match**(column, text)

**simbad\_otype\_matchall**(column, text)

(→ le type donné appartient à la hiérarchie avec tous les enfants possibles)

- Nouveau vocabulaire comme alias non visible