# Vocabulary of object types applied to SIMBAD

## IVOA
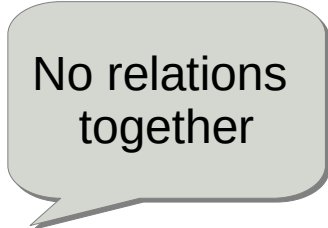## 26/05/2021

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# Vocabulary of object types
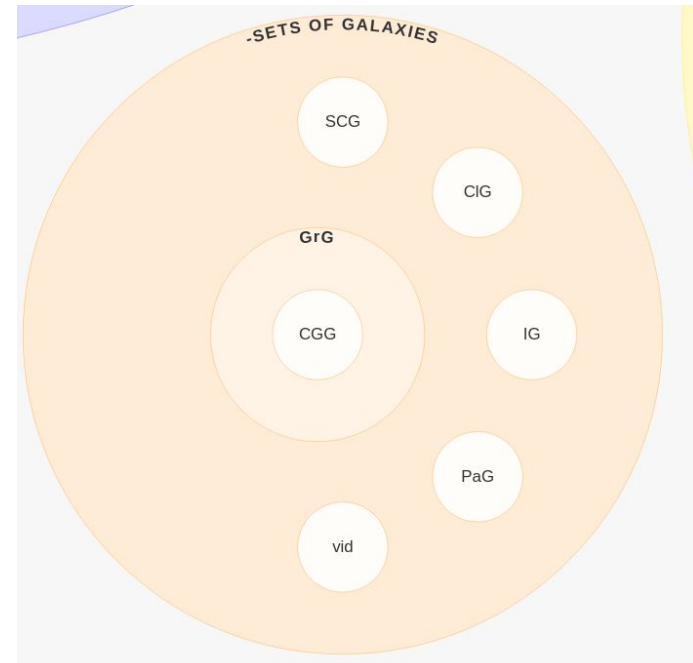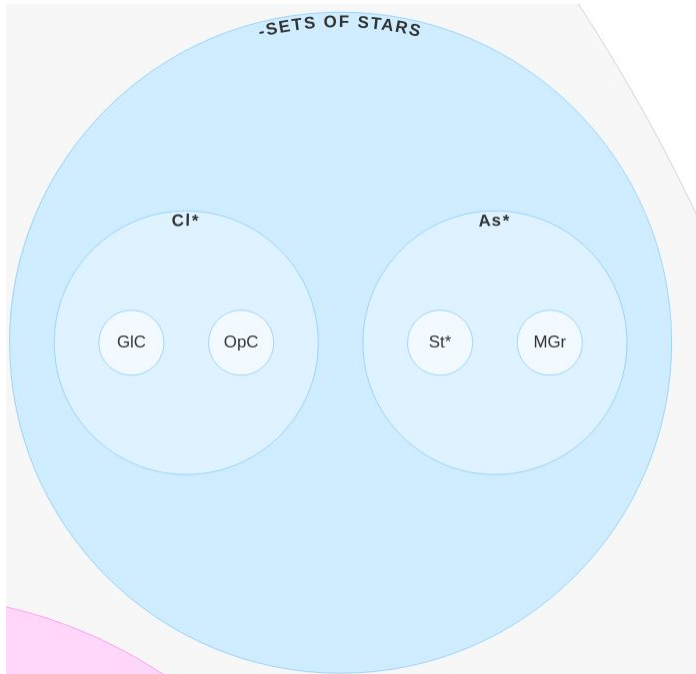
Separated into **distinct main categories**:

– Taxonomy of Stars

– Sets of Stars

– Interstellar Medium

– Taxonomy of Galaxies

– Sets of Galaxies

– Gravitation

– General Spectral Properties

– Blends, Errors, Not Well Defined Objects

No relations together

Some object types according to the structure:



Cluster of Stars: Globular Cluster, Open Cluster; Association of Stars: Stellar Stream, Moving Group
Interacting Galaxies, Pair of Galaxies, Group of Galaxies, Cluster of Galaxies, Supercluster of Galaxies, void
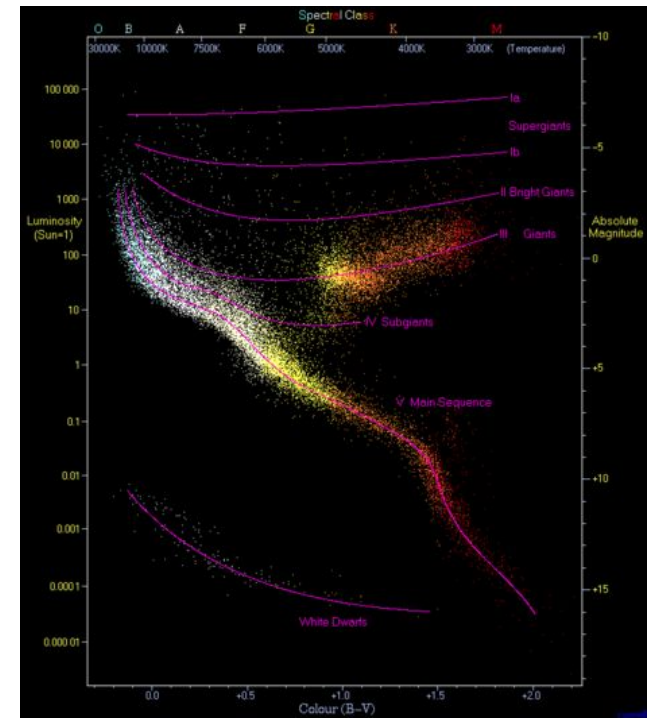
# Vocabulary of object types

Type according to a spectral property:

## 7. GENERAL SPECTRAL PROPERTIES

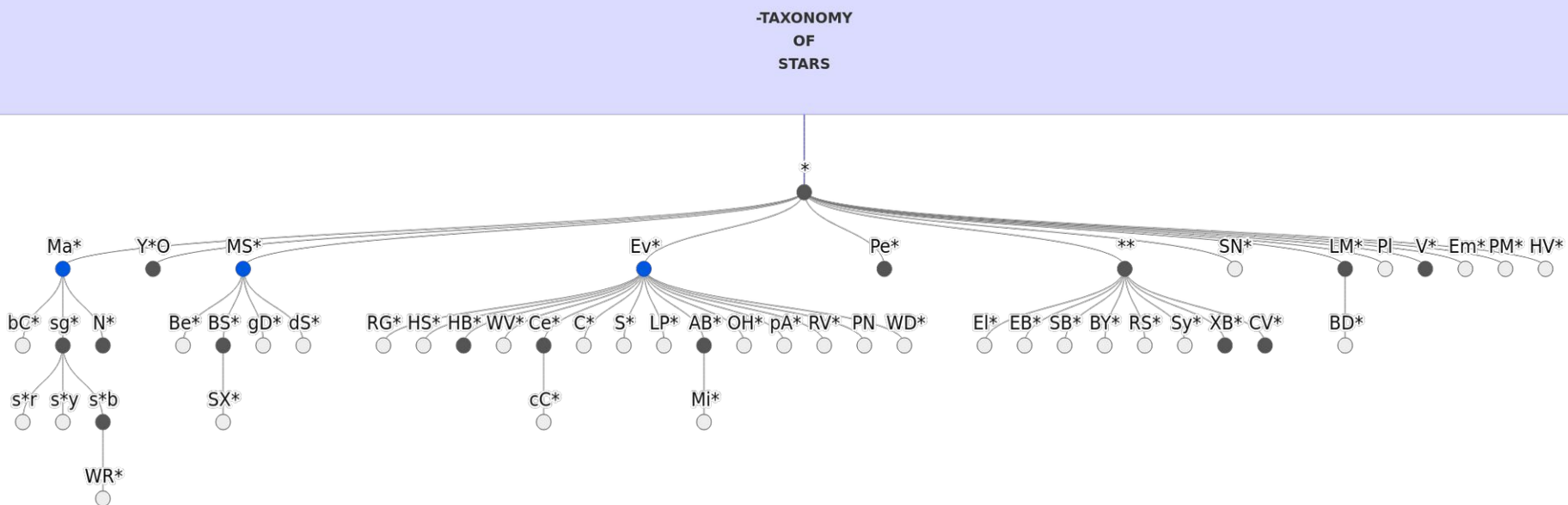| | | | |
|---|---|---|---|
| ev | Transient | | Transient Event |
| **Rad** | Radio | | Radio Source |
| — mR | Radio(m) | | Metric Radio Source |
| — cm | Radio(cm) | | Centimetric Radio Source |
| — mm | Radio(mm) | | Millimetric Radio Source |
| — smm | Radio(sub-mm) | | Sub-Millimetric Source |
| — HI | HI | | HI (21cm) Source |
| — rB | radioBurst | | Radio Burst |
| — Mas | Maser | | Maser |
| **IR** | IR | | Infra-Red Source |
| — FIR | IR>30um | | Far-IR source ($\lambda \geq 30\ \mu m$) |
| — MIR | MIR | | Mid-IR Source (3 to 30 $\mu m$) |
| — NIR | IR<10um | | Near-IR Source ($\lambda < 3\ \mu m$) |
| — {red} | Red | | Very Red Source |
| **Opt** | Opt | | Optical Source |
| — EmO | EmObj | | Emission Object |
| — blu | Blue | | Blue Object |
| **UV** | UV | | UV-emission Source |
| **X** | X | | X-ray Source |
| — ULX | ULX | UX? | Ultra-luminous X-ray Source |
| **gam** | gamma | | Gamma-ray Source |
| — gB | gammaBurst | | Gamma-ray Burst |

# Vocabulary of object types

Stars subcategories are split according to criteria like :
**mass / spectral / luminosity / age**:

- – Young / Main Sequence / Evolved
- – Massive / Low-mass
- – Super Giants

Stars subcategories are split according to criteria like :
**mass / spectral / luminosity / age**:



And more « technical » bridges to add facilities
(V* ↔ Wolf-Rayet)

# Vocabulary of object types

Miscellaneous things that have names in SIMBAD but are not simple astronomical objects:

- Composite Object, Blend

- Not an Object (Error, Artefact, …)

- Part of Cloud

- Part of a Galaxy

- Object of Unknown Nature

- Region defined in the Sky

# Vocabulary of object types

Difficulties in assigning a type to an object:

- Could be **contradictory**:

    - Contradictory classifications in papers
    - If taking into account the **history** thanks to evolution of detectors

- Could be subjective/**evolving**:
    - High Proper Motion Stars : SIMBAD's definition is total PM larger than 50 mas/yr. In the literature it has no clear definition: [20-200] mas/yr.

- Could be in multiple subcategories, hard to define:

    - Planetary Nebula vs White Dwarf

# Vocabulary of object types

Vocabulary according to our **needs in SIMBAD:** add details if many objects.

Representation of object types, porportionnally to number of objects in SIMBAD



Vocabulary of object types for SIMBAD