Discovery of Brown Dwarfs mining the 2MASS and SDSS databases
ALADIN

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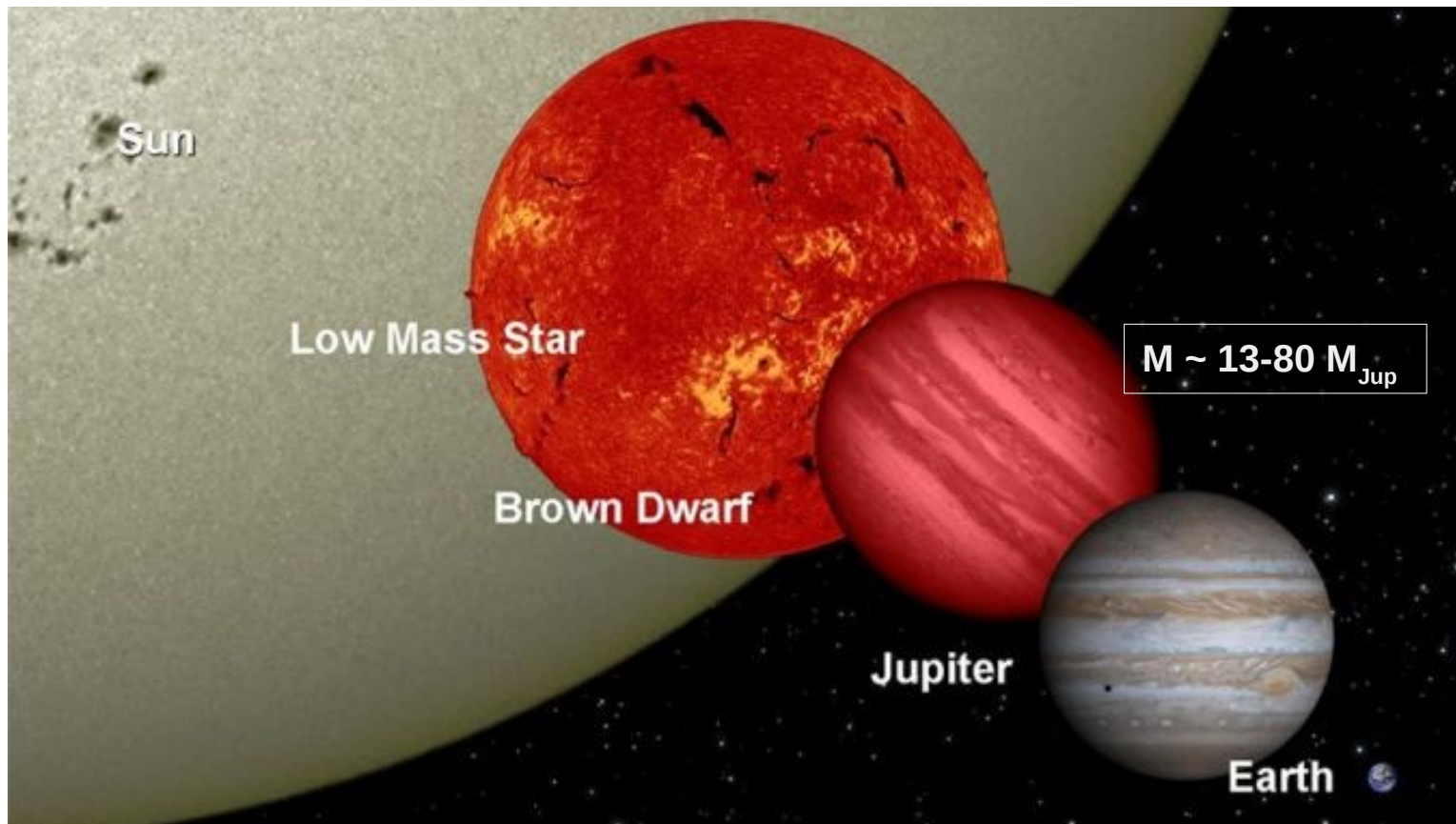Spanish Virtual Observatory, Madrid. Spain.

Stars → Brown Dwarfs → Planets

★ M ~ 13 to 80 M$_{jup}$ ★ Spectral types: M, L, T, and Y.

Stars → Brown Dwarfs → Planets

Science case: Brown dwarfs

Surface Temperature

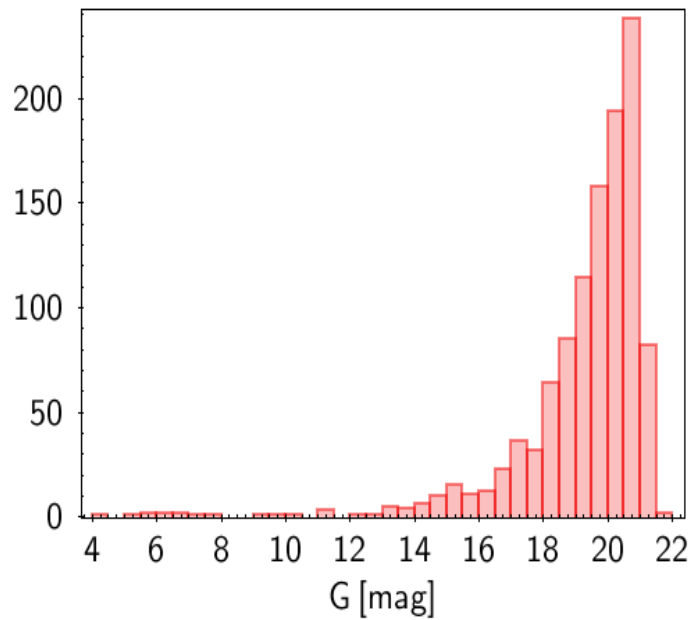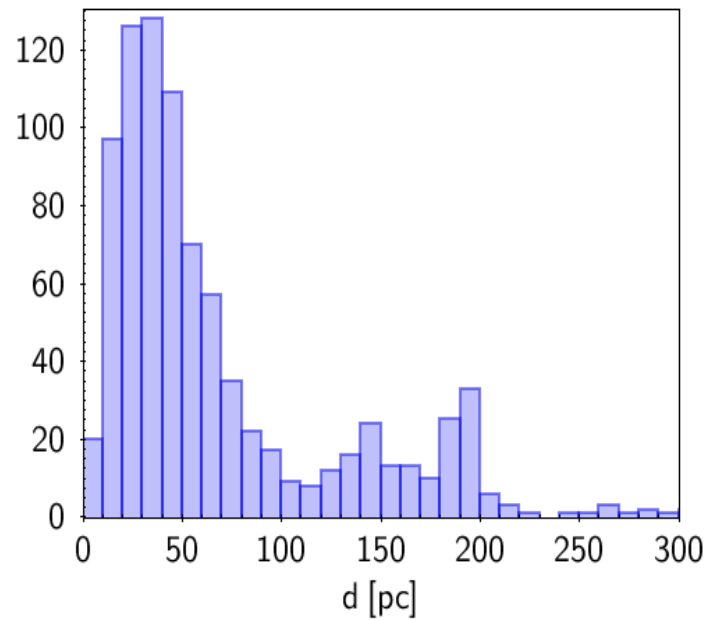Gaia ultracool dwarf sample from Smart et al. (2017)

Luminosity
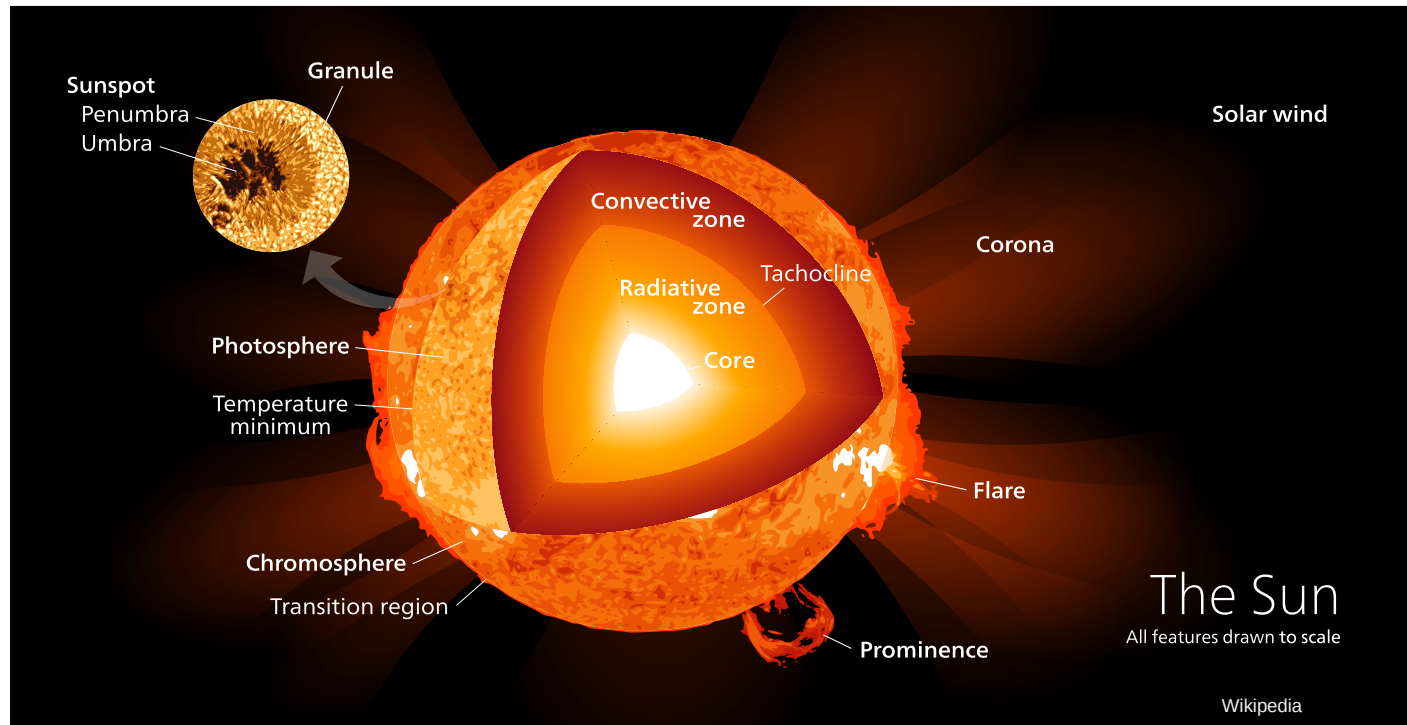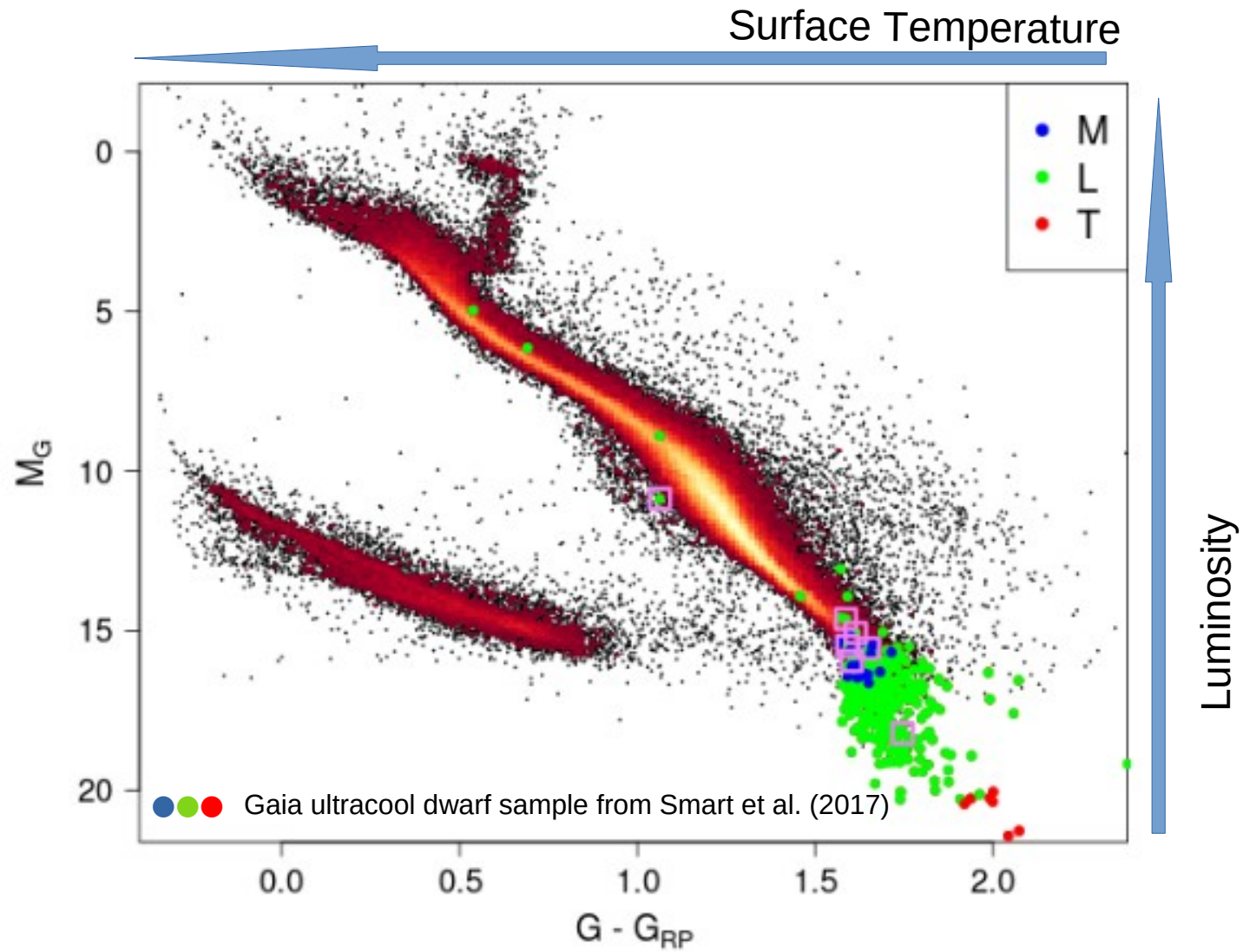
Gaia collaboration et al. 2018, A&A, 616 A10

Science case: Brown dwarfs
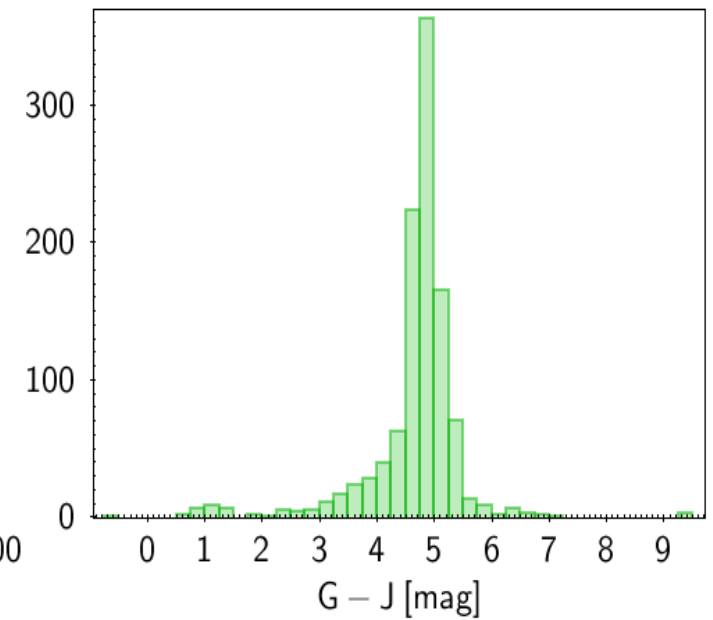

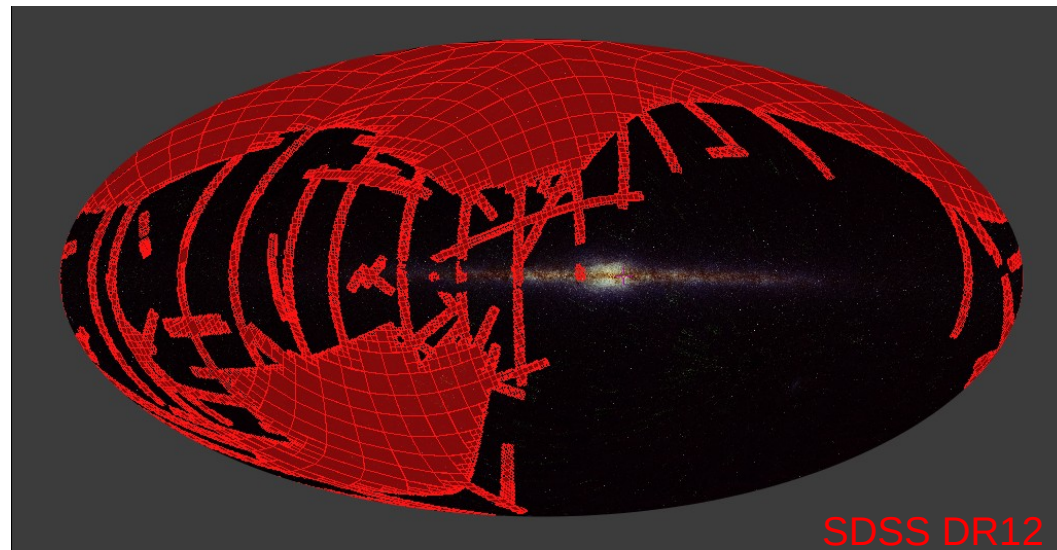Faint   Nearby   Red

Workflow: Mine 2MASS and SDSS catalogues to identify brown dwarfs

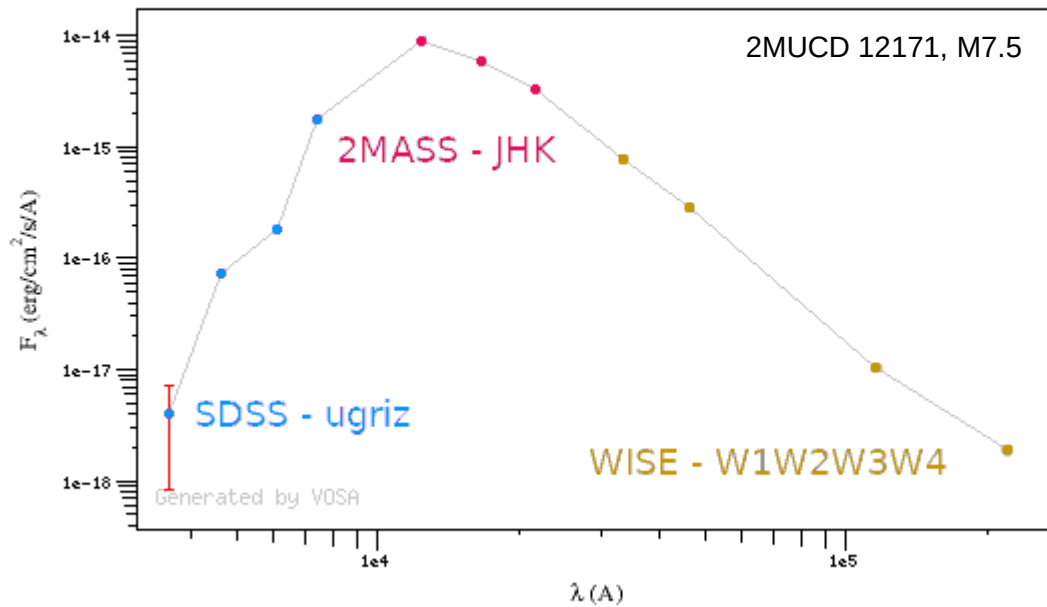**2MASS:** All-Sky Catalog of Point Sources.
2MASS has uniformly scanned **the entire sky** in three near-infrared bands from 1997-2001.

SDSS DR12

SDSS DR12: Sloan Digital Sky Survey, has surveyed near **35%** of the sky in the optical ugriz bands between 2000-2014.
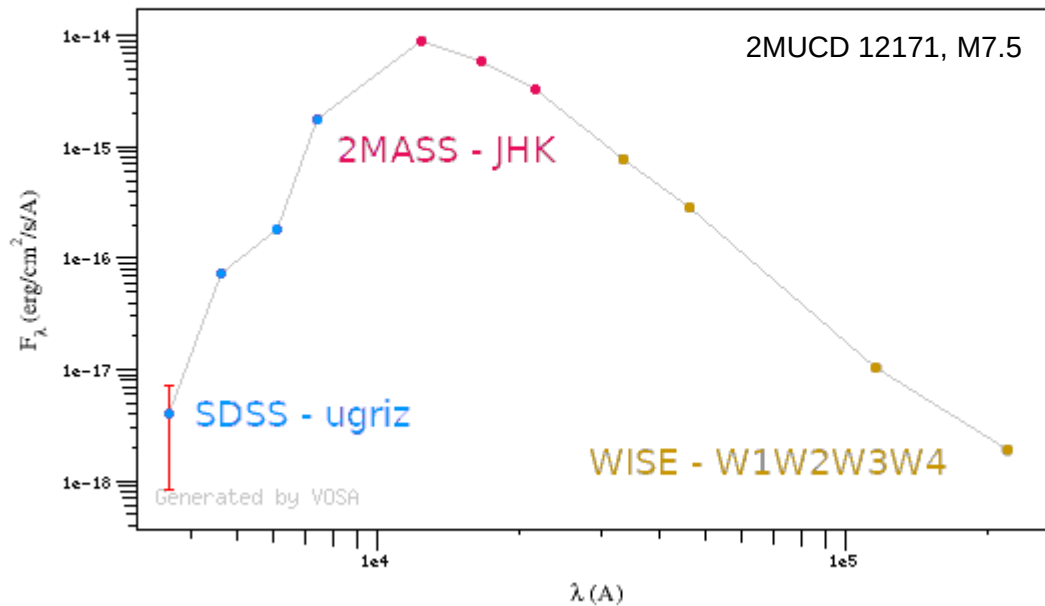
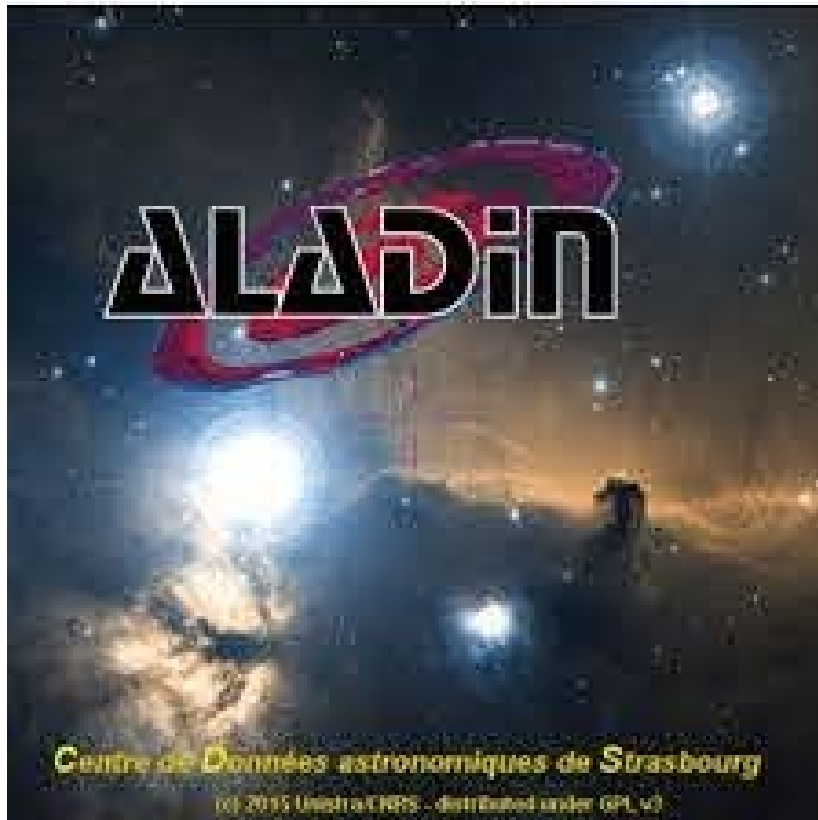**Workflow:** Mine 2MASS and SDSS catalogues to identify brown dwarfs

Workflow: Mine 2MASS and SDSS catalogues to identify brown dwarfs

2MUCD 12171, M7.5

In this tutorial we will explore how to:

- access catalogues
- cross-match tables
- filter sources
- analyse results

Aladin

https://aladin.u-strasbg.fr/

* The following tutorial is run using Aladin v11

* We refer to the F.A.Q. section in the webpage for further details.
(https://aladin.u-strasbg.fr/java/FAQ.htx)

Aladin

Tree panel for data collections

Visualization panel

Panel for loaded tables, images and catalogues