

Discovery of Brown Dwarfs mining the 2MASS and SDSS

ALADIN

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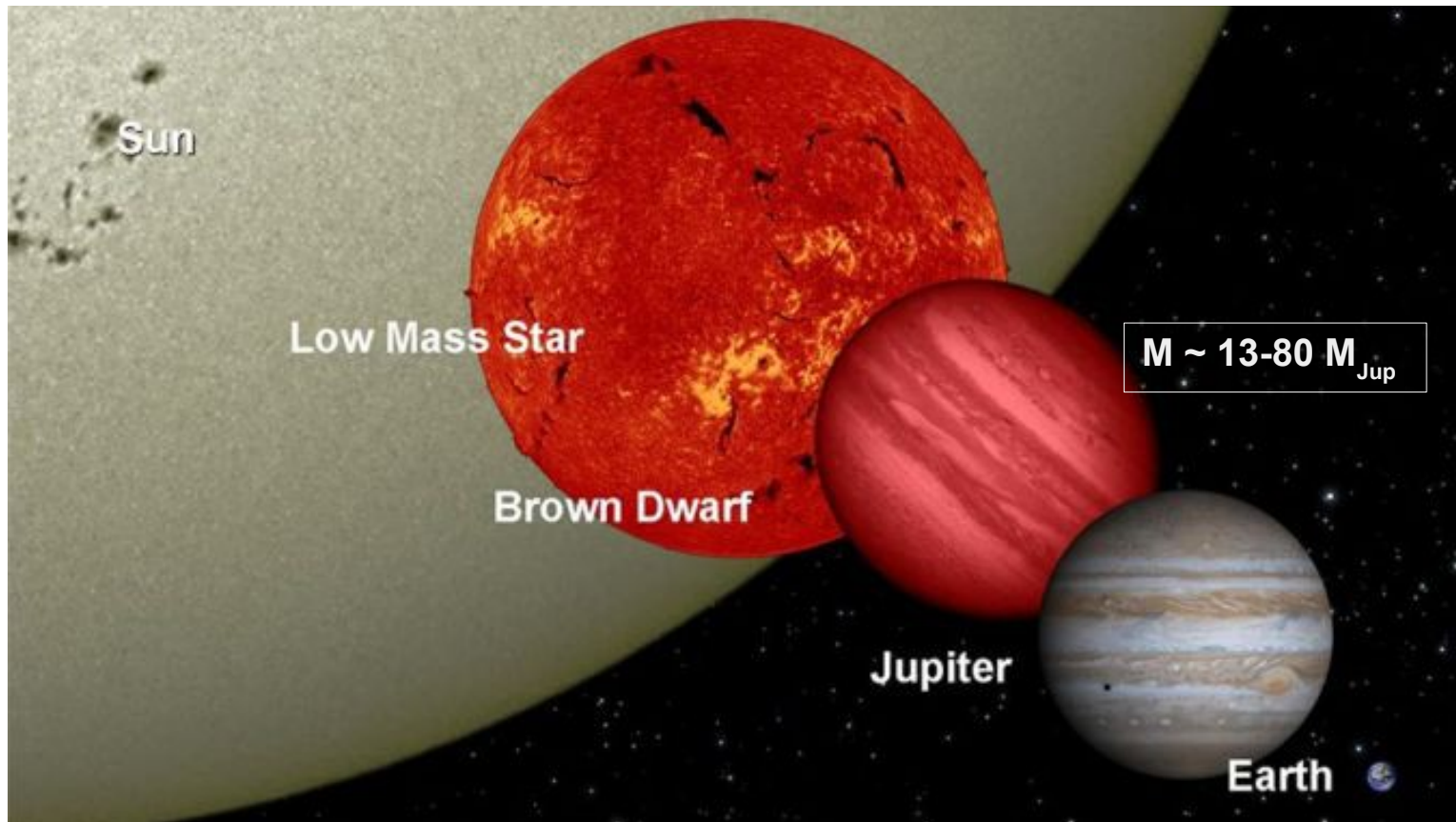


CSIC



Science case: Brown dwarfs

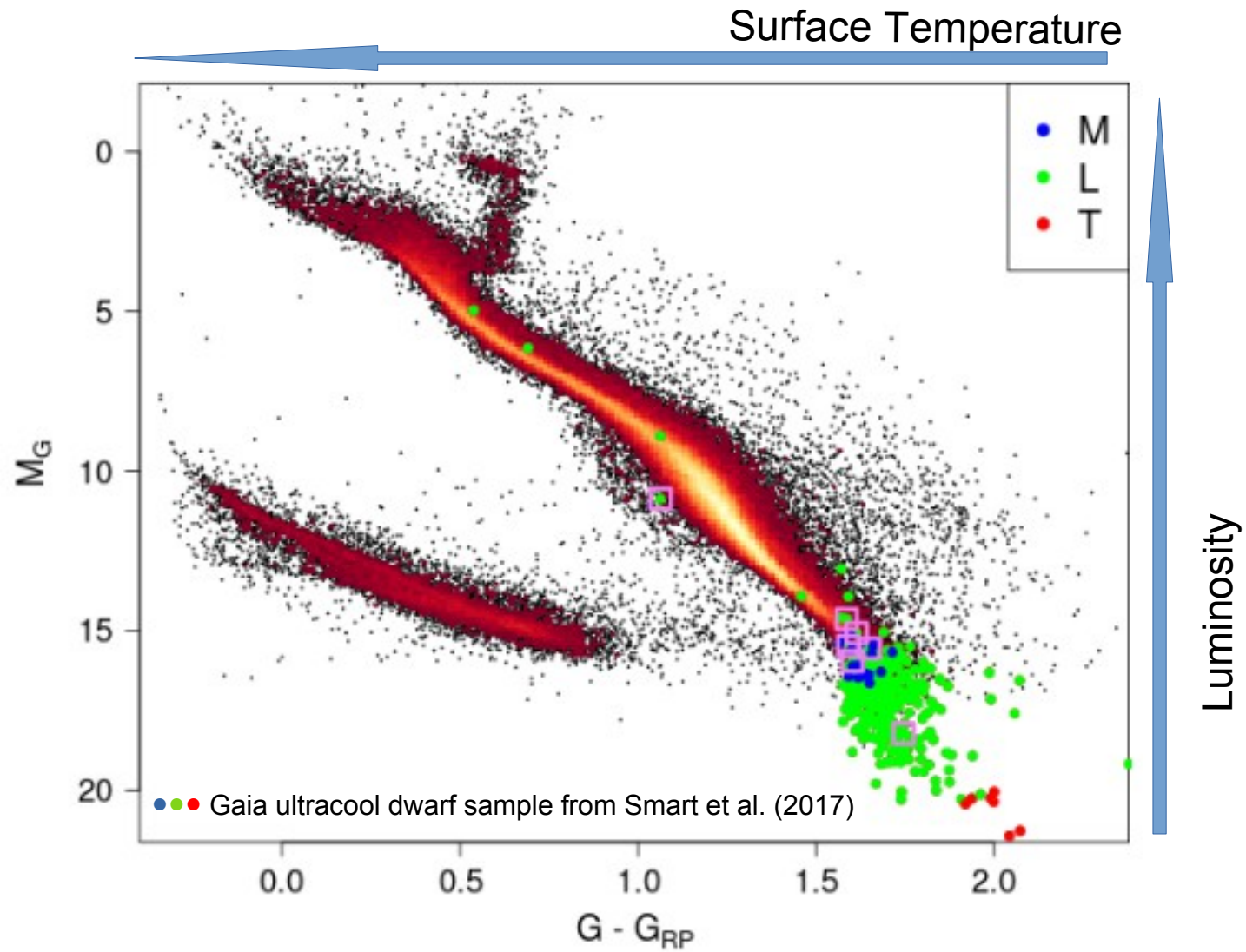
Stars → Brown Dwarfs → Planets



★ $M \sim 13 \text{ to } 80 M_{Jup}$

★ Spectral types: M, L, T, and Y.

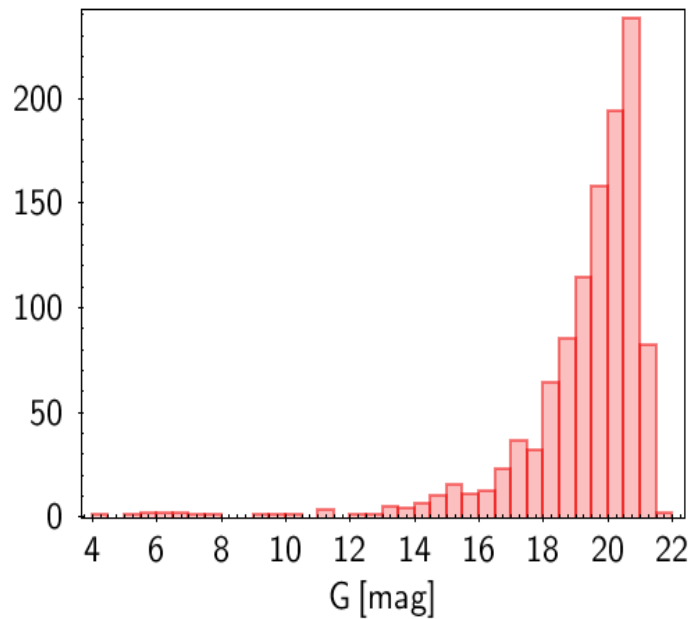
Science case: Brown dwarfs



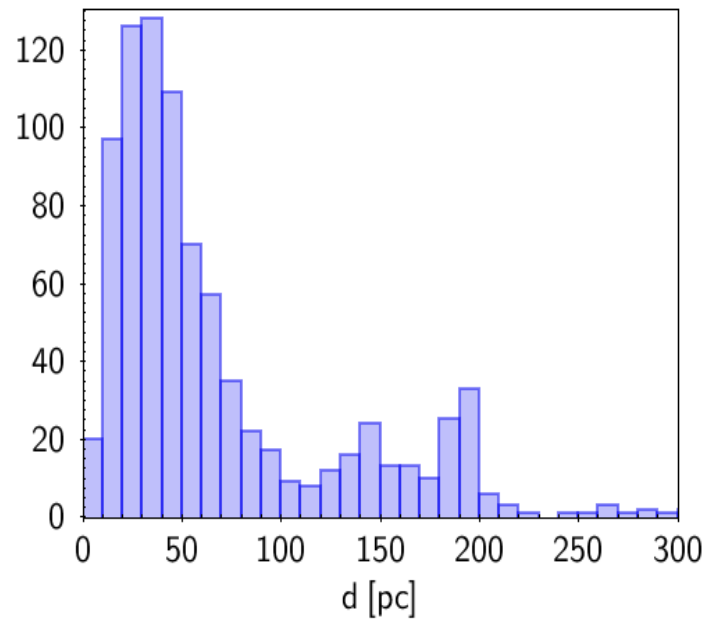
Gaia collaboration et al. 2018, A&A, 616 A10

Science case: Brown dwarfs

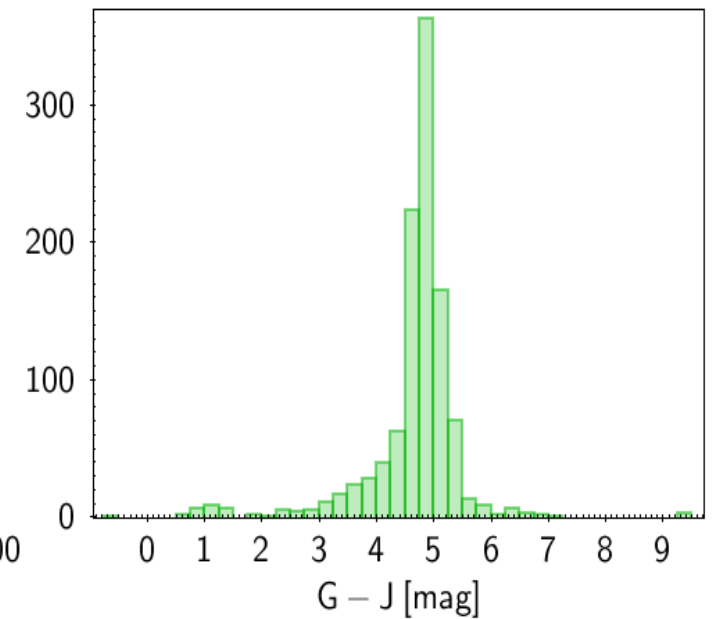
Faint



Nearby



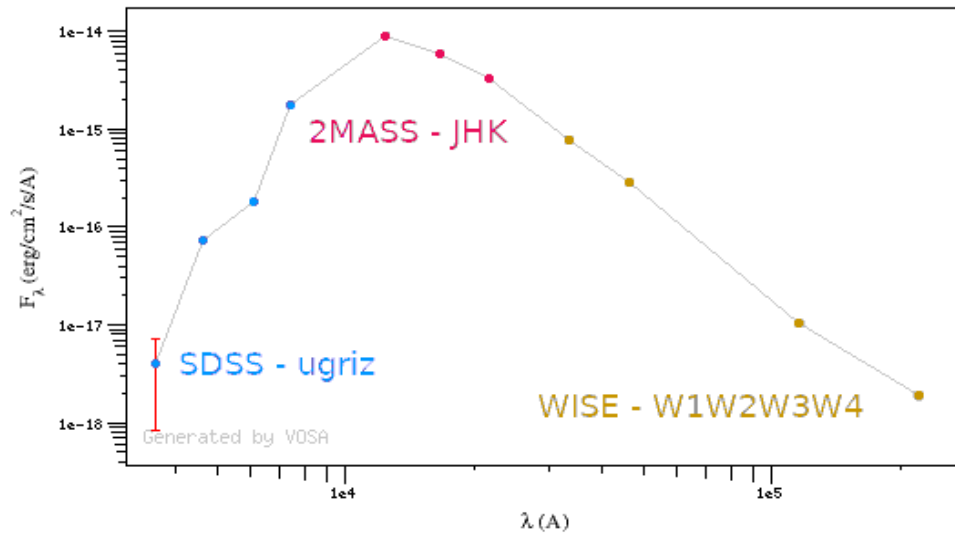
Red



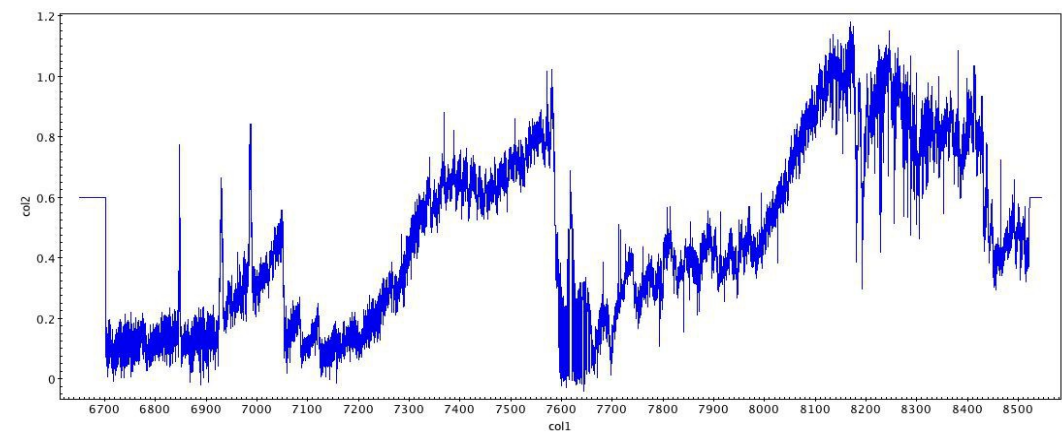
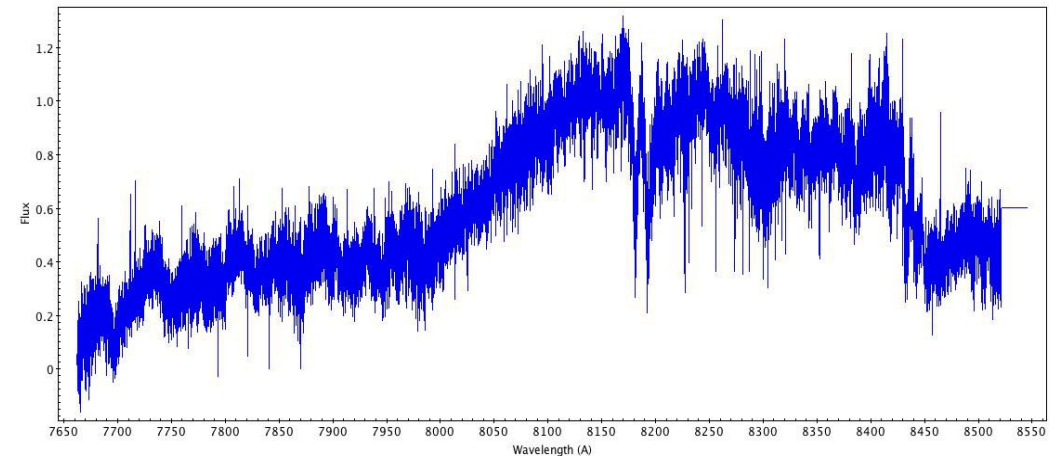
Science case: Brown dwarfs

brown dwarfs SEDs and spectra

2MUCD 12171, M7.5



SIPS2039-1126, M8

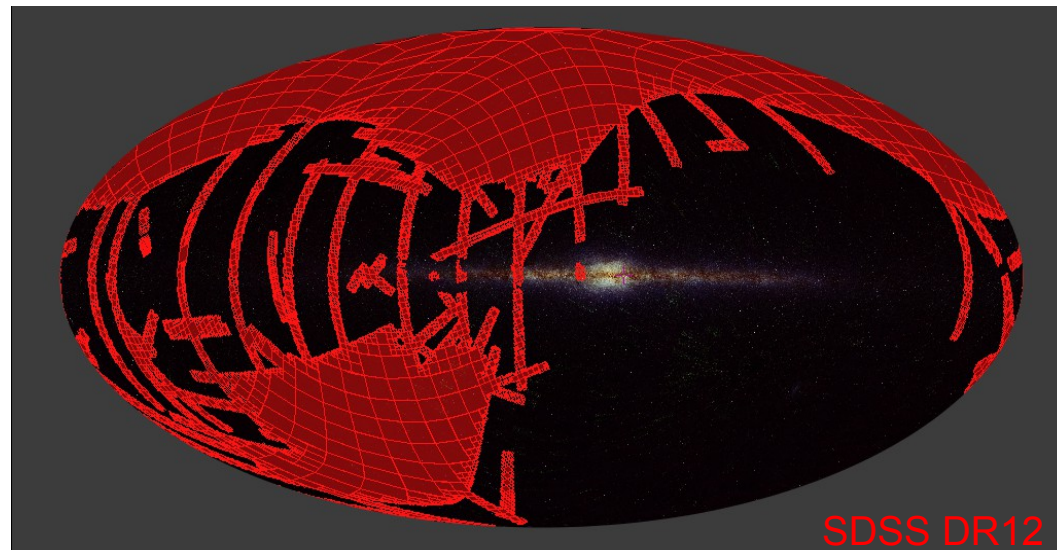


Science case: Brown dwarfs

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: Sloan Digital Sky Survey, has surveyed near **35%** of the sky in the optical ugriz bands between 2000-2014.

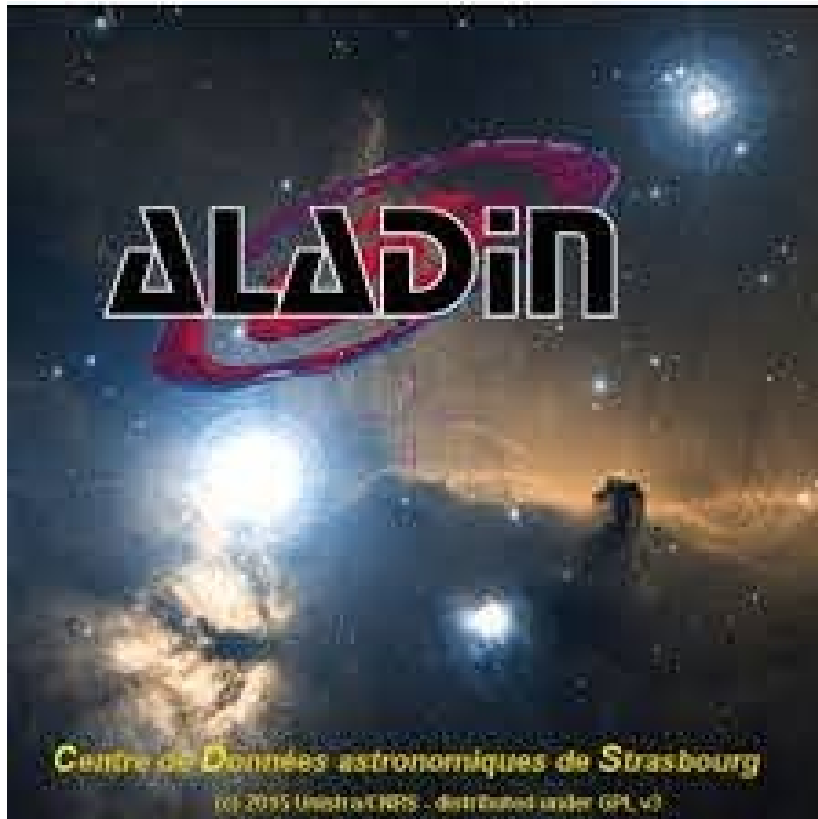
Science case: Brown dwarfs

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

In this tutorial we will explore how to:

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

Aladin



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



- * The following tutorial is run using Aladin v12
- * We refer to the F.A.Q. section in the webpage for further details.
(<https://aladin.u-strasbg.fr/java/FAQ.htm>)

Aladin



Tree panel for data collections

Visualization panel

Panel for loaded tables, images and catalogues