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CENTRE NATIONAL D'ÉTUDES SPATIALES

JC2
JOURNÉES CNES JEUNES CHERCHEURS

11, 12 ET 13 OCTOBRE 2023
CITÉ DE L'ESPACE

The Stellar-Substellar transition : From Gaia to Euclid

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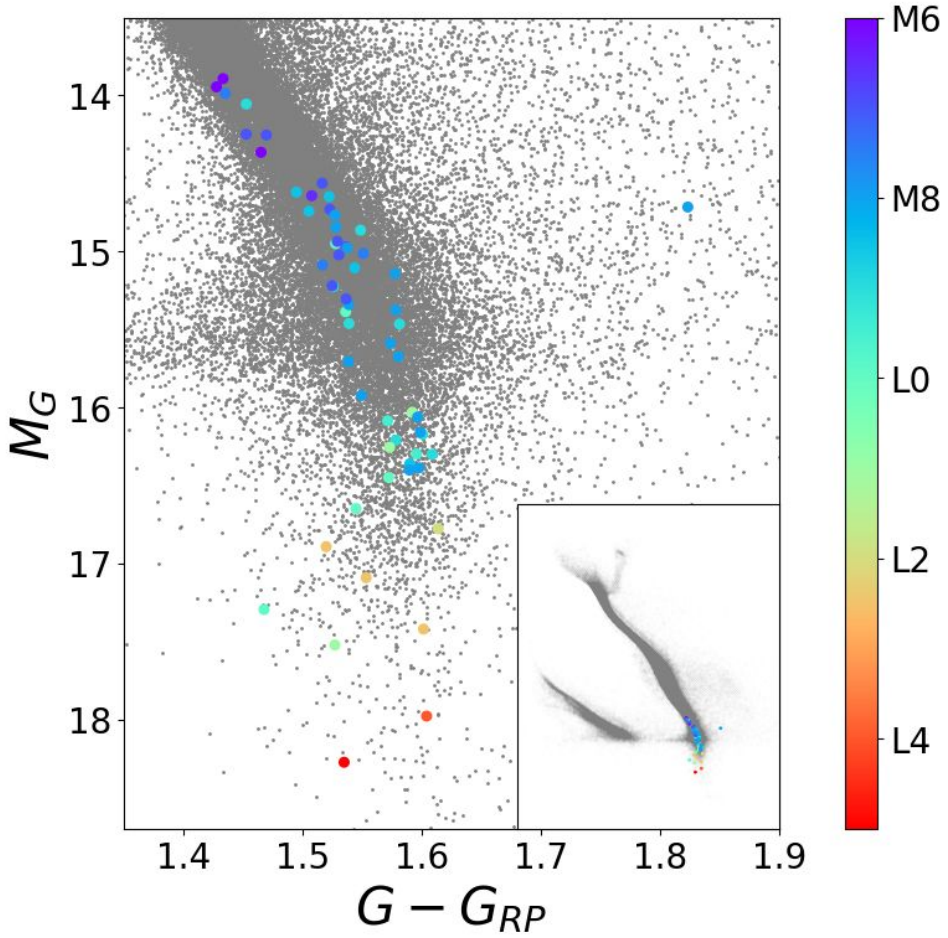
Very low mass stars and brown dwarfs - and how to find them?

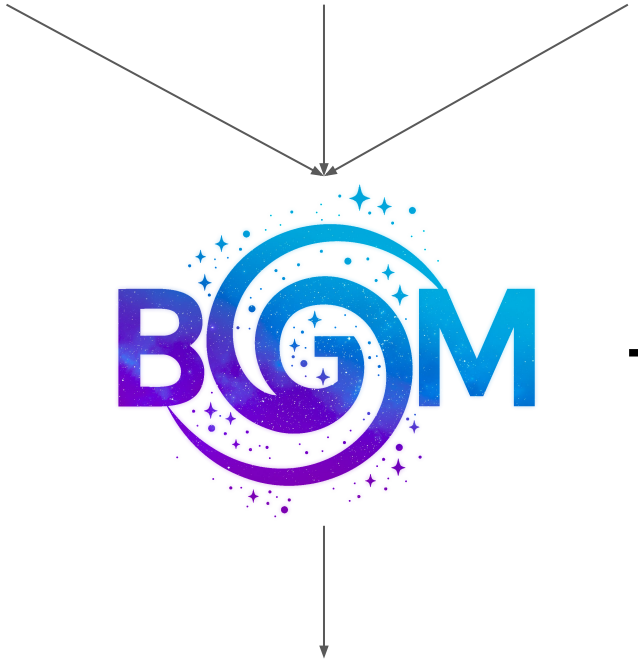
- Faint light sources in the night sky - usually called stars.
- 1.8 billion (!) found with the super-precise-and-accurate Gaia satellite.
- We're interested in the less luminous ones : very-low mass stars and brown dwarfs

→ Stars are objects that steadily "burn" (fusion) their hydrogen and maintain their temperature and luminosity.
→ Brown dwarfs, lighter than stars (below ~ 0.072 solar masses) don't burn (steadily) their hydrogen and cool down over time.



Counting the stars through modelling

Galactic theories Stellar theories Interstellar theories



Simulation of observations

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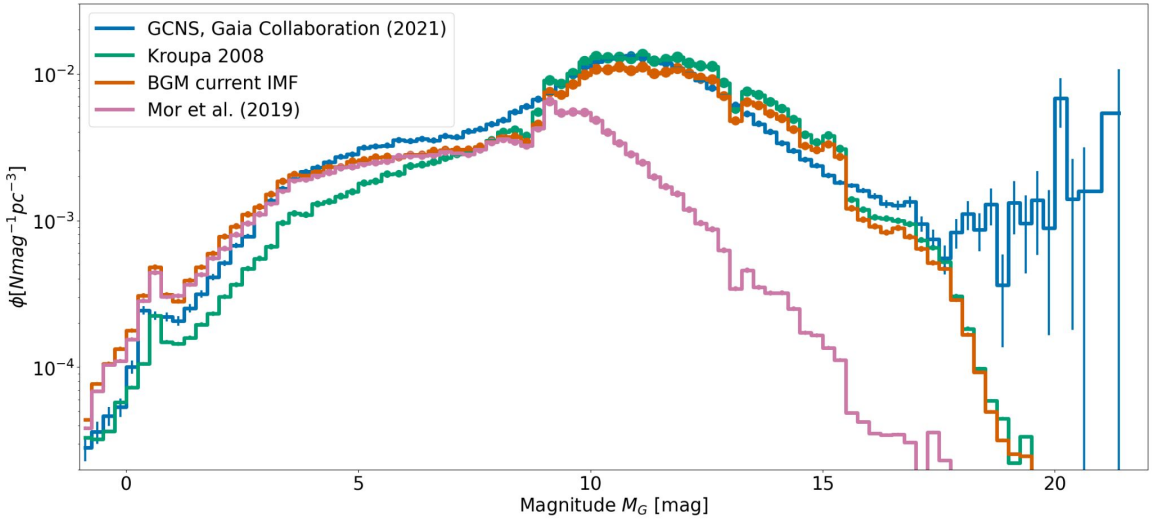

Constraint brought by the distribution of (absolute) luminosity of the sources!

Characterizing the low mass stars and brown dwarfs