aa epsfig,amsfonts,amssymb delfosse/delfosse/article/letter$_e ros/ = -0.5 in document 10.11.1, 12.04.1, 08.12.2

EROS 2 proper motion survey: a field brown dwarf, and an L dwarf companion to LHS 102 Based on observations made at the European Southern Observatory, La Silla, Chile.

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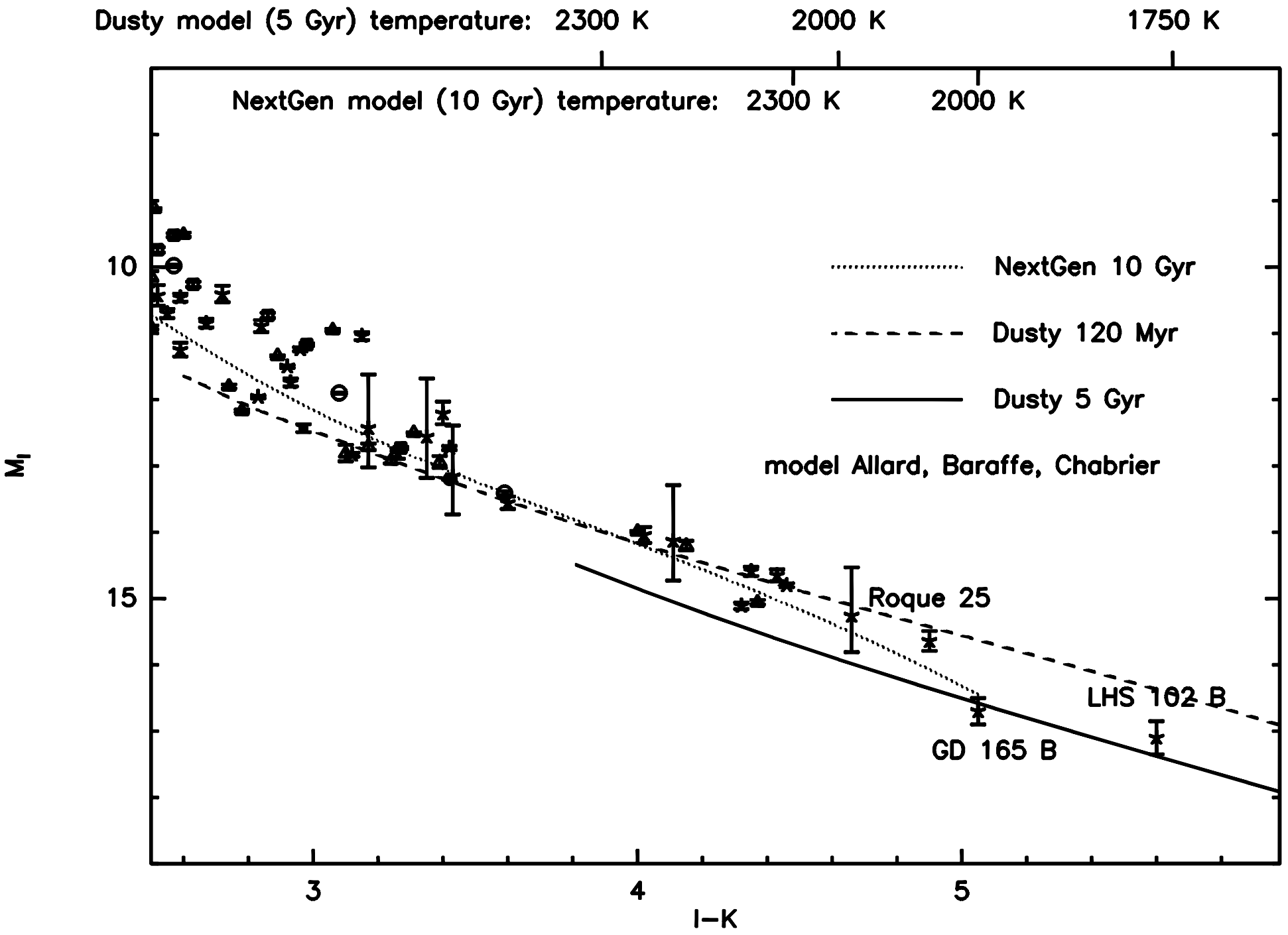
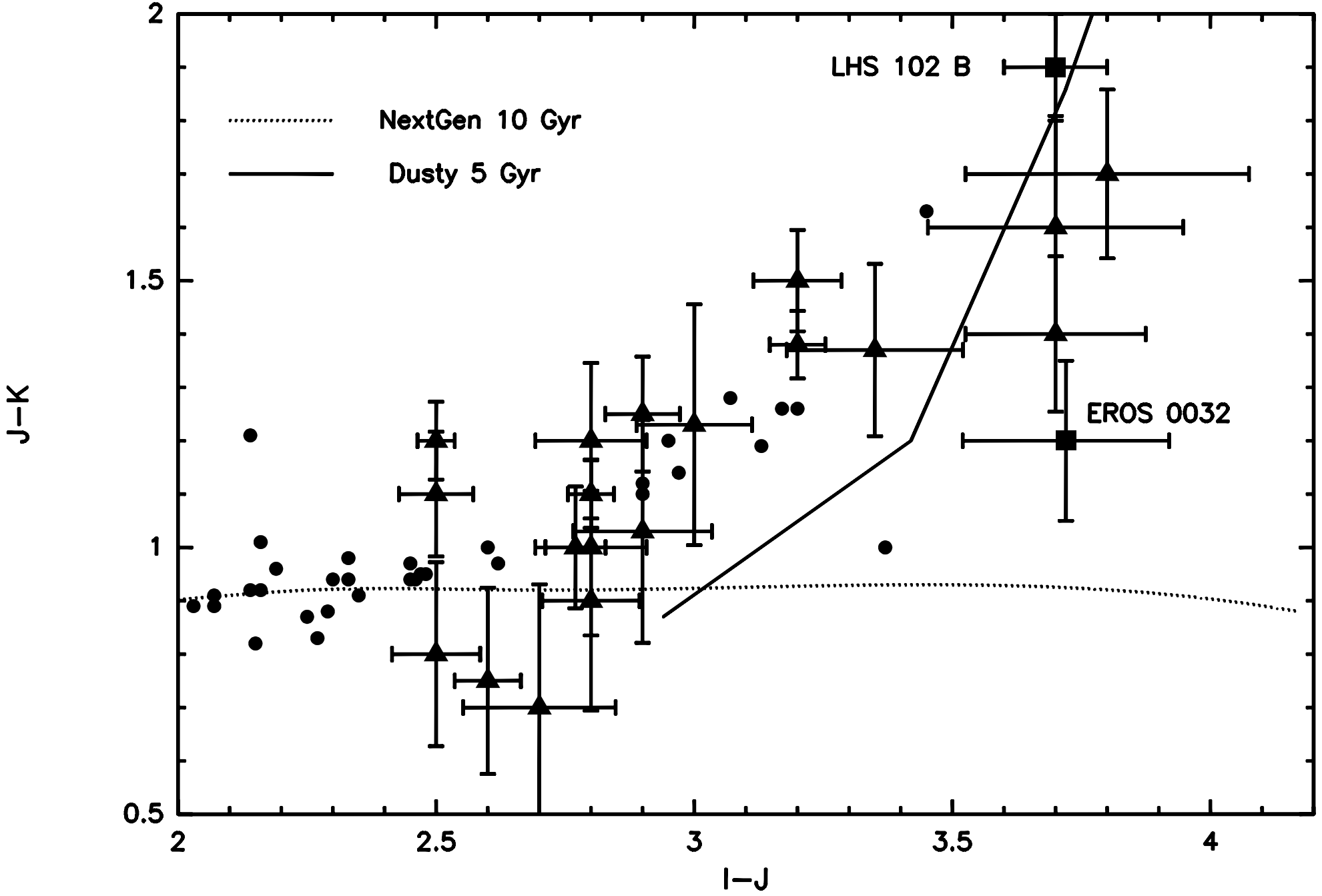
B. Goldman et al. EROS 2 proper motion survey: a brown dwarf and an L dwarf companion to LHS 102

abstract We report the discovery of two L dwarfs (the new spectral class defined for dwarfs cooler than the M type) in a two-epoch CCD proper motion survey of 413 square degrees, complemented by infrared photometry from DENIS. One of them has a strong lithium line and is therefore a brown dwarf. The other is a common proper motion companion to the mid-M dwarf LHS 102 (GJ 1001), which has a well determined trigonometric parallax. LHS 102B is thus the coolest L dwarf of known distance and luminosity. : Galaxy: kinematics and dynamics — dark matter — stars: low-mass, brown dwarfs


Dusty model (5 Gyr) temperature: 2300 K
2000 K
1750 K
NextGen model (10 Gyr) temperature: 2300 K
2000 K
NextGen 10 Gyr
Dusty 120 Myr
Dusty 5 Gyr
model Allard, Baraffe, Chabrier
Roque 25
LHS 102 B
GD 165 B
10
15
M_I
3
4
5
I−K


LHS 102 B
NextGen 10 Gyr
Dusty 5 Gyr
EROS 0032
J–K
I–J
2
1.5
1
0.5
2
2.5
3
3.5
4