Luminosities, colours, and SEDs of M dwarfs in the CARMENES catalogue

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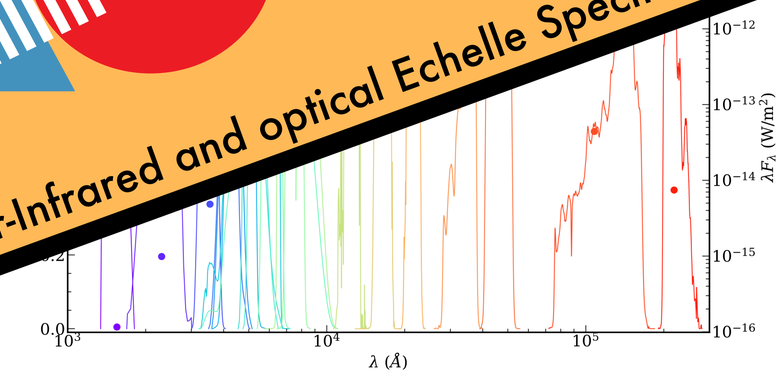
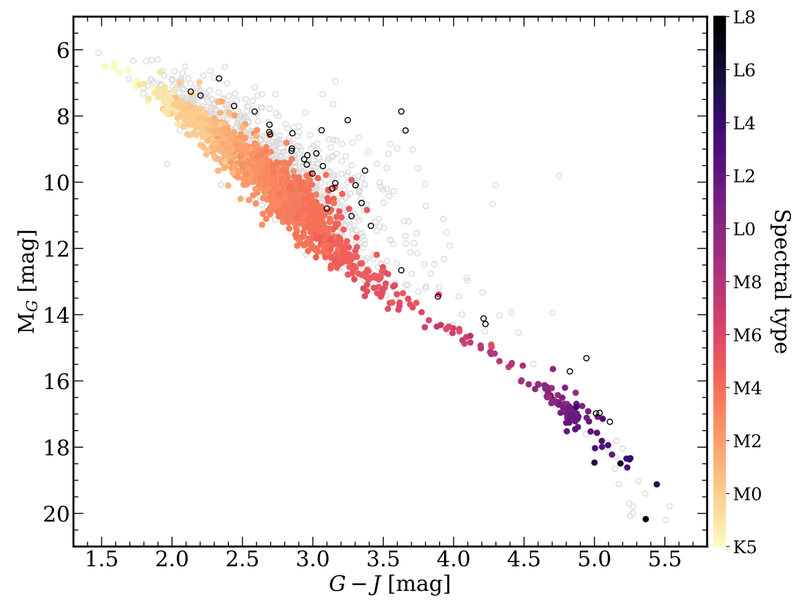
>350 M dwarfs monitored
>30 exoplanets confirmed

Calar Alto high-Resolution search for M dwarfs with Exo-Earths with Near-Infrared and optical Echelle Spectrographs





Once the flux of a star in multiple passbands (from UV to mid-IR) is known, one can produce a low-resolution spectrum or spectral energy distribution (SED) and derive the bolometric luminosity from it. We did this on almost 2500 cool stars. We determined the average values of very important astrophysical parameters, including absolute magnitudes, temperatures, masses or radii.

Spectral type	BC_G (mag)	BC_J (mag)	L ($10^{-4} L_\odot$)	$T_{\rm eff}$ (K)	$\mathcal{R}$ ($\mathcal{R}_\odot$)	$\mathcal{M}$ ($\mathcal{M}_\odot$)
K5 V	–0.206 ± 0.065	1.490 ± 0.047	1800 ± 420	4400 ± 180	0.693 ± 0.054	0.707
K7 V	–0.393 ± 0.046	1.615 ± 0.027	960 ± 210	4050 ± 100	0.635 ± 0.046	0
M0.0 V	–0.469 ± 0.082	1.654 ± 0.042	757 ± 230	3900 ± 140	0.613 ± 0.060	
M0.5 V	–0.570 ± 0.067	1.690 ± 0.038	585 ± 210	3800 ± 110	0.571 ± 0.0	
M1.0 V	–0.605 ± 0.054	1.719 ± 0.033	496 ± 150	3700 ± 85	0.550 ±	
M1.5 V	–0.664 ± 0.066	1.741 ± 0.037	409 ± 160	3600 ± 90	0.519	
M2.0 V	–0.746 ± 0.077	1.769 ± 0.035	306 ± 130	3500 ± 105	0	
M2.5 V	–0.825 ± 0.082	1.796 ± 0.034	228 ± 96	3400 ± 97		
M3.0 V	–0.915 ± 0.085	1.827 ± 0.040	161 ± 74	3300 ± 8		
M3.5 V	–0.985 ± 0.096	1.863 ± 0.043	111 ± 57	3300		
M4.0 V	–1.043 ± 0.093	1.890 ± 0.043	87 ± 47	320		
M4.5 V	–1.160 ± 0.103	1.920 ± 0.041	50 ± 27			
M5.0 V	–1.236 ± 0.122	1.951 ± 0.039	28 ± 13			
M5.5 V	–1.420 ± 0.116	1.997 ± 0.057	20.1 ± 8			
M6.0 V	–1.572 ± 0.178	2.062 ± 0.066	11.1			
M6.5 V	–1.837 ± 0.223	2.096 ± 0.065	7			
M7.0 V	–1.854 ± 0.129	2.105 ± 0.050				
M7.5 V	–2.169 ± 0.141	2.078 ± 0.04				
M8.0 V	–2.192 ± 0.163	2.082 ± 0				
M8.5 V	–2.342 ± 0.169	2.119				
M9.0 V	–2.520 ± 0.158	2.1				
M9.5 V	–2.627 ± 0.118					
L0.0	–2.648 ±	102				
L0.5	–2.746 ± 0					
1.0	–2.817					
5	–2.8					

carmenes.caha.es

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2479 K5 V to L8 stars

SEDs from 20 passbands

Luminosities and effective temperatures for 1843 single stars

40 new close multiple systems

36 overluminous (young?) objects