

Spectral energy distributions and luminosities of M dwarfs in the CARMENES search for exoplanets.

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Abstract

In the quest for Earth-sized exoplanets, M dwarfs are stars of increasing interest during the last two decades. Their small sizes and masses as compared to our Sun make them specially suitable targets to look for the signatures of planetary companions, as their habitable zones fall closer to their host star. Despite being the most abundant stars in our Galaxy, it still exists large uncertainty about basic physical properties of M dwarfs. In particular, determining properties such as luminosities and effective temperatures is essential to characterize their planetary companions, since their properties are derived from those of their host stars. This means that the larger the uncertainties in these fundamental stellar properties, the broader is the span of compatible planetary compositions and parameters. CARMENES is a next-generation spectrograph, built and operated by the homonymous German-Spanish consortium of eleven institutions, which monitorizes bright nearby M dwarfs using the radial velocity method. Carmencita, its input catalog, contains dozens of parameters for about 2200 M dwarfs, from M0.0 to M7.0, including photometric data in a broad range, from UV to mid-infrared. These photometric data, compiled and updated for 18 broadband filters, *FUV*, *NUV*, *u'*, *B_T*, *B*, *g'*, *V_T*, *G*, *V*, *r'*, *i'*, *J*, *H*, *Ks*, *W1*, *W2*, *W3*, *W4*, have made possible the determination of important stellar properties using the Virtual Observatory SED Analyzer (VOSA). (See poster).