

CARMENES science preparation. High-resolution spectroscopy of M dwarfs

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Abstract

To ensure an efficient use of CARMENES observing time, and the highest chances of success, it is necessary first to select the most promising targets. To achieve this, we are observing 500 M dwarfs at high-resolution ($R = 30,000$ – $48,000$), from which we determine the projected rotational velocity $v \sin i$ with an accuracy better than 0.5 – 0.2 km/s and radial-velocity stability better than 0.2 – 0.1 km/s. Our aim is to have at least two spectra at different epochs of the final 300 CARMENES targets. Our observations with FEROS at ESO/MPG 2.2 m La Silla, CAFE at 2.2 m Calar Alto and HRS at Hobby Eberly Telescope allow us to identify single- and double-line spectroscopic binaries and, especially, fast rotators, which should be discarded from the target list for exoplanet searches. Here we present preliminary results.

Acknowledgments

This work was supported by the Universidad Complutense de Madrid (UCM), the Spanish Ministerio de Economía y Competitividad (MINECO) under grants AYA2011-30147-C03-02 and AYA2011-30147-C03-03, and The Comunidad de Madrid under PRICIT project S2009/ESP-1496 (AstroMadrid).