Poster

Splinter Exoplanets

# The Design of the High Resolution Spectrograph CARMENES - From the Optical to the Near-IR

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The CARMENES instrument is installed at the 3.5 meter telescope at the Calar Alto Observatory in Spain and is in operation since January 2016. Its design is tailored to the search for extrasolar planets around M dwarfs. CARMENES consists of two independent but simultaneously fiber-fed high-resolution Echelle spectrographs. Together both channels cover the wavelength range from 520 to 1710 nm. Thereby CARMENES is the first instrument on sky that is dedicated to and optimized for precise radial velocity measurements at the level of a few meters per second across the visual and the near-IR wavelength range.

Except for the camera and detector systems, the two channels are identical in their design. Both spectrographs are being operated in vacuum. The visual channel is operated at room temperature, whereas the near-infrared instrument is cooled down to around 140 K.

A synopsis of the instrument's design will be given, including the substantial elements along the entire light path. In addition, the Carmenes survey aiming at detecting exoplanets around M-dwarfs, as well as further possible applications of the instrument are shortly outlined.