

carmenes

in a nutshell

How many times have you looked up at the night sky and wondered if we are alone in the Universe? Or if there are planets in other solar systems? Or if the things on Earth really go wrong, which is the nearest habitable exoplanet? CARMENES will help answering these questions... And many others!

In plain English, CARMENES (/kár-me-nes/) is a “complex machine being built by Germans and Spaniards to look for planets like our Earth around close, small, red stars”. While one may think that the pretty CARMENES’ name comes from those of our mother or daughter (Carmen is a typical name in Spain) or from the traditional houses with gardens and orchards from Granada, the truth is more logical: it means something! In particular, the ‘C’ and ‘A’ are for ‘Calar Alto’, the observatory in Almería where the Zeiss 3.5 meter telescope is placed; the ‘R’ is for ‘high-Resolution search’, although ‘Radial-velocity survey’ could be valid, too; ‘M’ is the type of cool, low-mass, red dwarf stars that make up three-quarters of the stars of the Universe; ‘E’ is for ‘Exo-earths’, planets with masses similar to ours and with mild temperatures that allow the sustain of liquid water on surface; ‘N’ is for ‘Near-infrared and visible’, the two channels in different spectral regions, which make CARMENES unique with respect to its competitors; and ‘E’ and ‘S’ are for ‘Échelle Spectrographs’, the devices with which astronomers investigate in detail the fingerprints of stars.

CARMENES is not only the original name of an astronomical instrument, but also that of the international consortium that builds it, which consists of over 100 engineers and scientists of eleven institutions in Spain and Germany, and that of the scientific project that will hunt exoplanets for at least 600 nights from Calar Alto.

In December 2013, some key CARMENES components (detectors, échelle gratings) are being tested, while some units are complete (calibration, NIR cooling) or close to it (vacuum tanks, front end). We plan to make our preliminary tests in Calar Alto just in summer 2014, and to have first light by the turn of the year.

Do you want to know more? Visit our website at <http://carmenes.caha.es/>

