

Dr Khalid Barkaoui is a postdoctoral researcher in the SUBSTELLAR Group at the Instituto de Astrofísica de Canarias (IAC). His main research interests are the photometric follow-up of low-mass stars and substellar objects in order to search for transiting exoplanets, as well as stellar variability.

He obtained his PhD from the University of Liège in Belgium and Cadi Ayyad University in Morocco, working on the TRAPPIST-North telescope, which has been installed at the Oukaimeden Observatory in Morocco since 2016.

Dr Barkaoui PhD project focused on detecting and characterising transiting exoplanets using this telescope. He participated in the TRAPPIST-North project, which involves telescope operations and scientific exploitation. This project is a prototype for the SPECULOOS (Search for Habitable Planets Eclipsing Ultra-Cool Stars) project.

Prior to joining the SUBSTELLAR project at the IAC, Dr Barkaoui was awarded a postdoctoral fellowship funded by the University of Liège in collaboration with the Massachusetts Institute of Technology (MIT, USA) and the Instituto de Astrofísica de Canarias (IAC, Spain), working on the SPECULOOS-North project at the Teide Observatory. He focused on the photometric follow-up of TESS M dwarfs. He was involved in two main projects with the SPECULOOS team:

The first was about confirming and characterising small exoplanets (Earth- to mini-Neptune-sized planets) orbiting M dwarfs. The second project involved confirming and characterising short-period gas giant exoplanets, as well as transiting brown dwarfs, orbiting M dwarfs. This was in the context of the MANGOS (M Dwarfs Accompanied by Close-in Giant Orbiters with SPECULOOS) project, which aimed to learn about the formation and evolution histories of these systems, which are ideal candidates for atmospheric characterisation using emission and transmission spectroscopy techniques with JWST.