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## On the study of atmospheric escape of exoplanets using the new window of the He 10830 line

**Manuel López-Puertas**<sup>1</sup>, Manuel Lampón<sup>1</sup>, Jorge Sanz-Forcada<sup>2</sup>, Stefan Czesla<sup>3</sup>, Alejandro Sánchez-López<sup>4</sup>, Karan Molaverdikhani<sup>5</sup>, Lisa Nortmann<sup>6</sup>, Jaume Orell-Miquel<sup>7</sup>, and The CARMENES Consortium

<sup>1</sup>Instituto de Astrofísica de Andalucía, CSIC, Solar System, Granada, Spain (puertas@iaa.es)

<sup>2</sup>Centro de Astrobiología (CSIC-INTA), ESAC, Villanueva de la Cañada, Madrid, Spain.

<sup>3</sup>Hamburger Sternwarte, Universität Hamburg, Hamburg, Germany.

<sup>4</sup>Leiden Observatory, Leiden University, Leiden, The Netherlands.

<sup>5</sup>Max-Planck-Institut für Astronomie, Heidelberg, Germany

<sup>6</sup>Institut für Astrophysik, Georg-August-Universität, Göttingen, Germany

<sup>7</sup>Instituto de Astrofísica de Canarias (IAC), La Laguna, Tenerife, Spain

The key role that hydrodynamic escape has on the mass loss of the planets and their evolution is well known. This is particularly important for close-in planets because the extreme stellar XUV irradiation they receive causes them to undergo hydrodynamic atmospheric escape. Although the mass loss caused by this mechanism may not be high enough to significantly alter the state of hot Jupiters, it strongly affects the evolution of lower-mass planets. For the latter, atmospheric escape drives and controls their evolution, shaping our currently observed exoplanet population. The whole process, from stellar irradiation to the planet, is not currently well understood, mainly because of the scarcity of appropriate observations.

Recently though, high-resolution absorption measurements of the metastable He I triplet state at 10830 Å have become available. These have opened a new window to study the upper atmospheres of exoplanets. In particular, the CARMENES high-resolution spectrograph at CAHA has provided in the last few years He I triplet absorption measurements of about ten diverse exoplanets.

This talk will present those observations and a thorough analysis of them. In particular, we will show results about key parameters of those planets' upper atmospheres like their mass-loss rates, H/He abundances, and their diverse hydrodynamic escape regimes. The number of planets observed is already large enough that we can draw some general conclusions.