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The atmosphere of WASP-76b seen with CARMENES: looking for CaII IRT and HeI

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Currently, one of the most used techniques to study the atmosphere of the exoplanets is transmission spectroscopy by means of high-resolution facilities ($R > 10^5$). This methodology has led to the detection of several species in the atmosphere of exoplanets, showing that ultra-hot Jupiters ($T_{\text{eq}} > 2000$ K) are one of the most intriguing exoplanets, possessing the richest atmospheres measured to date. Here, using two transit observations with the high-resolution spectrograph CARMENES, we study the atmosphere of one of the most famous ultra-hot Jupiters: WASP-76b. We take advantage of the redder wavelength coverage of CARMENES, in comparison with the facilities used in previous studies of this same planet, and focus our analysis on the CaII IRT triplet at 850nm and the metastable HeI triplet at 1083nm. In line with recent studies, we detect ionised calcium in the atmosphere of WASP-76b and, additionally, find possible evidence of HeI. We contextualise our findings with previous atmospheric studies of other ultra-hot Jupiters and, in particular, with those showing the presence of CaII and HeI absorption in their transmission spectrum. We show that this planet is a potential candidate for further follow up studies of the HeI lines using high-resolution spectrographs located at larger telescopes, such as CRIRES+.