



A lucky imaging multiplicity study of exoplanet host stars

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To understand the influence of additional wide stellar companions on planet formation, it is necessary to determine the fraction of multiple stellar systems amongst the known extrasolar planet population. We target recently discovered radial velocity exoplanetary systems observable from the northern hemisphere and with sufficiently high proper motion to detect stellar companions via direct imaging. We utilize the Calar Alto 2.2m telescope in combination with its lucky imaging camera AstraLux. 71 planet host stars have been observed so far, yielding one new low-mass ($0.239 \pm 0.022 M_{\odot}$) stellar companion, 4.5 arcsec (227 AU of projected separation) northeast of the planet host star HD185269, detected via astrometry with AstraLux. We also present follow-up astrometry on three previously discovered stellar companions, showing for the first time common proper motion of the 0.5 arcsec companion to HD126614. Additionally, we determined the achieved detection limits for all targets, which allows us to characterize the detection space of possible further companions of these stars.

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