Two mini-Neptune systems around bright G-dwarf stars from SOPHIE high-precision program

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Abstract

The high-precision radial velocity programs, conducted with the SOPHIE spectrograph for the past 20 years at the 1.93 m telescope of the Observatoire de Haute-Provence, aim at detecting and characterizing low-mass planets around nearby bright stars, in particular of spectral types G and K. They are part of the continuity of recent works carried out with SOPHIE on these stars (Courcol et al. 2015 [1]; Hara et al. 2020 [2]; Heidari et al. 2024 [3]), which have enabled the detection of multi-planet systems as well as super-Earth and mini-Neptune type planets around bright stars.

We present here the analysis of two G-type stars monitored within the SP1+ program. The radial velocity measurements, complemented by space-based photometry from the TESS and CHEOPS missions, reveal the presence of short-period mini-Neptune planets, including a multi-planet system.

References

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