Where are those planets now?

Towards precision orbit predictions for near-future imaging targets

Alexander Venner

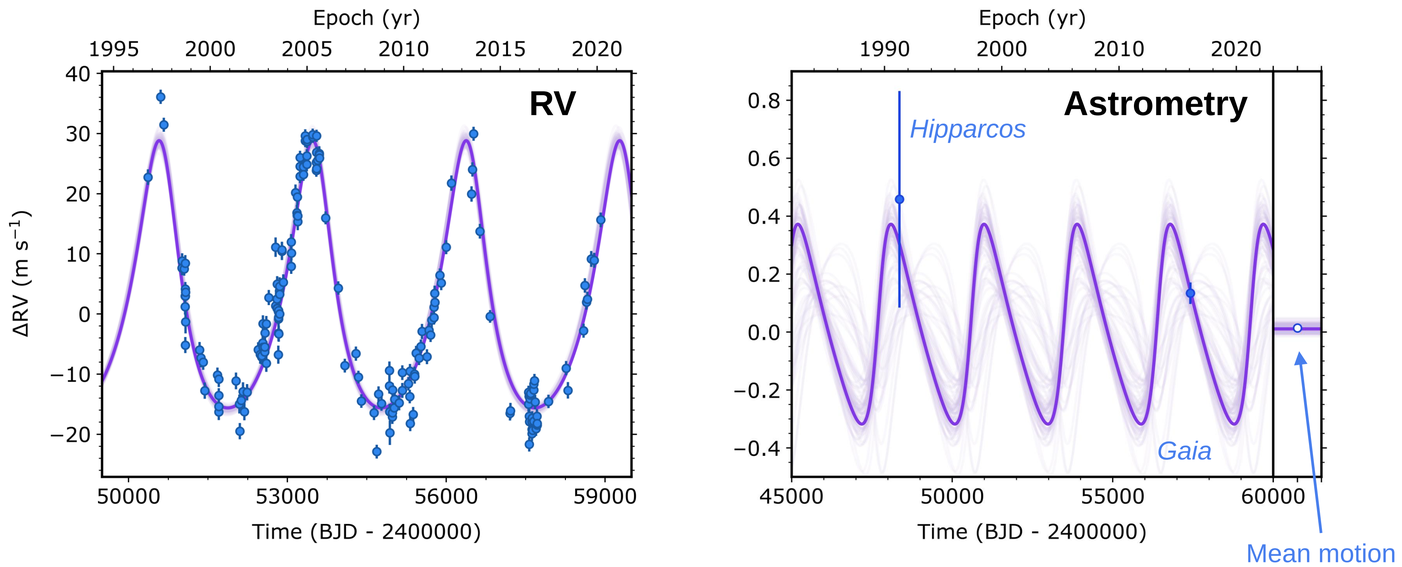
University of Southern Queensland, Australia

Future extreme-contrast exoplanet imaging missions such as Roman and HWO will require highly meticulous target selection. Knowing what planets are where is crucial for every system!

For the nearest stars (d $\lesssim$ 20 pc), the long-period Jupiters are largely already known from RV surveys. More recently, *Hipparcos-Gaia* astrometry has provided their inclinations for the first time. Combined, precise predictions of planetary separations are now possible.

HD 190360 is a nearby (16 pc) star with a P = 8 yr Jovian planet that is, on paper, a good target for Roman. However, the astrometry shows that the orbit is near to edge-on, and during the first years of Roman the planet persistently straddles the inner working angle (IWA), making it difficult to detect.

This system aptly demonstrates some of the potentials and pitfalls to consider in future direct imaging of known exoplanets.



University of Southern Queensland

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