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Occurrence rates of small close-in planets in the presence of cold Jupiters

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Despite the great advancements made in the exoplanetary field over the last decades, it is not yet clear whether our Solar System's architecture is common. To shed light on this topic, the GAPS team in 2012 started a program aimed at monitoring 16 systems known to host giant planets on a Jupiter-like orbit to detect potential inner smaller companions. After 13 years of observations and a few new planets detected, we are working on a statistical analysis of these systems. To expand on that, we selected a larger and homogeneous sample of Sun-like stars hosting a Jupiter-like object suited for the search for small inner planets. The target list includes 138 stars for which we gathered all the available RV data and fitted them homogeneously, finding evidence for 6 new convincing candidates. We derived completeness maps and occurrence rates of small and close-in planets, obtaining results in agreement with the literature. We also split our sample into various sub-samples to test the importance of different physical parameters in determining the link between outer gas giants and their internal low-mass companions.

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Session Classification: Cold Jupiters AND inner low-mass planets (individual systems and statistical analyses) - outside-in