## Planets spinning up their host stars: A twist on the age-activity relationship

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## Abstract

It is a long-standing question if Hot Jupiters can influence the magnetic activity of their host stars. While cool stars usually spin down with age and become inactive, an input of angular momentum through tidal interaction, as seen for example in close binaries, can preserve high activity levels over time. This may also be the case for cool stars hosting a Hot Jupiter. However, selection effects from planet detection methods often dominate the activity levels seen in samples of exoplanet host stars, and planet-induced, systematically enhanced stellar activity has not been detected unambiguously so far.

We have developed an approach to identify planet-induced stellar spin-up avoiding the selection biases from planet detection, by using visual proper motion binaries in which only one of the stars possesses a Hot Jupiter. This approach immediately rids one of the ambiguities of detection biases: with two co-eval stars, the second star acts as a negative control. I will present results from our ongoing observational campaign at X-ray wavelengths and in the optical, and present several outstanding systems which display significant age/activity discrepancies presumably caused by their Hot Jupiters.

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