

Spin-orbit angles, and the aligned-misaligned transition

D. J. A. Brown (1), A. H. M. J. Triaud (2) and A. C. Cameron (1)

(1) SUPA, School of Physics and Astronomy, University of St Andrews, North Haugh, St Andrews, KY16 9SS, United Kingdom (djab@st-andrews.ac.uk)

(2) MIT Kavli Institute for Astrophysics and Space Research, 77 Massachusetts Avenue, 37-582B, Cambridge, MA 02139, USA

Abstract

The number of planetary systems with measured or inferred spin-orbit alignment angles is rapidly approaching 100. With increased sample size comes increased importance of ‘unusual’ systems: either very hot or very cold host stars, or strongly misaligned orbits. It is these that will provide the information that is vital to our understanding of the mechanisms underlying (mis)alignment and its evolution.

We present new Rossiter-McLaughlin measurements for several planets discovered by the WASP survey. Our sample consists of planets which lie close to the $T_{\text{eff}} = 6250$ K transition between ‘hot’ and ‘cold’ systems proposed by [1]; we examine this transition in the context of our new results, and comment on how well-defined it really is.

References

- [1] Winn, J. N., Fabrycky, D., Albrecht, S., and Johnson, J. A.: Hot Stars with Hot Jupiters Have High Obliquities, *ApJL*, Vol. 718, pp. L145-L149, 2010.