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Spinning worlds

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Propositions

accompanying the thesis

Spinning Worlds

1. High-dispersion spectroscopy has the potential to unambiguously detect a temperature inversion in the atmosphere of a hot Jupiter.
(Chapter 2)
2. The projected rotational velocities of directly imaged exoplanets can be measured by combining techniques of high-contrast imaging and high-dispersion spectroscopy.
(Chapters 3, 4 & 5)
3. GQ Lupi b is a slow rotator compared to objects of comparable mass, and this is likely related to the young age of the system.
(Chapter 3)
4. The first five substellar companions with measurements of $v \sin(i)$ show a correlation with age.
(Chapters 3, 4 & 5)
5. Studies of planetary spin may reveal clues to the formation and dynamical evolution of exoplanets.
6. The mass ratio between the primary and the secondary should be the decisive parameter for when a substellar companion is considered an exoplanet.
7. AO-assisted high-resolution infrared spectrographs will play a major role in characterising exoplanets in the near future.
8. Statistical analysis with small samples is like making astronomical observations with binoculars.
9. Astronomy is a philosophic endeavour.
10. A University campus should provide the opportunity to purchase healthy nutrition from early morning to late evening.
11. To survive a PhD, one must remember to live.

Henriette Schwarz
May 2017