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Atmospheres of hot alien Worlds

Brogi, M.

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Author: Brogi, Matteo

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Propositions
accompanying the thesis
Atmospheres
of hot alien worlds

1. Thanks to ground-based, high-resolution spectroscopy, it is now possible to study the atmospheres of non-transiting planets, and to measure their masses and orbital inclinations. *(Chapters 2, 3, and 4)*
2. A model of a trailing cloud of dust reproduces the light curve of KIC 12557548 b in detail, reinforcing the hypothesis that we are observing a disintegrating planet. *(Chapter 5)*
3. The rotational period of HD 189733 b, measured through the broadening of its cross-correlation signal, suggests that the planet is tidally locked, as theories predict. *(Chapter 6)*
4. Only a reliable and robust strategy for determining the structure and composition of exoplanet atmospheres will maximize the yield of future missions designed to find planets around bright stars. *(Chapter 7)*
5. When assessing planet habitability and the existence of life elsewhere in the Galaxy, scientists should not underestimate the cultural and philosophical impact of their claims.
6. Astronomers often underrate the potential of ground-based telescopes.
7. A strong synergy between the fields of star formation and exoplanets is needed to link the observable properties of evolved planets to their birth and early evolution.
8. In times of economic crisis, outreach makes people not only aware of scientific research, but also more keen to invest money in it.
9. Accurate weather statistics should be provided with every job offer.
10. All PhD students should be informed about job opportunities outside academia, even if they want to continue with their research.
11. Asking for help is one of the most difficult tasks for a PhD student.
12. Living abroad broadens the view of your homeland.

Matteo Brogi
Leiden, 5 June 2014