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Extrasolar planet detection through spatially resolved observations

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Title: Extrasolar planet detection through spatially resolved observations

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Propositions

accompanying the thesis

Extrasolar Planet Detection Through Spatially Resolved Observations

1. The most important variable when subtracting a halo of a star to find a planet with principal component analysis is the number of principal components in the fit.

Chapter 2

2. Stars whose spectral energy distributions imply spatially separated, two temperature debris disks are promising locations for the direct detection of exoplanets.

Chapter 3

3. L' -band is the favorable bandpass for discovering planets, as direct imaging planets are redder and have less methane than expected.

Chapter 4

4. It is essential to obtain a spectral energy distribution of a directly imaged companion before its mass can be trusted.

Chapter 5

5. Radial velocity and direct imaging observations probe different planet populations.

Chapter 6

6. Thus far in direct imaging, we have learned much more from the non-detections than the detections of planets.

7. Astronomy press releases do not always match the science – and that’s okay.

8. Academic papers based on scooping are less rigorous.

9. Making Very Entertaining Mnemonics does not Justify Sentimental, Unsuitable Nomenclature – Pluto is not a planet.

10. The application of market forces to university canteens would improve the quality of cuisine and life.

11. Introducing separated bike lanes to major cities is necessary before Dutch biking culture will be accepted outside of the Netherlands.

12. The “best candidate” for a position cannot exist so long as implicit bias still exists.

13. Living outside your home country is an important way to understand and challenge your generalizations about other cultures, and theirs about yours.

Leiden, 11 June 2015

Tiffany Meshkat