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Tuning in to star-planet interactions at radio wavelengths

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Propositions accompanying the thesis

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1) Detection of radio emission from exoplanets is most favourable near conjunction (Chapter 2).

2) The duration that radio emission from a planet is eclipsed by the wind of its host star provides a new way to study stellar winds (Chapter 3).

3) Detection of magnetic star-planet interactions can also tell us about the winds of planet-hosting stars (Chapter 4).

4) Theoretical models can be used to identify potential planet-hosting stars from radio observations (Chapter 5).

5) Direct detection of exoplanets at radio wavelengths is hindered by our lack of knowledge about their magnetic fields.

6) Blind searches for signatures of star-planet interactions appear to be more successful than targeted observations.

7) The application of observed phenomena on the solar system planets to stellar environments should be done so with caution.

8) Treating a tool as a black box can be risky, but is often necessary.

9) Confusion is the first step toward clarity.

10) Gauging how much time is too much time to spend on a task is a key skill that one should learn.

11) There is nothing wrong with asking people for help.

Robert Kavanagh
Leiden, November 15th 2022