

# Identifying Extra Solar Planets and their Key Features using the Doppler Wobble and Planetary Transits Methods

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1/1/2023

## Abstract

This is the abstract

## Introduction and Background

### Aims

Understand the effect of Doppler shifts on the intensity of stellar spectra and use the Python `scipy.optimize` library to determine “best-fit” radial velocities from high- resolution spectra observed at different epochs Derive a radial velocity curve i.e. radial velocity as a function of orbital phase for each star, and use fitting to estimate the amplitude of each curve Estimate the mass and semi-major axis of each planet.<sup>1</sup>

### Method

For the Doppler Wobble method it was first necessary to import all the data provided into a directory that could be accessed by the code source files. From here it was possible to start writing the Python script that would take the data and produce the required outputs as outlined in the aims above.

### Results

### Analysis

### Discussion

### Conclusion

### References

### Aims

Obtain a phase-folded photometric light curve for a star with a transiting planetary companion. Use this to estimate the radius and orbital semi-major axis of the planet Apply the method of least-squares to estimate mean apparent magnitudes during the transit and non-transit phase. Hence estimate the radius of the planet.<sup>1</sup>

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