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Multiplanet systems from the Dispersed Matter Planet Project

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Multiplanet systems in the exoplanet catalogues appear to be less well represented than Kepler transit statistics would suggest. Identification of exoplanet periodicities in radial velocity data via the sequential addition of Keplerian signals may lead to systematically biased multiplanet solutions. A Bayesian approach instead allows us to determine the optimal number of planet candidates by simultaneously fitting multiple signals. This is particularly important when several exoplanets are indicated in limited datasets as it enables competing solutions to be more completely assessed. I will present results from the Dispersed Matter Planet Project, which pre-identifies potential exoplanet systems through atmospheric mass loss that is imprinted on their host stars. Subsequent radial velocities on the systems we have identified have efficiently led to a number of diverse, predominantly low mass multiplanet systems where a Bayesian approach is crucial for optimal recovery of periodicities. I will examine the sensitivity of our survey to date and will discuss our targets in the context of the wider population of short period hot planets.

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Session Classification: RV-detected multiple systems