

RV Jitters in M Dwarfs: Near-Infrared Measurements and a New Diagnosis

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Suppression of RV jitters is now an essential part of RV exoplanet searches, attempting to clarify the population of Earth-sized planets. RV jitters are more evident in young, active stars due to their enhanced surface activity. Together with their rapid rotations, RV jitters inhibit exoplanet detections as well as accurate mass measurements of known transiting exoplanets around such active stars. It is widely assumed that RV jitters are suppressed at longer wavelengths due to the improved flux contrast of starspots. In the case of M dwarfs whose spectra are dominated by "molecular lines", however, we found RV jitters have more complicated properties than generally assumed. Presenting the new RV results for active M dwarfs observed by the InfraRed Doppler (IRD) spectrograph on Subaru, we show that RV jitters are not monotonically suppressed against wavelength, and discuss a new diagnosis to model/mitigate stellar jitters for near-infrared spectra. We will also report mass measurements for known transiting planets around (young) active M dwarfs.