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Planet Frequency beyond the Snow Line from 6 Years MOA-II Microlensing Survey Data

I present the first statistical analysis of the exoplanet frequency using planets found by a microlensing survey as opposed to microlensing follow-up groups. MOA survey data from 2007-2012 is used to derive the planet frequency as a function of the planet/star mass ratio and separation relative to the Einstein radius. The sample includes 1472 microlensing events, including 22 planetary events and 1 ambiguous events with possible planetary and stellar binary solutions. I calculate the detection efficiency for each event and employ a Bayesian analysis to deal with the ambiguous event. The measured planet frequency is somewhat lower, but consistent with previous microlensing results. The planet frequency along with the separation beyond the snow line is consistent with the extrapolation of the inner planet frequency estimated by RV.