Studies on Single Crystals CePdGa$_6$ and Ce$_2$PdGa$_{12}$

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— Single crystals of tetragonal CePdGa$_6$ and Ce$_2$PdGa$_{12}$ are found to be antiferromagnetic below a $T_N$ of 5 and 12 K respectively, with ordering along the $c$-axis. The electronic specific heat coefficients at $T_N$ are approximately 350 and 140 (mJ/mole-Ce-K$^2$) for CePdGa$_6$ and Ce$_2$PdGa$_{12}$ respectively, suggesting strong Kondo competition. In addition, a metamagnetic transition can be driven by relatively small magnetic fields applied along the $c$-axis in both systems. Field dependent thermodynamic properties and magnetization data will be presented and the origin of the complex ground states will be discussed. This work was supported by NSF DMR-0433560.