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Itinerant magnetism in $CaMn_2Al_{10}$[1] JACK SIMONSON, Farmingdale State College, LUCIA STEINKE, Brookhaven National Laboratory, SHELBY ZELLMAN, JEDEDIAH KISTNER-MORRIS, AKSHAT PURI, Stony Brook University, EVON ANDREWS, Farmingdale State College, MEIGAN ARONSON, Stony Brook University and Brookhaven National Laboratory — We report the synthesis and basic properties of $CaMn_2Al_{10}$, a new itinerant magnet that is nearly isostructural with the known quantum critical compound YFe_2Al_{10}. Magnetic susceptibility measurements performed on single crystals reveal a cusp at 2 K. Electrical resistivity measurements similarly have a maximum at this temperature, and heat capacity measurements show a broad peak with total entropy of $\sim 10\%R$ ln2. These results together with those of neutron diffraction measurements suggest that $CaMn_2Al_{10}$ is weakly magnetic and potentially close to a quantum critical point.

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