Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Physical Properties of Single Crystal $EuIn_2P_2$ and $EuGa_2P_2$[1]
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— Single crystals of $EuIn_2P_2$ and $EuGa_2P_2$ have been grown by a metal flux method.The $EuIn_2P_2$ material crystallizes in a new hexagonal structure type and orders magnetically at 24 K. The magnetic ordering is anisotropic suggesting a possible canted ferromagnetic magnetic structure. The temperature dependent resistivity data indicate semi-metallic behavior. Negative colossal magnetoresistance is observed at the ordering temperature. The gallium metal analogue, $EuGa_2P_2$, crystallizes in a related monoclinic structure and magnetically orders at a slightly higher temperature. Magnetization, resistivity and specific heat data are presented for both compounds.

[1]This work is partially supported by NSF DMR-0433560 and DMR-0120990

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Date submitted: 04 Jan 2006 Electronic form version 1.4