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Suppressing magnetic order in $GeNi_2O_4$ and $GeCo_2O_4$ M. JAIME, A.V. SILHANEK, LANL, Los Alamos, NM, P GODDARD, S.J. BLUNDELL, Clarendon Lab, Oxford, UK, J.C. LASHLEY, LANL, Los Alamos, NM, R.A. FISHER, LBNL, Berkeley, CA, M.K. CRAWFORD, DuPont, Willmington, DL — Spin S = 3/2 $GeCo_2O_4$ and spin S = 1 $GeNi_2O_4$ are both frustrated spinels, but they nevertheless order magnetically a low temperatures. $GeCo_2O_4$ achieves this by undergoing a structural phase transition, but the mechanism adopted by $GeNi_2O_4$ is still an open question. We measured the magnetization, specific heat and magnetocaloric effect in polycrystalline samples of the title materials in high fields up to 45 T, and obtained detailed H,T phase diagrams. In the case of $GeNi_2O_4$ an almost degenerate double phase transition in zero field splits into two transitions separated by a wide magnetic field gap. The possibility of a spin-flop transition driven by single-ion anisotropy that also relieves the frustration in the Ni compound will be discussed.

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