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Field-Induced Phase Transitions in the S=1/2 Quasi-1D Antiferromagnet $BaCo_2V_2O_8$[1] GIOVANNI FRANCO-RIVERA, University of Puerto Rico at Mayaguez, N.A. FORTUNE, Smith College, S.T. HANNAHS, H.D. ZHOU, National High Magnetic Field Lab, H. TSUJII, Kanazawa University, Y. TAKANO, University of Florida — We have performed magnetocaloric effect and specific heat measurements in the S=1/2 quasi-one-dimensional Ising-like antiferromagnet $BaCo_2V_2O_8$ in magnetic fields up to 24 T at temperatures down to 0.3 K. The magnetocaloric effect measurements were made in order to investigate the field-direction dependence of a magnetic transition near 3.7 T. The specific heat and magnetocaloric effect measurements were employed to determine the H-T phase diagram when the field is applied parallel to the c axis of the sample. We have found a new antiferromagnetically ordered phase between 19.7 T and 23.1 T, most likely a spin-flop phase. At low fields, our results agree with the known Néel ordered phase boundary.

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