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Neutron Scattering and Thermodynamic Studies of Low Spin Kagome Magnets[1] ROBIN CHISNELL, DANNA FREEDMAN, MIT, JOEL HELTON, NIST Center for Neutron Research, CHRIS STOCK, FRANZ DEMMEL, ISIS Facility - Rutherford Appleton Laboratory, DANIEL NOCERA, YOUNG LEE, MIT — Materials containing low quantum number spins arranged on a kagome lattice are some of the most promising candidates to display spin liquid ground states due to the high degree of geometric frustration. Cu(1,3-bdc) is a hybrid organometallic compound featuring antiferromagnetically coupled S=$\frac{1}{2}$ Cu^{2+} ions on a kagome lattice. Below T=1.8 K the magnetic moments enter a quasi-static phase with no long range magnetic order but extremely slow spin fluctuations. Application of a magnetic field quickly leads to a competing magnetic phase, with a 1 Tesla field able to completely polarize the magnetization below T=2 K. We present inelastic neutron scattering measurements of Cu(1,3-bdc) and note the emergence of low-energy modes in the quasi-static phase. We also present new thermodynamic data on the compound $BaNi_3(OH)_2(VO_4)_2$, recently synthesized by our group, which features S=1 Ni^{2+} ions on a kagome lattice.

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