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Coexistence of ordered and disordered magnetic moments in [Cu(py_z)₂(VF₆)]•4H₂O and comparison to [Cu(HF₂)(py_z)₂]SbF₆ (py_z = pyrazine)¹ J.L. MANSON, Eastern Washington University, J.A. SCHLUETER, Argonne National Laboratory, J. SINGLETON, R. MCDONALD, Los Alamos National Laboratory, T. LANCASTER, A.J. STEELE, P.A. GODDARD, I. FRANKE, S.J. BLUNDELL, Oxford University, F.L. PRATT, ISIS Pulsed Muon Facility, EASTERN WASHINGTON UNIVERSITY TEAM, ARGONNE NATIONAL LABORATORY TEAM, LOS ALAMOS NATIONAL LABORATORY TEAM, OXFORD UNIVERSITY TEAM, ISIS PULSED MUON FACILITY TEAM — Quasi-2D [Cu(py_z)₂(VF₆)]•4H₂O (**1**) and [Cu(HF₂)(py_z)₂]SbF₆ (**2**) have tetragonal symmetry and consist of 2D [Cu(py_z)₂]²⁺ square lattices that are linked in 3D by bridging VF₆²⁻ (**1**) or HF₂⁻ (**2**) anions. Magnetic susceptibility shows apparent paramagnetism in **1** whereas a broad maximum at 12.5 K and sharp kink at 4.3 K indicate short- (SRO) and long-range (LRO) magnetic ordering, respectively, for **2**. Additional experimental data however, indicate that a LRO state occurs below 3.6 K for **1**. The observed LRO in **1** is confined to the Cu-sublattice while the V⁴⁺ magnetic moments remain disordered. The structural and magnetic behavior of **1** and **2** will be described.

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