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**A spin-1 kagome antiferromagnet**[1] MAYRA TOVAR, KIRILL SHTENGEL, University of California at Riverside, GIL REFAEL, California Institute of Technology — We study a spin-1 antiferromagnet on the kagomé lattice. We start by constructing a Klein-type SU(2) symmetric Hamiltonian which contains Heisenberg interactions between nearest and next-nearest neighbors as well as three-body terms. Our model Hamiltonian has an extensive degenerate ground state whose manifold is spanned by the AKLT-like valence bond states. We also perturb the parent Hamiltonian by introducing an enhancement to the nearest neighbor antiferromagnetic Heisenberg interactions. By projecting this perturbation onto the basis spanned by the unperturbed ground states, we derive an effective Hamiltonian which is dual to that of the transverse field antiferromagnetic Ising model on the triangular lattice. Based on the parameters of our model, we find it to be in the order-by-disorder phase. The ground state is a valence bond crystal stabilized by quantum fluctuations. We also discuss excitations, both magnetic and non-magnetic, and address their possible relevance to experiment.

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