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Successive phase transitions and phase diagrams of $S = 5/2$ quasi-two dimensional triangular antiferromagnet $\mathbf{Rb_4Mn(MoO_4)_3}$ RIEKO ISHII, KEISUKE ONUMA, SHU TANAKA, MASASHI TOKUNAGA, TOSHIRO SAKAKIBARA, DIXIE GAUTREAUX, JULIA CHAN, SATORU NAKATSUJI — Our comprehensive experimental studies on $S = 5/2$ $Rb_4Mn(MoO_4)_3$ have clarified that this is a model system of a quasi-two dimensional Ising-like triangular Heisenberg antiferromagnet. This material exhibits the successive phase transitions and 1/3 magnetic plateau phase under fields. Furthermore, we have clarified a complete phase diagrams for which quantitative agreement between experiment and Monte Carlo simulation is obtained. We will report experimental results of magnetic susceptibilities, specific heat, and neutron measurements and discuss spin structures under zero/nonzero fields.

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