

Abstract Submitted  
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**Growth of EuO Single Crystals at Reduced Temperatures<sup>1</sup>**

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National High Magnetic Field Laboratory / Florida State University — Single crystals of  $\text{Eu}_{1-x}\text{Ba}_x\text{O}$  have been grown in a barium-magnesium flux at moderate temperatures up to  $1000^\circ\text{C}$ , producing single crystals with barium doping levels ranging from  $x = 0.03$  to  $x = 0.25$ . Magnetic measurements show that the ferromagnetic Curie temperature  $T_C$  correlates with the Ba doping levels, and a modified Heisenberg model is employed to describe the  $T_C$  dependence on the stoichiometry. The decrease in  $T_C$  is dominated by the Ba substitution on the Eu lattice with a small contribution arising from the lattice strain. Extrapolation of results indicates that a sample at  $x = 0.72$  should have a  $T_C = 0$  K, potentially producing a quantum phase transition in this material.

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