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**Magnetic and Metal-Insulator Transition in natural Transition Metal Sulfides** RENXIONG WANG, TRISTIN METZ, I-LIN LIU, KEFENG WANG, XIANGFENG WANG, Department of Physics, University of Maryland College Park, J.R. JEFFRIES, Lawrence Livermore National Laboratory, S.R. SAHA, R.L. GREENE, J. PAGLIONE, Department of Physics, University of Maryland College Park, C. C. SANTELLI, J. POST, Department of Mineral Sciences, Smithsonian Museum of Natural History — In collaboration with the Smithsonian Institution's National Museum of Natural History, we present detailed studies of a class of natural minerals with potential to harbor correlated behavior. Transition metal sulfide minerals, such as Bornite ( $\text{Cu}_5\text{FeS}_4$ ), are an important family of compounds known for their thermoelectric properties. We will present low temperature experimental studies of magnetic transitions and focus on a compound that exhibits a metal to insulator transition coincident with entrance to an antiferromagnetic ground state, suggesting a potentially interesting system with promise for realizing new correlated states of matter in a naturally occurring mineral.

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