## Abstract Submitted for the MAR13 Meeting of The American Physical Society

Magnetic Origin of Electronic Nematicity in NaFeAs (Part II) ETHAN ROSENTHAL, CARLOS ARGUELLO, ERICK ANDRADE, Columbia University, RAFAEL FERNANDES, University of Minnesota, ANDREW MILLIS, Columbia University, CHANGQING JIN, Institute of Physics, Chinese Academy of Sciences, ABHAY PASUPATHY, Columbia University — The characterization of possible broken symmetries is essential to understanding high-temperature superconductivity. The electronic states of many iron-based superconductors have been shown to break rotational symmetry, but the origin of this nematicity remains elusive. We use Scanning Tunneling Microscopy (STM) and Spectroscopy (STS) to directly visualize the spatial structure of electronic states in NaFeAs. Intrinsic defects produce unidirectional spectroscopic features that persist to temperatures well above both the spin density wave (SDW) and orthogonabic transitions. By comparing our measurements to angle-resolved photoemission spectroscopy (ARPES) data on the same material, we find that these features arise from quasiparticle interference (QPI) in the presence of magnetic order, indicating the primary role of spin interactions in electronic nematicity.

> Ethan Rosenthal Columbia University

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