



Supplementary Figure 1. A. Vector diagrams showing a typical paleomagnetic response for two Duncairn tephra samples to AF and thermal demagnetization. Vertical and horizontal projections are shown by triangles and dots, respectively. Only the vertical projections showing clear negative inclinations are meaningful because the samples were oriented only with respect to their way-up. Both vertical and horizontal intensity scales are in units of  $10E-3$  A/m. Given the low intensity of the samples ( $< 2 \times E-4$  A/m) the clear linearity of the magnetization decay is surprising. Small numbers on plots give single step demagnetization values in mT for AF demagnetization and °C for thermal demagnetization. B. Vector diagram showing typical response to AF demagnetization of the Tshirege Member of the Bandelier Tuff. Inset equal area stereonet shows site results for six samples. Scale in units of  $10E-4$  A/m. Other symbols the same as in A.