Supporting Online Material for

Massive Dirac Fermion Observed in Lanthanide-Doped Topological Insulator Thin Films

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HAADF-STEM image and EDX line scans obtained along the Bi lattice planes is shown in the Supplementary Figure 1.

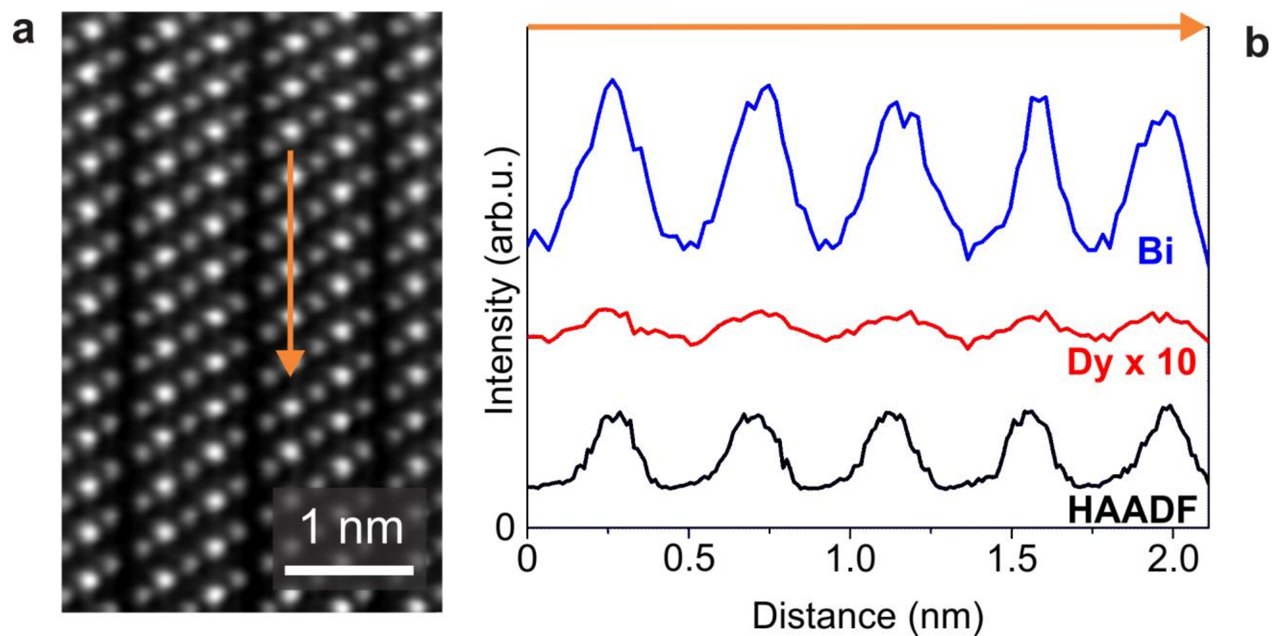

Figure S1. **a,** HAADF-STEM image of a $(Dy_{0.113}Bi_{0.887})_2Te_3$ film with marked position of measured EDX line scan (orange arrow). **b,** Corresponding profiles of Bi-M (blue) and Dy-L (red) x-ray emission intensities along the line scan together with the HAADF-STEM intensity profile (black).