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Superconducting Proximity Effect in the Weyl Semimetal WTe2 and MoTe2 WUDI WANG, MINHAO LIU, Department of Physics, Princeton University, Princeton, NJ 08544, QUINN GIBSON, R. J. CAVA, Department of Chemistry, Princeton University, Princeton, NJ 08544, N. P. ONG, Department of Physics, Princeton University, Princeton, NJ 08544 — WTe2 and MoTe2 are predicted to have type-II Weyl nodes and many novel transport properties have been studied. We investigated the transport of cooper pairs and Andreev reflection in Weyl semimetals by proximitizing WTe2 and MoTe2 nanoflakes with superconducting pads (Nb and Al). We have fabricated superconductor-nanoflakes-superconductor structure with different length. Supercurrent were observed in both materials with junction length up to 700nm. We conducted dc IV curve measurements and got exotic Fraunhofer patterns. We also measured the current-phase relation with a radio frequency-based CPR measurement technique.

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