**Unconventional superconductivity emerging along with the strange-metal behavior in UAs2 under pressure**  
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**ABSTRACT:** The recently discovered spin-triplet superconductor candidate UTe2 with *T*c ~ 2 K has attracted enormous attention because it possesses many interesting properties, such as the extremely high upper critical field *H*c2(0), chiral superconductivity and spontaneous time-reversal symmetry breaking, *etc.*, all these suggest that it may be the long-sought spin-triplet superconductor. Here we report the discovery of superconductivity up to *T*c ≈ 4 K in one of its siblings, i.e., UAs2 under pressure. Interestingly, the UAs2 shows metallic behavior with an antiferromagnetic (AFM) transition at about 274 K under ambient pressure. Upon applying pressure, this transition is pushed down to lower temperatures with improved electric conductivity. When the pressure rises beyond about 20 GPa, superconductivity occurs together with the emergence of a linear temperature dependence of normal state resistance in low temperature region, the latter is a hallmark of the strange-metal state. The superconductivity with the highest *T*c ≈ 4 K is reached under a pressure of about 26.8 GPa, and it is robust against magnetic field with the upper critical field *μ*0*H*c2(0) ~ 12 T, far beyond the Pauli limit. Higher pressures will suppress the superconductivity and bring back the Fermi liquid behavior. Our results open a new avenue for investigating the unconventional superconductivity concerning the mysterious 5*f*-band electrons in this uranium-based system.