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**$CaFe_2As_2$ Under In-Plane Uniaxial Pressure** MILES FRAMPTON, RENA ZIEVE, ADAM DIOGUARDI, Univ of California - Davis — Many unconventional superconductors have a planar crystal structure, with a resulting two-dimensional character that favors superconductivity. They tend to have anisotropic behavior and can be very sensitive to uniaxial pressure. Since these materials often grow preferentially as platelets perpendicular to the crystalline $c$ axis, applying in-plane pressure is challenging. We present a new setup for studying thin samples under uniaxial pressure and our results on $CaFe_2As_2$. $CaFe_2As_2$ undergoes a magnetic transition simultaneously with a tetragonal-to-orthorhombic structural transition. In-plane uniaxial pressure detwins the orthorhombic phase and accentuates the difference between the axes. We find a significant change in $T_s$ as well as anisotropy of the in-plane resistivity that increases with pressure.

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