



## Fabrication of transition edge sensor microcalorimeters for x-ray focal planes

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Requirements for focal planes for x-ray astrophysics vary widely depending on the needs of the science application such as photon count rate, energy band, resolving power, and angular resolution. Transition edge sensor x-ray calorimeters can encounter limitations when optimized for these specific applications. Balancing specifications leads to choices in, for example, pixel size, thermal sinking arrangement, and absorber thickness and material. For the broadest specifications, instruments can benefit from multiple pixel types in the same array or focal plane. Here we describe a variety of focal plane architectures that anticipate science requirements of x-ray instruments for

heliophysics and astrophysics. We describe the fabrication procedures that enable each array and explore limitations for the specifications of such arrays, including arrays with multiple pixel types on the same substrate.