

## High-resolution EUV observations in space

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Once thought to be largely unobservable, the extreme ultraviolet (EUV: 100-1000 Å) and ultrasoft X-ray (USX: 44-100 Å) wavebands sit at a sweet spot for both astrophysics and the search for extra-solar planets and life. For example, the trend in extragalactic research towards observation of ever more distant AGNs ( $Z \sim 6$ ) will shift the X-ray wavelengths of critical spectral diagnostics (e.g., Fe-L and O) into the USX and the hard EUV. On the other hand, at rest wavelengths these bands capture the bulk of emission from million-degree plasmas, where important classes of relatively local objects such as CVs and stellar coronae radiate strongly. Thus the need for USX and EUV observations in space should grow. Spectrometers, imagers, and photometers of high resolution and sensitivity are all required in the next generation of instruments. Normal-incidence multilayer-coated optics provide a practical technology as they achieve their best performance at EUV and USX wavelengths.