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Toward Supernova Observations with the Micro-X High-Resolution Microcalorimeter X-ray Imaging Rocket[1] ENECTALI FIGUEROA-FELICIANO, Massachusetts Institute of Technology, MICRO-X COLLABORATION — The Micro-X High-Resolution Microcalorimeter X-ray Imaging Rocket is a sounding rocket payload which will observe extended astrophysical X-ray sources with a focal plane array of transition-edge sensor microcalorimeters. An energy resolution of 2–4 eV over the 0.2–3.0 keV band, coupled with a $\sim$ 300 cm^2 conical approximation Wolter-I mirror, will make high energy resolution imaging of extended sources possible. Puppis A, a bright supernova remnant, will be the first target. The line-dominated expected spectrum of the recently discovered "silicon knot" of Puppis A will provide a wealth of new information. Highly resolved Doppler shifts and broadening of emission lines will map out the dynamical structure of the ejecta. The ionization state of the plasma across the knot and between elements will be analyzed with the benefit of fewer model degeneracies. Additionally, estimates of elemental abundances in the remnant will be refined, and the spatial variations of enrichment across the knot will be mapped. The first flight is scheduled for January 2011. We will give an overview of the science goals and an update on our current progress.

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