

Branching Ratios For The Radiometric Calibration Of EUNIS-2012

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Abstract. The Extreme Ultraviolet Normal Incidence Spectrograph (EUNIS) sounding rocket instrument is a two-channel imaging spectrograph that observes the solar corona and transition region with high spectral resolution and a rapid cadence made possible by unprecedented sensitivity. The upcoming flight will incorporate a new wavelength channel covering the range 524–630 Å, the previously-flown 300–370 Å channel, and the first flight demonstration of cooled active pixel sensor (APS) arrays. The new 524–630 Å channel incorporates a Toroidal Varied Line Space (TVLS) grating coated with B₄C/Ir, providing broad spectral coverage and a wide temperature range of 0.025 to 10 MK. Absolute radiometric calibration of the two channels is being performed using a hollow cathode discharge lamp and NIST-calibrated AXUV-100G photodiode. Laboratory observations of He I 584 Å and He II 304 Å provide absolute radiometric calibrations of the two channels at those two respective wavelengths by using the AXUV photodiode as a transfer standard. The spectral responsivity is being determined by observing line pairs with a common upper state in the spectra of Ne I-III and Ar II-III. Calculations of *A*-values for the observed branching ratios are in progress.