

A Comparison of LWR Sensitivity Monitoring  
at UVC Settings of 4.5 and 4.0 kV

IUE stellar spectra taken with the LWR camera to monitor detector sensitivity changes have been acquired at the same high-voltage setting of the ultraviolet converter (UVC) since 1978. All analysis to date (see Sonneborn and Garhart, 1986) has utilized only images taken with a UVC voltage of 5.0 kV. With the development in 1983 of a flare in the UVC section of the camera, the UVC setting for all GO observations with the LWR has been 4.5 kV since October 1985. Since late 1985, sensitivity monitoring exposures have been acquired at 5.0 and 4.5 kV on alternate months to provide a set of data with which to compare camera sensitivity at the two UVC voltages. In this report we present the results of this analysis.

Thirty-two LWR low dispersion sensitivity monitoring spectra were obtained at the 5.0 kV setting between 1985.1 and 1986.9 (see Table 1); 26 images were obtained at 4.5 kV between 1985.8 and 1987.1. The images were reduced with precisely the same procedures used by Sonneborn and Garhart (1986). The 4.5 kV LWR spectra were taken with exposure times approximately 1.37 times the standard values at 5.0 kV in order to have spectra of comparable DN levels.

The absolute calibration curve was multiplied by 1.37 to account for the lower camera sensitivity. The spectra were ratioed to a reference spectrum for each star and binned in the standard broad bandpasses. Finally, the same camera temperature (THDA) dependence ( $-0.73\%/^{\circ}\text{C}$ ) and zero-point corrections were applied to both 4.5 and 5.0 kV flux ratios.

The corrected flux ratios for the three wavelength bins (2250 - 2550 $\text{\AA}$ , 2550 - 2650 $\text{\AA}$ , and 2750 - 3050 $\text{\AA}$ ) are plotted in Figure 1. The data for the two UVC settings are in good overall agreement. (New regressions through the 1985.7 - 1987.1 data finds no significant time dependence, although this is not surprising given the noise characteristics and small number of data points.) The mean fluxes for the various bandpasses during this period are tabulated below:

	<u>Mean Flux Ratios</u>	
	4.5 kV	5.0 kV
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2250 - 2550 A	0.8356 $\pm$ 0.0154 (+1.84%)	0.8351 $\pm$ 0.0186 (2.23%)
2550 - 2650 A	0.8336 $\pm$ 0.0174 (+2.08%)	0.8383 $\pm$ 0.0227 (2.71%)
2750 - 3050 A	0.8349 $\pm$ 0.0201 (+2.32%)	0.8658 $\pm$ 0.0164 (1.89%)

Given the reproducibility of IUE spectra, there appears to be no differences between the binned fluxes for 4.5 and 5.0 kV spectra.

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Table 1 - LWR Images for Comparison of Sensitivity  
Monitoring at UVC Settings of 4.5 and 5.0 kV

<u>5.0 kV UVC</u>			<u>4.5 kV UVC</u>		
<u>IMAGE NUMBER</u>	<u>DATE</u>	<u>STAR</u>	<u>IMAGE NUMBER</u>	<u>DATE</u>	<u>STAR</u>
17628	1985.140	5	17801	1985.834	3
17629	1985.140	2	17802	1985.834	5
17631	1985.140	4	17803	1985.834	2
17699	1985.263	3	17837	1985.982	5
17701	1985.263	2	17838	1985.982	2
17702	1985.263	5	17842	1985.999	4
17704	1985.263	4	17845	1986.003	1
17727	1985.433	1	17846	1986.003	2
17728	1985.433	1	17847	1986.003	3
17732	1985.433	4	17861	1986.083	2
17756	1985.570	1	17863	1986.083	5
17768	1985.662	3	17887	1986.342	5
17772	1985.663	1	17916	1986.478	1
17773	1985.666	4	17919	1986.479	3
17793	1985.793	1	17922	1986.479	4
17794	1985.793	5	17932	1986.620	1
17828	1985.913	1	17936	1986.621	4
17830	1985.913	5	17937	1986.621	3
17832	1985.913	3	18002	1986.918	1
17833	1985.913	2	18004	1986.918	5
17855	1986.061	2	18006	1986.918	2
17856	1986.061	4	18008	1986.919	3
17857	1986.061	3	18044	1987.011	3
17903	1986.418	5	18046	1987.011	5
17904	1986.419	2	18047	1987.011	2
17906	1986.419	4	18049	1987.011	4
17945	1986.722	1			
17988	1986.891	3			
17989	1986.891	2			
17990	1986.891	5			
17992	1986.894	2			
17996	1986.894	2			

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