STUDY OF THE TRANSMISSION OF THE SHORTWAVELENGTH SMALL APERTURE.

PRELIMINARY REPORT.

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We have performed a series of observations of the IUE standard star BD+28 4211 in order to study the transmission of the small aperture of the Short-wavelength spectrograph at different distances from its center.

The observational procedure was as follows. After having trimmed the spacecraft gyros to avoid any drift,we took a series of SWP images in the small aperture using different offsets from the standard reference point in order to get distances from the center of the aperture up to 2.5 arc.sec. from it. These reference points were aligned along a radius of the aperture.

In order to check that there was not any drift during the exposure which migth have brought the star out of the aperture, a FESPNT was performed at each reference point both before and after each exposure. The average position of the two FESPNT was used to obtain the real offset from the center of the aperture. Since the difference between the two FESPNT was always equal or smaller than a pixel, we adopt half a pixel (0.13 arc.sec.) as the indetermination for the measured offset from the center of the aperture.

We obtained two spectra in the large aperture as well, to be used as the reference value for the small aperture. All the spectra were processed with the standard IUESIPS . Then the net spectra were rebinned to 2A step and absolutely calibrated. Then all the small aperture spectra were divided by the average of the large aperture spectra. We computed the mean value of these ratios in three spectral bands, 1300-1400A, 1700-1800A and 1300-1900A. We computed in the same way the ratios between the small aperture spectra and the small aperture spectrum taken at the center of the aperture. All these ratios are given in Table 1.

The analysis of Table 1 shows that the throughput of the SWSA is independent of the wavelength. In Fig.1 we represent the transmission of the small aperture normalised to the large one and to the center of the small aperture itself.

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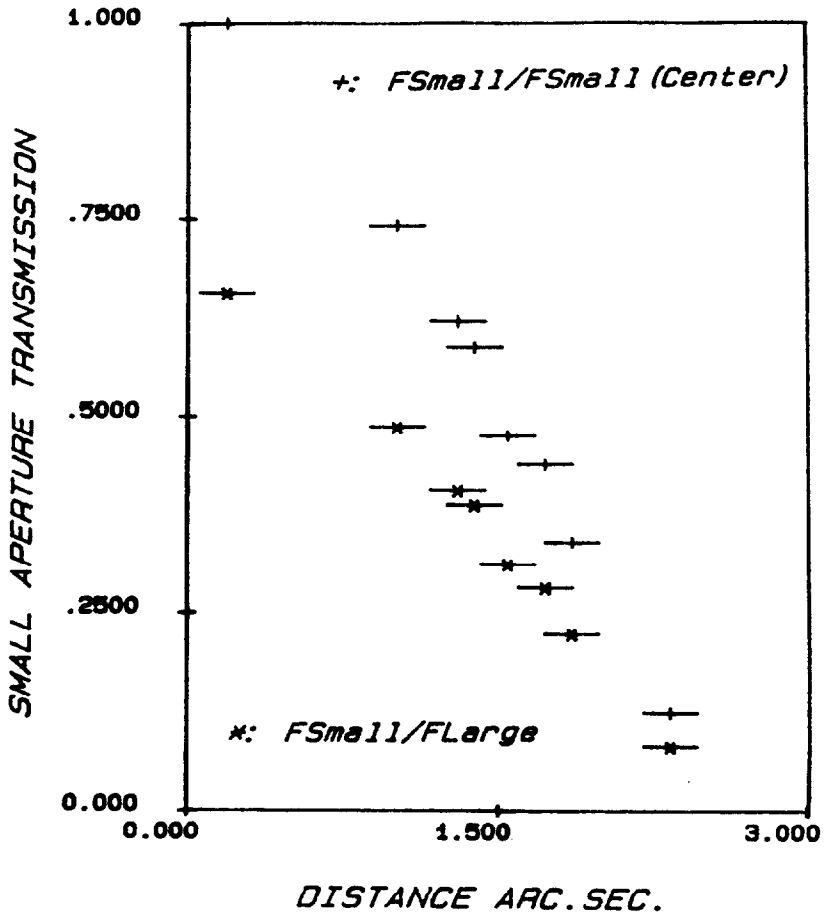

Figure 1.

TABLE 1.

DIST.	FL SMAP / FL LGAP			FL SMAP/FL SMAP CENTER		
Arc.Sec.	1	2	3	1	2	3
0.19	.674	.661	.656	1.	1.	1.
1.01	.483	.491	.486	.719	.744	.741
1.30	.421	.412	.406	.626	.624	.620
1.38	.394	.392	.386	.586	.593	.588
1.54	.324	.312	.311	.482	.473	.475
1.72	.286	.288	.281	.426	.436	.439
1.85	.227	.225	.222	.337	.340	.339
2.33	.082	.083	.081	.122	.126	.123

1: Flux 1300A-1400A
2: Flux 1700A-1800A
3: Flux 1300A-1900A

The estimated error in the distance from the center of th aperture is 0.13 arc.sec. (0.5 FES pixel).