

Effective Date: March 1, 1980

Low Dispersion Background

Extraction Error

An error has been discovered and corrected in the computer scheme used to extract low dispersion spectra (eslo file). When the extraction scheme was originally implemented the parameter DISTANCE input to the applications program EXTLOW to specify the distance between the dispersion line (center of spectrum) and the center of the background regions was too small by a factor of the square root of two ($\sqrt{2}$).

Because of this error the eslo background was in fact taken eight pixels from the small aperture and 11 pixels from the center of the large aperture and not $8 \times \sqrt{2}$ and $11 \times \sqrt{2}$ pixels as was intended. (See Figure 6.2 of CSC TM-79/6301, "International Ultraviolet Explorer Image Processing Information Manual, Version 1.0" for a diagram of the intended slit geometries.)

For a spectrum centered in the large aperture, this placed the inner end of the eslo background slit immediately adjacent to the edge of the large aperture and, in fact, overlapped the gross extraction slit slightly in the extended source mode. A similar slight overlap of background and gross extraction slits occurred in the small aperture reduction. In the case of two trailed spectra (SWP 2060 and SWP 5742) analyzed by A. Holm, the net spectrum contained in the eslo file (computed with improperly placed background slits) was about 3 percent too low compared to a net spectrum generated from the essr data (using properly placed background samples). Note that the essr data are not affected by the placement of the background slits used to generate the eslo data.

In order to correct this problem, the program EXTLOW has been changed so that the eslo background slits will be $8 \times \sqrt{2}$ and $11 \times \sqrt{2}$ pixels from the center of the extraction. The new version of EXTLOW is named EXTLOW2.

The new applications program EXTLOW2 was installed on March 1, 1980 at 21:26 UT; therefore, all low dispersion spectra processed after that time will show the new program name (EXTLOW2) in the processing history at the end of the image label. Also included in the processing history are the values of the parameters HT, HBACK and DISTANCE used for the extraction. Note that whereas HT and HBACK give, respectively, the heights of the gross extraction slit and the background extraction slit in units of $\sqrt{2}$ pixels, (i. e. a pixel diagonal) DISTANCE gives (and always has given) the separation between the centers of these two slits in pixels.

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