Addendum to Image Processing Information Packet

2000-Count Offset in Photometrically Corrected Images

It is important to emphasize that IUE images which have been both geometrically and photometrically corrected are given a 2000-count positive offset to each pixel value. This offset is added to each linearized pixel value in order to keep positive low pixel values which would otherwise be assigned negative fluxes due to noise or low null pedestal values (the photometric correction algorithm extrapolates the intensity transfer function (ITF) to negative flux values if the observed input DN value is below the ITF null DN level for a given pixel). In this way, one can "see" the negative noise or otherwise low-valued pixels in the photowrite hardcopy images.

It is equally important to note that this 2000-count offset is removed by the current* spectral extraction software, so that all gross and background extracted spectra, as well as the net spectra, are free of this artificial offset. Thus the Addendum to the Image Processing Information Packet entitled "Treatment of Saturated Pixels" is applicable for unsaturated pixel values insofar as they contribute to an extracted flux, but in the two dimensional image format, all unsaturated pixel values are 2000 counts larger.

* For high dispersion spectra, the 2000 count offset has always been removed from the photometrically corrected image during the extraction procedure. For low dispersion spectra, the 2000 count offset has been removed from all spectra (gross, background, net, line-by-line, etc.) extracted using the program EXTLOW (i.e., all low dispersion spectra processed since 22 May 1978). Spectra extracted using the earlier program COMPARE (prior to 22 May 1978) have not had the offset removed from the gross and background spectra, but the net spectrum is of course free of the offset.

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