URL: http://cxc.harvard.edu/ciao3.4/faq/dp_hrc_pha.html
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Why do the HRC−S threads filter out the final PHA channel (e.g. "pha=0:254")?

PHA has 256 channels (0 to 255). Filtering PHA 0:254 (i.e. removing channel 255) is a quick way to remove a fair amount of HRC−S background. Roughly 30% of background events and ~0% of x−ray events have PHA=255. You can safely remove PHA=0, too, but the improvement is negligible. See the HRC−S Degap Correction thread for an example of this filtering.

For grating data, better results are obtained when using the LETG/HRC−S "light" background filter, as described in the Apply background filter section of the Obtain Grating Spectra from LETG/HRC−S Data thread. This uses a PHA filter (actually, a PI filter) centered on the expected mean PI value as a function of LETG/HRC−S dispersed wavelength. A tighter filter can therefore be used. This not only removes a larger fraction of the background, it does so more uniformly than simply removing pha=255 (which is not adjusted for local gain variations, as PI is). This may be important when doing spectral background subtractions.

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