

'eROSITA Source Detection and Catalogues': test of suitable energy bands for distinguishing stellar sources based on real data from the XMM pn detector

**Key findings:**

1. A split at 1 keV is mandatory (and 1.0 keV is better than 1.2 keV).
2. Four bands are a good choice for stars ( $E_{\min} - 0.5, 0.5 - 1.0, 1.0 - 2.0, 2.0 - 7.0$  keV)

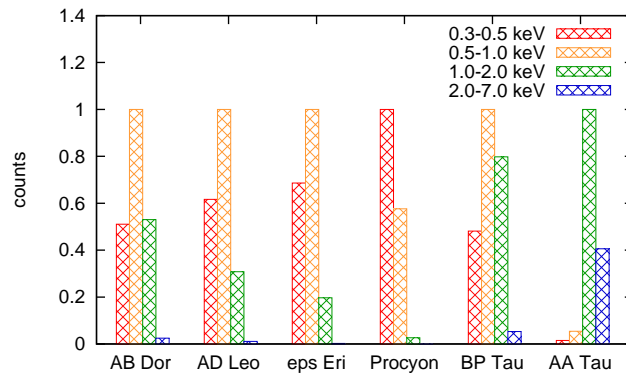


Figure 1: Photon distribution for six stars scaled with the eROSITA effective area and normalized to the respective highest bin. AB Dor to Procyon are coronal sources, sorted by decreasing activity level. BP Tau is a typical classical T Tauri star and AA Tau a heavily absorbed young star observed during a flare.

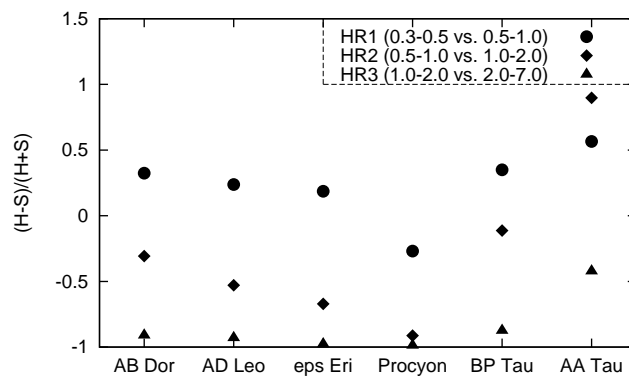


Figure 2: Normalized neighboring bands hardness ratios. The HRs measure the activity level or average coronal temperature for 'normal' magnetically active stars. Note the distinct pattern for YSOs (CTTS etc.) that depends on activity and absorption.