LONG-TERM STUDIES OF Z SOURCES WITH HEXTE/RXTE

F. D’Amico (1), W. A. Heindl (2) and R. E. Rothschild (2)

(1) INPE, Brazil [damico@das.inpe.br/55 12 39456750], (2) CASS/UCSD, USA

Using the High Energy X–Ray Timing Experiment (HEXTE) on-board the Rossi X-Ray Timing Explorer (RXTE) we perform a spectral study of the Z sources, with emphasis on the production of hard X–ray tails (HXT). Data from the Proportional Counter Array (PCA) were used to determine the position of the source in the Z diagram. We present current results of this ongoing study. Previous results show that, at least for Sco X-1, there is no correlation between the presence of a HXT and the position on the Z. For GX 5–1, in 1 out of 12 observations, the presence of a HXT is compelling, although contamination by the nearby hard source GRS 1758–258 may be possible. We took advantage of the HEXTE background field measurements to avoid possible contamination by the diffuse Galactic Ridge X–ray emission. No other HXT were found for GX 349+2 (in 10 observations), GX 17+2 (13 observations), GX 340+0 (14 observations) and Cyg X-2 (13 observations). Based on the HXT detected by HEXTE/RXTE and BeppoSAX in Z sources, we argue that the x hard X–ray emission in such sources is a process triggered when the brightness of the thermal component exceeds a certain threshold level.