

K09a Point Sources in the Cygnus Loop

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In 2002, XMM-Newton has observed the Cygnus Loop supernova remnant at 8 positions. Before one can study the diffuse emission of this remnant, it is necessary to remove the point sources present in the field of view. In this case, it is not quite a straight forward process because the Loop is so bright that the point sources are often obscured and the tasks developed for this purpose do not give accurate results.

Thus, we were forced to search for alternative ways of detecting these sources. Since all of the radiation from the Cygnus Loop is confined to energies less than 3.0 keV, we created images in the 3.0 – 9.0 keV energy band for each observation and smoothed them with a 3 pixel gaussian, making the visual identification of the point sources much easier. One drawback of this method is that detector noise and even statistical fluctuations can show up looking like point sources. To compensate for this, we selected every structure resembling a point source and extracted spectra for each one of them. The background spectrum was extracted from the surrounding areas. Only the objects that showed a power law-like spectrum were retained as point sources. We present our results from using this method.