

High resolution and broad band spectra of Low Mass X-ray Binaries: a comparison between black Hholes and neutron stars

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A common question about compact objects in high energy astrophysics is whether it is possible to distinguish black hole from neutron star systems with some other property that is not the mass of the compact object. Up to now a few characteristics have been found which are typical of neutron stars (like quasi periodic oscillations at kHz frequencies or type-I X-ray bursts), but in many respects black hole and neutron star systems show very similar behaviors. We present here a spectral study of low mass X-ray binaries containing neutron stars and show that these systems have spectral characteristics that are very similar to what is found for black hole systems. This implies that it is unlikely we can distinguish between black holes and neutron stars from their X-ray spectra, except for the fact that black hole systems show sometimes a more extreme behavior with respect to neutron star systems.