RevMexAA (Serie de Conferencias), **00**, 1–1 (2007)

ABSTRACT ONLY

HUNTING STELLAR-MASS BLACK HOLES IN X-RAY BINARIES

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Since the beginning of the X-ray astronomy era, we have detected nearly 60 Galactic stellar-mass black hole candidates in transient X-ray binaries. However, only 17 have been dynamically confirmed since 1966. Actually, during this decade, we have confirmed only one black hole (XTE J1859+226; Corral-Santana+2011) and establish strong constrains in two more systems (Swift J1357.2-0933; Corral-Santana+2013, Mata Sanchez+2015 and KY TrA; Zurita+2015). The formed has been established as the largest black hole ever measured in our Galaxy with more than 9 $M_{\odot}$. In BlackCAT (Corral-Santana+2016) we present a thorough compilation of all the dynamical parameters of the BH transients and show a statistical analysis of the expected population of BH transients in our Galaxy based on observations. Thus, we estimate 1300 systems in the Milky Way and therefore we have detected only the tip of the iceberg on a hidden population of black hole transients. In this contribution, we explain why there exists this huge bias and the latest relations that will allow us to increase the current sample of black hole transients.

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