

M. KOUZIS¹, G. VASILOPOULOS^{2,3}

³Institute of Accelerating Systems and Applications



- Search the BW07 parameter space in order to identify self-consistent solutions that conserve energy.

$$a = \frac{32\sqrt{3}}{49 \ln(7/3)} \frac{GM_* \xi}{R_* c^2} = 0.2 \left(\frac{M_*}{M_\odot} \right) \left(\frac{R_*}{10 \text{ km}} \right)^{-1} \xi$$

We analyzed 13 *NuSTAR* observations from 5 systems in the Small and Large Magellanic Cloud (SMC, LMC) during major outbursts. RX J0520.5-6932 (J0520) in the LMC where three observations were performed during its 2014 and 2024 major outbursts. For SMC X-2 in the SMC we worked on four observations that were performed during its 2015 and 2022 major outbursts. RX J0209.6-7427 (J0209) in the Magellanic Bridge, where one observation was performed during its 2019 major outburst. XTE J0052-723 (SXP 4.78) with three observations during its 2018 outburst and XTE J0111.2-7317 (SXP 31) with two observations during its 2025 outburst, both in the SMC. *NuSTAR* data were reduced with *nupipeline* version 0.4.8 and CALDB version 20240315.

Figure 2: Scatter plots of the `bwcycl` parameters and the integrated 0.1–100 keV X-ray luminosity. Points are color-coded by the $\mathcal{K}$ ratio: warm colors (yellow–red) indicate BREM-dominated spectra ($\mathcal{K} > 1$), cold colors (blue–purple) mark CYC-dominated spectra ($\mathcal{K} < 1$), and light green shows balance ($\mathcal{K} \sim 1$). Only energy-conserving solutions are shown; best-fit results from multiple observations are overlaid, with distinct symbols per source and colors per observation.

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Table 1: Cyclotron line parameters.

Figure 4: Same as Fig. 3 but spectra fitted only with BW07+gauss model.

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