Chandra DDT observations of the soft X–ray transient RX J170930.2-263927 returning to quiescence

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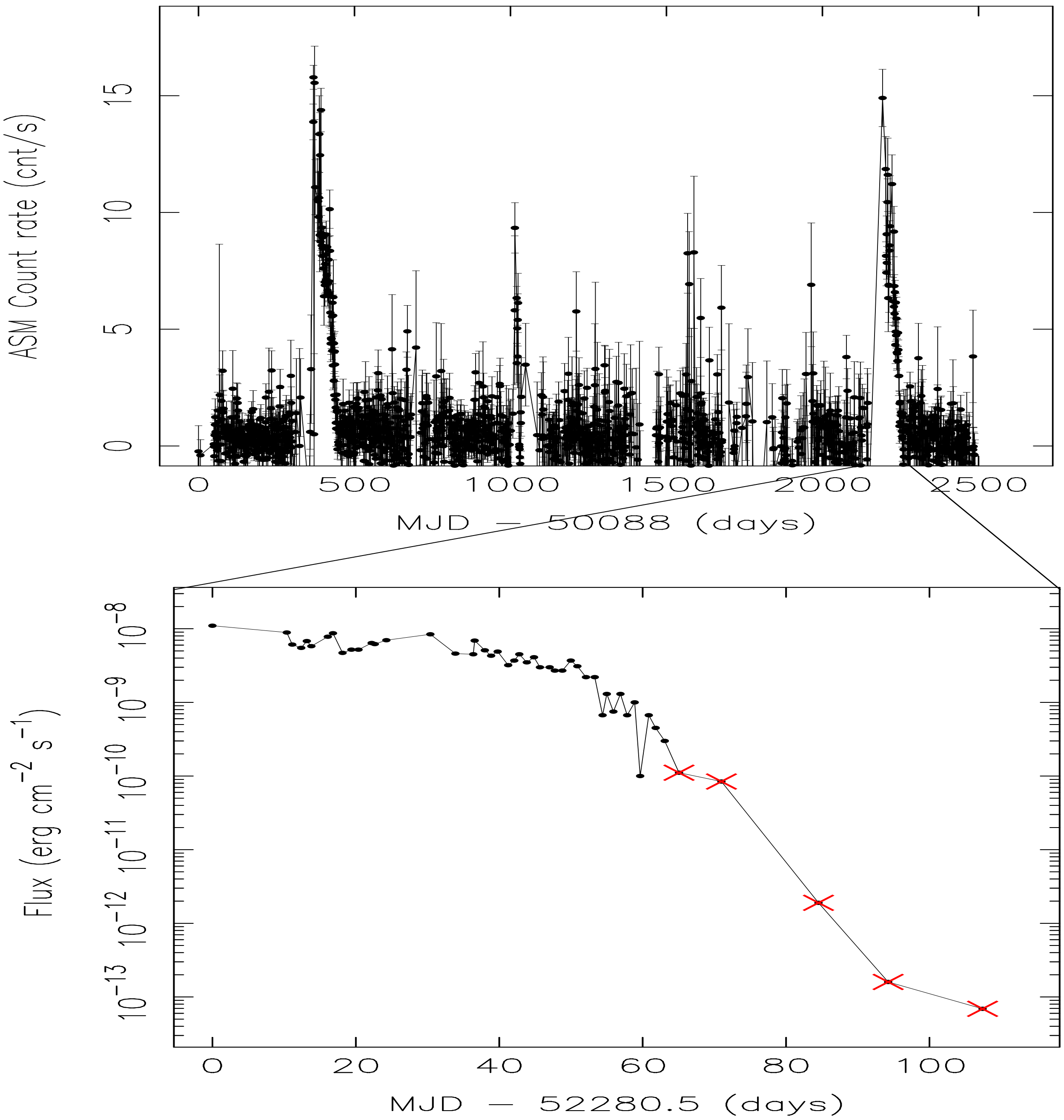
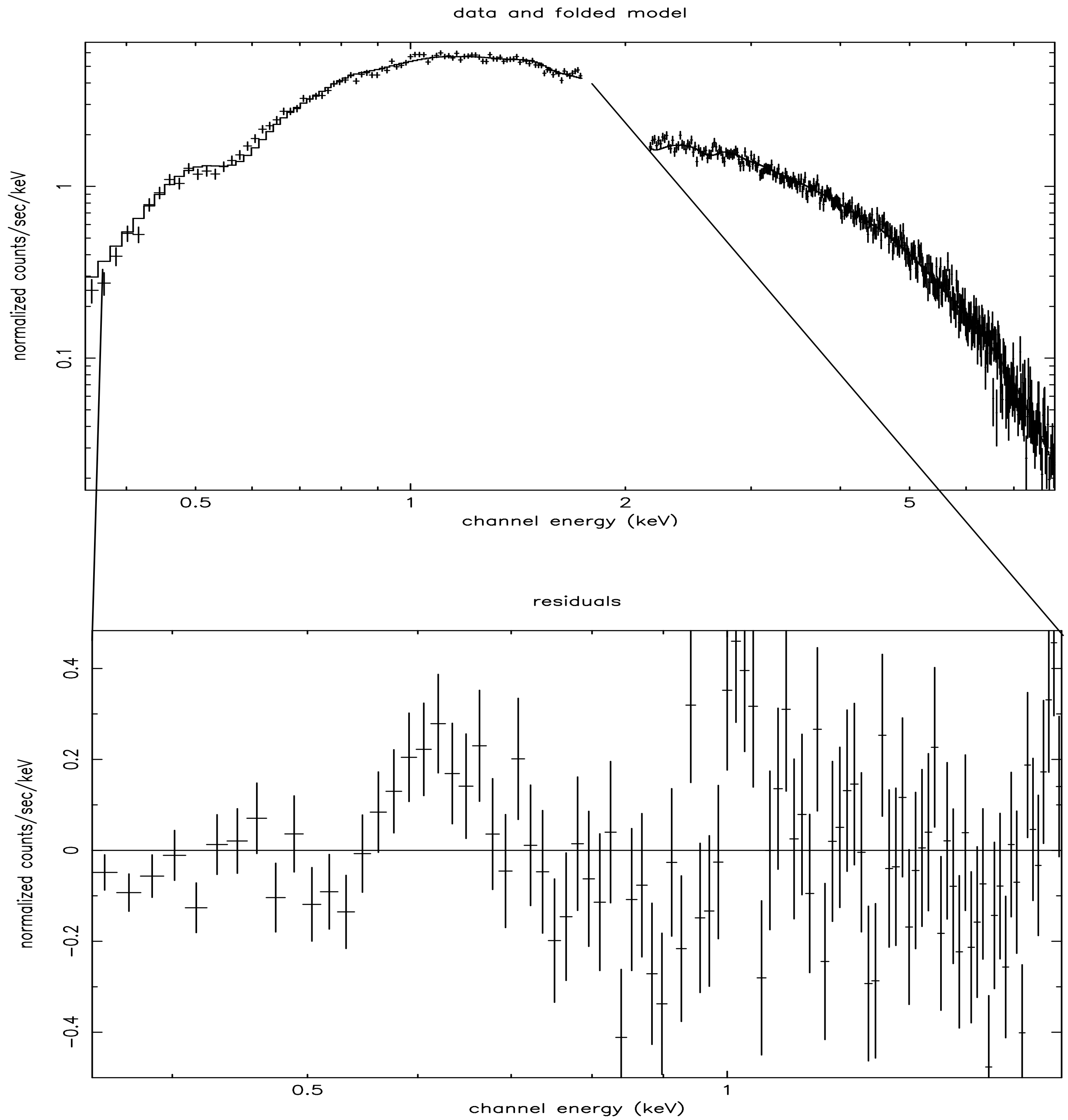
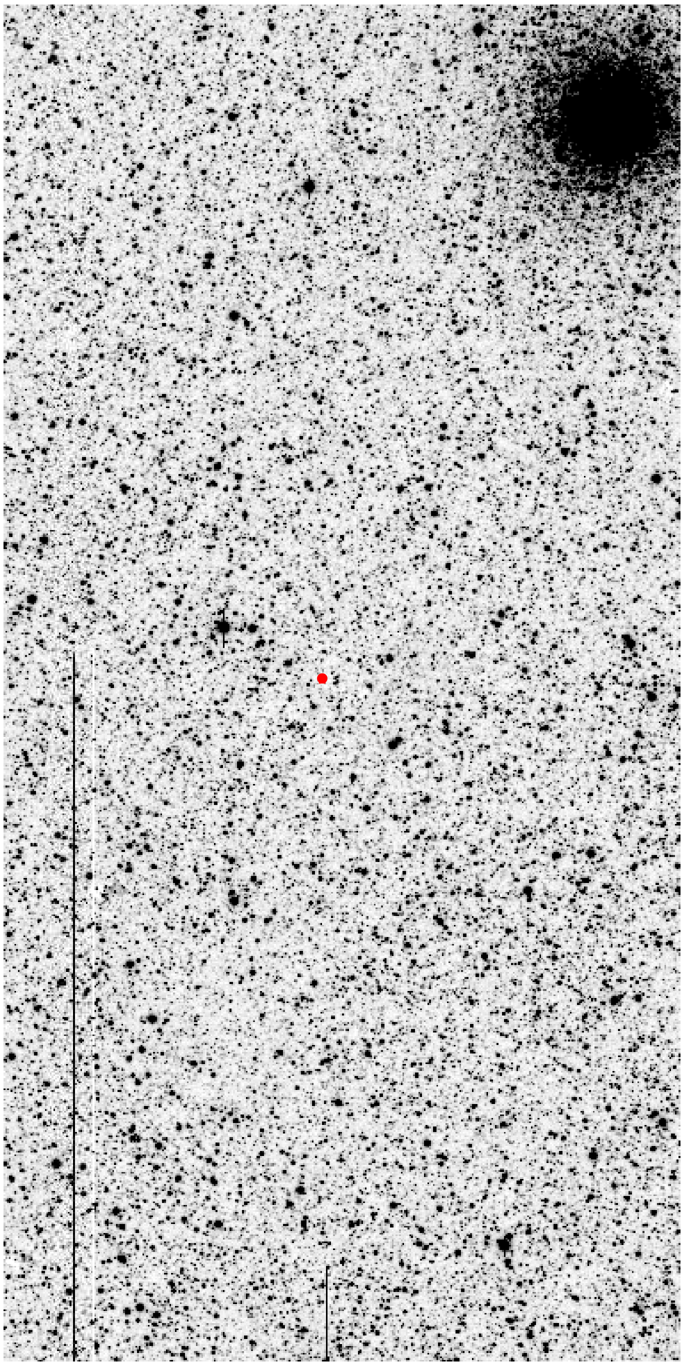
RX J170930.2-263927: what do we know?



RX J170930.2-263927: Spectrum

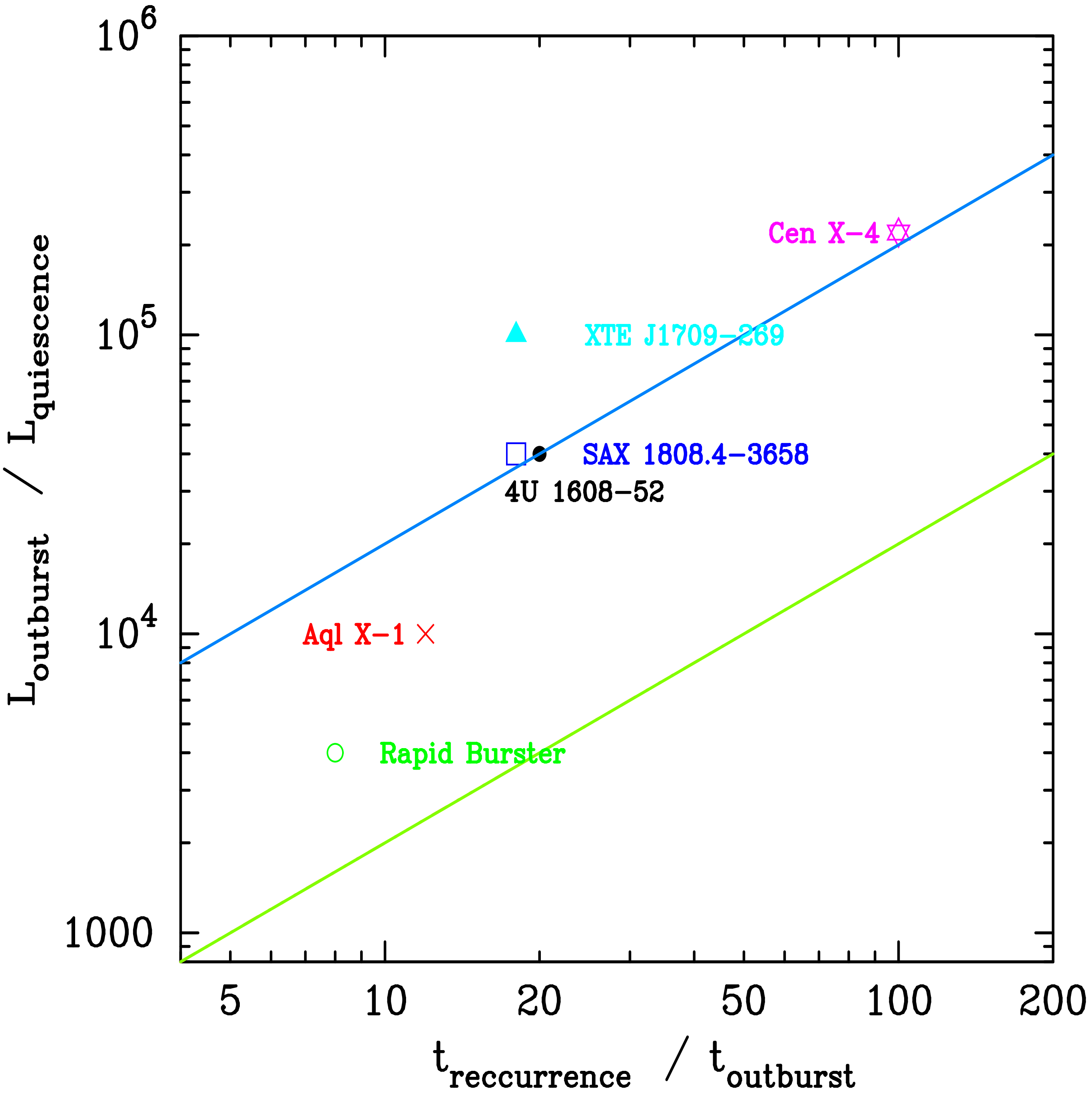


Associated with GC NGC 6293?

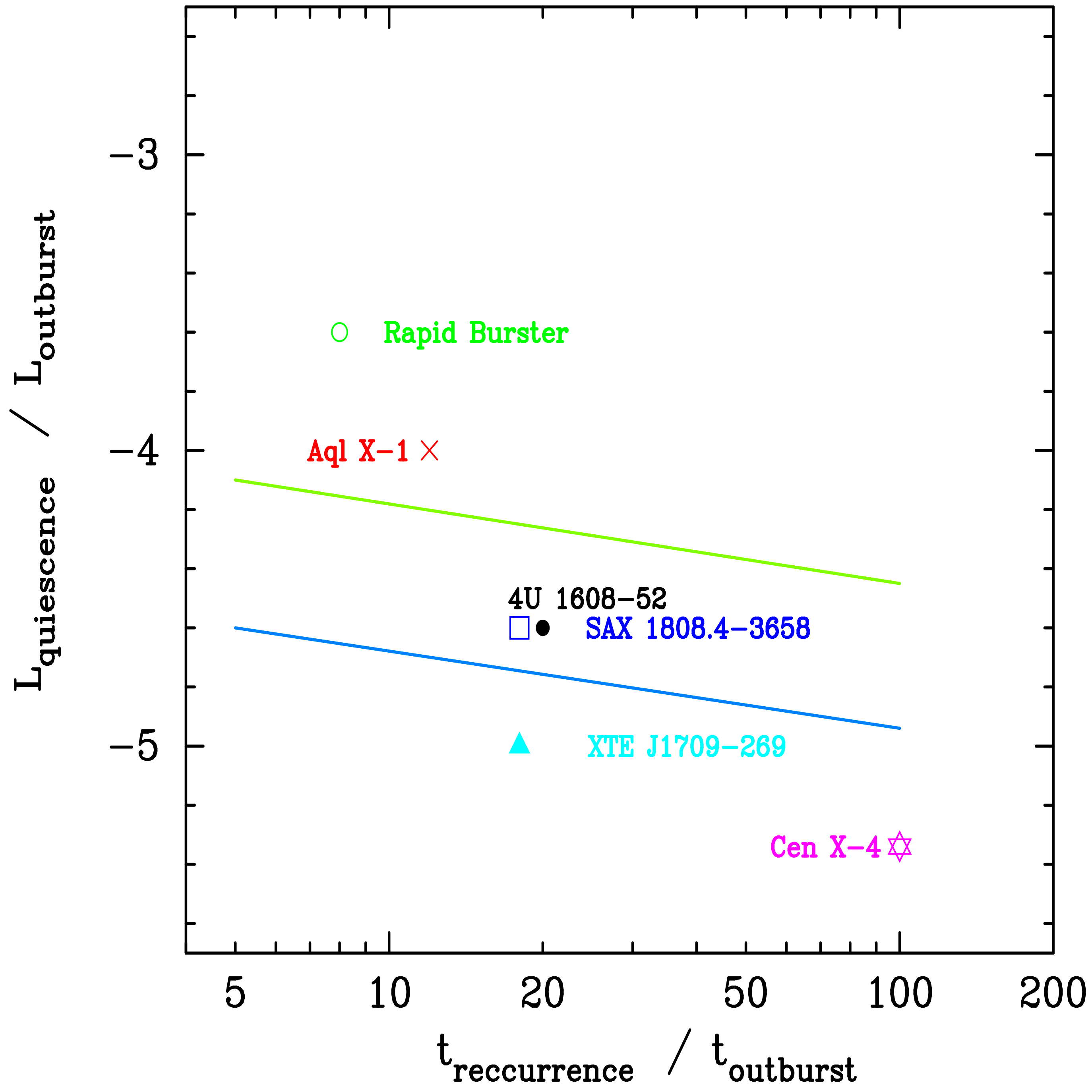


11'×22', distance to Cluster ∼ 8.5 kpc

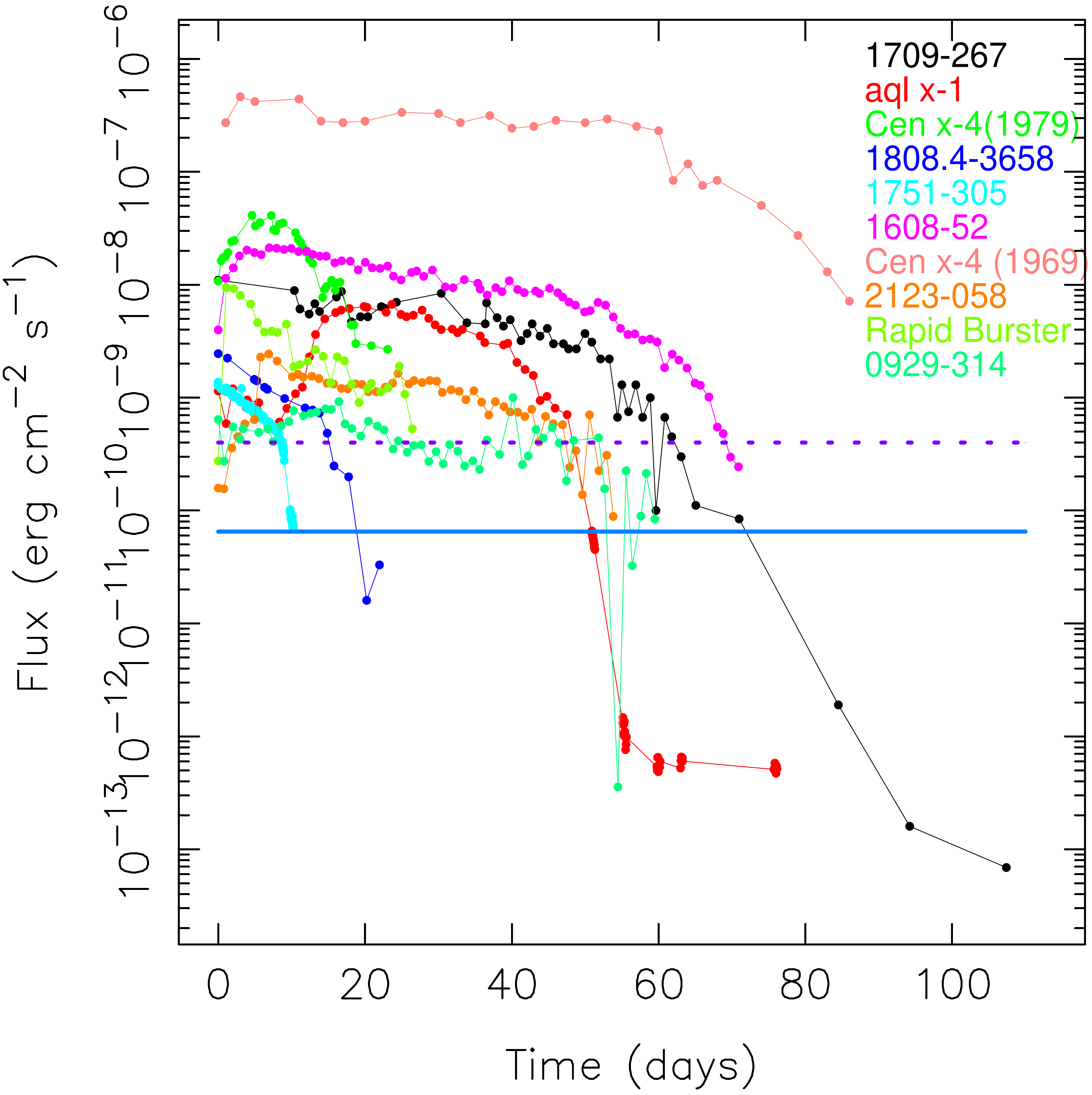
The ratio $L_{Outburst}/L_{Quiescence}$



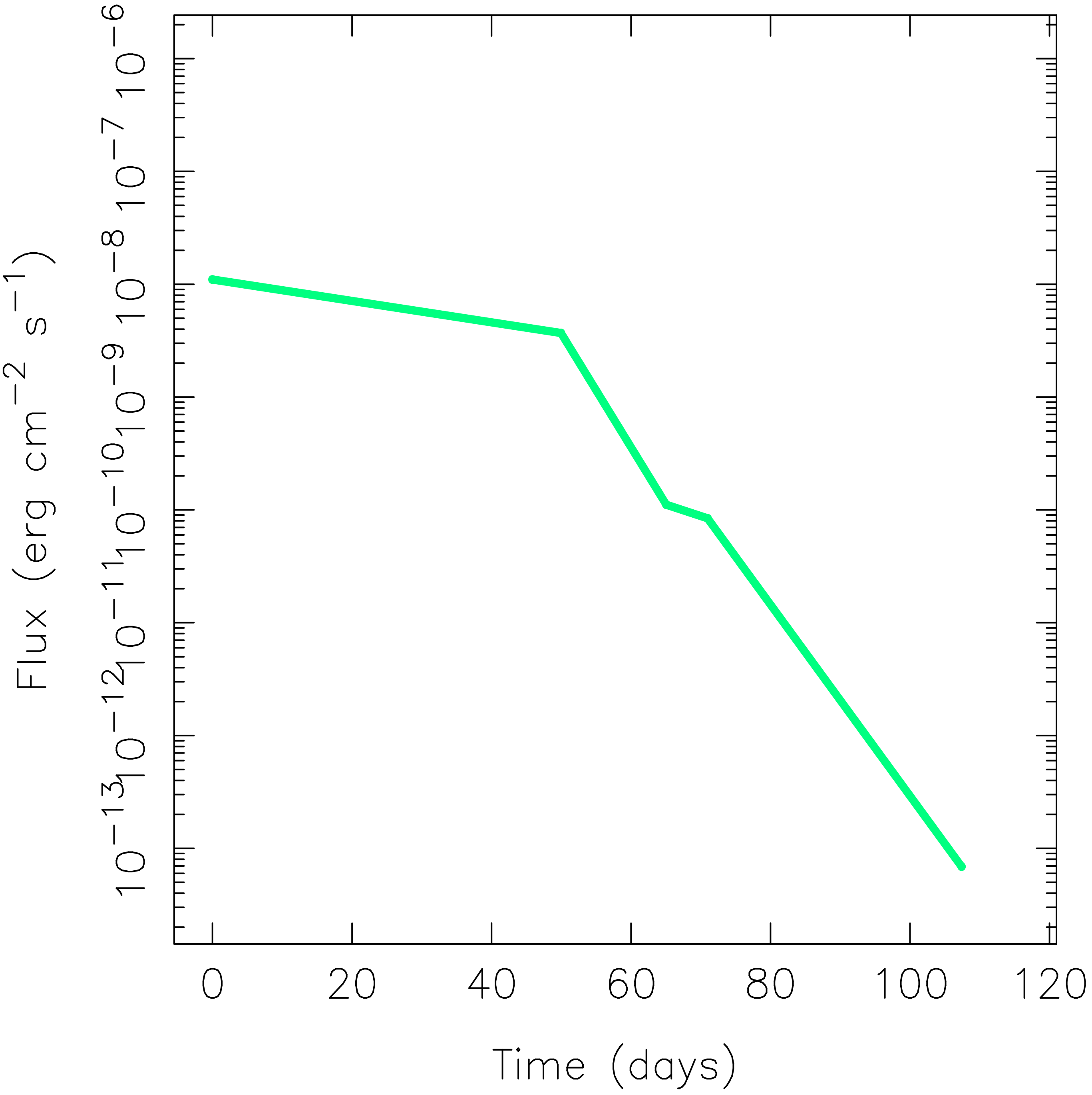
The ratio $L_{Quiescence}/L_{Outburst}$



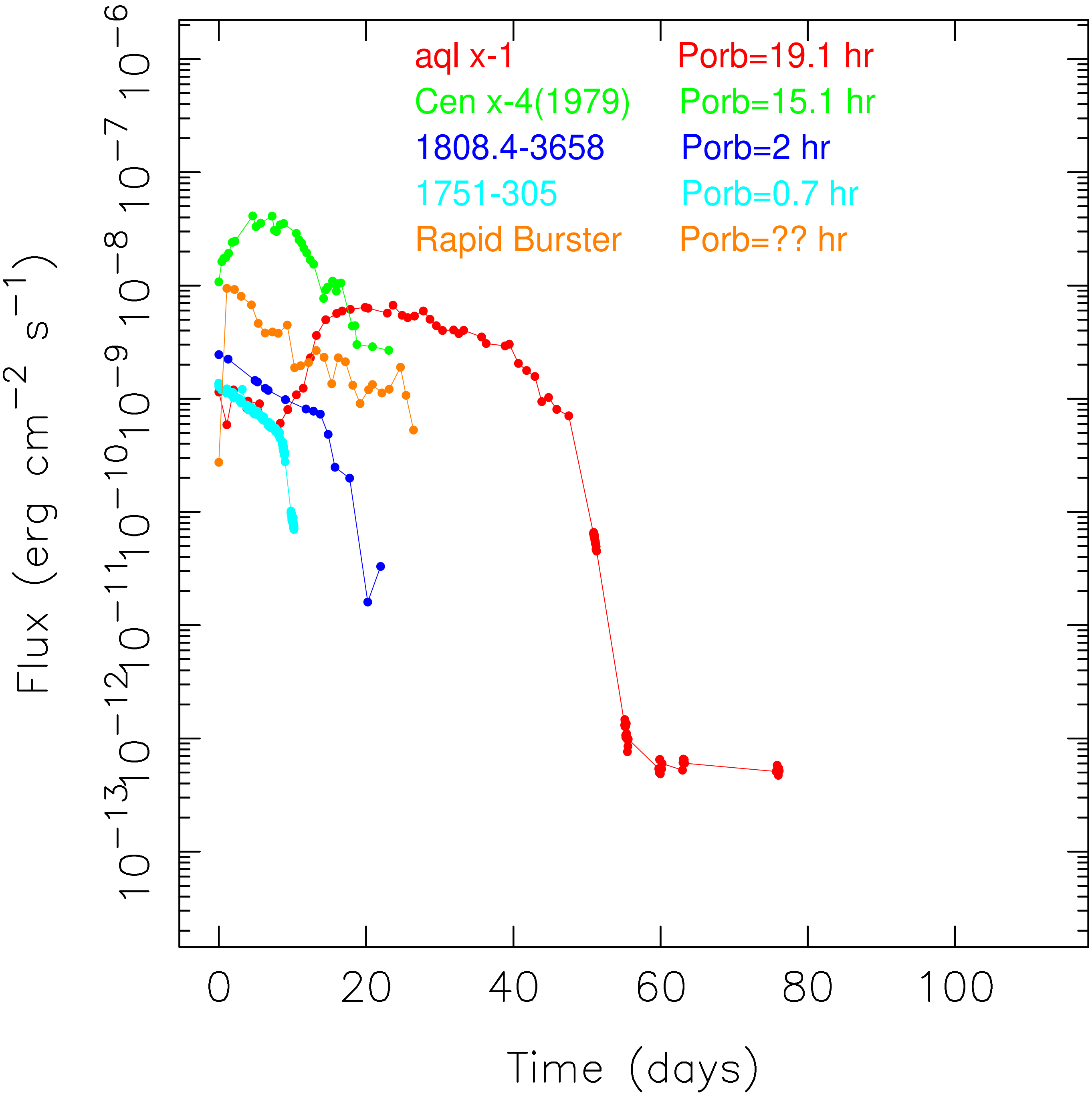
NS SXT outburst profiles



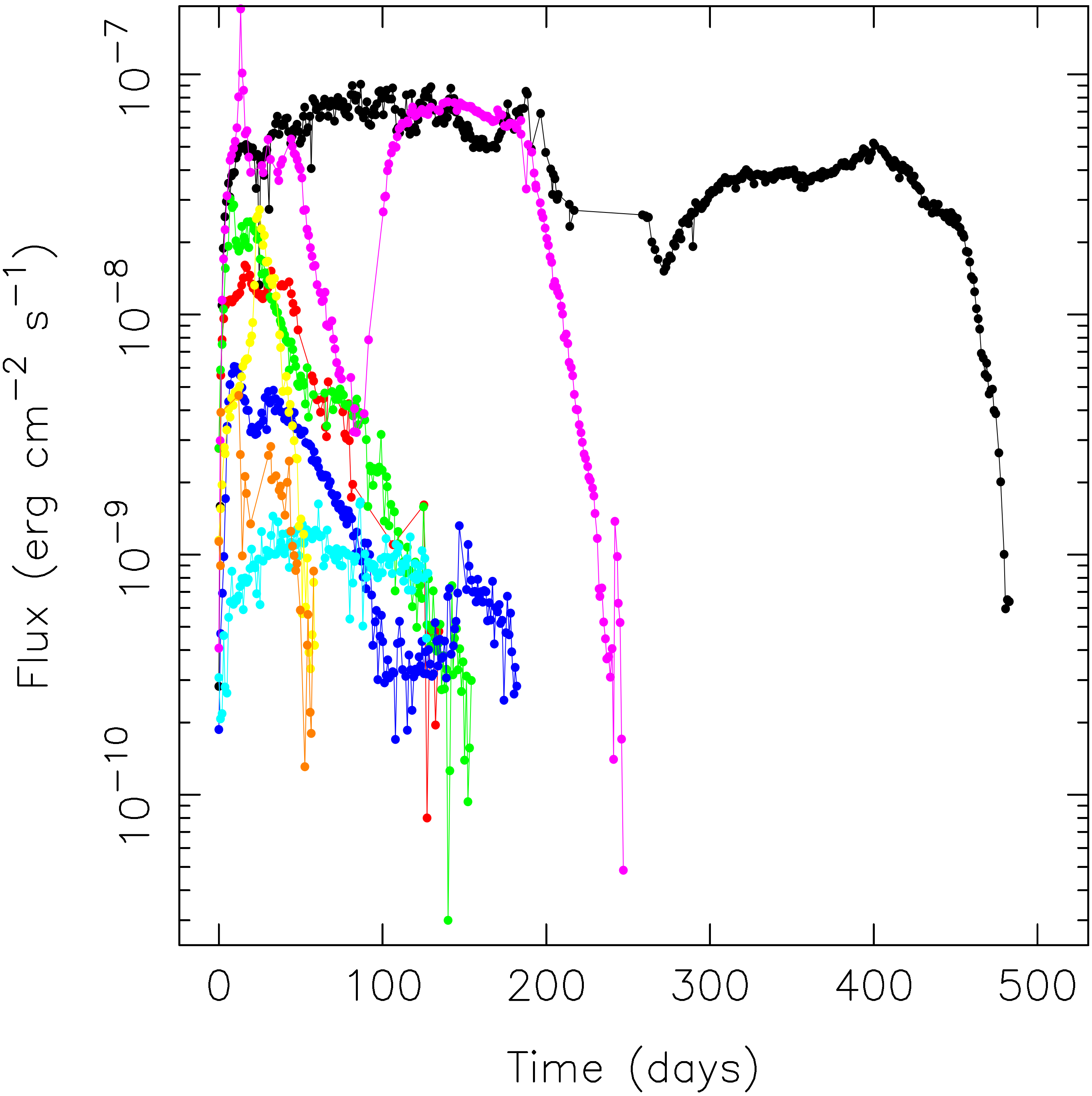
NS SXT outburst profiles



Short NS SXT outburst profiles



BHC SXT outburst profiles



Conclusions

$\Rightarrow$ If L$_{quiescent}$ is due to cooling of the NS then RX J170930.2–263927 is a massive neutron star for the time averaged mass accretion rate of $\sim 10^{-10}$ M$_\odot$ yr^{-1} $(\frac{\mathrm{d}}{10\mathrm{kpc}})^2$

$\Rightarrow$ Decay profile seems fixed, spectrum of RX J170930.2–263927 softens as L$\lesssim 10^{34}$ erg s^{-1}

$\Rightarrow$ There exist long nearly Eddington limited outbursts and short fainter outbursts, the duration of the short, fainter outbursts seems related to the orbital period.

$\Rightarrow$ In order to study the emission mechanisms, TOO observations of Chandra/XMM are the best way forward