

SFXT - Supergiant Fast X-ray Transient

- HMXB: compact object accretes the clumpy wind from supergiant companion
- Bright X-ray short flares: dynamic range ≥ 10 , duration ~1000 s
- Average luminosity $L \lesssim 10^{34} {\rm erg \ s}^{-1}$
- Possible models:
 - extremely clumpy winds (in't Zand 2005): clump masses $\sim 10^{21} 10^{23} g_{r}$
 - centrifugal or magnetic gates (Grebenev 2008; Bozzo et al. 2008):

$$B \sim 10^{12} \ G_{\rm spin} \sim 10 \ {\rm sor} \ B \sim 10^{14} \ G_{\rm spin} \gtrsim 1000 \ {\rm s}_{\rm spin}$$

- quasi-spherical subsonic settling accretion (Shakura et al. 2012): $L_X \lesssim 4 \times 10^{36} \text{ erg s}^{-1}$

Credits: ESA/AOES Medialab

Supergiant X-ray Binaries with Red Supergiant Donor (RSG SgXBs)

Wind-fed X-ray Binaries

Galactic RSG SgXBs: Scutum X-1, CXO 174528.79- 290942.8, 3A 1954+319