

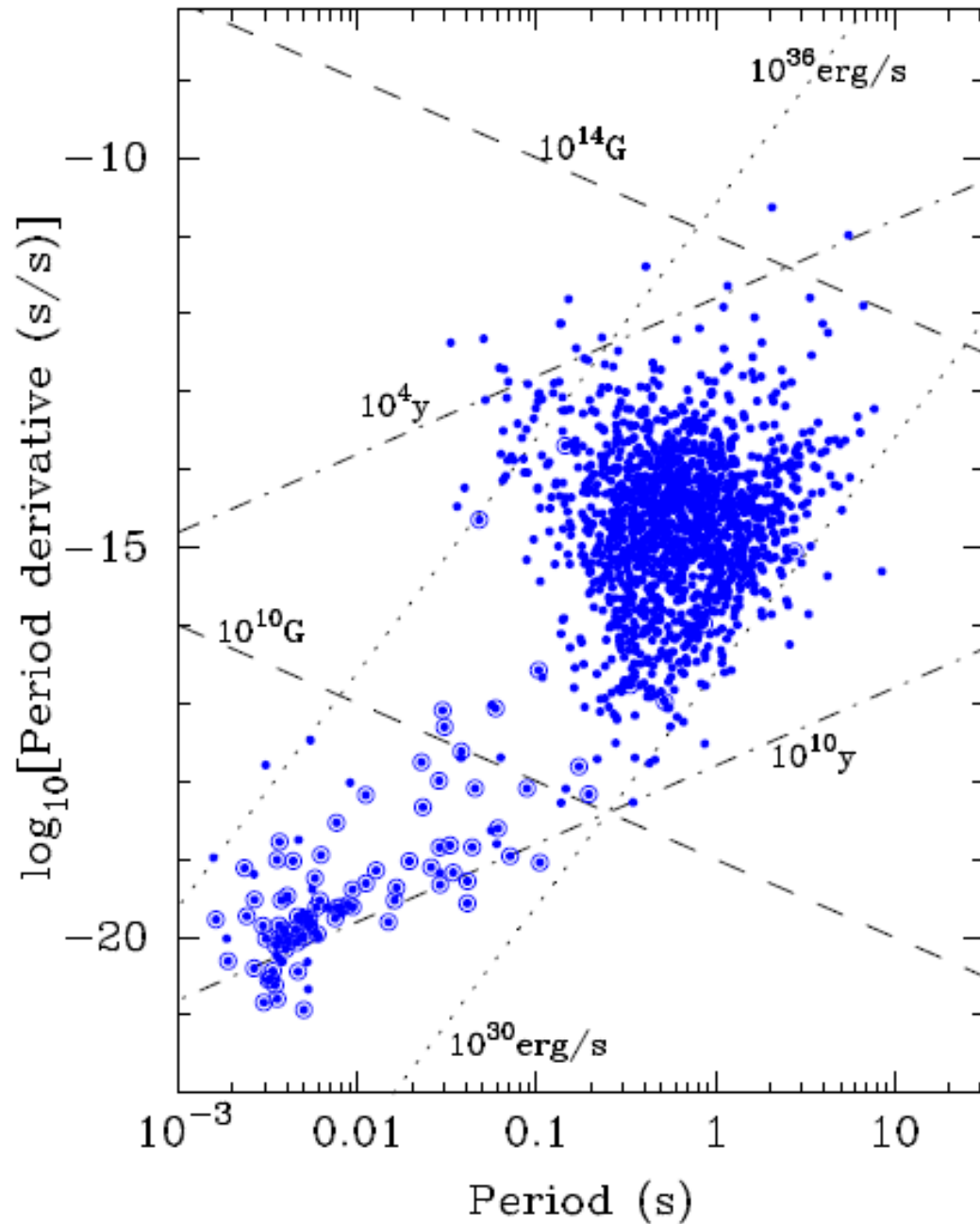
# News sulle Magnetars

A central glowing blue and purple sphere, likely representing a magnetar, is surrounded by several concentric, glowing cyan rings. The background is a dark blue space filled with numerous small white stars.

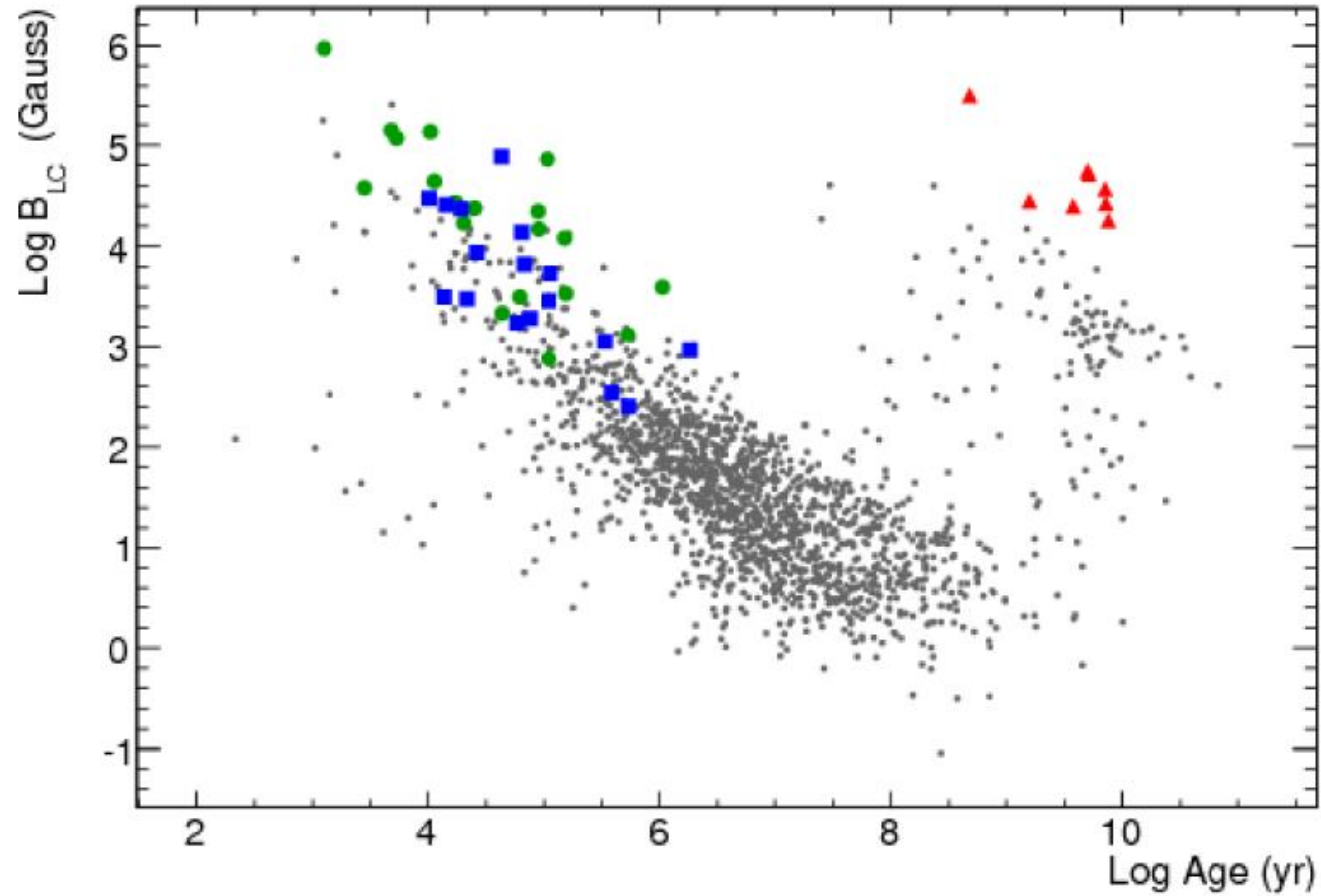
S. Mereghetti

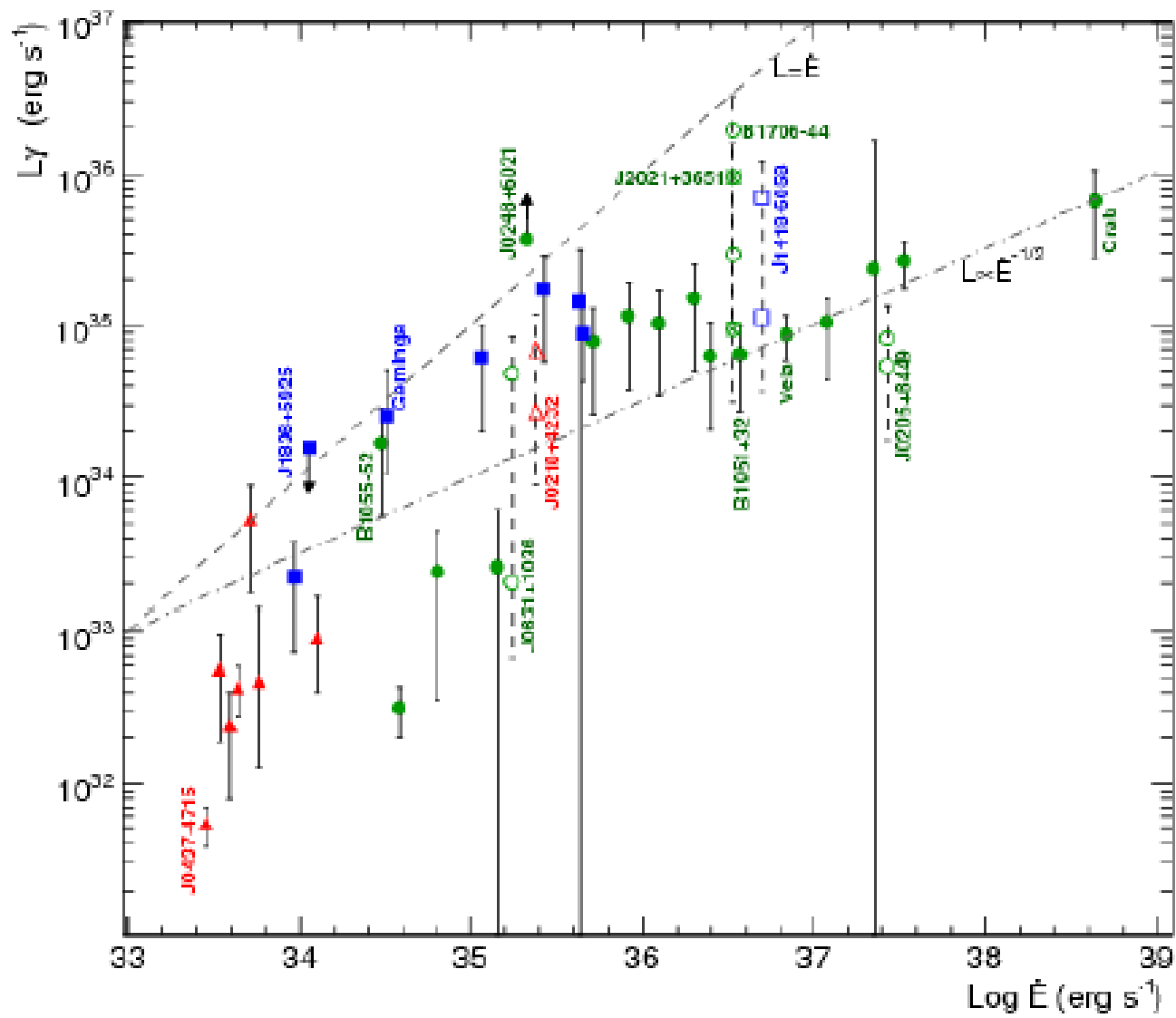
AstroSiesta 4 Nov.2010

# Radio pulsars

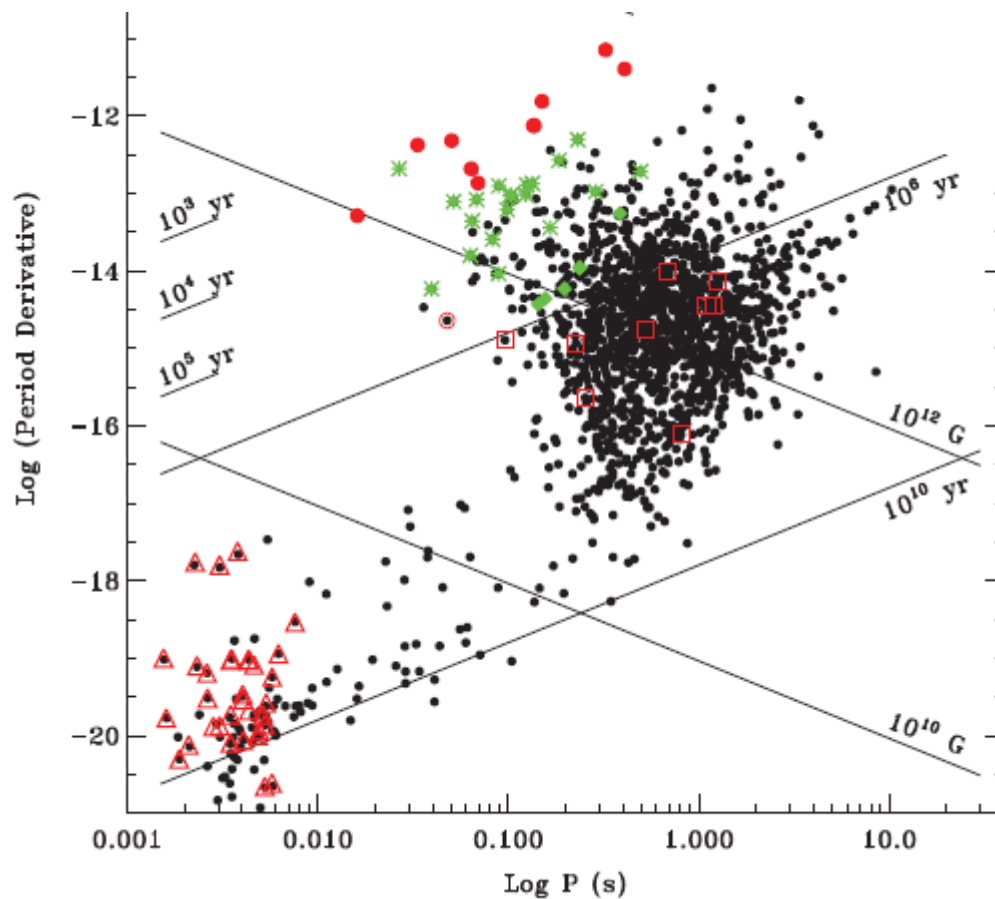


# Gamma-ray pulsars



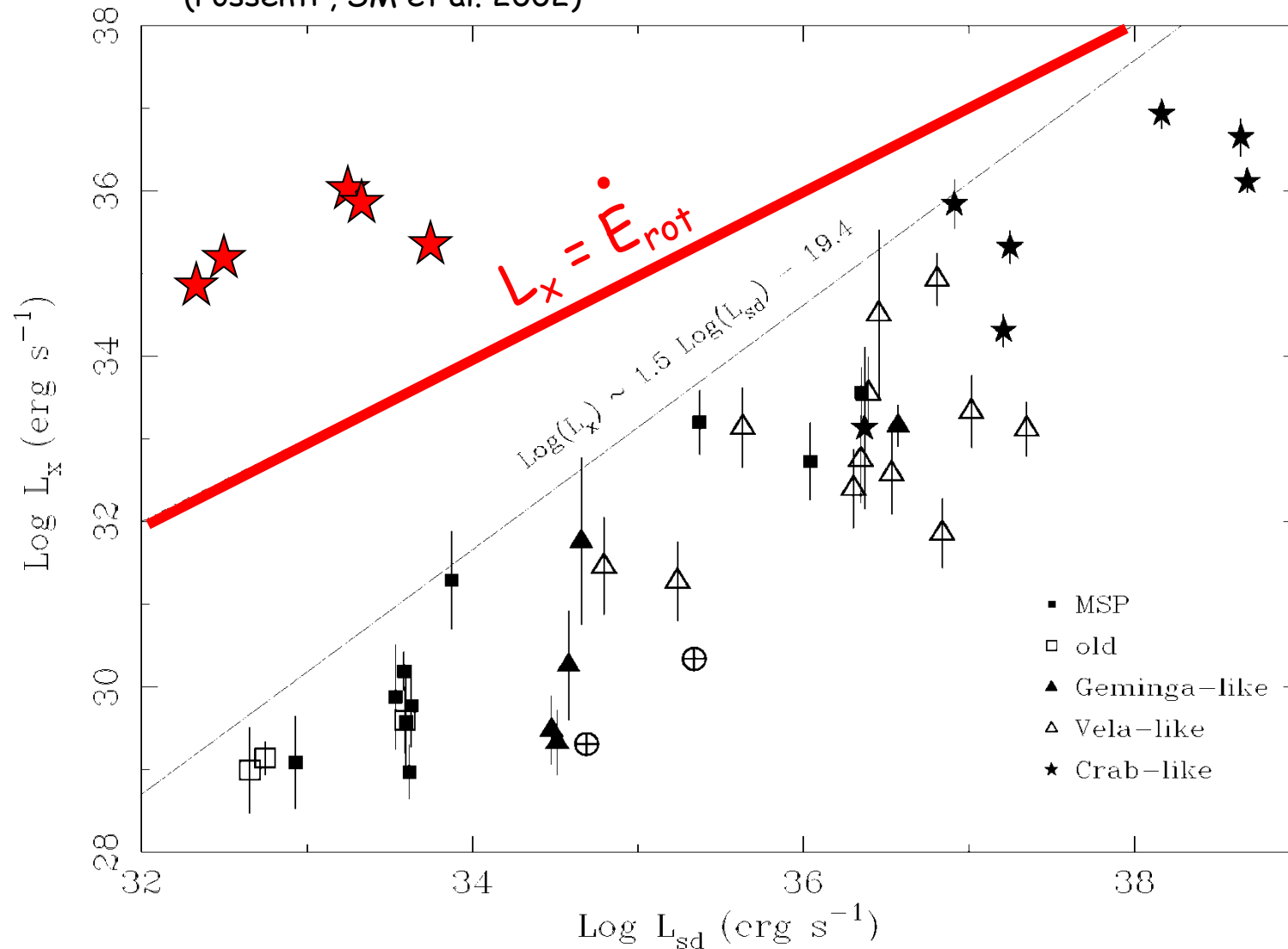


# X-ray pulsars



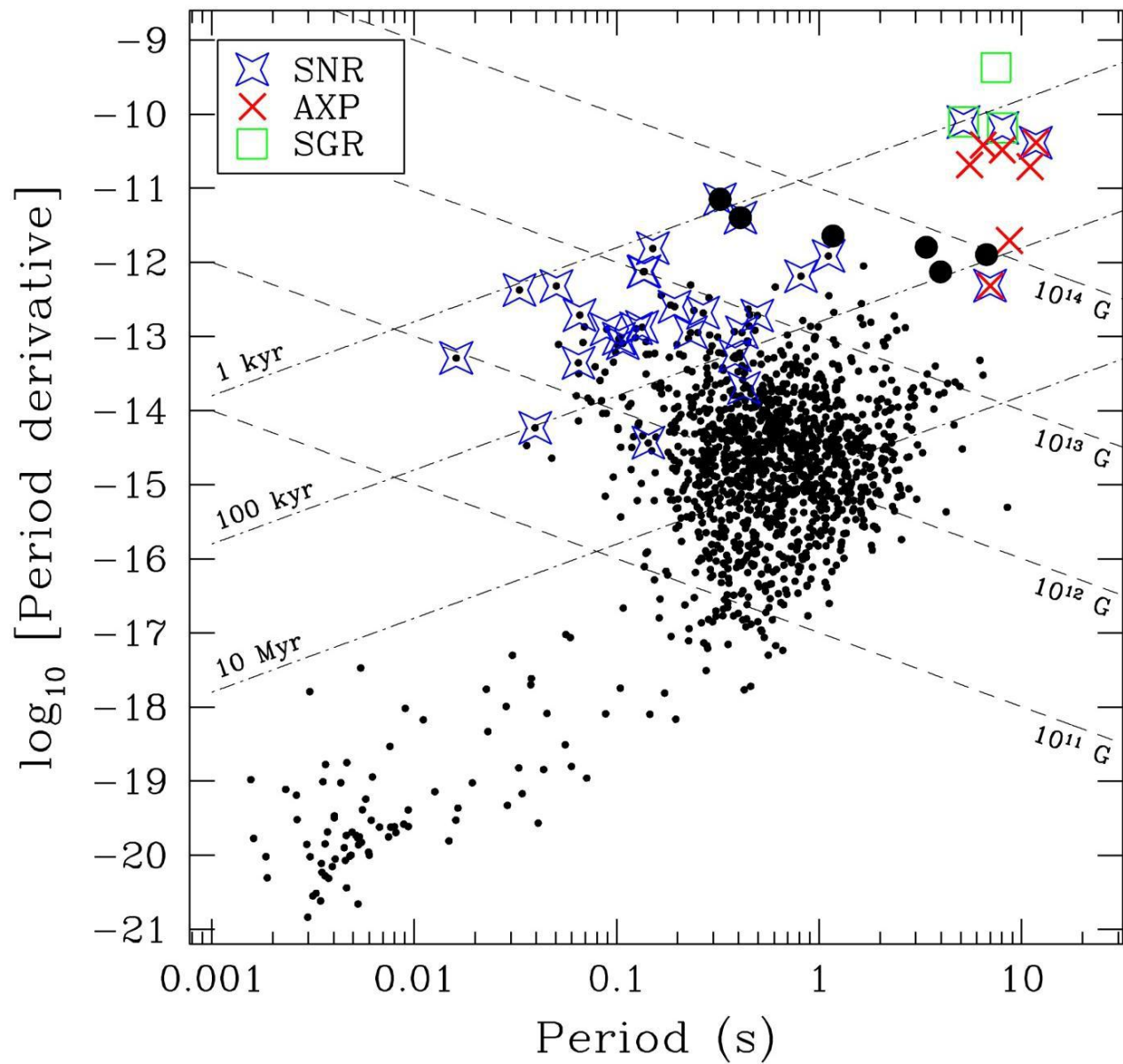
(Possenti, SM et al. 2002)

X-RAY LUMINOSITY



SPIN - DOWN ENERGY LOSS

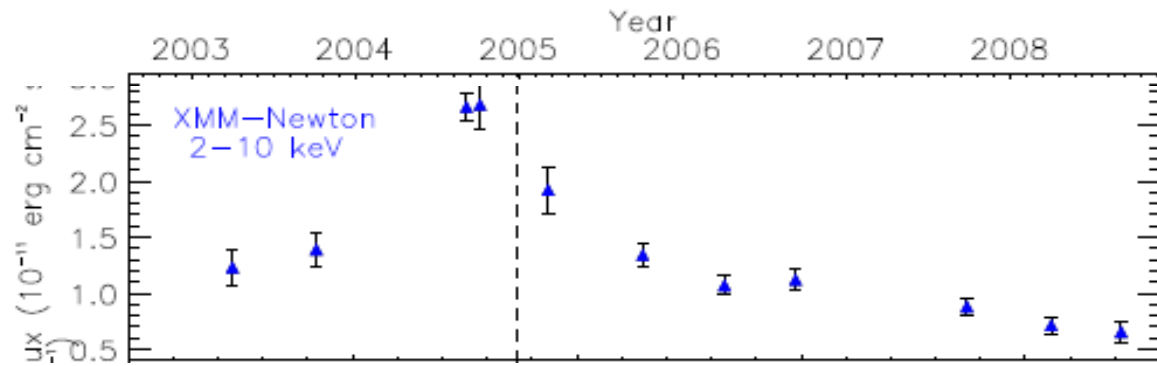




# Magnetars emit:

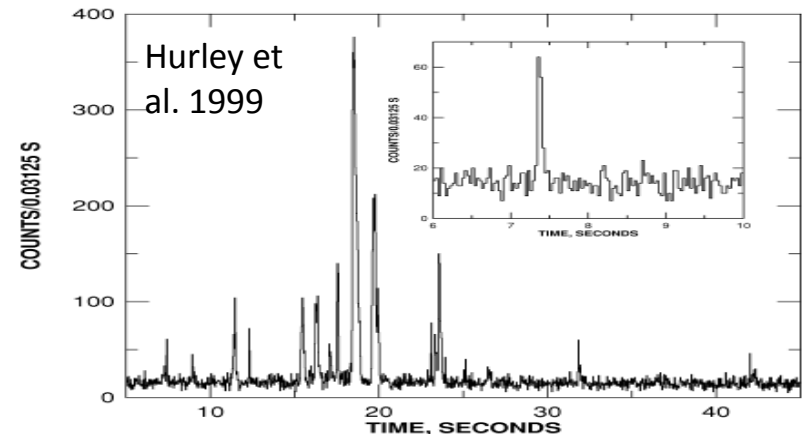
## – “Persistent” X-rays

- $L_x \sim 10^{35-36}$  erg/s
- $\sim 1-200$  keV
- pulsed at few seconds,
- spin-down



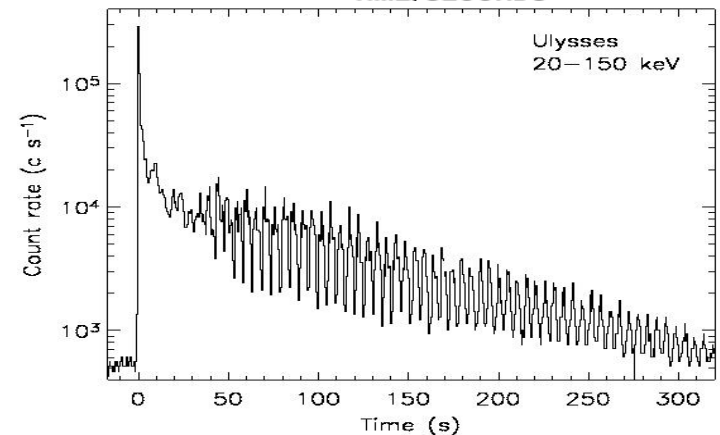
## – short bursts of soft gamma-rays

- $L_x \sim 10^{39-42}$  erg/s
- $kT \sim 30-40$  keV
- durations  $\sim 0.1-1$  sec



## – Giant Flares

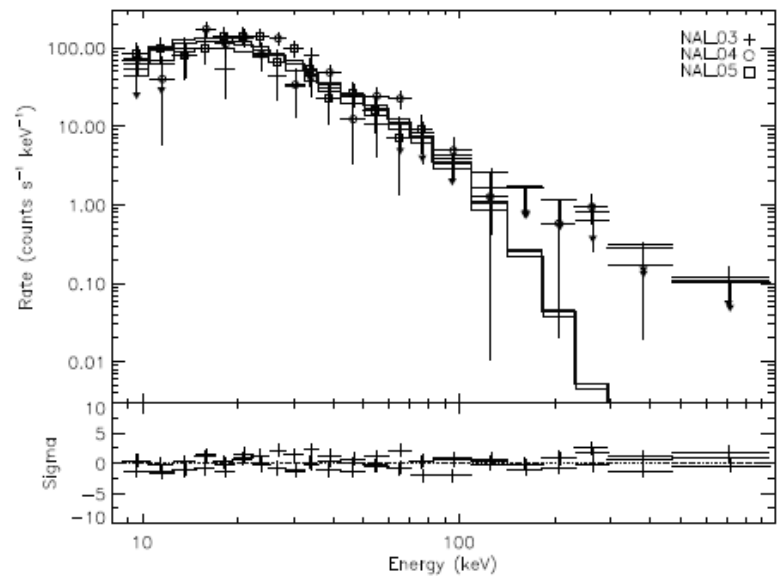
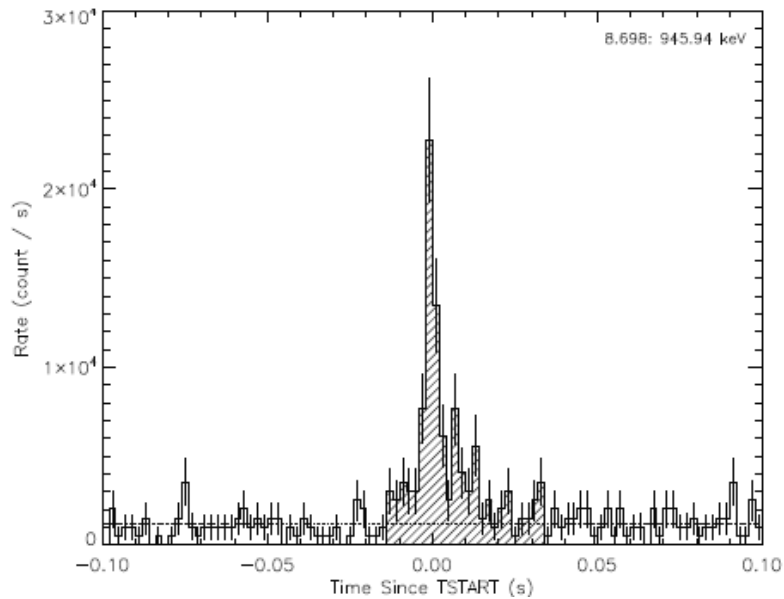
- $L_x > 10^{44}$  erg/s
- very rare events (only three observed)





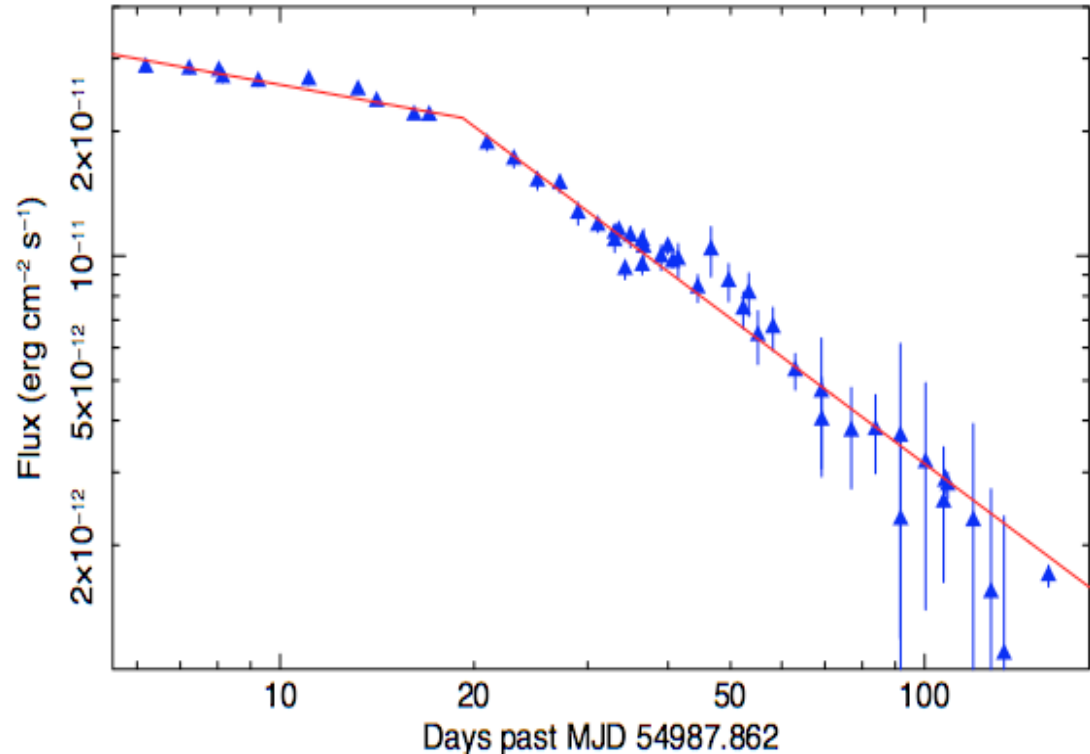
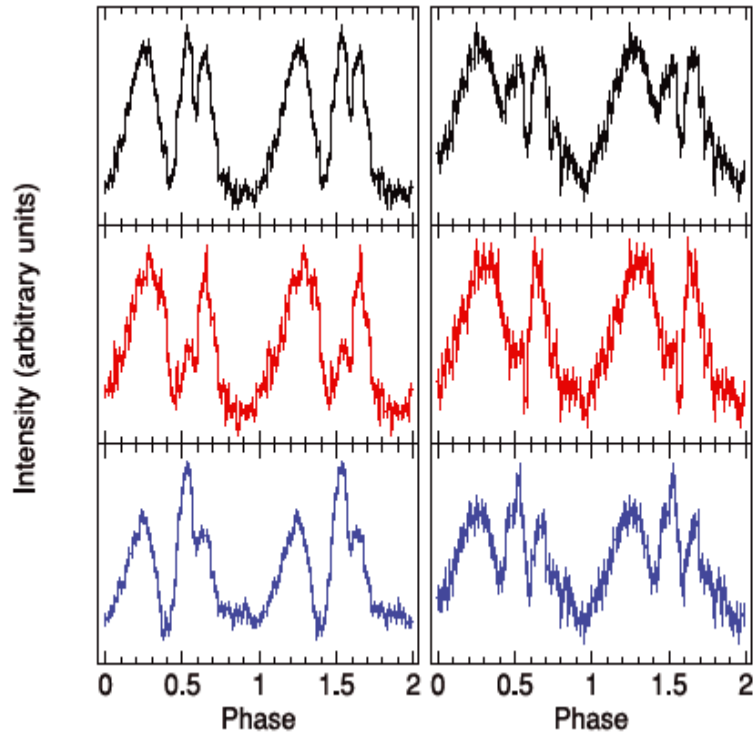
# SGR 0418+5729

2 bursts detected on 2009 June 05 with Fermi/GBM, spin period of 9.1 with RXTE within days (van der Horst et al. 2010).



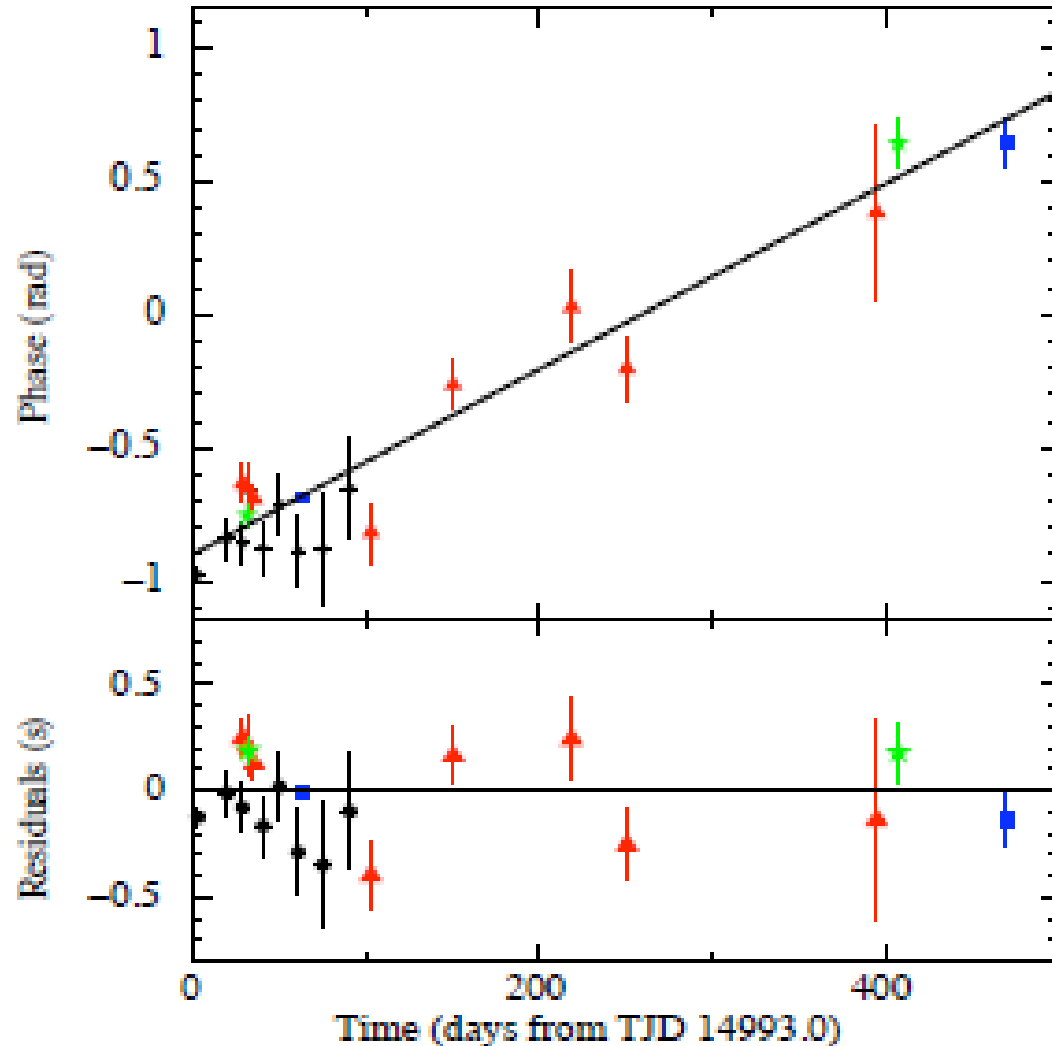
# SGR 0418+5729

Intensive monitoring for about 160 days, but the period derivative eluded measurement [ $B < 3 \times 10^{13}$  G] (Esposito et al. 2010, MNRAS).



# SGR 0418+5729

(Rea et al. 2010, Science in press)

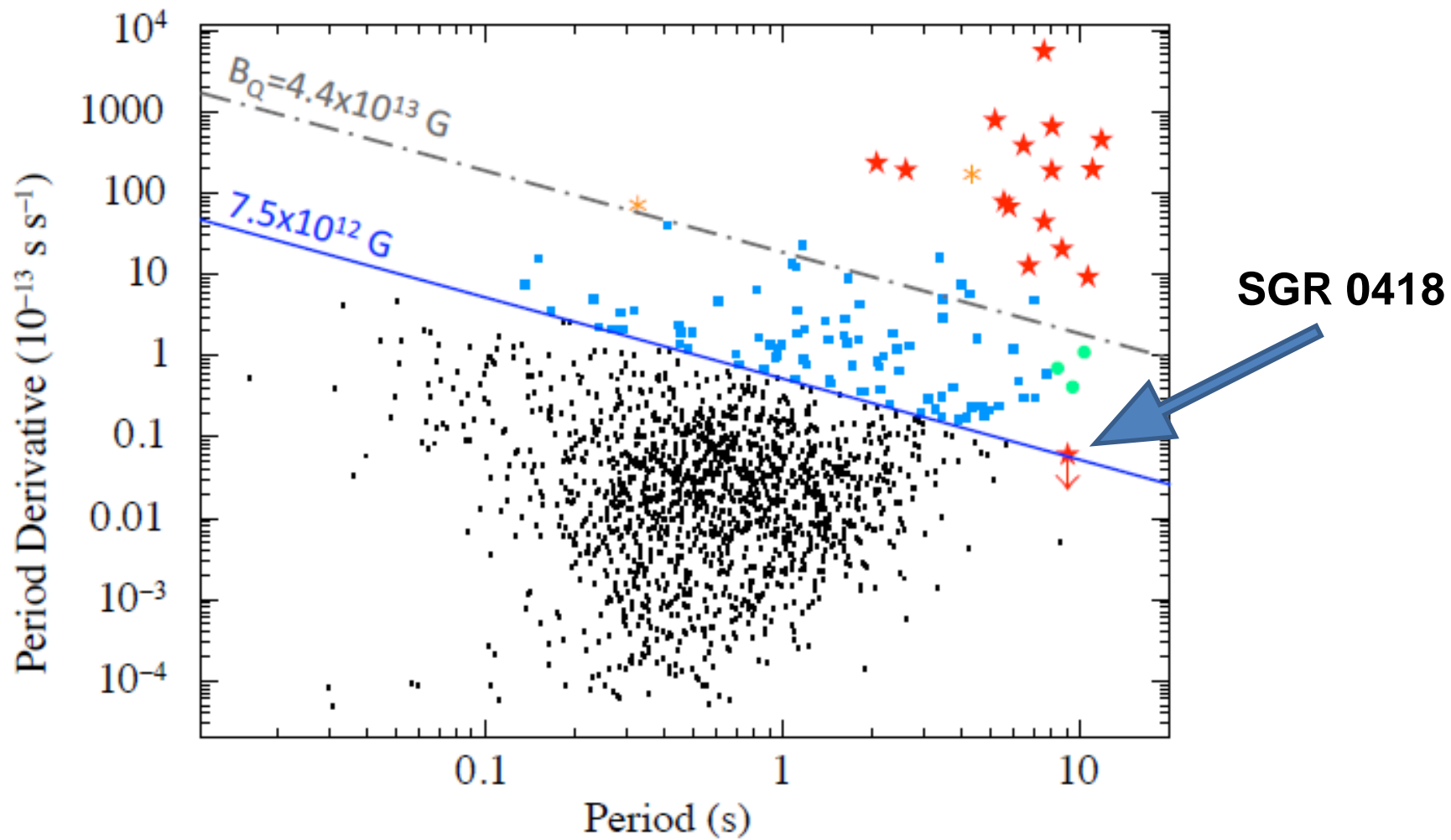


**Phase-coherent  
timing analysis  
2009 Jun 5 2010 Sep 24.**

$$\dot{P} < 6 \times 10^{-15} \text{ s s}^{-1}$$

$$\Rightarrow B < 7.5 \times 10^{12} \text{ G}$$

(Rea et al. 2010, Science in press)

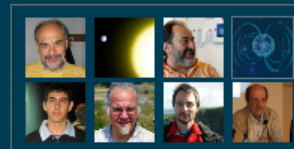
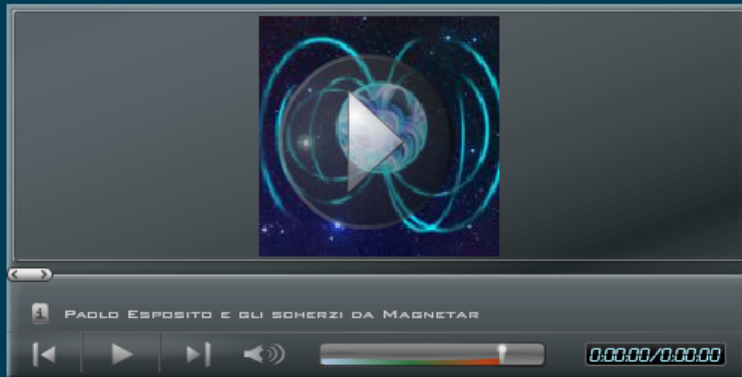


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Data: 14/10/2010  
Visite: 133

Mi piace Piace a 11 persone.

