LAXPC : status of simulation tools and calibration data

Baseline Science meeting

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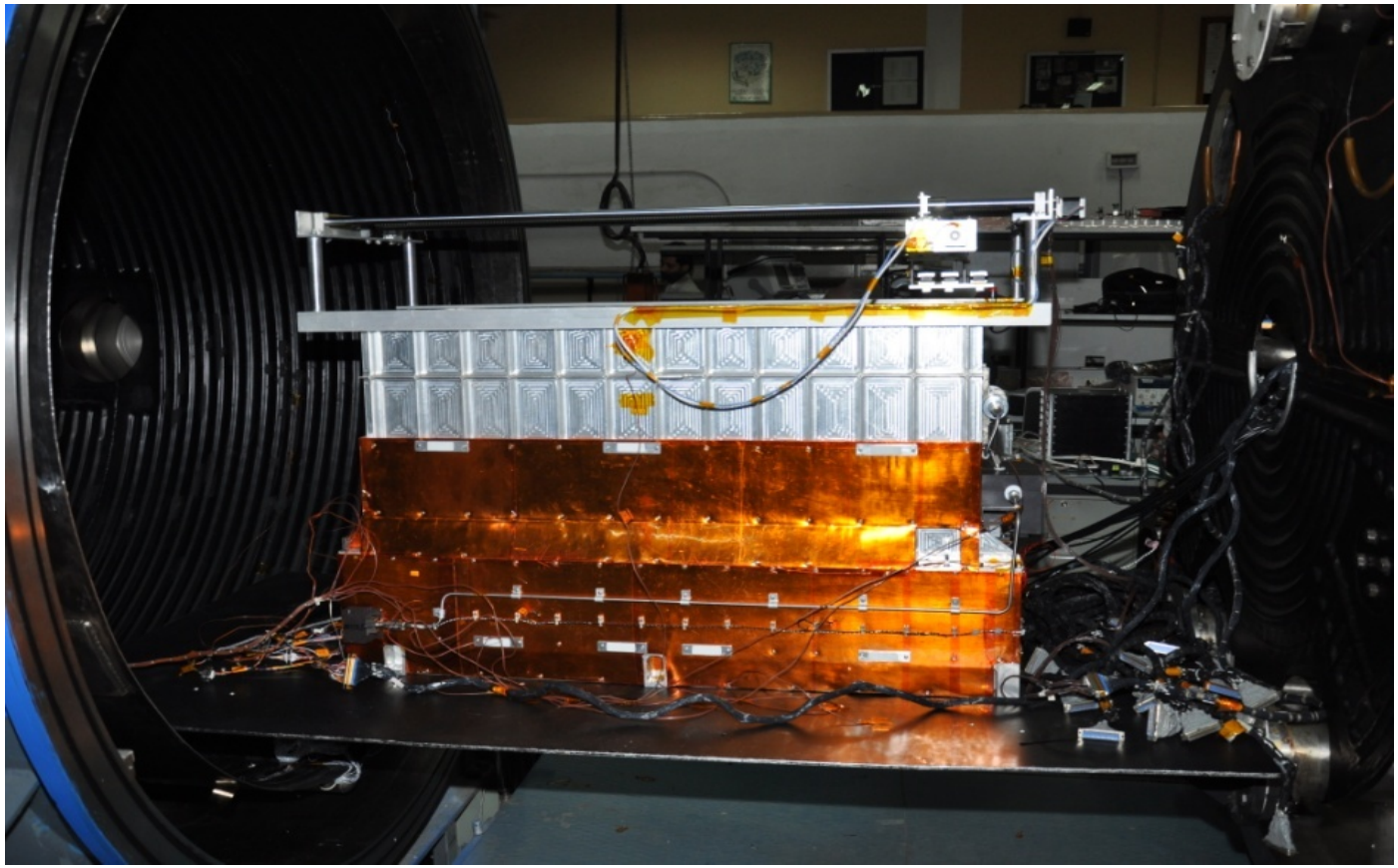
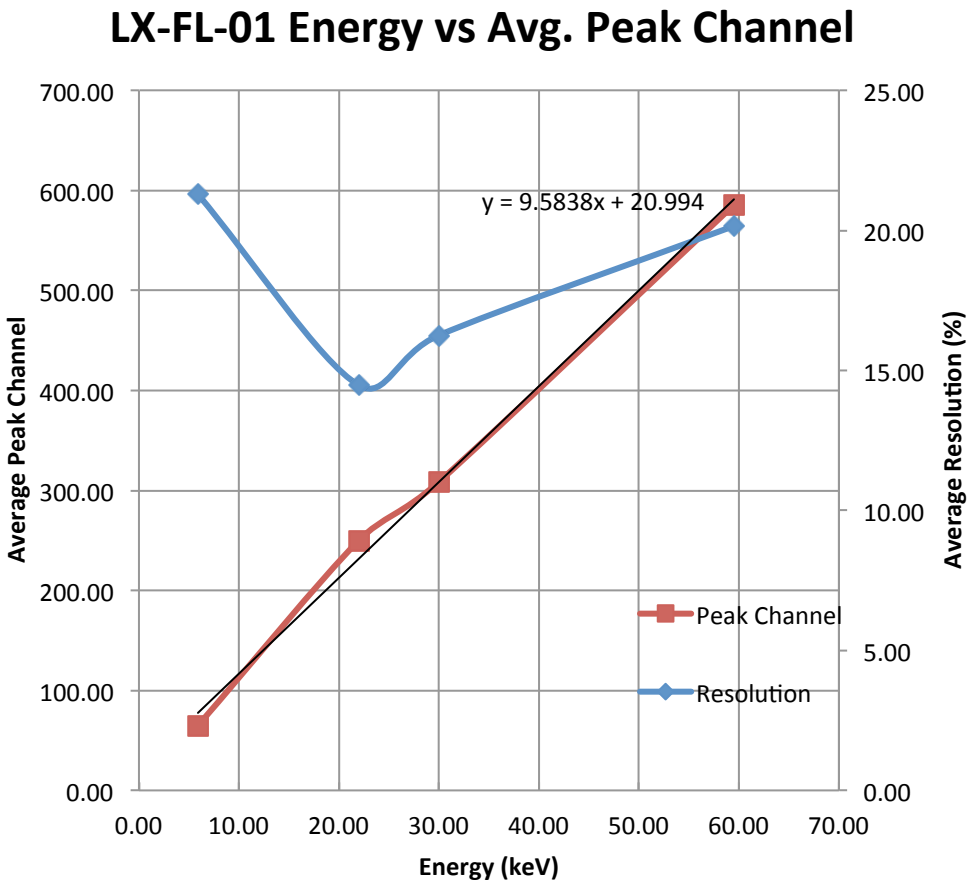
AS-LX-DT-10 in 2 mtr. chamber

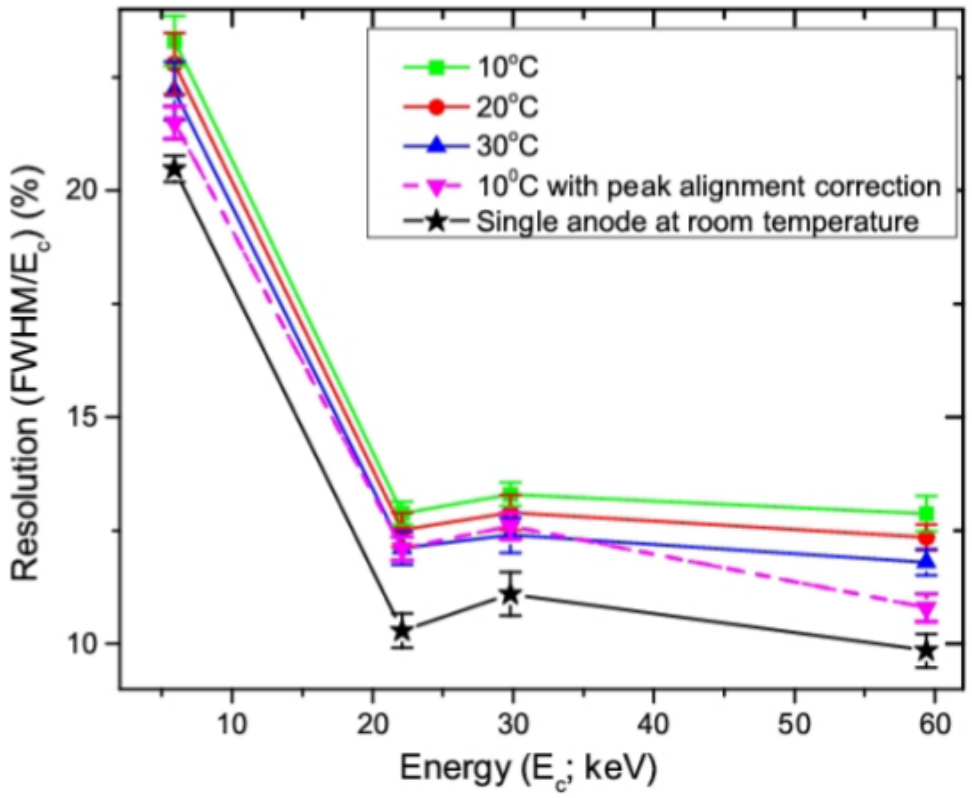


LX-FL-01

Source Energy (keV)	Avg Peak Channel	Avg Res (%)
5.90	64.59	21.31
22.00	250.20	14.47
30.00	308.69	16.26
59.50	585.63	20.16



Detector calibration



Expected and observed parameters

Calibration Matrix for LAXPC

Sr no	Parameter	Expected Values	Observed Values
1	Stability of peak channel	± 10% at 30KeV	±10%
2	Peak channel		
	at 5.9KeV		47 ±2%
	at 22KeV		189 ±2%
	at 29.8KeV		253 ±2%
	at 59.6KeV		504 ±3%
	Temp Dependence		5% (10°-30°C)
3	Energy Resolution		
	at 6KeV	22 ±2%	23 ±1%
	at 60KeV	20 ±2%	12 ±1%
	Temp Dependence		4% (10°-30°C)
4	Purifier		
5	Field of View	1°	0.72° at 15KeV
			0.80° at 50KeV
6	Efficiency		
	at 10-15KeV		97%
	at 80KeV		40%
7	Effective Area		
	at 10-15KeV	0.6m²	0.8m²
	at 80KeV		0.4m²

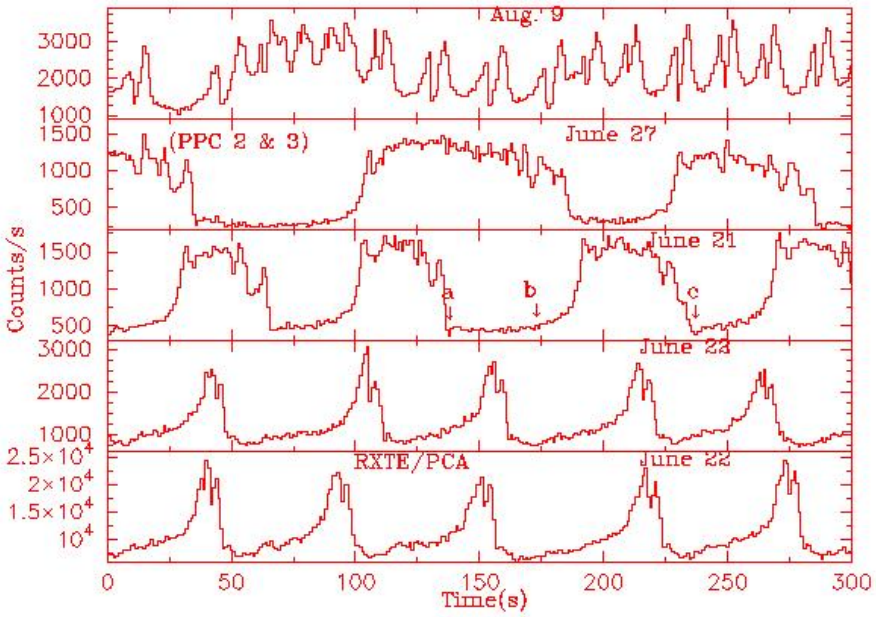
Advantages of LAXPC over RXTE/PCA

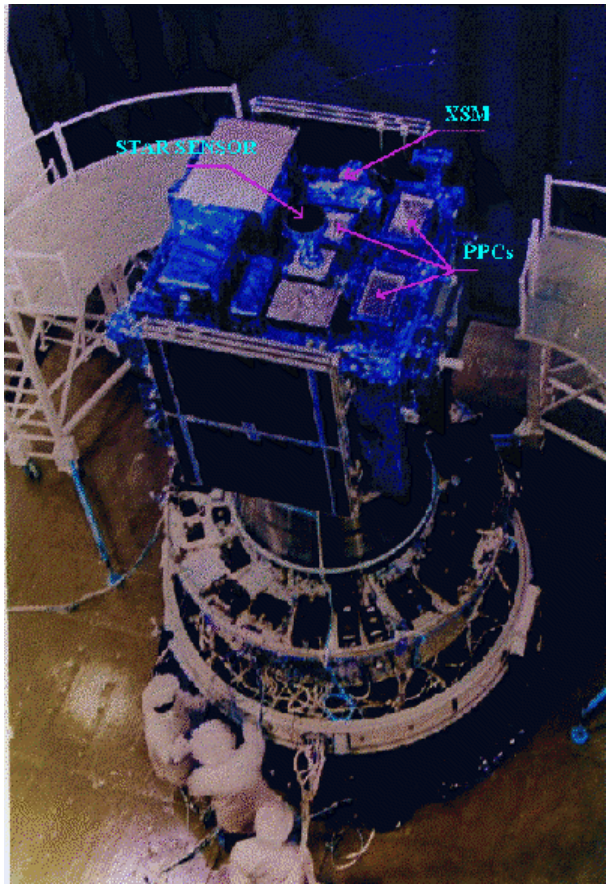
4 times effective area at 20 keV as compared to RXTE/PCA

Science with LAXPC

- New transient sources
- Outbursts and X-ray states
- Flares/ bursts
- Superbursts, burst oscillations
- kHz QPO
- accretion disk and radio jet connection
- transient sources; black hole and neutorn star binaries
- Many more

IXAE June-Aug. *1997*





J. S. Yadav et al ApJ (1999) v. 517,p 935

GX 339-4

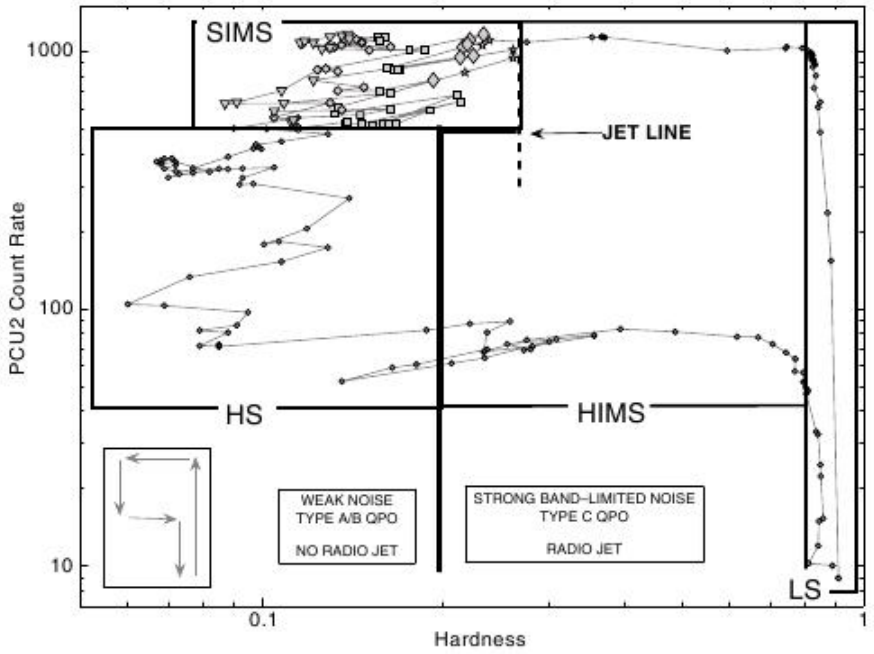
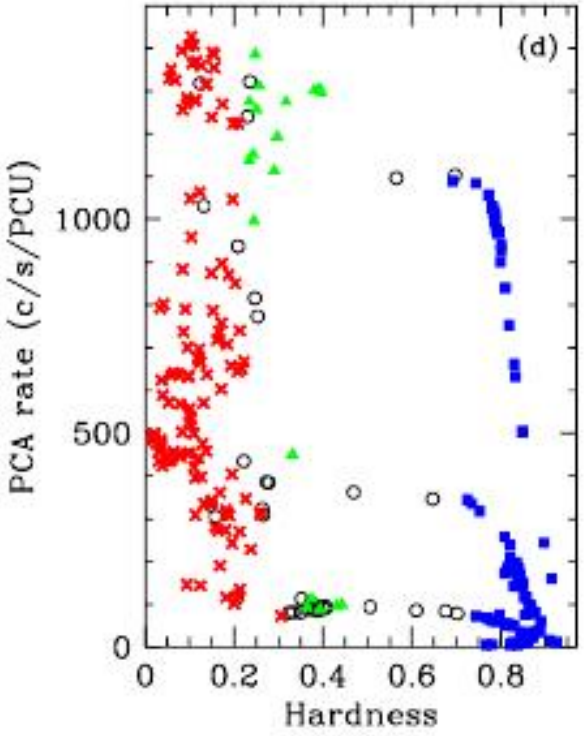


Fig. 1. Hardness-Intensity diagram of the 2002/2003 outburst of GX 339-4 as observed by the RXTE PCA. The lines mark the four source states

Belloni 2006



Remillard & McClintock 2006;

Outburst evolution & X-ray states