

Calibration targets

Source	Energy keV	Flux	Simplicity	Var	Extend	Lines	purpose
HZ 43	< 0.2	Bright	WD	No	Point	Cont	
Sirius B	< 0.2	HZ43 /10	WD	No	Point	Cont	
RXJ1856	< 1	Faint	NS, simple	No	Point	Cont	
1ES0102	0.4-1.5	Bright	Complex	No	1'	Lines	
PKS2155	0.2-20+	Med	Blazer	Yes	Point	Cont	
Capella	0.2-2	Bright	Brems + lines	Yes	Point	Lines	
AR Lac			Brems + lines		Point	Lines	
HR 1099	0.5-6	Bright	Brems + lines	No	Point	Lines	
Algol	0.5-6	Bright	Brems + lines		Point	Lines	
Crab	0.5-	Bright		Yes	Yes	Cont	
Cas A				No			
PSR 1509				Yes	Point		
3C273		Bright		Yes	Point, jet	Cont	
Mkn421		Bright		Yes	Point		
O836+71	1-100	Bright	FSRQ	Yes, spectral constant		Cont	

An initial, incomplete, list of calibration targets and their characteristics was developed. The list will be expanded with more detail about objects, and possibly links to archival data or publications about various sources. Ensembles of sources useful for different tasks (I.e. subsets of the whole list useful for effective area calibration, timing, ...) will be developed.

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Perseus cluster					Yes		
A2199					Yes		
Ophi cluster	<20						
Cygnus loop	0.3-5					Line	contamination
On-board calibration sources with instrumental fluorescence lines			Move block of metal below detector, e.g. as seen from XMM pn copper		Yes	Line	
Bursts							Variability tracking, timing alignment
Star clusters							Astrometry
Ngc2516			Star cluster				Astrometry
Highly absorbed sources							redistribution
Closed							Instrumental background

Future needs

Future missions	Needs	Comments
Con-X	Energy scale > 6 keV, line shapes	Grating calibration, XMS
	Lines with widths known < 100 km/s	
		Bright stellar flares
On-board calibration sources with instrumental fluorescence lines		
Transfer standards	Connection of low energy sources with high energy sources, targets for simultaneous observations	Problem of different exposure times to get high quality spectra, e.g. ksec for low x-rays but Msec for high energy missions

On orbit calibration schemes are not well developed for planned future observatory capabilities or even for putting current (plus past and future) missions on common and consistent scales.

- Calibrating planned spectroscopic capabilities will be a combination of calibration and science observations
- Making sense of joint observations will require further study of the techniques of simultaneous analysis such as presented by Burwitz and Marshall