

Calibration evaluation of the MOS timing modes

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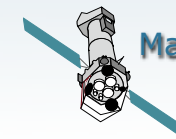
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- flux
- timing



- flux:
 - X-cal archive showed for some MOS observations that have been performed in timing mode flux differences of up to 30 %
 - GOAL:
 - understand if that is systematically the case
 - diagnose reason
- timing:
 - timing accuracy has never been evaluated (low priority)



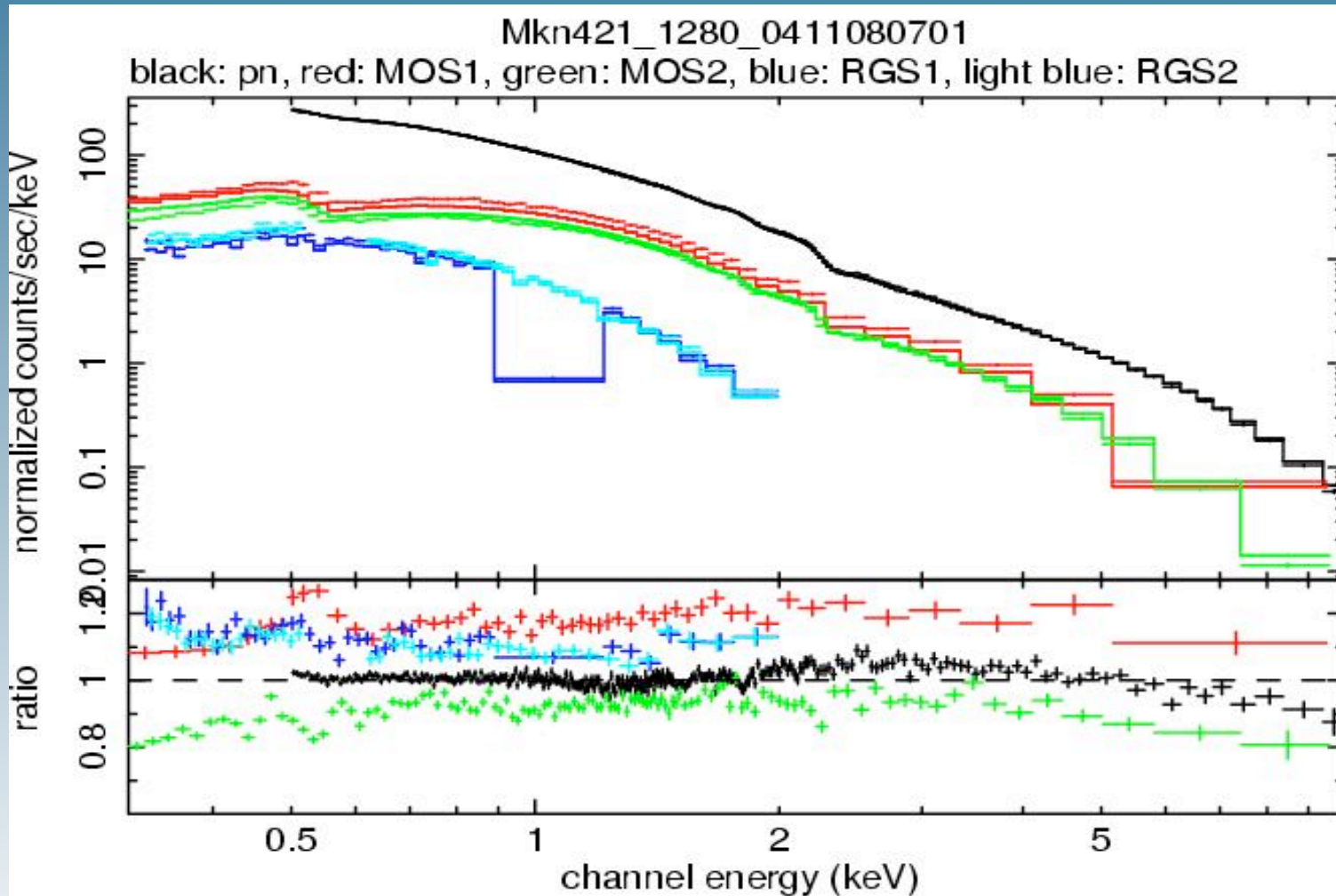
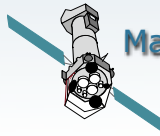
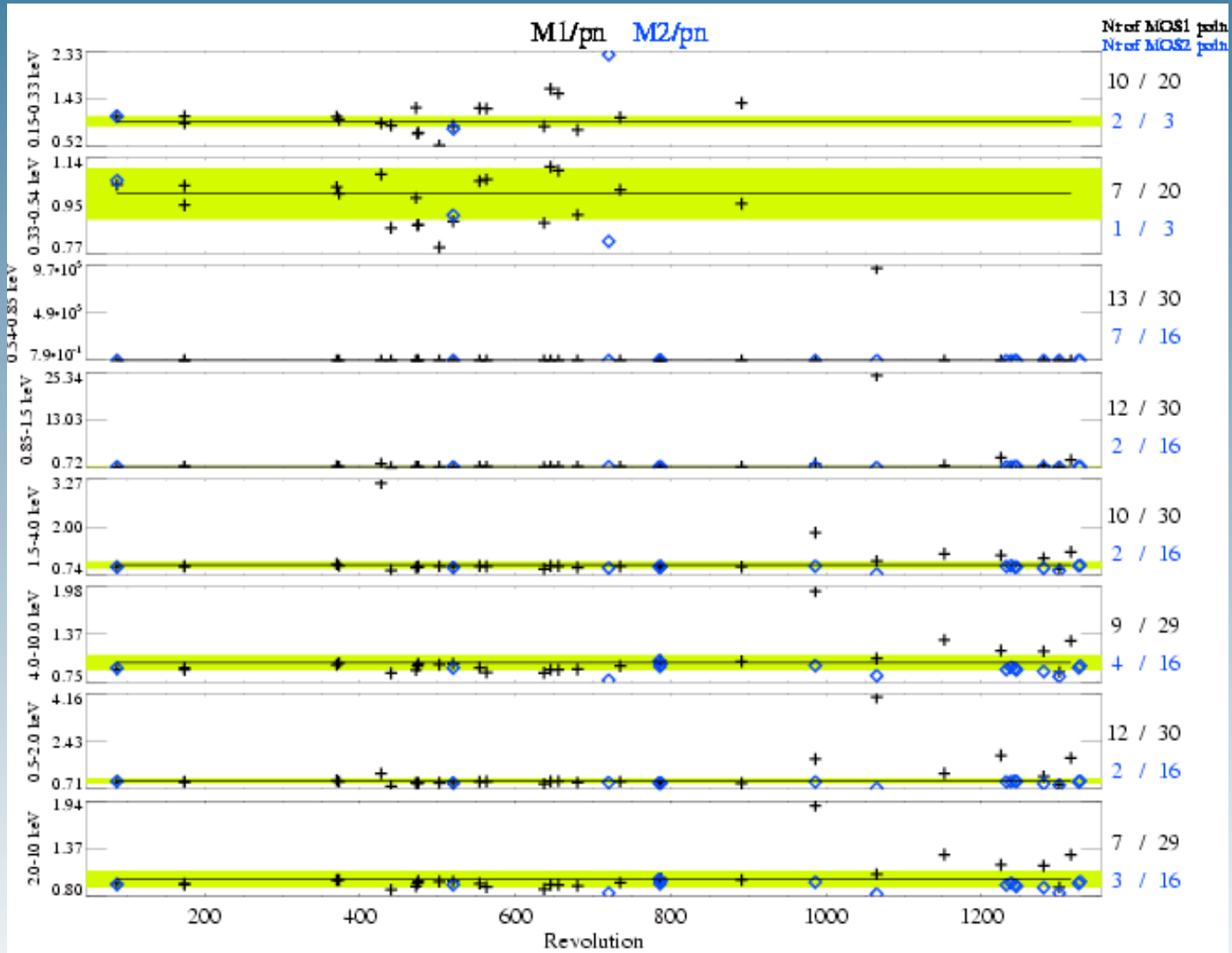


Figure 5.1. Spectra of MKN421



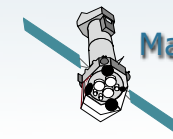


OBSID	MOS/PN flux ratio	Counting mode	Remarks
0084020401	0.895	YES	All cameras in counting mode EPIC-PN in counting mode EPIC-PN in counting mode
0084020501	0.900	NO	
0106260101	1.27	NO	
0153950601	0.812	NO	
0158970101	0.887	NO	
0212480501	1.80	NO	
0303210201	4.04	YES	
0311590901	1.27	YES	
0402330301	1.93	YES	
0402330501	1.83	YES	
0404860301	0.860	YES	
0411080701	1.16	YES	

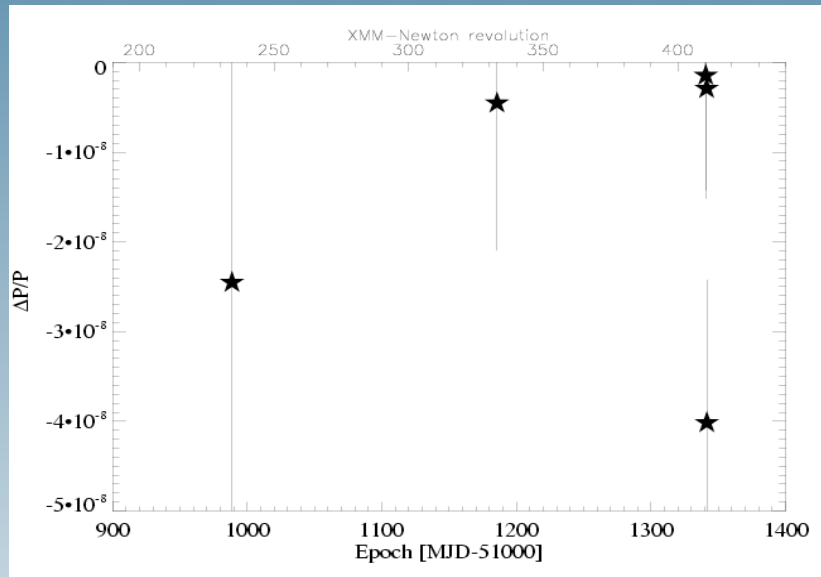
Table 5.1. EPIC-MOS1 observations identified by MOS_tmd having a MOS/PN flux ratio > 1.1 or < 0.9

OBSID	MOS/PN flux ratio	Counting mode	Remarks
0303210201	0.730	NO	EPIC-MOS1 in counting mode
0404860301	0.850	NO	EPIC-MOS1 in counting mode

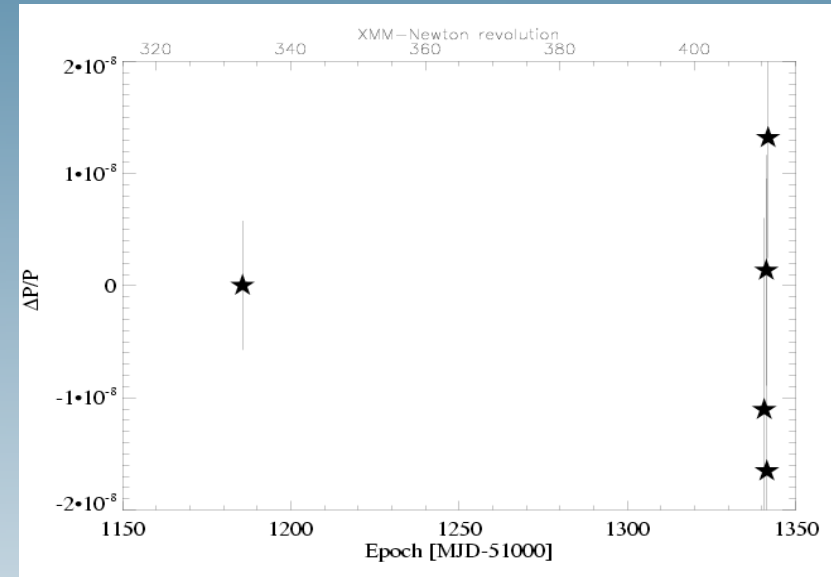
Table 5.2. EPIC-MOS2 observations identified by MOS_tmd having a MOS/PN flux ratio > 1.1 or < 0.9



MOS1

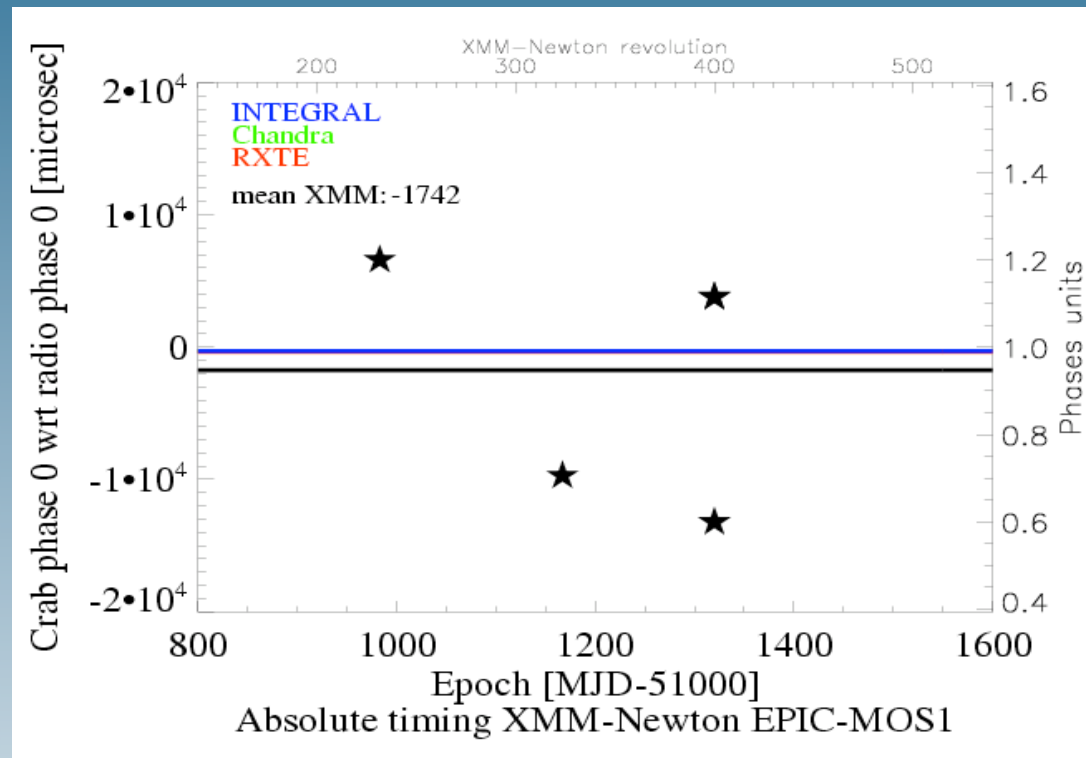


MOS2

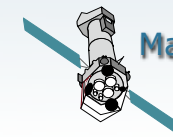


- using Crab to compare radio versus (MOS X-ray period)
- $\Delta P/P < 5 \cdot 10^{-8}$
- further observations needed





- better than 10 ms
- requirement for pn was better than 1 ms (result is better than 100 micro sec)
- --> MOS absolute timing not to be used ?



- flux
 - flux differences in some cases may be due to imperfect GTI treatment (counting mode etc.) currently under investigation by SAS team
 - telemetry resources in timing mode may need revision
- timing
 - relative: $\sim 5 \text{ E-}8$
 - absolute: doubtful

