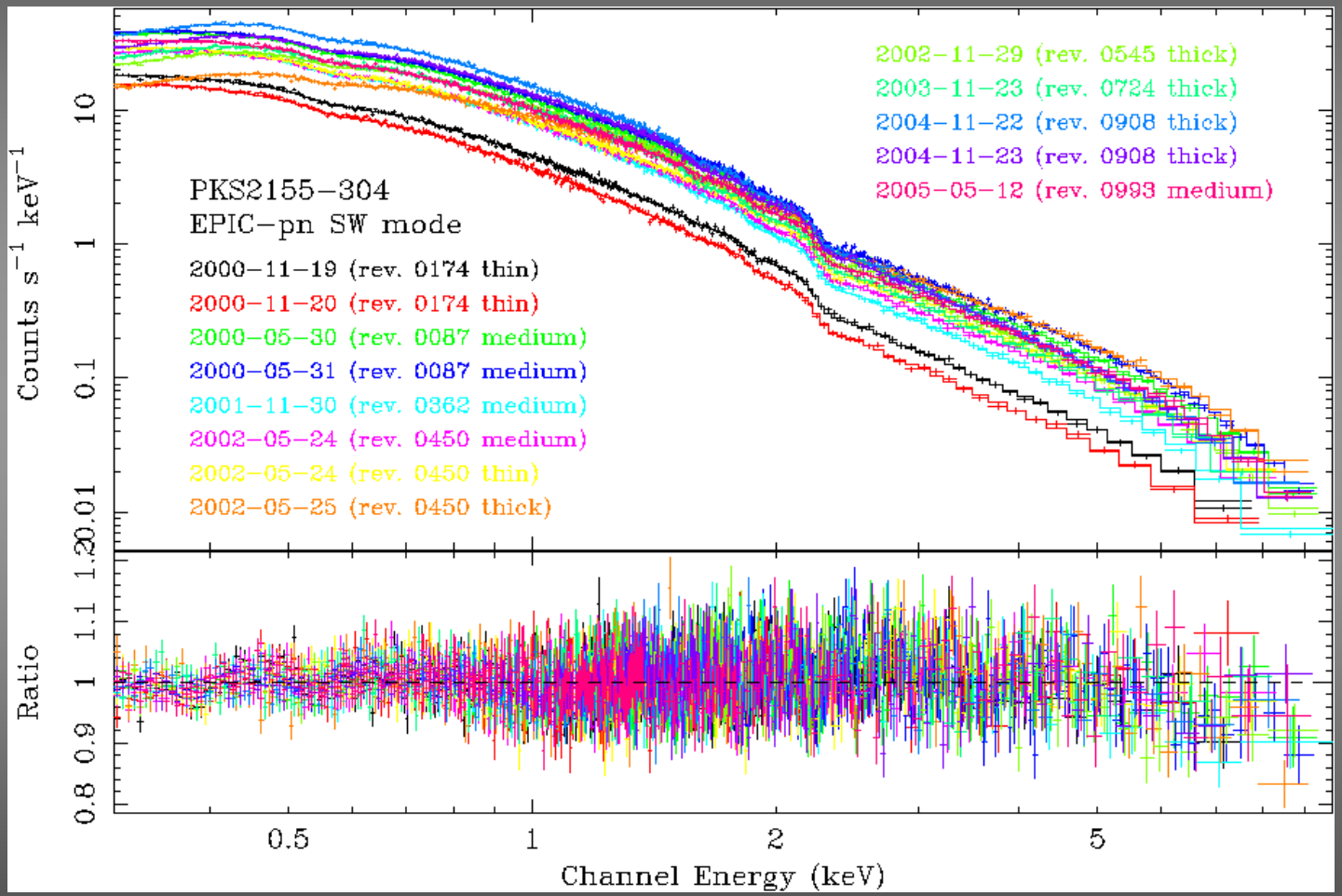
EPIC-PN residuals above 6 keV: an update

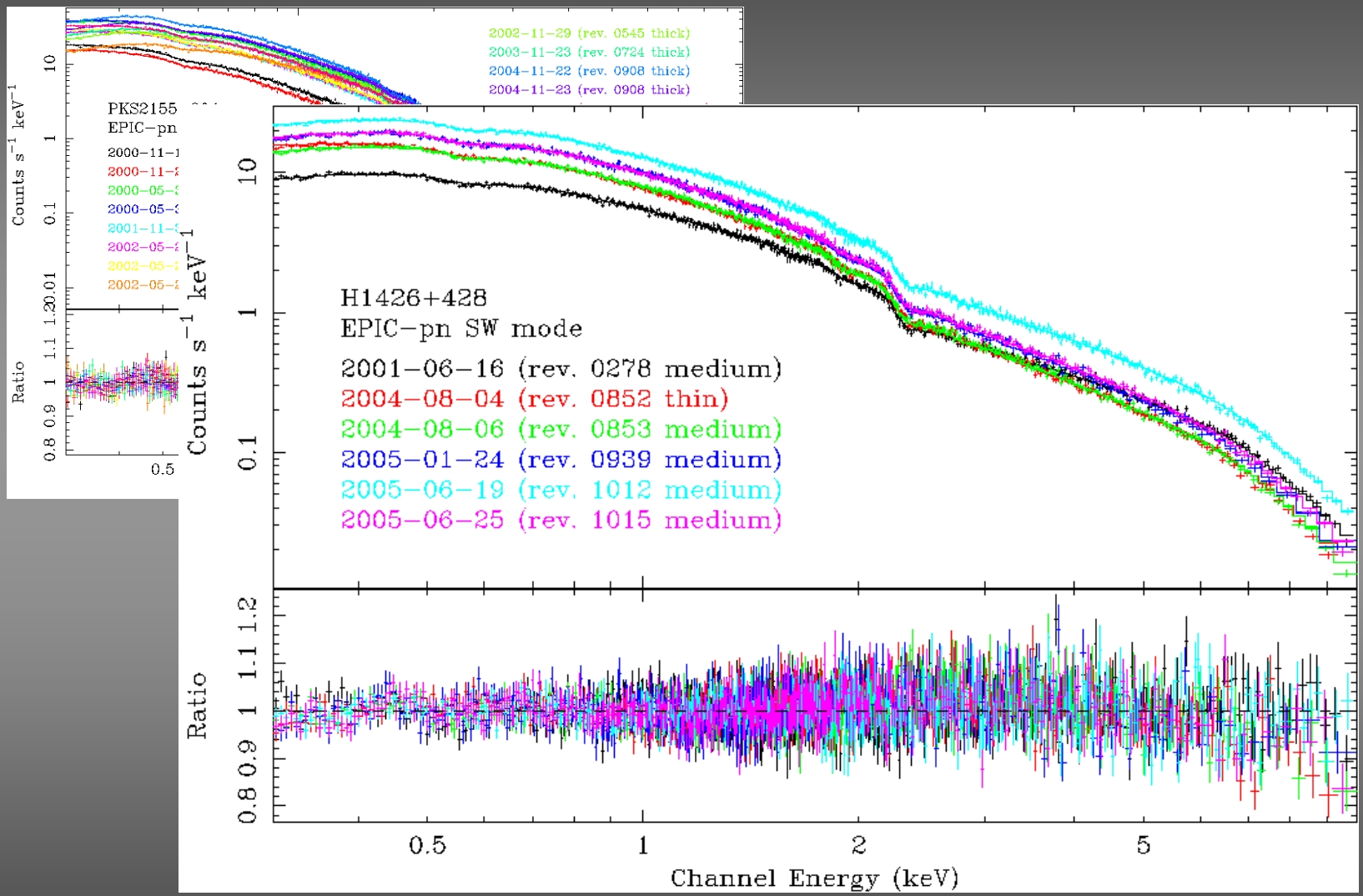
Frank Haberl

EPIC cal meeting, Garching, 4-5 May 2006

Residuals above 6 keV



Residuals above 6 keV



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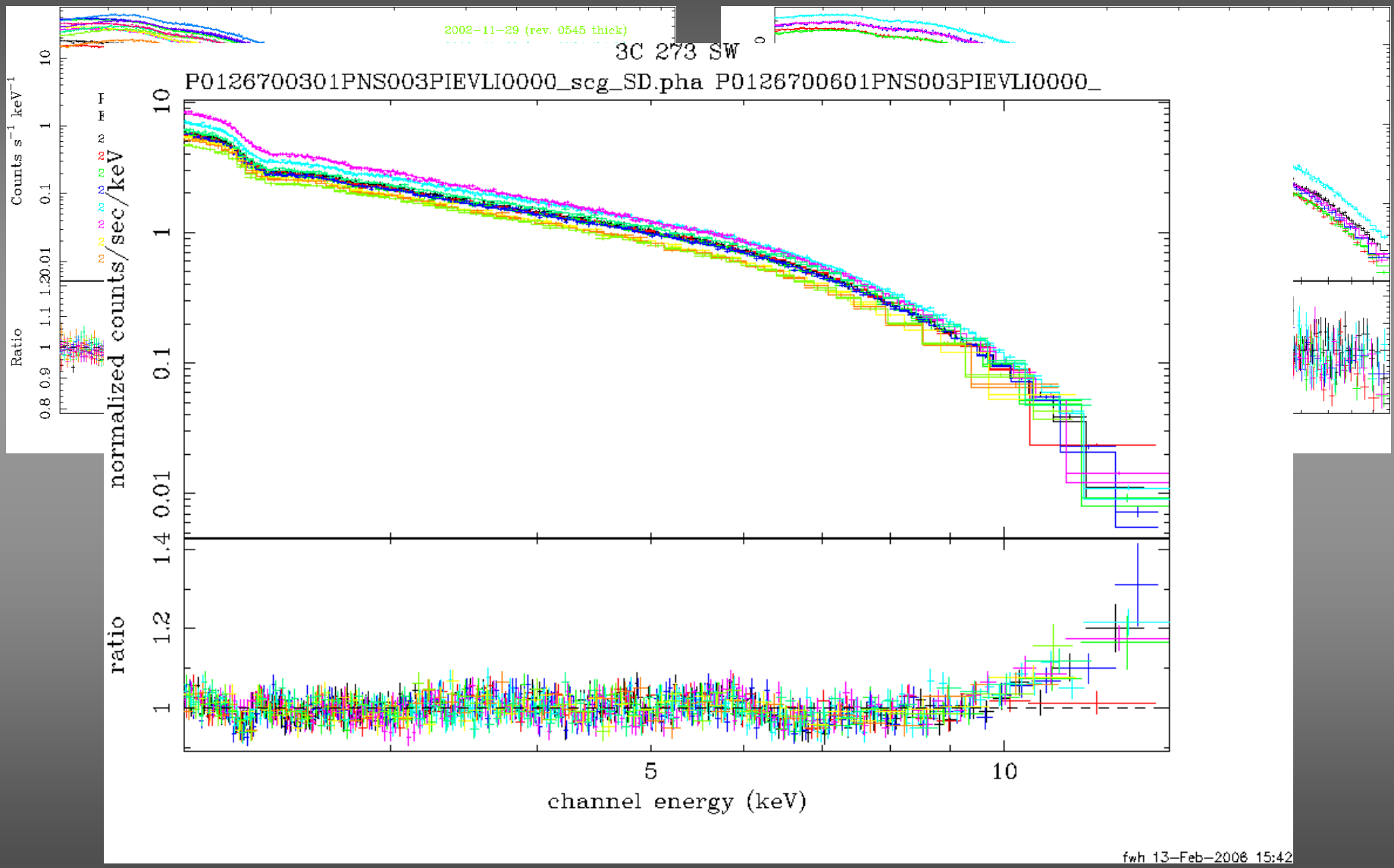

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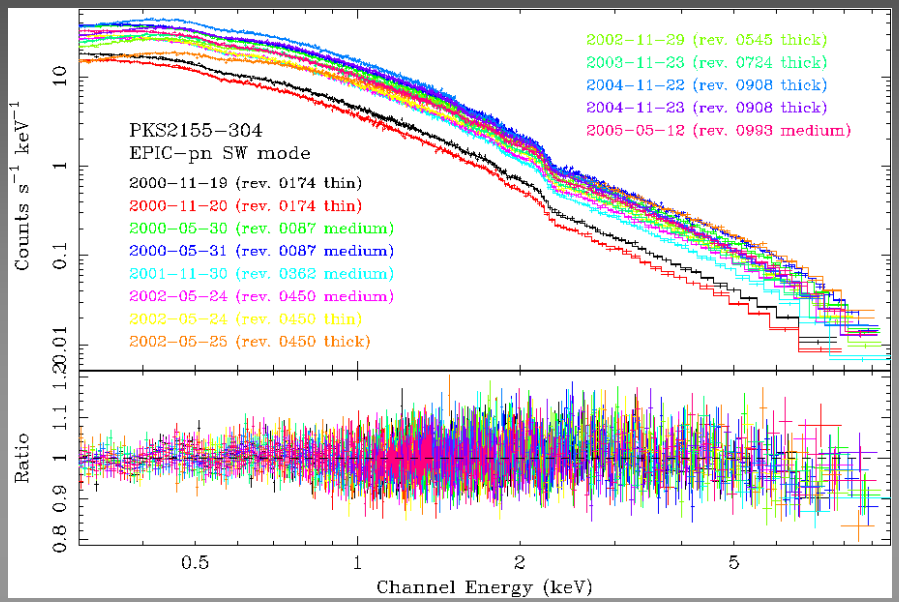
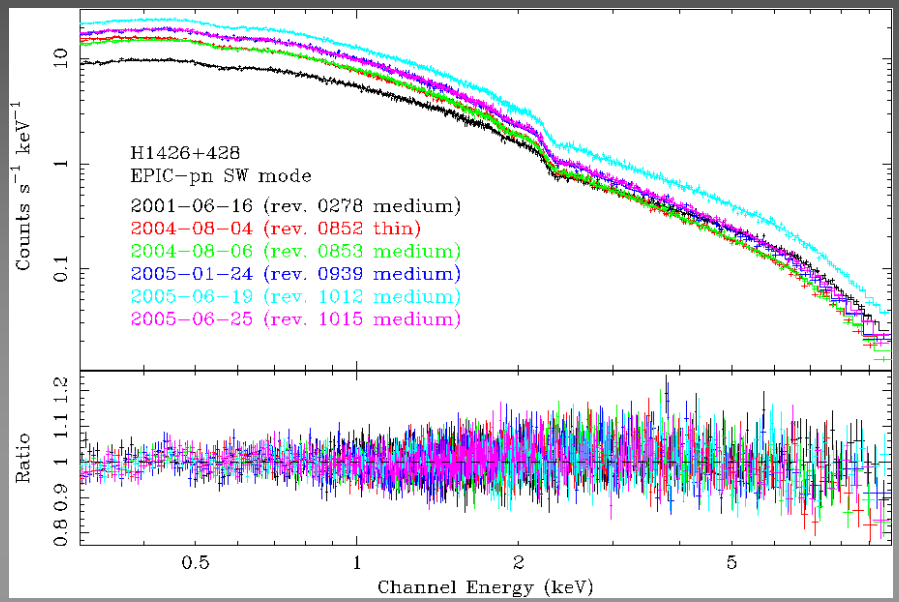
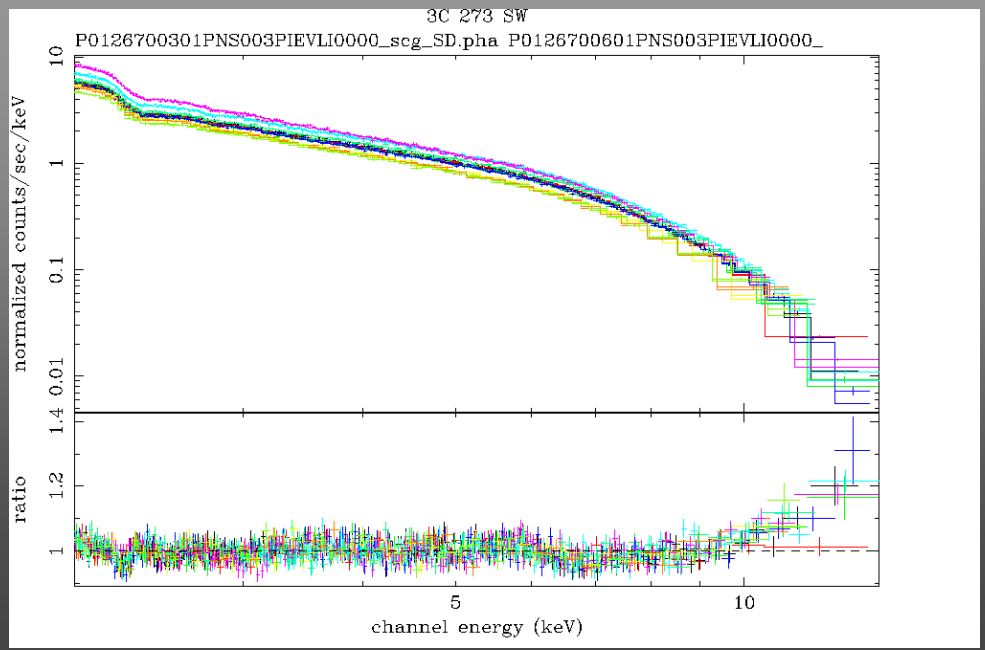
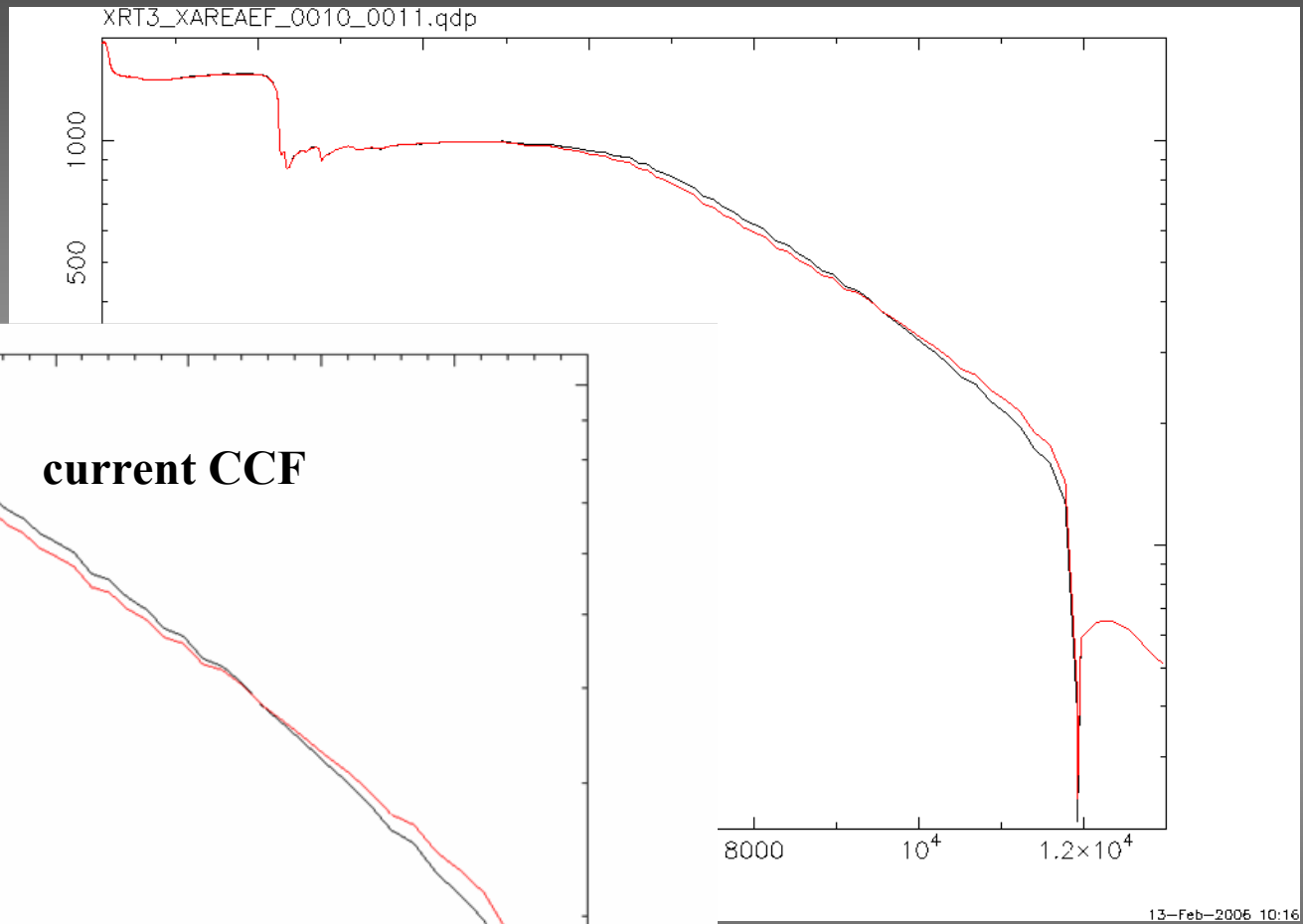
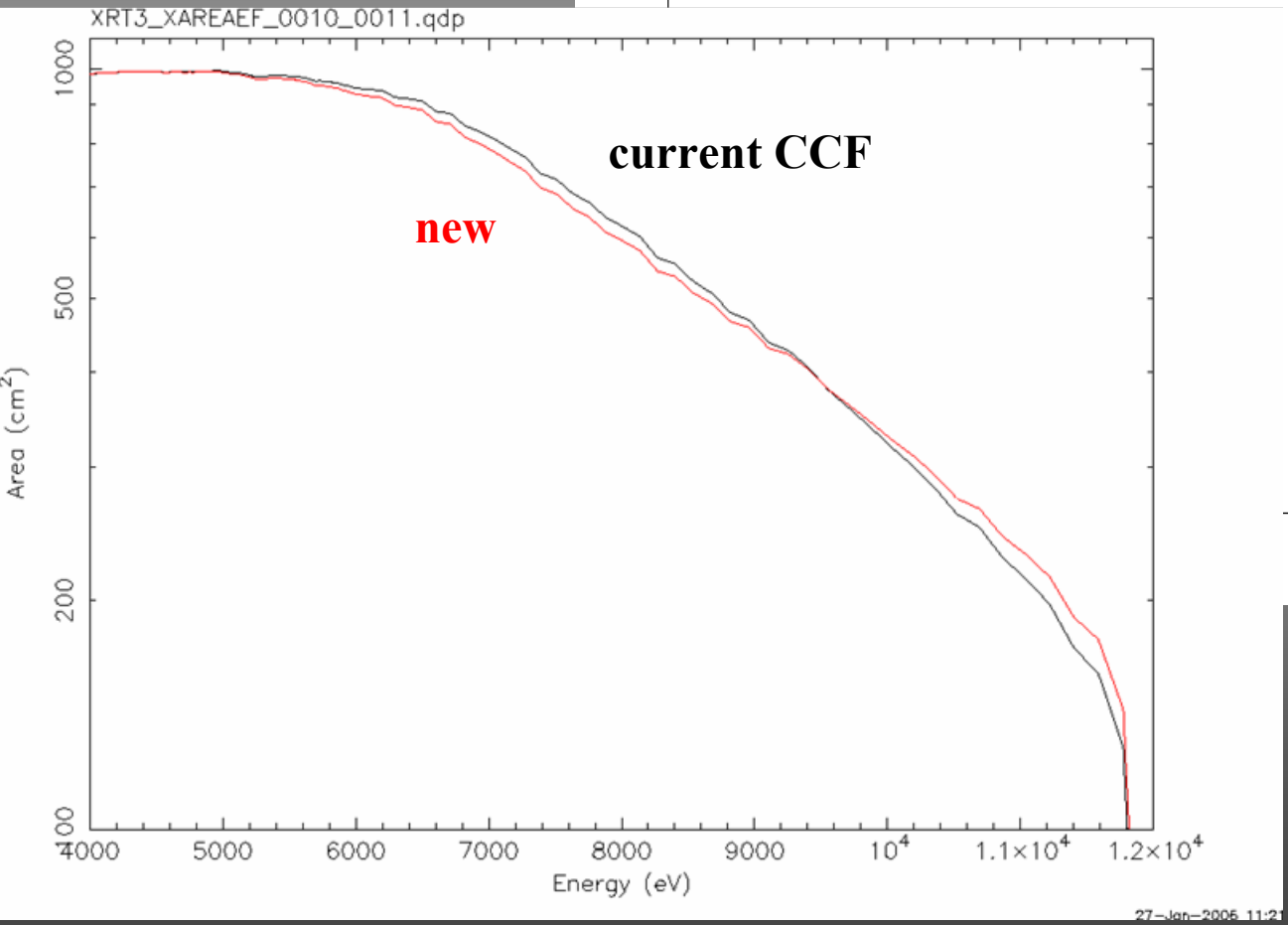




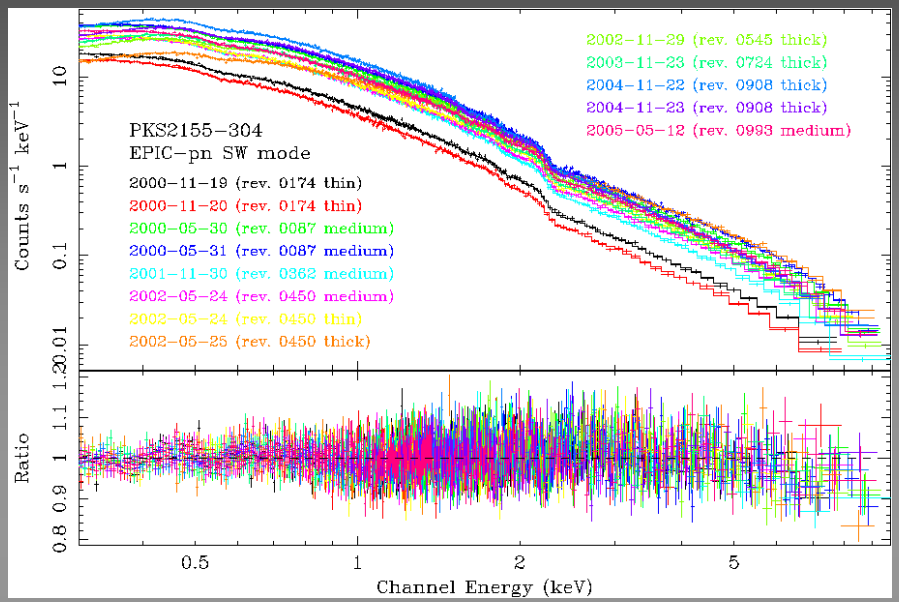


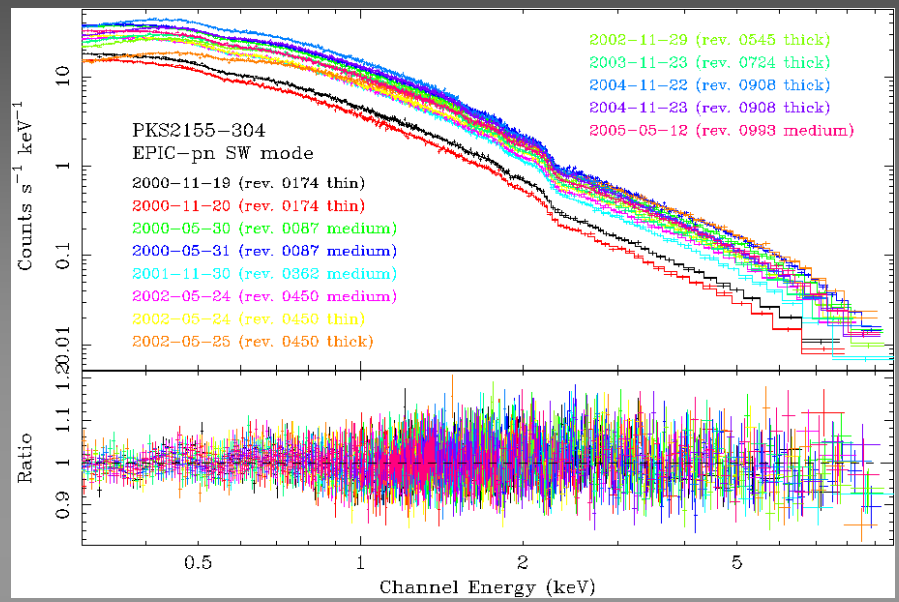
Modified mirror areas

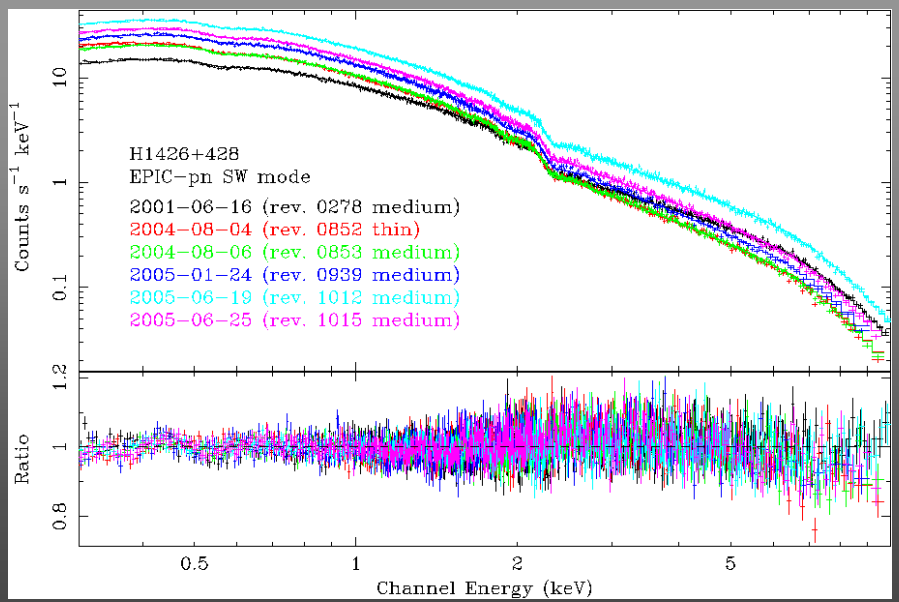


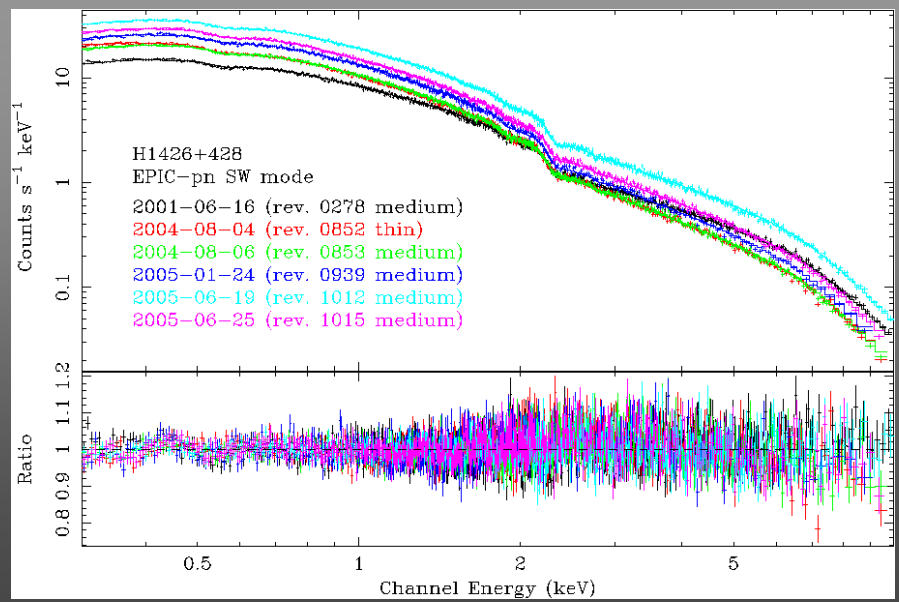


Comparison 0010/0011









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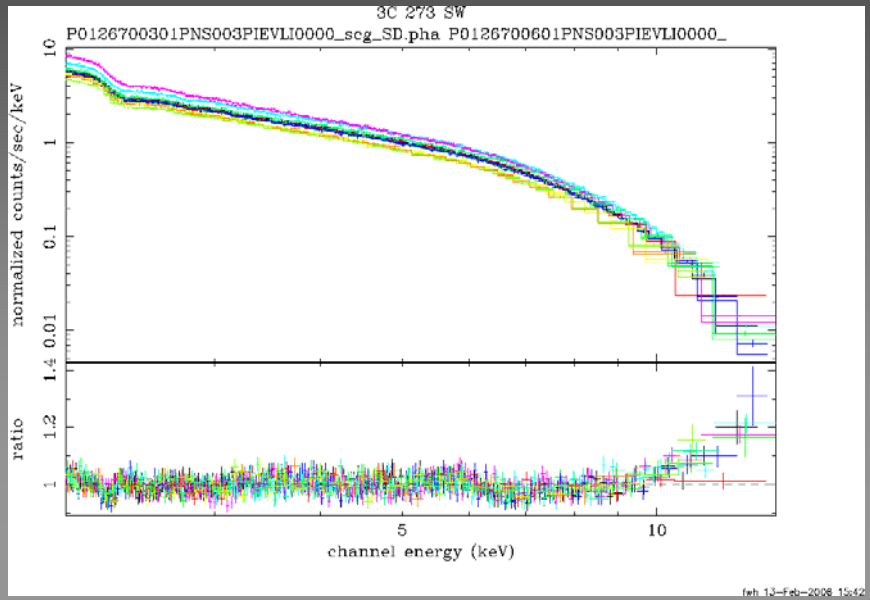
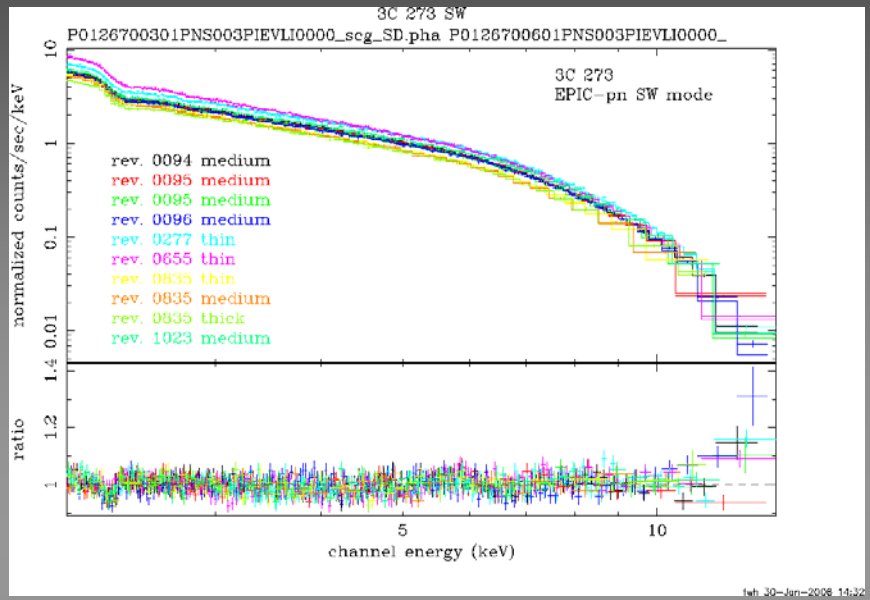
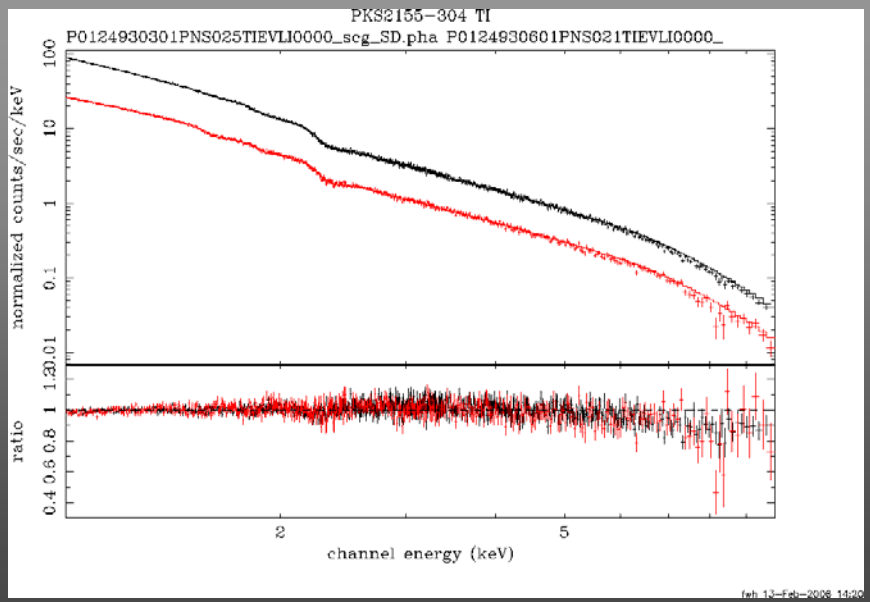
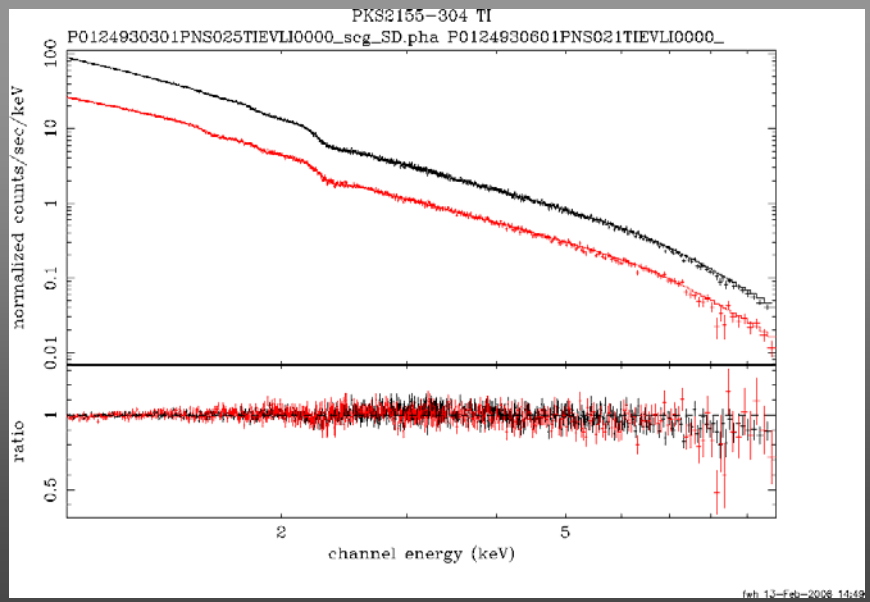








Comparison XRT3_XAREA_00xx.CCF

0010 0011

Spectra	χ^2	χ^2 red	χ^2	χ^2 red	dof	
3C273 SW	4748	1.202	4592	1.163	3950	
H1426+428 SW	4196	1.262	3986	1.199	3325	
PKS2155 SW	5193	1.159	5097	1.137	4520	ring
PKS2155 TI	1650	1.313	1511	1.202	1257	

Improvement, but not perfect

Another iteration to 0012?

Powerlaw index:

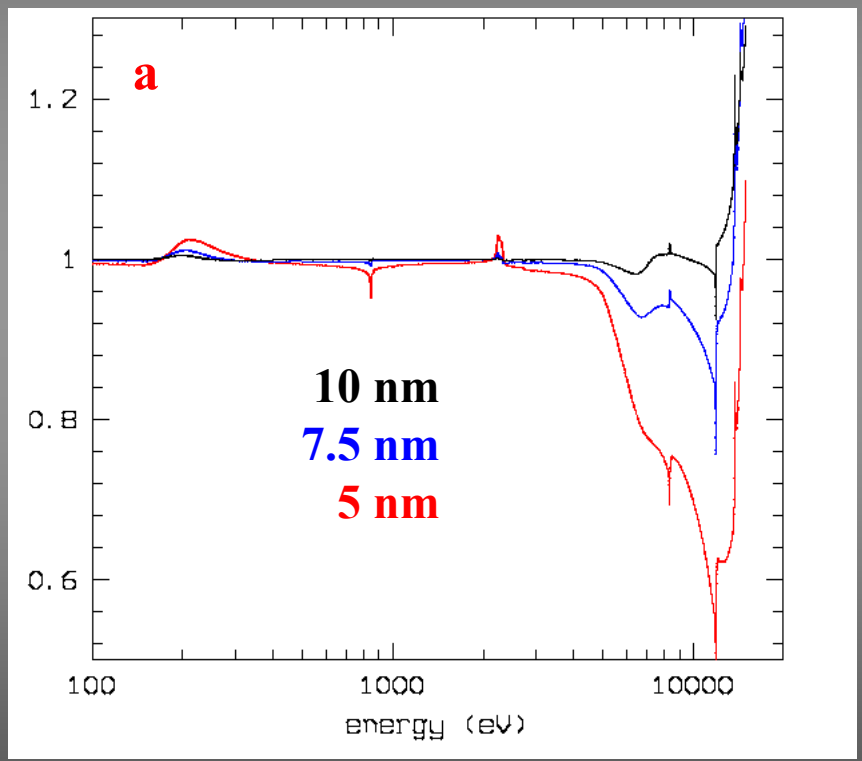
3C273 SW	1.6187	1.5842	1.5928	1.5940	1.5974	1.7665	1.6839	1.7030	1.6817	1.5836
	1.6157	1.5822	1.5900	1.5940	1.5950	1.7647	1.6804	1.6986	1.6919	1.5689
H1426+428 SW	1.7978	2.1650	2.1871	2.2010	2.0054	2.1531				
	1.7938	2.1589	2.1799	2.1941	1.9997	2.1457				

Index decreases (spectra become harder) only by 0.003-0.007

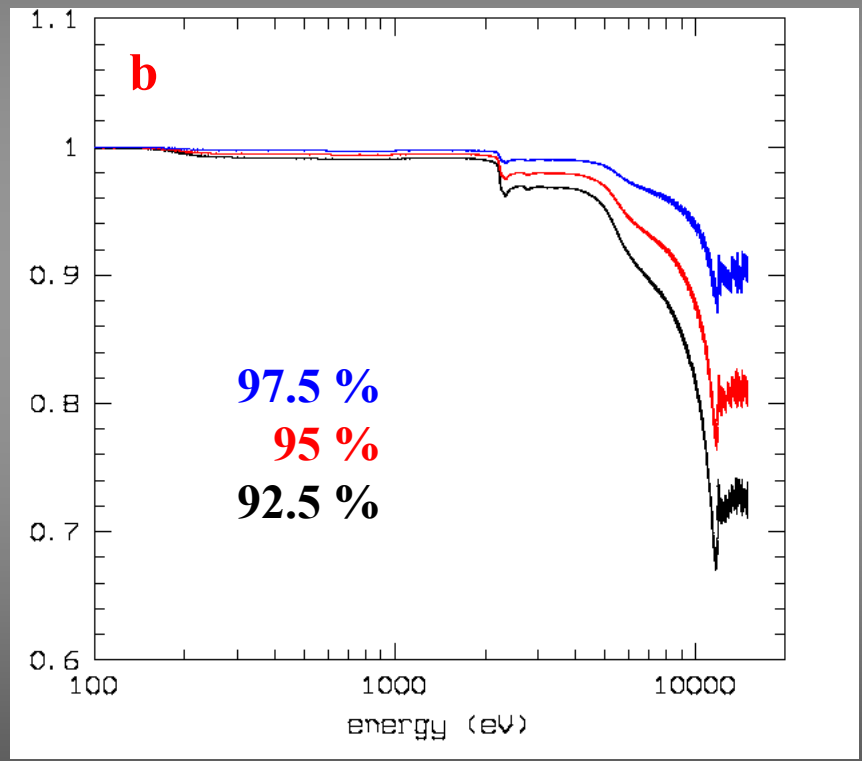
Models with different Au layers

Problems at MEDIALARIO to reach specified Au-thickness for FM1/2 on the mandrels. Specifications were changed allowing higher thickness.
FM1: PN - FM3/4: MOS1/2

Different thickness of the Au layer (a)



Different density of the Au layer (b)



Correct shape
But: A (far to) small thickness is required compared to specified minimum of 100 nm

Needs small change in density
But: Wrong shape

Plots by Bernd Aschenbach