

Update of SXT mirror calibration files (TDFs)

ah_sxi_mirror_20140101v002.fits **SXI old** ah_sxi_mirror_20140101v003.fits **SXI new**
ah_sxs_mirror_20140101v002.fits **SXS old** ah_sxs_mirror_20140101v003.fits **SXS new**

Only updates in the TDFs are changes in the thickness
of epoxy and mirror foils

	Group #	OLD SXI (mm)	NEW SXI (mm)	OLD SXS (mm)	NEW SXS
Epoxy	1	0.0254	0.0127	0.0254	0.0127
Foil	1	0.1395	0.1524	0.1395	0.1524
Epoxy	2	0.0254	0.0127	0.0254	0.0127
Foil	2	0.2157	0.2286	0.2157	0.2286
Epoxy	3	0.0254	0.0127	0.0254	0.0127
Foil	3	0.2919	0.3048	0.2919	0.3048

Check of Effective Area with Old & New TDFs

Transmission through epoxy and foil body is negligible;
Check EA with xrtraytrace using old and new TDFs

xrtraytrace key inputs:

- point source
- numphoton = 4,000,000
- energy = 1.0, 6.0, 17.4 keV (3 values)
- offaxis = 0, 5 arcmin (2 values)
- roll = 0 (1 value)

Full command example (SXS, new TDF):

```
xrtraytrace mirrorfile="ah_sxs_mirror_20140101v003.fits[1]"  
obstructfile="ah_sxs_mirror_20140101v003.fits[2]" frontreffile=CALDB backreffile=CALDB  
pcolreffile=CALDB scatterfile=CALDB numphoton=4000000 energy="1.0 6.0 17.4"  
seed=299138 misalign="1 1 1 1 1 1" transmode=ALL scattermode=ALL source=POINT  
betapars="0.5 0.6 5.0" flatradius=5.0 psrfile=NONE diagpars="2 5 174 0.7 0.5"  
offaxis="0.0 5.0" roll=0.0 annulus="-1 100000.0 0.0 360.0" rectangle="0.0 0.0 -40.0 -50.0"  
outeafile=newtdf_sxts_eset01_tset01_roll0_n4e6_ea.fits  
outpsffile=newtdf_sxts_eset01_tset01_roll0_n4e6_psf.fits psfpars="1 100 3"  
resultsplanez=0.0 resplaneonly=YES outphistfile=newtdf_sxts_eset01_tset01_roll0_n4e6.evt.fits  
phisttype=BRIEF externobjects=ALL fastmode=YES telescop=HITOMI instrume=SXS mode=h  
clobber=no logfile=newtdf_sxts_eset01_tset01_roll0_n4e6.log validdate="2015-01-01"
```

Raytracing Results

Effective Area (cm²)

Energy (keV)	SXI on-axis	SXI 5' off-axis	SXS on-axis	SXS 5' off-axis
1.0	537.06617 537.06617 1.0000000	397.58158 397.57707 1.0000113	535.72208 535.72208 1.0000000	399.52875 399.52274 1.0000150
6.0	433.54759 433.54834 0.99999827	299.72754 299.74558 0.99993983	423.16691 423.16240 1.0000107	293.69024 293.69738 0.99997569
17.4	37.230061 37.264630 0.99907232	9.8790424 9.8794182 0.99996197	37.072618 37.082764 0.99972641	10.374291 10.379552 0.99949318

Black: New TDF (v003)

Blue : Old TDF (v002)

Red : EA ratio New/Old