

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 7511 - L2 Version 3
Chandra X-Ray Center

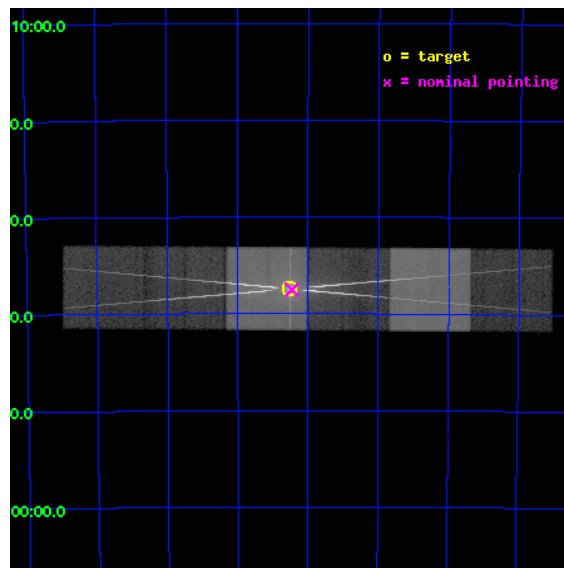
L2 Processing Date : May 1 2012

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1 Front

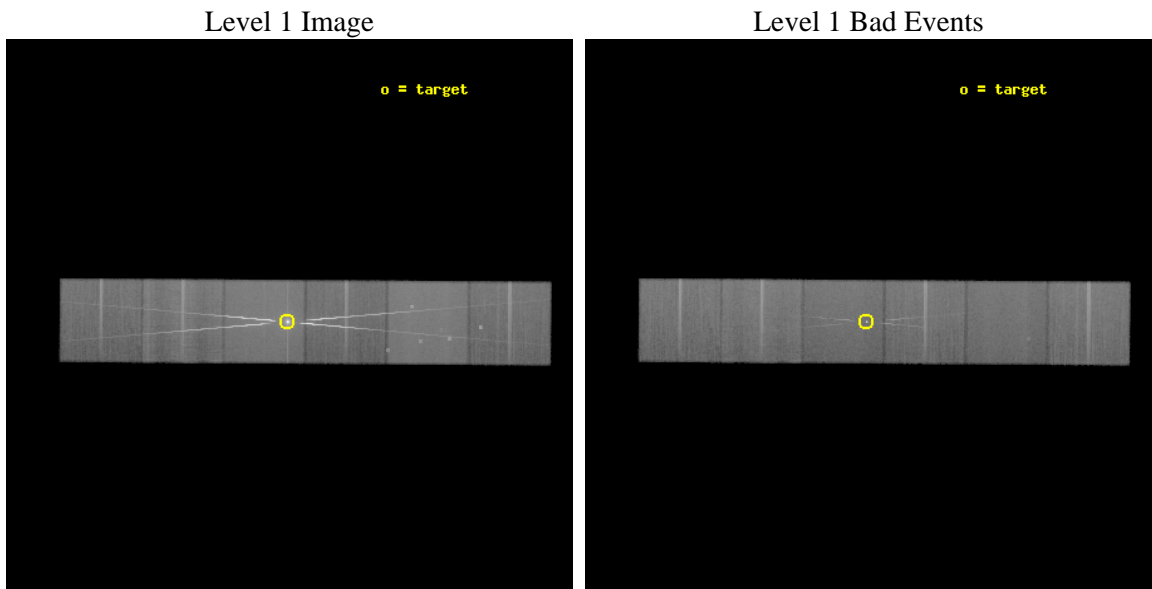
seq_num	400621	Sequence number
obs_id	7511	Observation id
title	Measuring the Distance and Dust Distribution to Cen X-3 with X-Ray Halo Variability	Proposal title
observer	Mr. Thomas Thompson	Principal investigator
object	Cen X-3	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	170.315833	Observer's specified target RA [deg]
dec_targ	-60.622972	Observer's specified target Dec [deg]
ra_nom	170.30746253529	Nominal RA [deg]
dec_nom	-60.625533918805	Nominal Dec [deg]
roll_nom	180.38133651364	Nominal Roll [deg]
revision	3	Processing version of data
ontime	39945.599851251	Sum of GTIs [s]
livetime	39439.784613582	Livetime [s]
ontime4	39945.599851251	Sum of GTIs [s]
ontime5	39945.599851251	Sum of GTIs [s]
ontime6	39945.599851251	Sum of GTIs [s]
ontime7	39945.599851251	Sum of GTIs [s]
ontime8	39942.359030366	Sum of GTIs [s]
ontime9	39942.358880997	Sum of GTIs [s]
l2events	1188545	Number of level 2 events



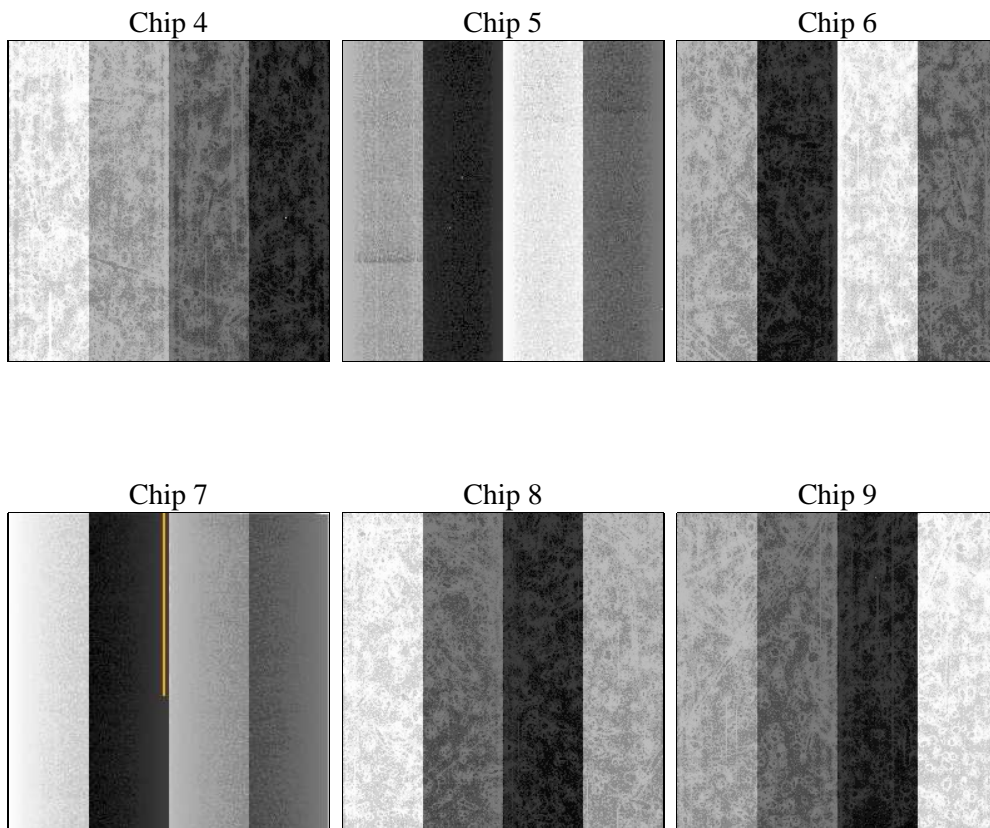
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	40000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	39945.599851251	Sum of GTIs [s]
caldbver	4.4.9	 	ontime4	39945.599851251	Sum of GTIs [s]
date	2012-05-01T07:05:07	Date and time of file creation	ontime5	39945.599851251	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	39945.599851251	Sum of GTIs [s]
			ontime7	39945.599851251	Sum of GTIs [s]
			ontime8	39942.359030366	Sum of GTIs [s]
			ontime9	39942.358880997	Sum of GTIs [s]
			l1events	3478838	Number of level 1 events

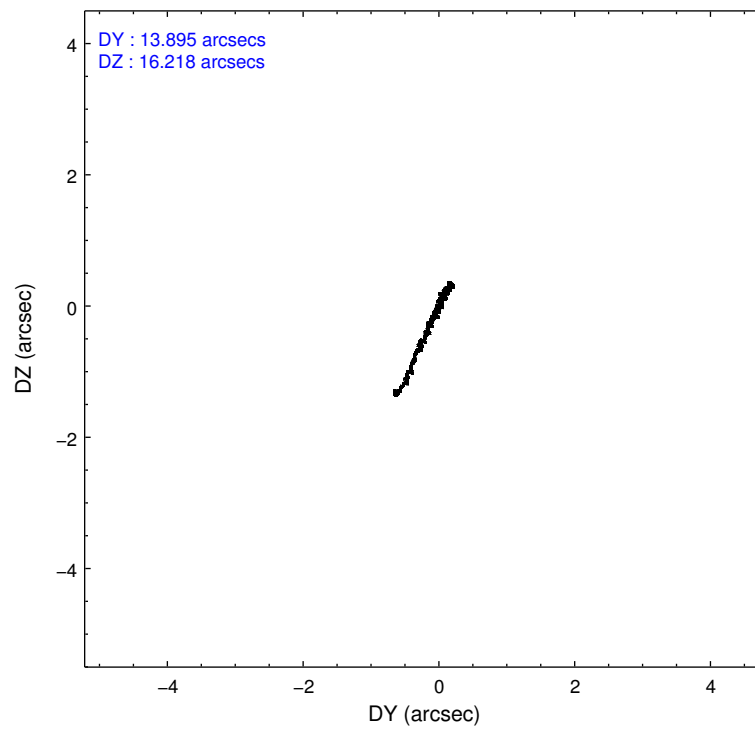
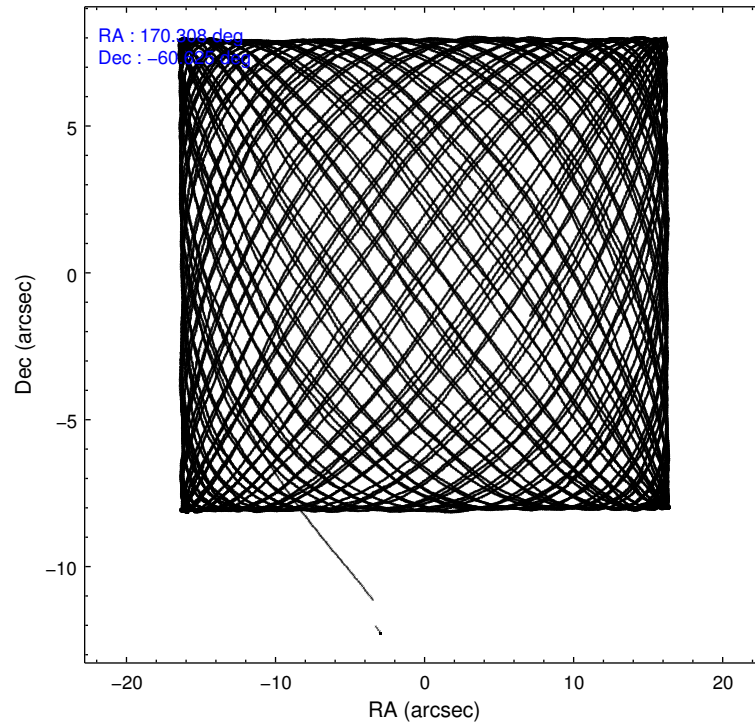
2.1.4 Events

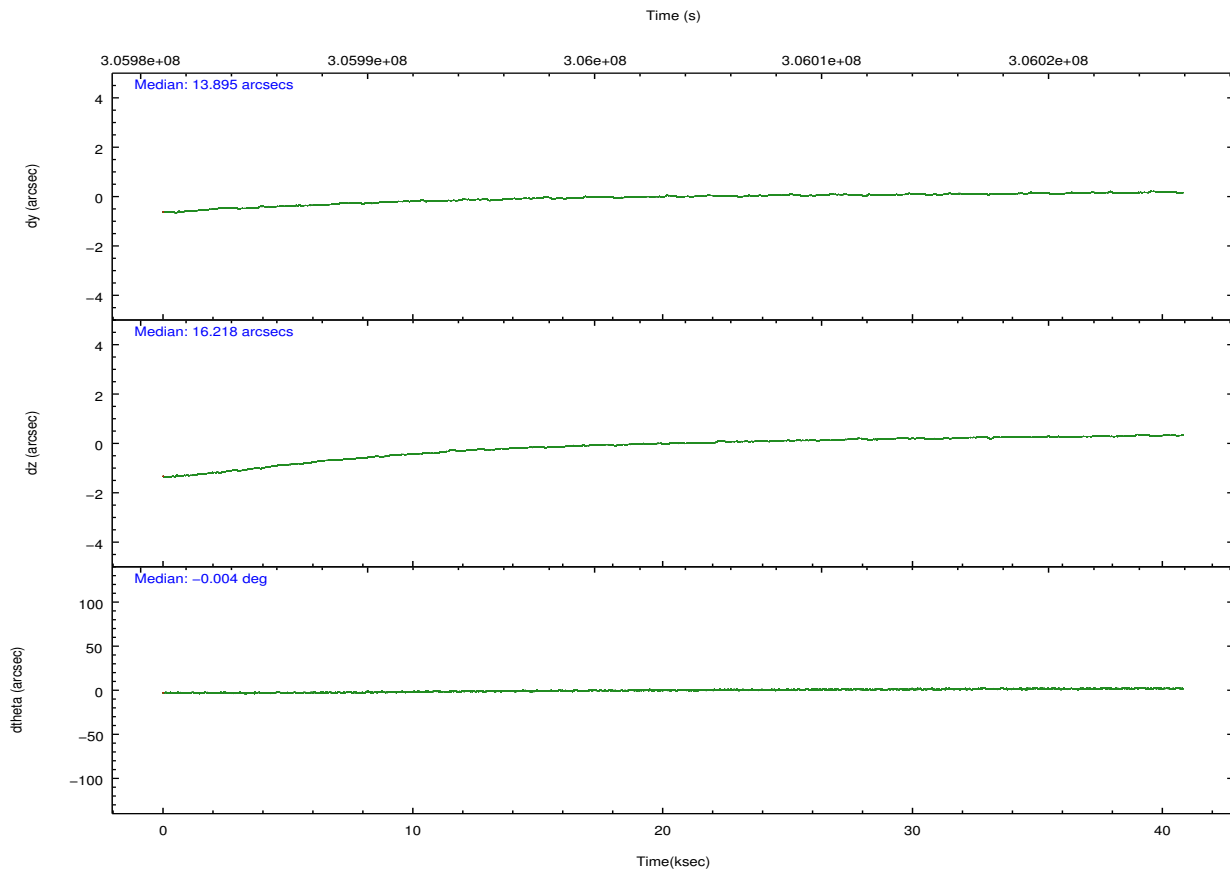
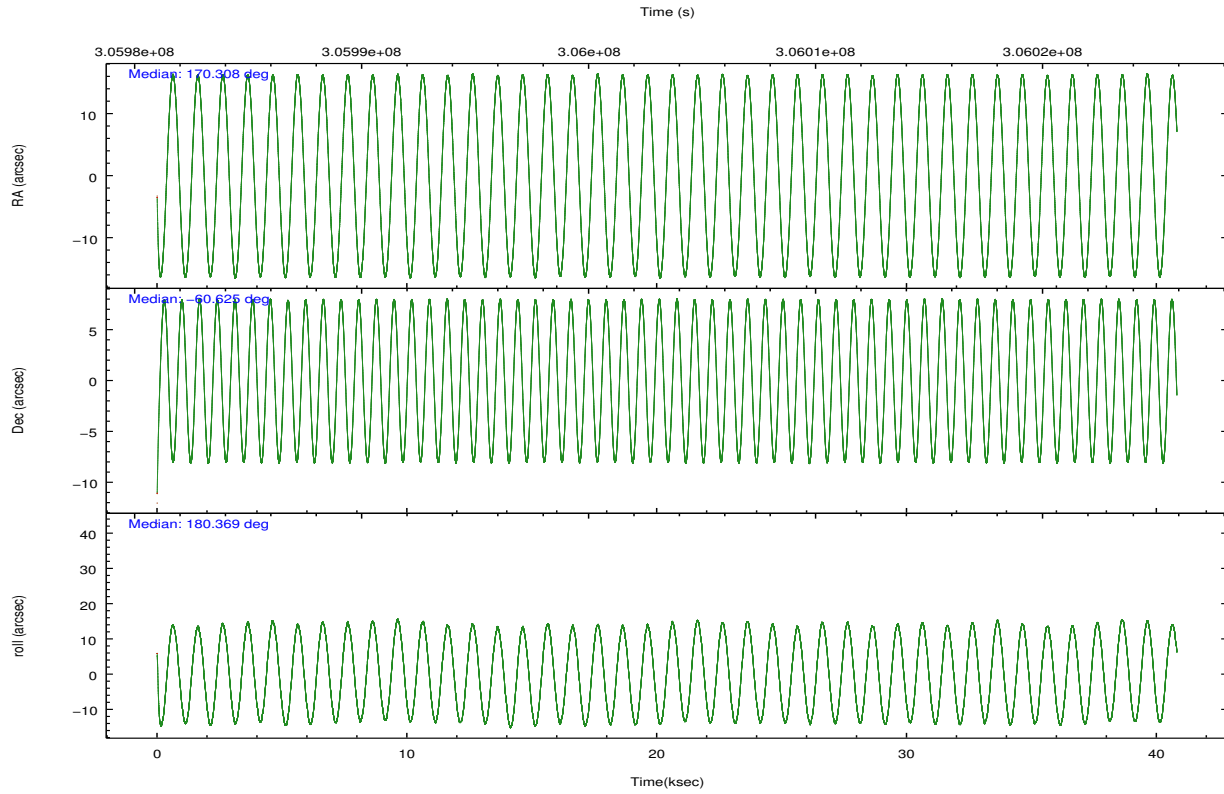
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	453491	622100	604927	829757	555572	412991	grade 0 events	30194	29820	154103	82041	69911	26894
rejected events	394161	324460	362457	327402	396332	355459		6%	4%	25%	9%	12%	6%
rejected %	86%	52%	59%	39%	71%	86%	grade 1 events	521	1395	2030	1848	687	306
								0%	0%	0%	0%	0%	0%
							grade 2 events	11161	91842	37569	112729	31125	10952
								2%	14%	6%	13%	5%	2%
							grade 3 events	5104	11932	13723	48510	13417	5105
								1%	1%	2%	5%	2%	1%
							grade 4 events	4917	11621	13400	48358	12806	4904
								1%	1%	2%	5%	2%	1%
							grade 5 events	18246	43288	20335	56151	25068	19816
								4%	6%	3%	6%	4%	4%
							grade 6 events	7957	152456	23709	210768	31994	9686
								1%	24%	3%	25%	5%	2%
							grade 7 events	375391	279746	340058	269352	370564	335328
								82%	44%	56%	32%	66%	81%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	170.355141	170.3074625352912	CCD I2 on	N	N
[deg] Pointing Dec	-60.611387	-60.62553391880522	CCD I3 on	N	N
[deg] Pointing Roll	180.266257	180.3813365136368	CCD S0 on	O1	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	Y	Y
Phase constraints	Y	Y	CCD S5 on	O2	Y
[d] Phase period	2.087065	2.087065	Number of optional ACIS chips dropped	0	0
[d] Phase epoch (MJD)	53800.190700	53800.190700	On-chip summing requested	N	N
Phase start	0.060000	0.060000	Subarray requested	NONE	NONE
Phase end	0.300000	0.300000	Alternating exposures requested	N	N
Phase start error	0.010000	0.010000	[s] Primary exposure time	0.000000	3.2
Phase end error	0.050000	0.050000			
[s] Observation start time (MET)	305983865.184000	305982420.06693			
Observation start date	2007-09-12T11:30:00	2007-09-12T11:07:00			
[s] Observation end time (MET)	306023865.184000	306024435.33145			
Observation end date	2007-09-12T22:36:40	2007-09-12T22:47:15			
Read mode	TIMED	TIMED			

2.3 Aspect



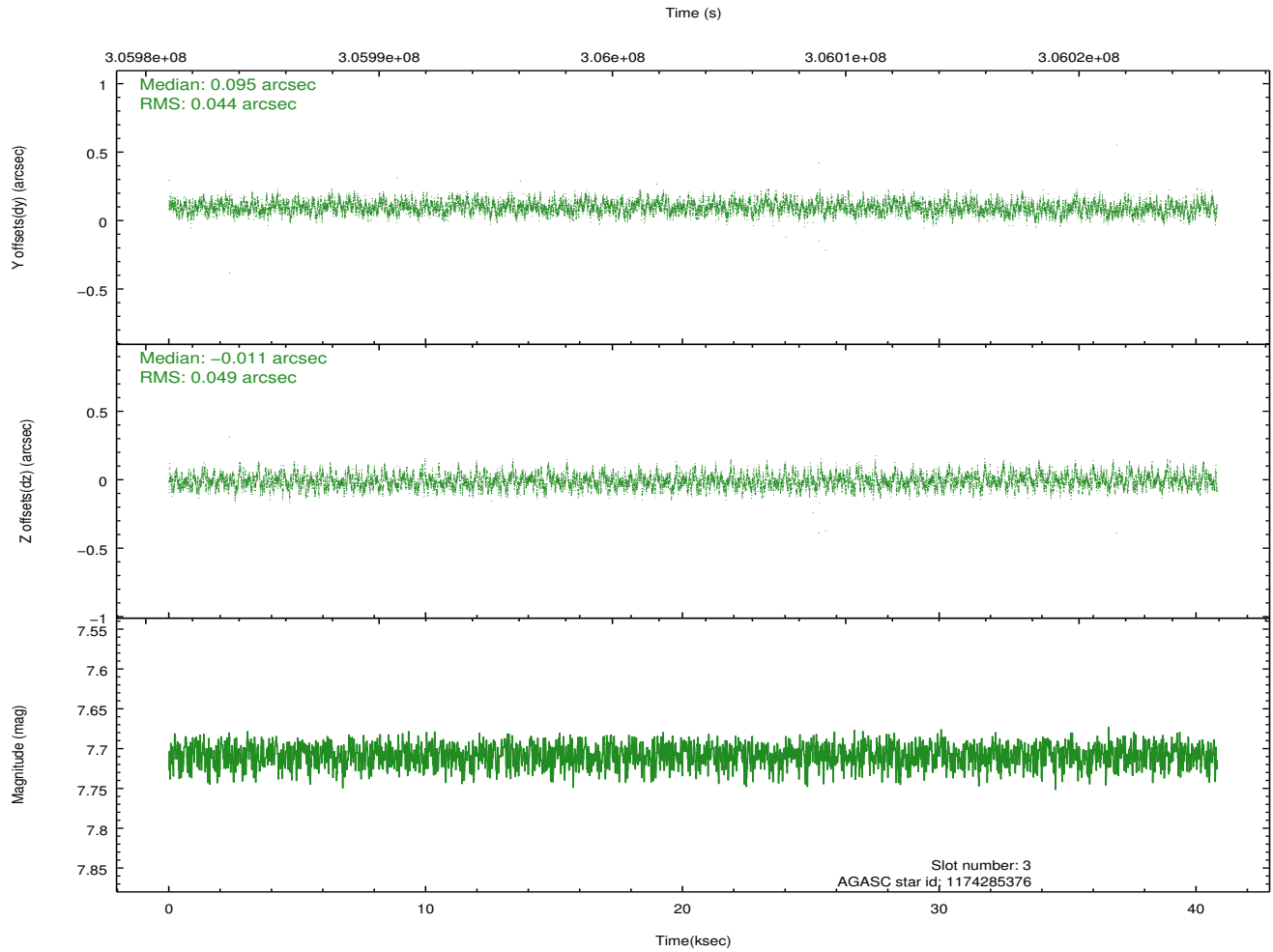
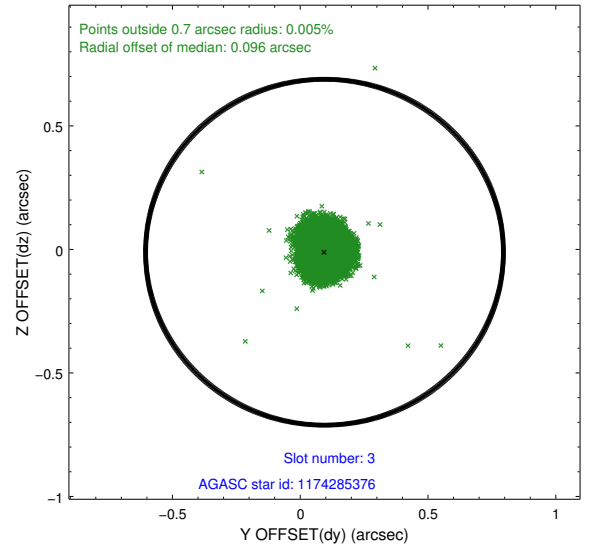
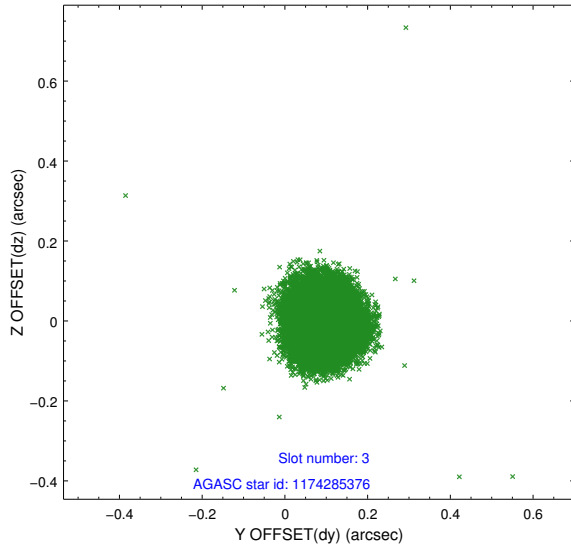


Slot Statistics

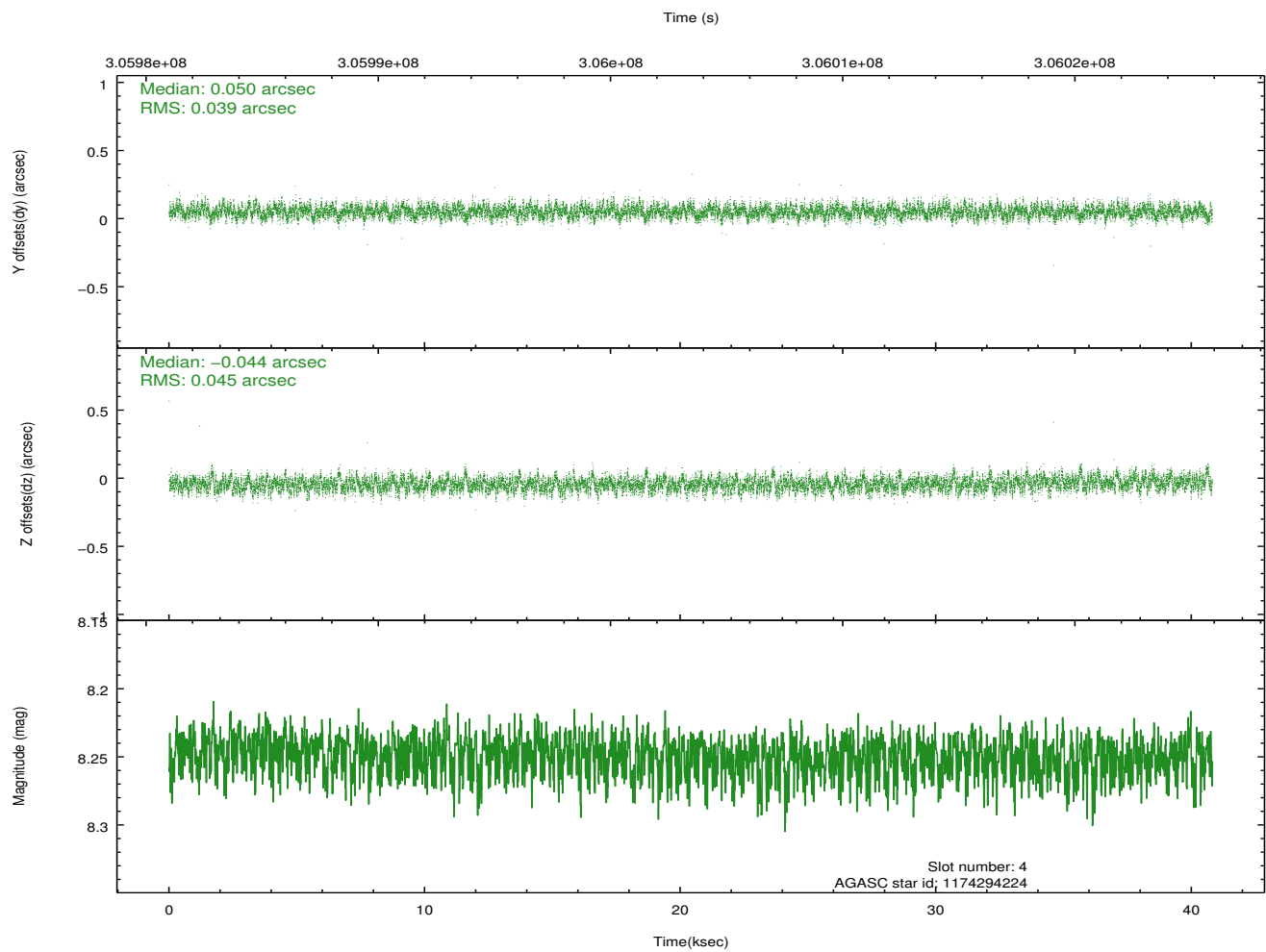
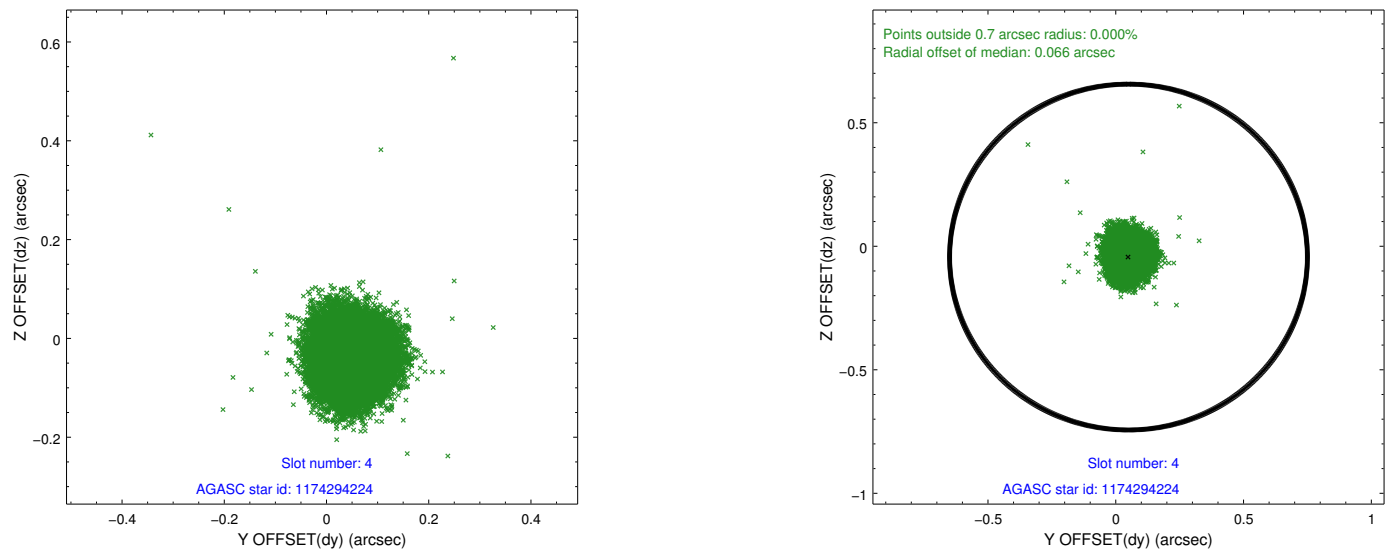
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	9956	-0.064	-0.041	0.010	0.016	0.000000	0.000000	-766.83	-1737.50
1	FID	ACIS-S-4	7.19	9956	0.210	0.042	0.011	0.023	0.000000	0.000000	2146.72	171.05
2	FID	ACIS-S-5	7.22	9954	-0.176	0.008	0.011	0.019	0.000000	0.000000	-1819.77	164.70
3	GUIDE	1174285376	7.71	19910	0.095	-0.011	0.071	0.110	169.630551	-60.244001	1288.98	-1321.11
4	GUIDE	1174294224	8.25	19904	0.050	-0.044	0.063	0.100	170.238614	-60.161504	201.76	-1620.31
5	GUIDE	1174293864	7.51	19908	-0.084	0.015	0.058	0.094	170.089015	-61.097044	471.11	1747.21
6	GUIDE	1174283976	7.18	19911	-0.012	-0.115	0.053	0.088	170.390254	-61.226219	-50.25	2213.41
7	GUIDE	1174293608	8.84	19865	-0.056	0.144	0.081	0.129	171.337887	-60.017603	-1777.39	-2116.29

2.4 Star Slots

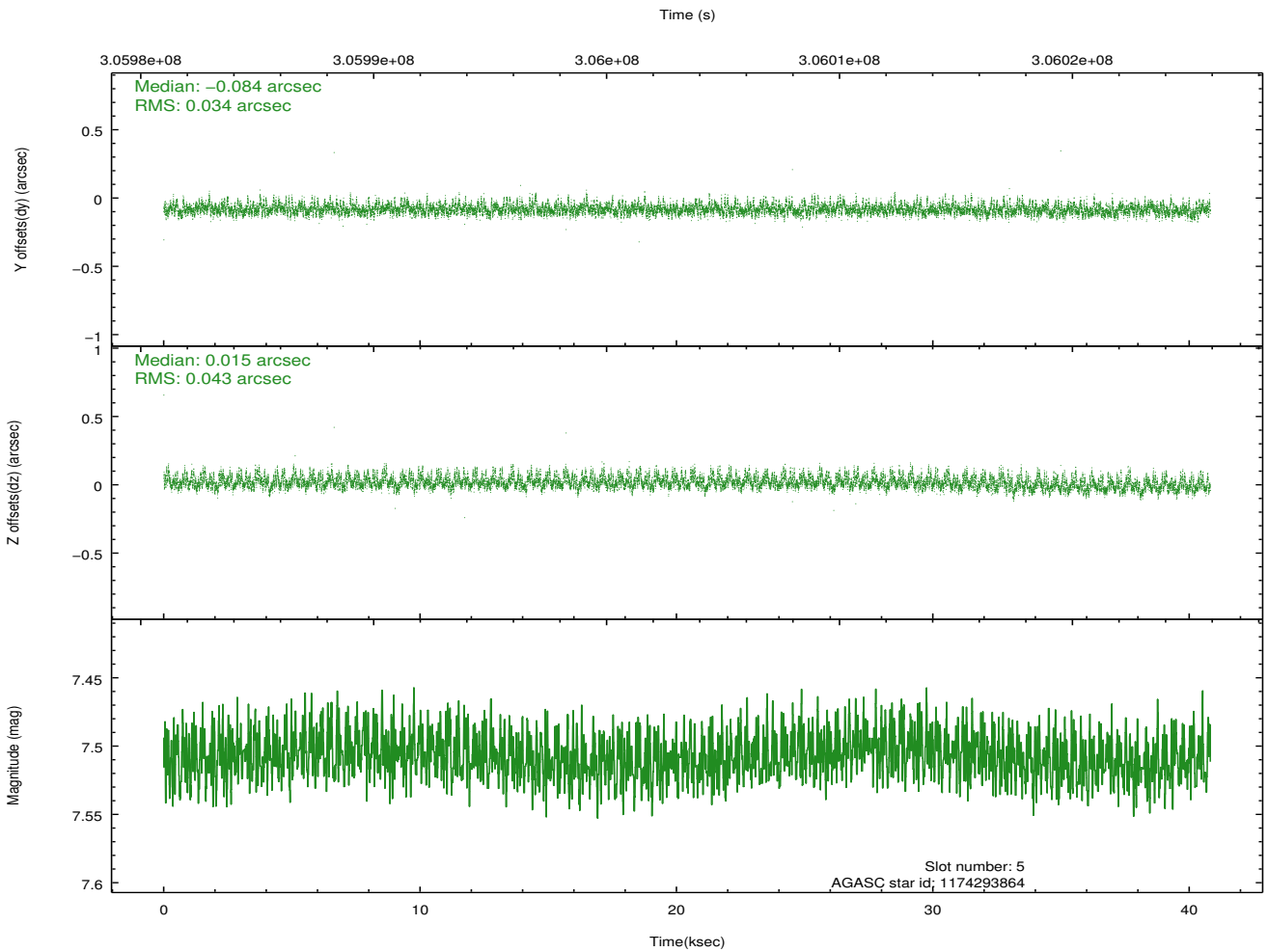
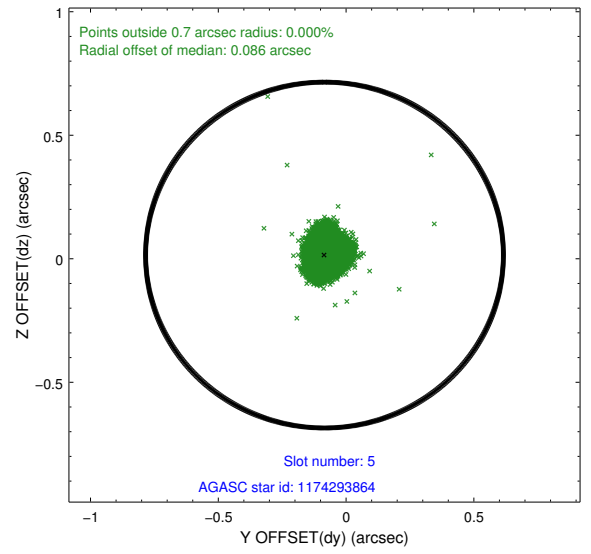
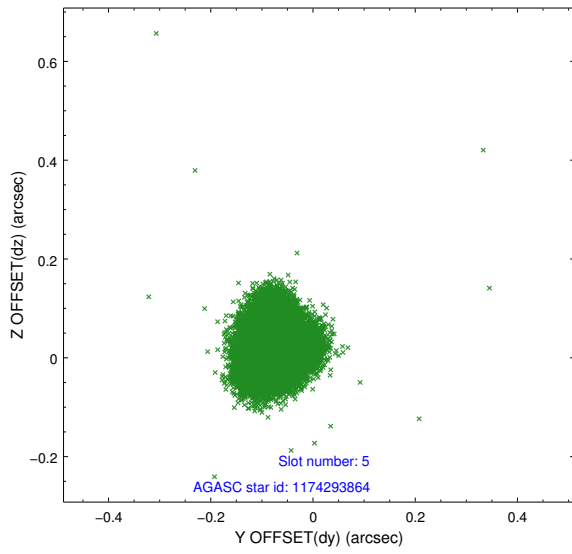
2.4.1 Slot 3



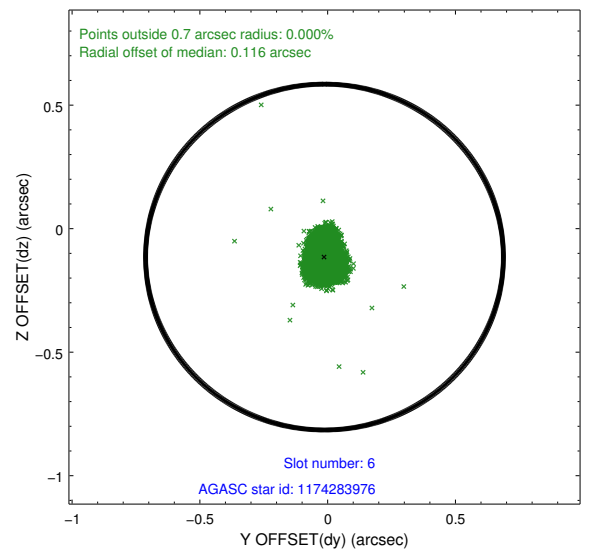
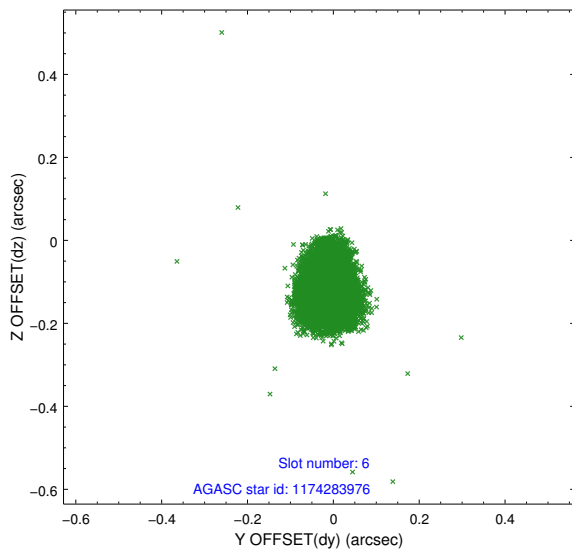
2.4.2 Slot 4



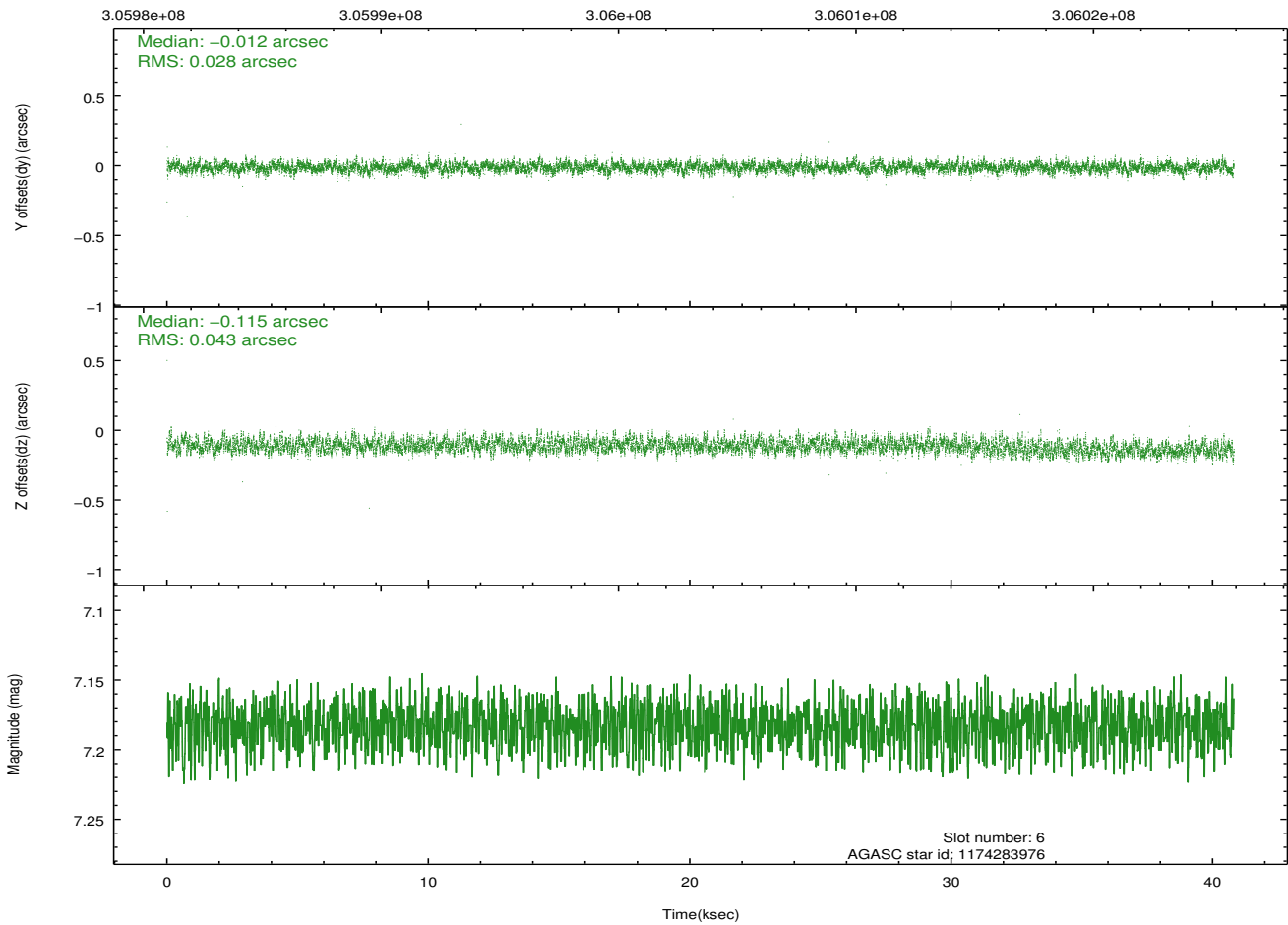
2.4.3 Slot 5



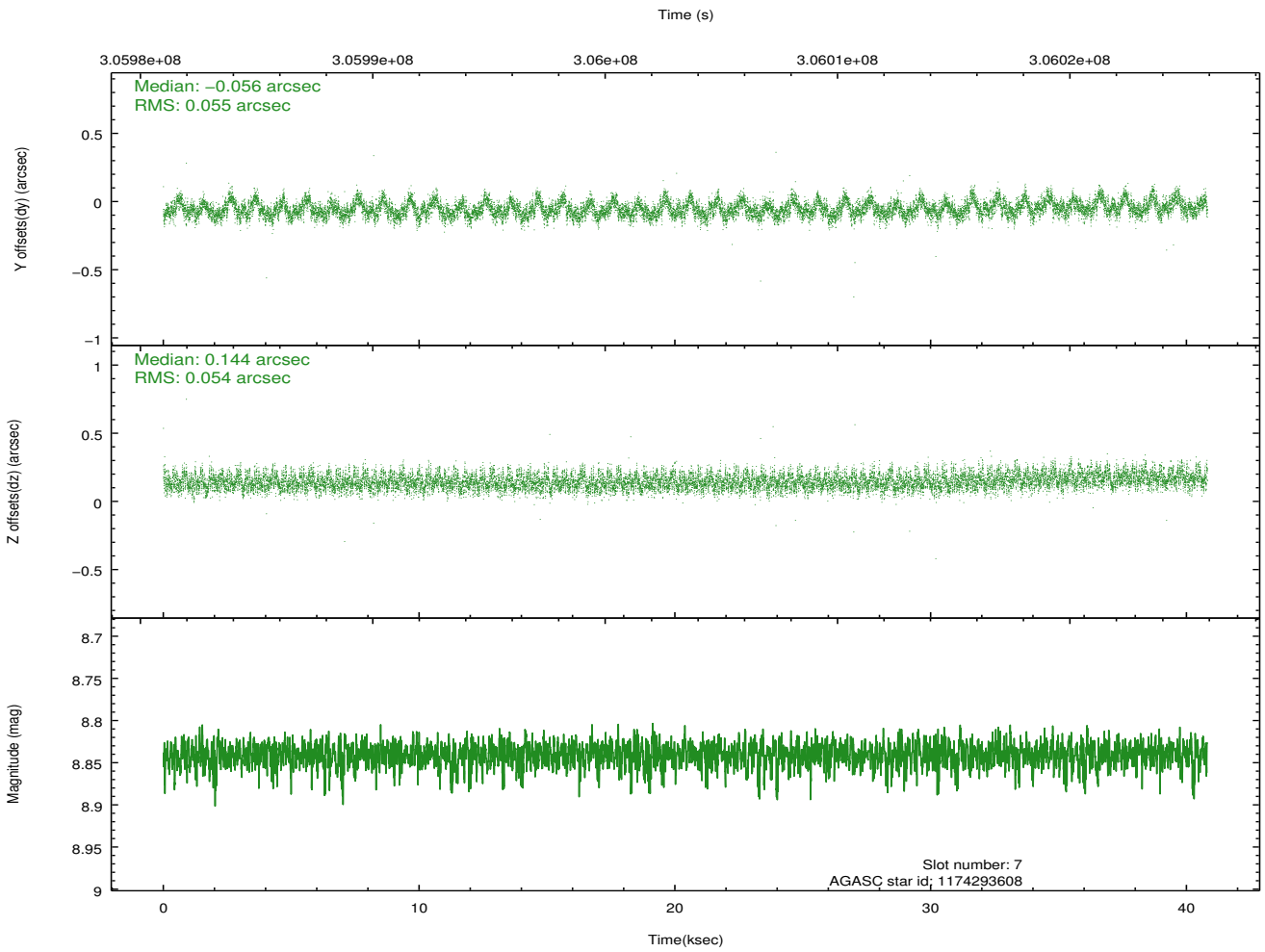
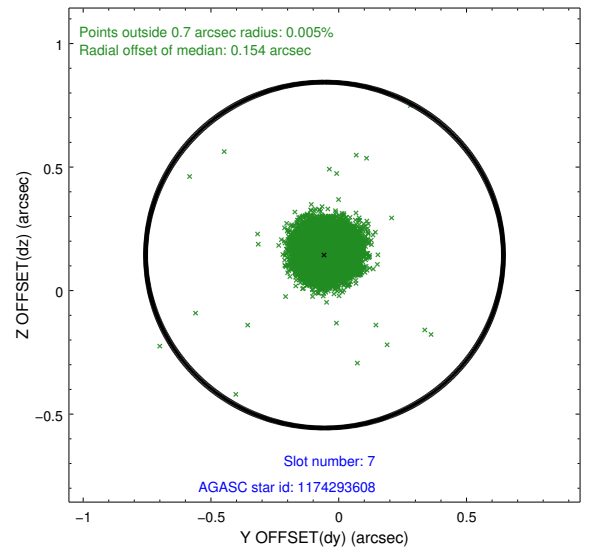
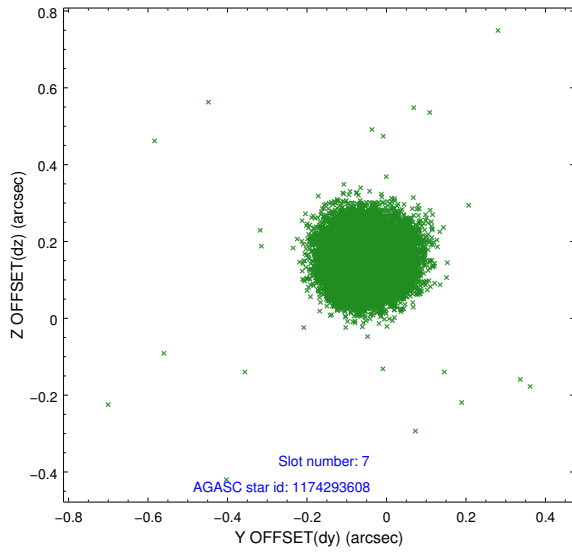
2.4.4 Slot 6



Time (s)

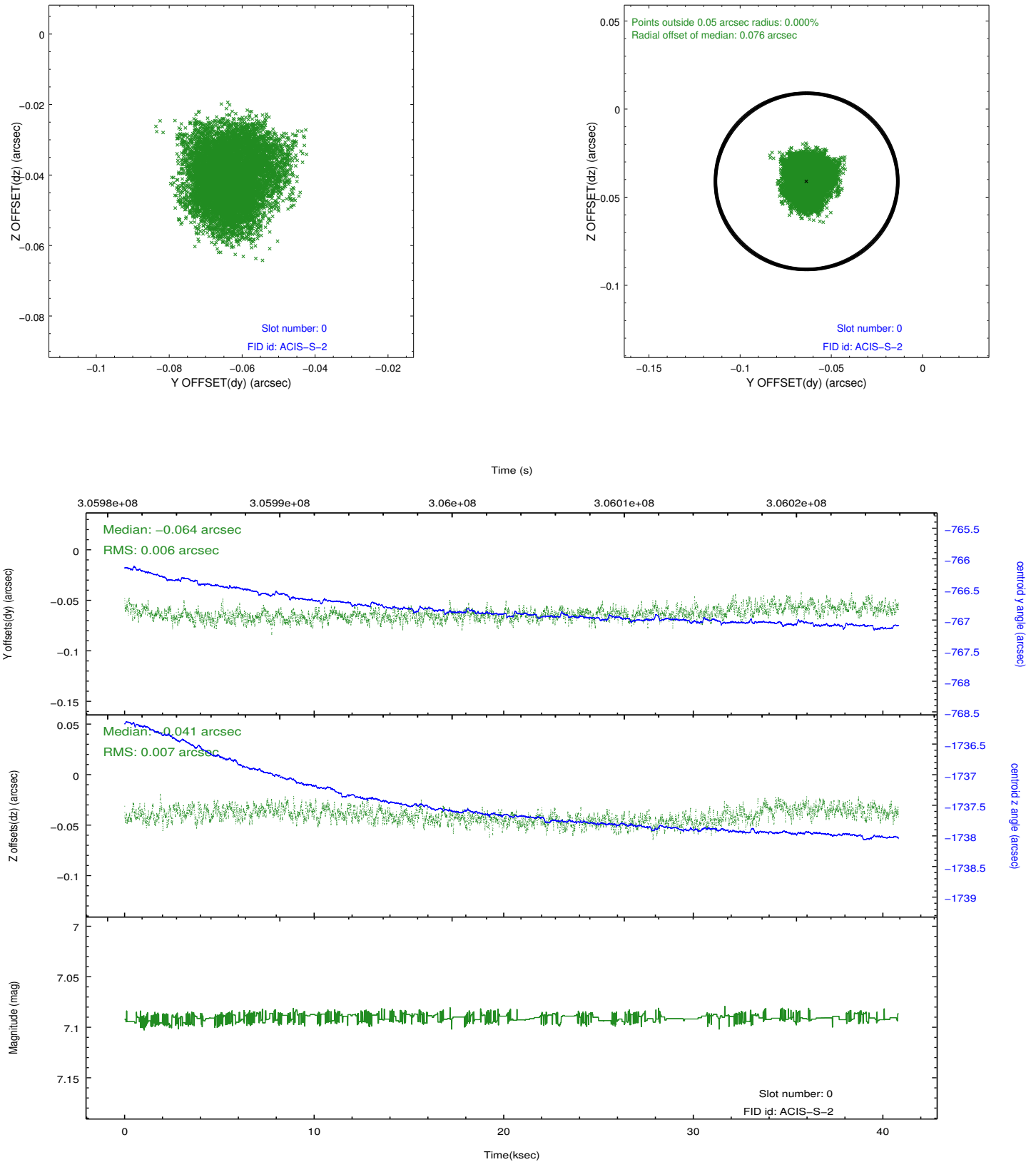


2.4.5 Slot 7

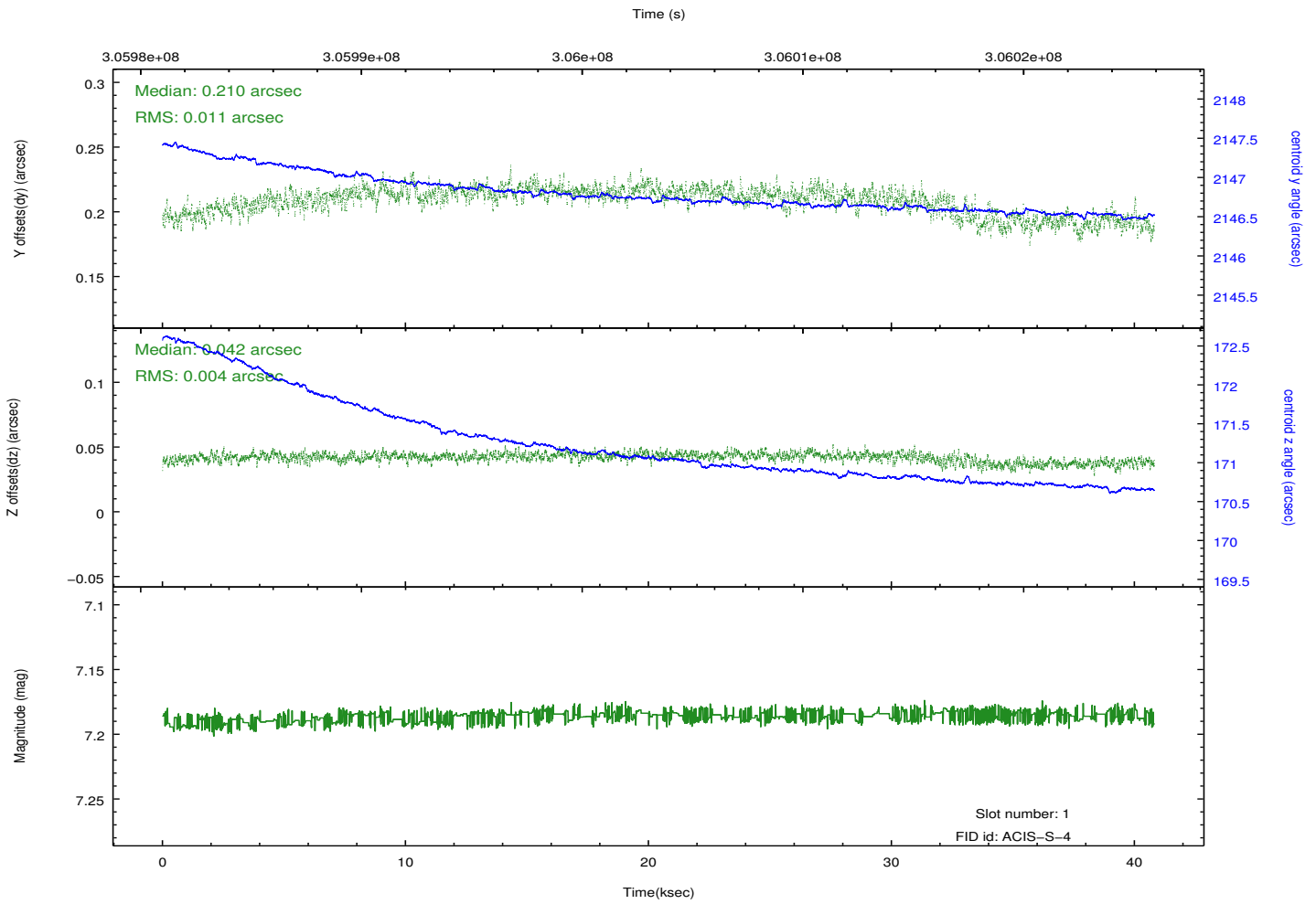
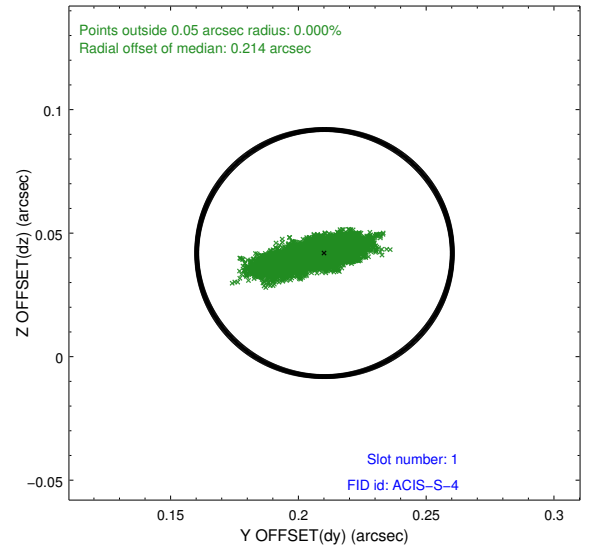
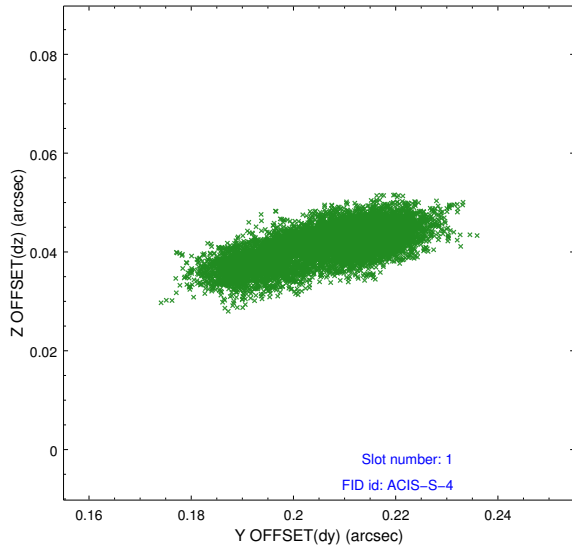


2.5 FID Slots

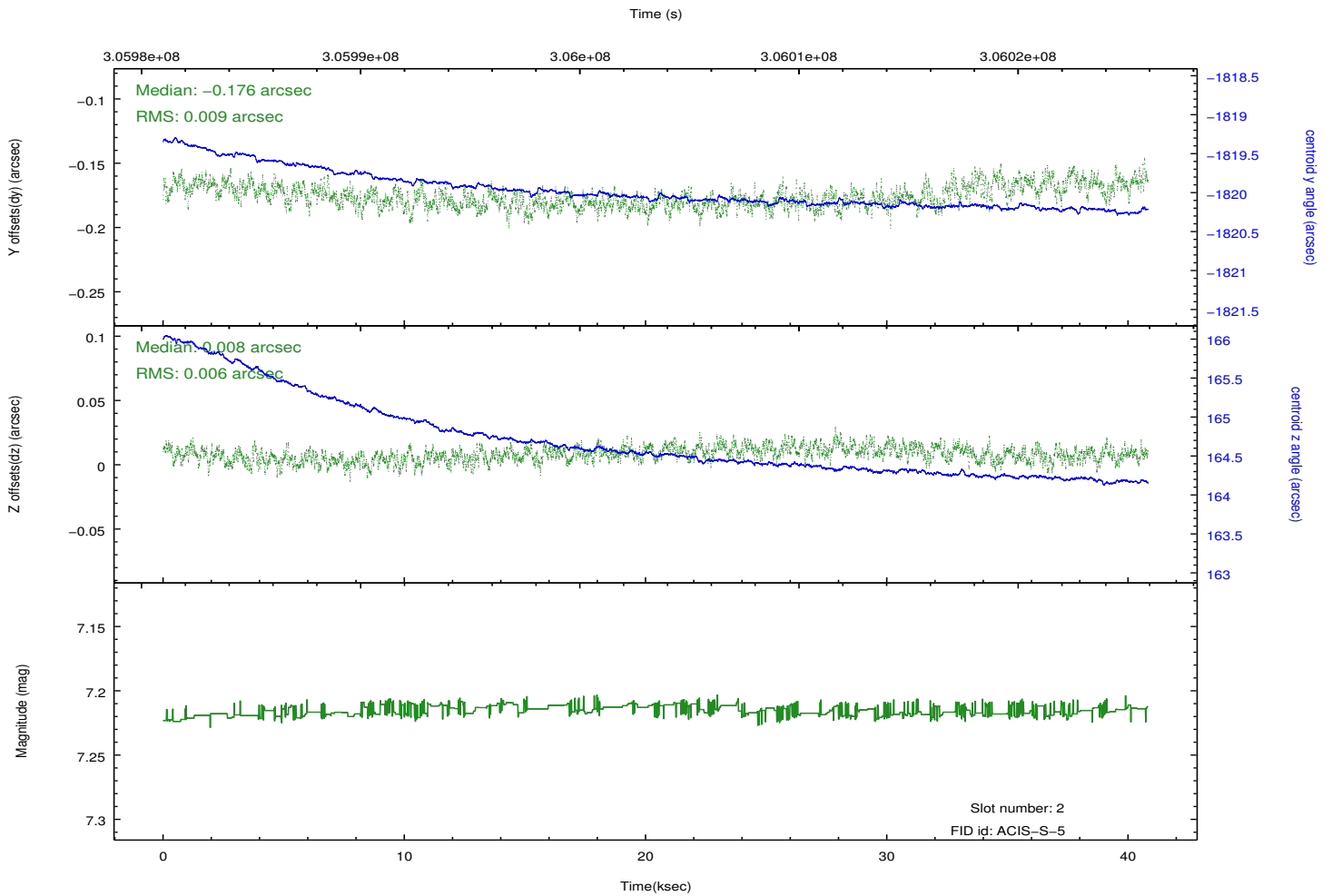
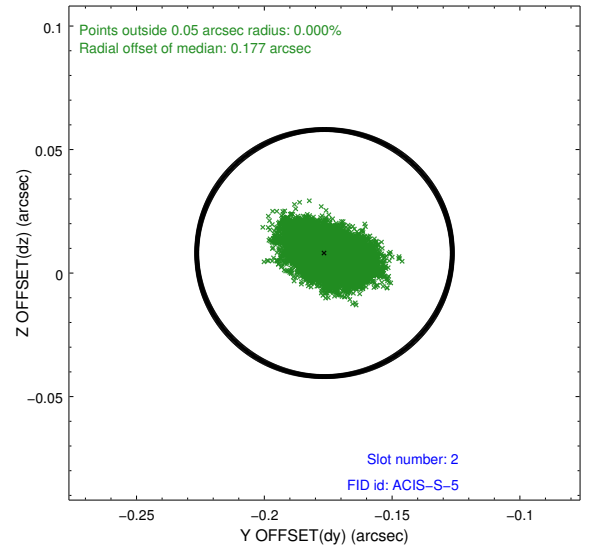
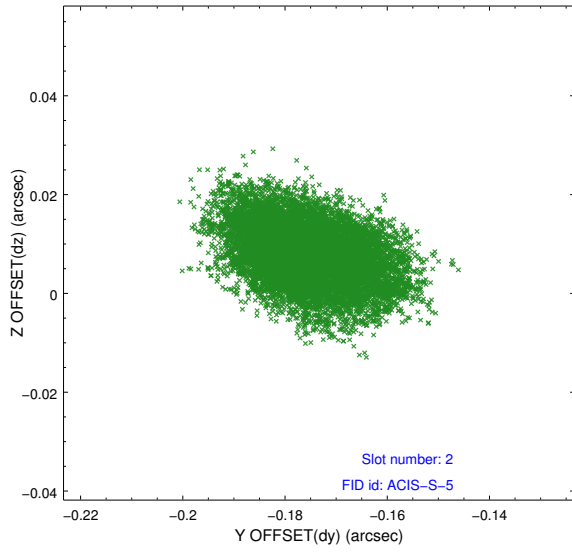
2.5.1 Slot 0



2.5.2 Slot 1

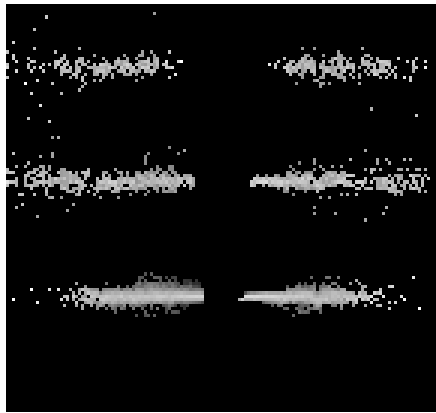


2.5.3 Slot 2

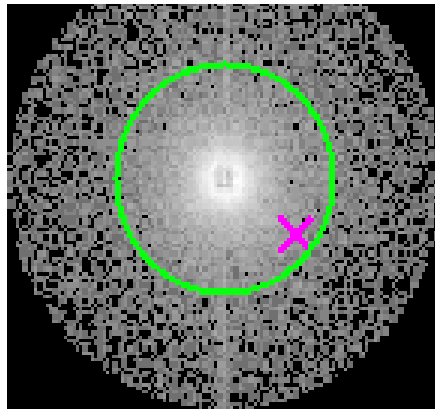


3 Gratings

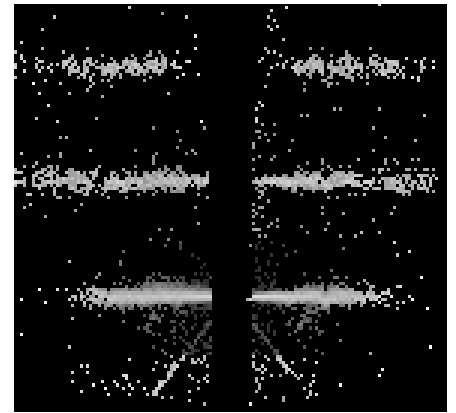
3.1 HEG Arm



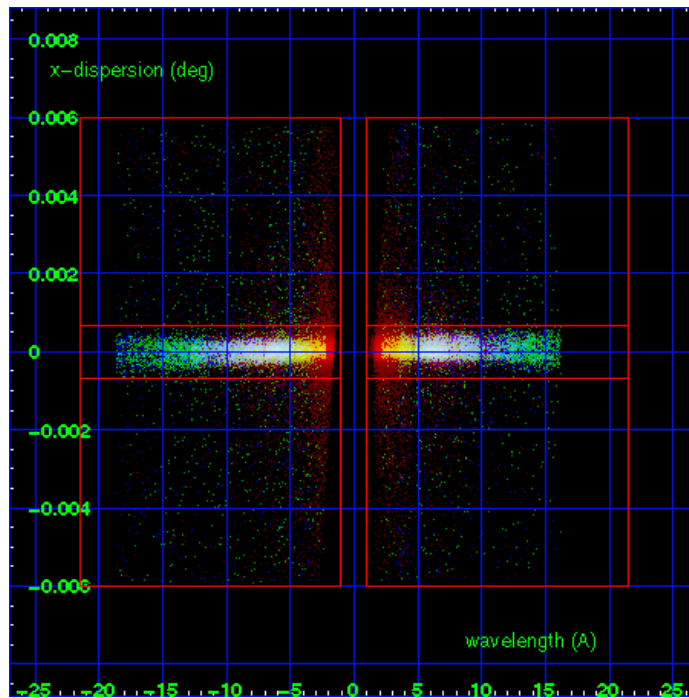
HEG Order Sort 123



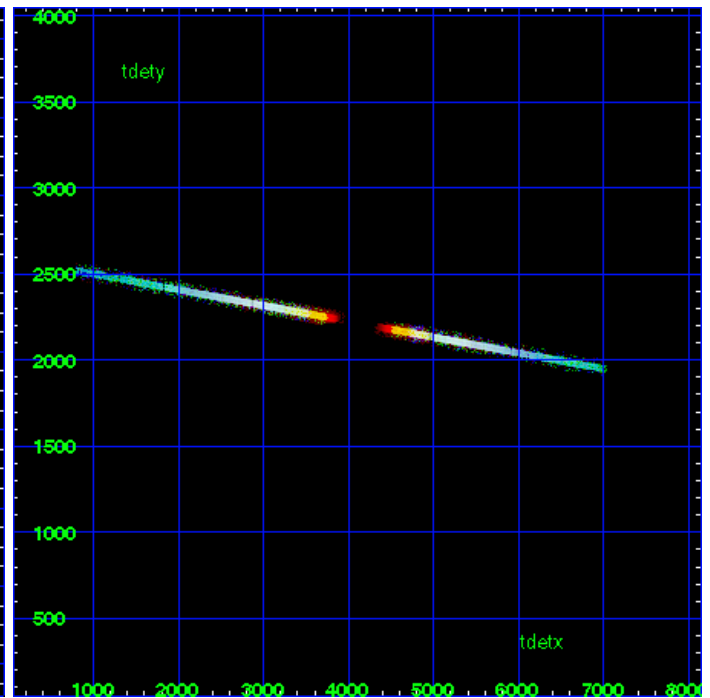
HEG Zero Order



HEG Order Sort ALL

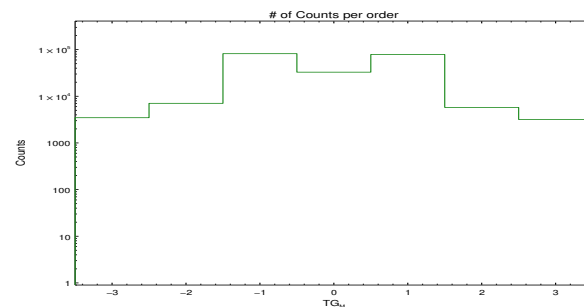


Spot Image HEG

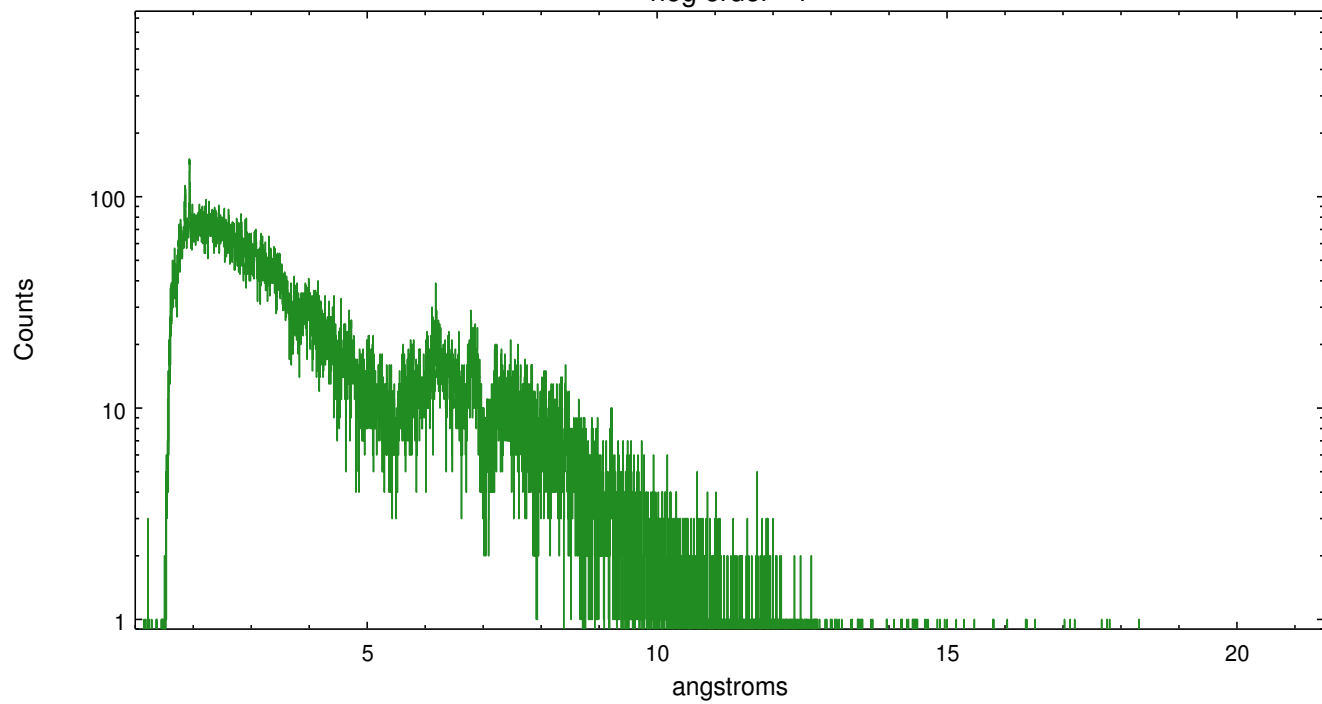


Full Detector HEG

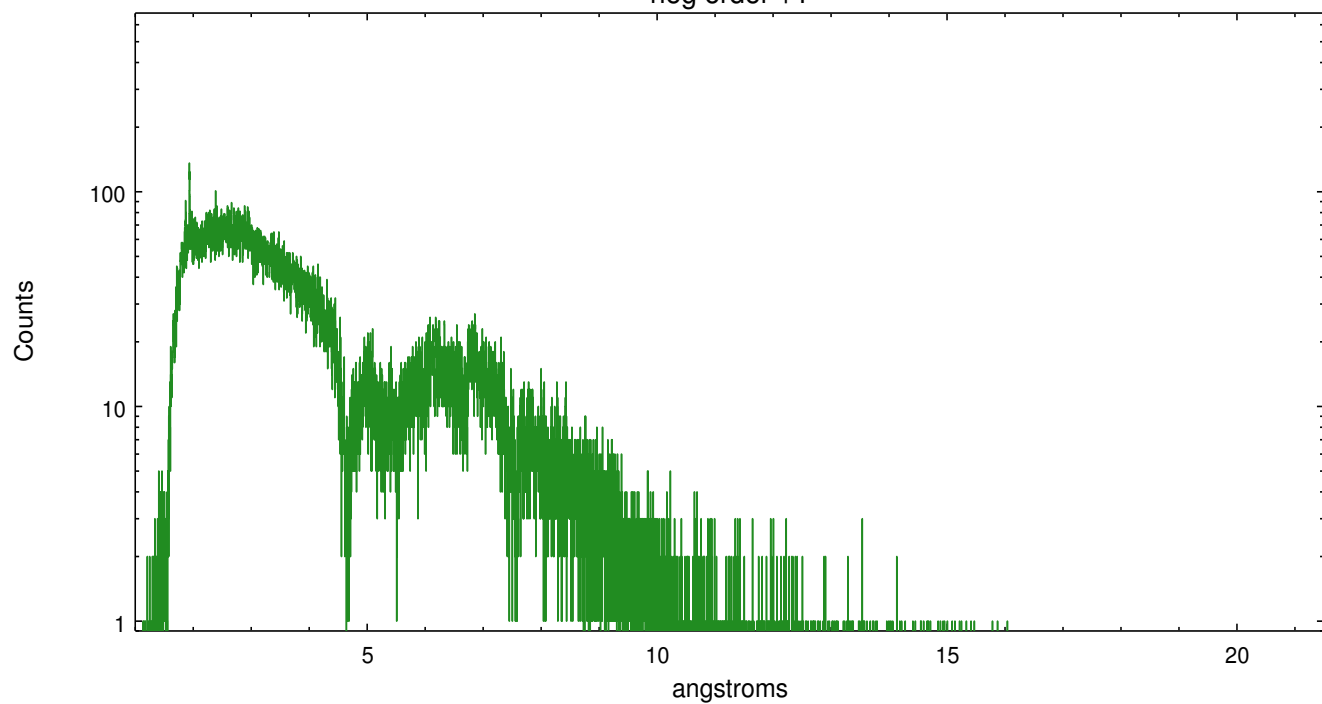
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	3476	7055	81909	32838	78539	5771	3182



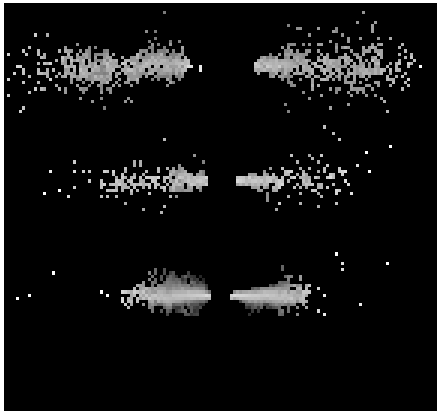
heg order -1



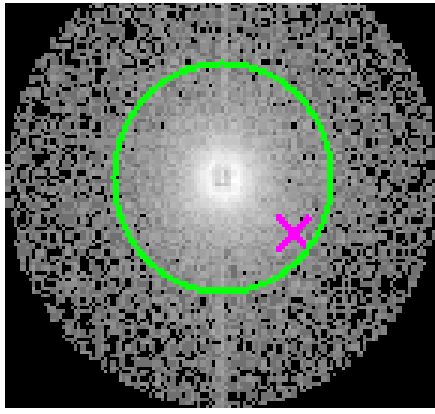
heg order +1



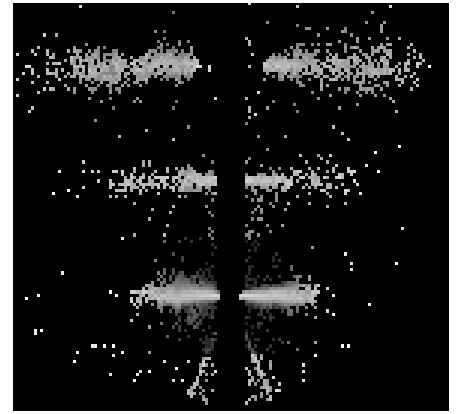
3.2 MEG Arm



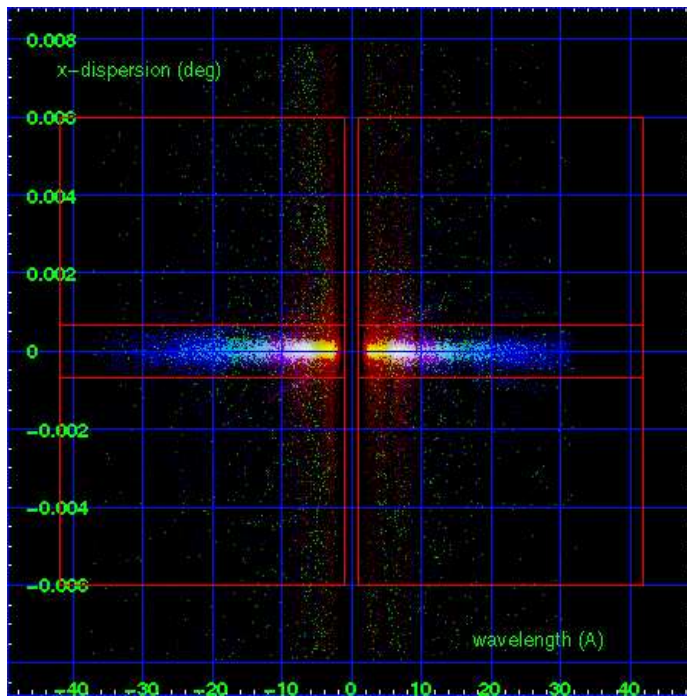
MEG Order Sort 123



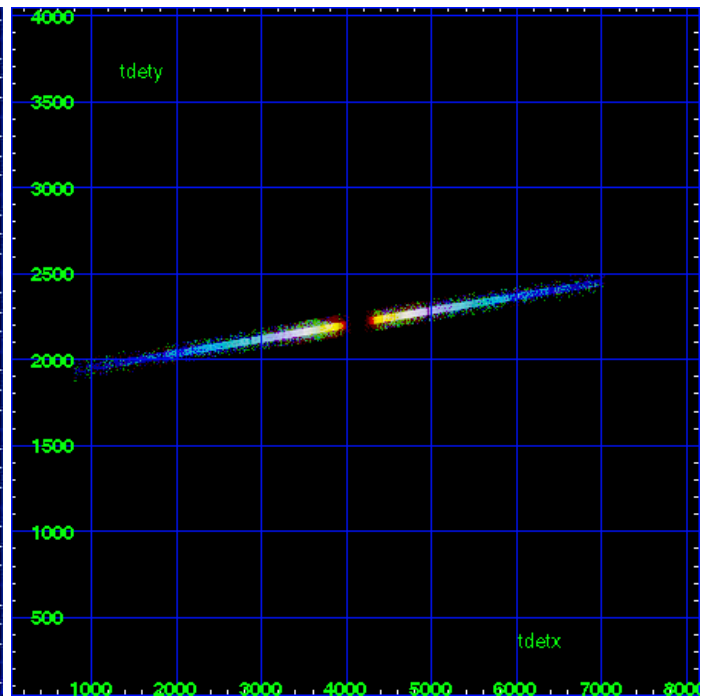
MEG Zero Order



MEG Order Sort ALL

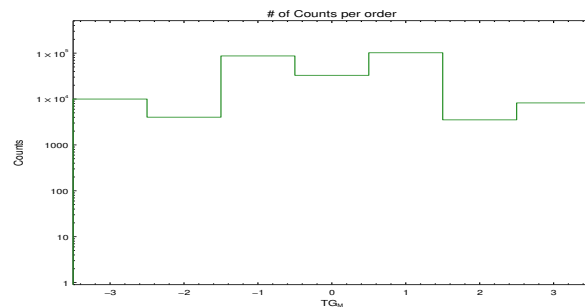


Spot Image MEG

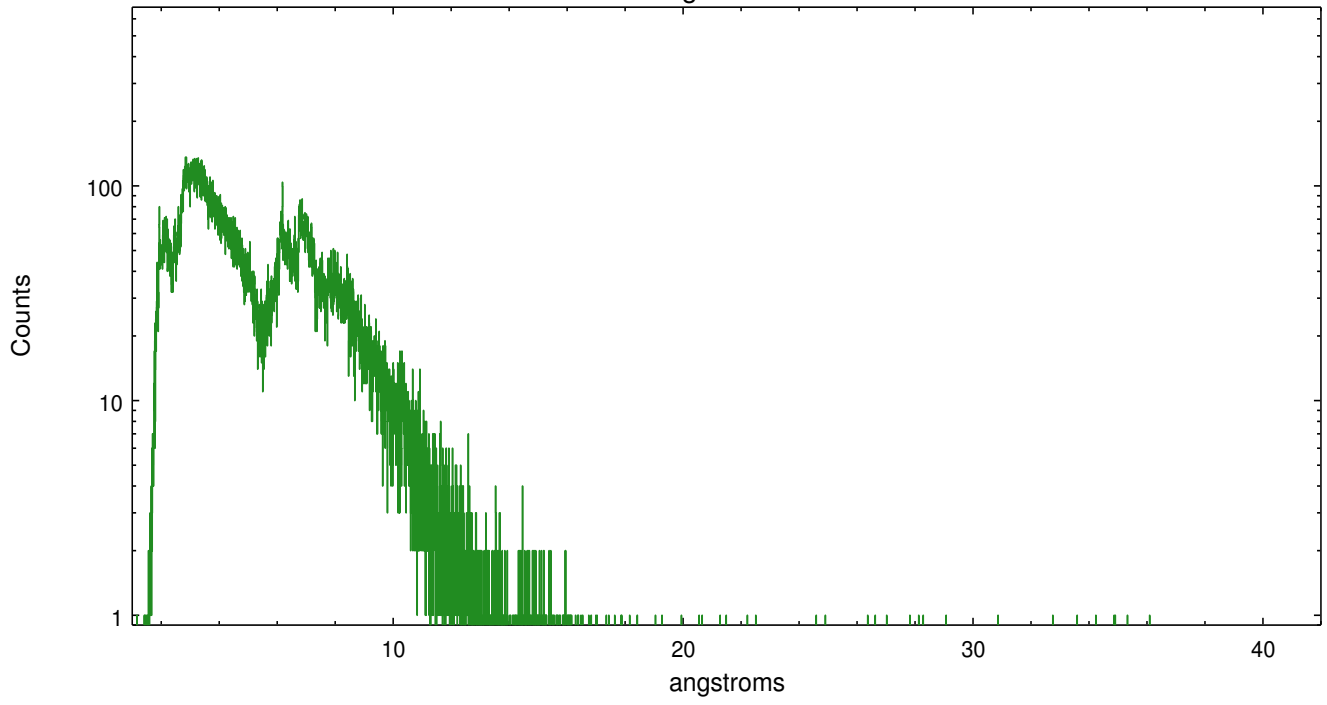


Full Detector MEG

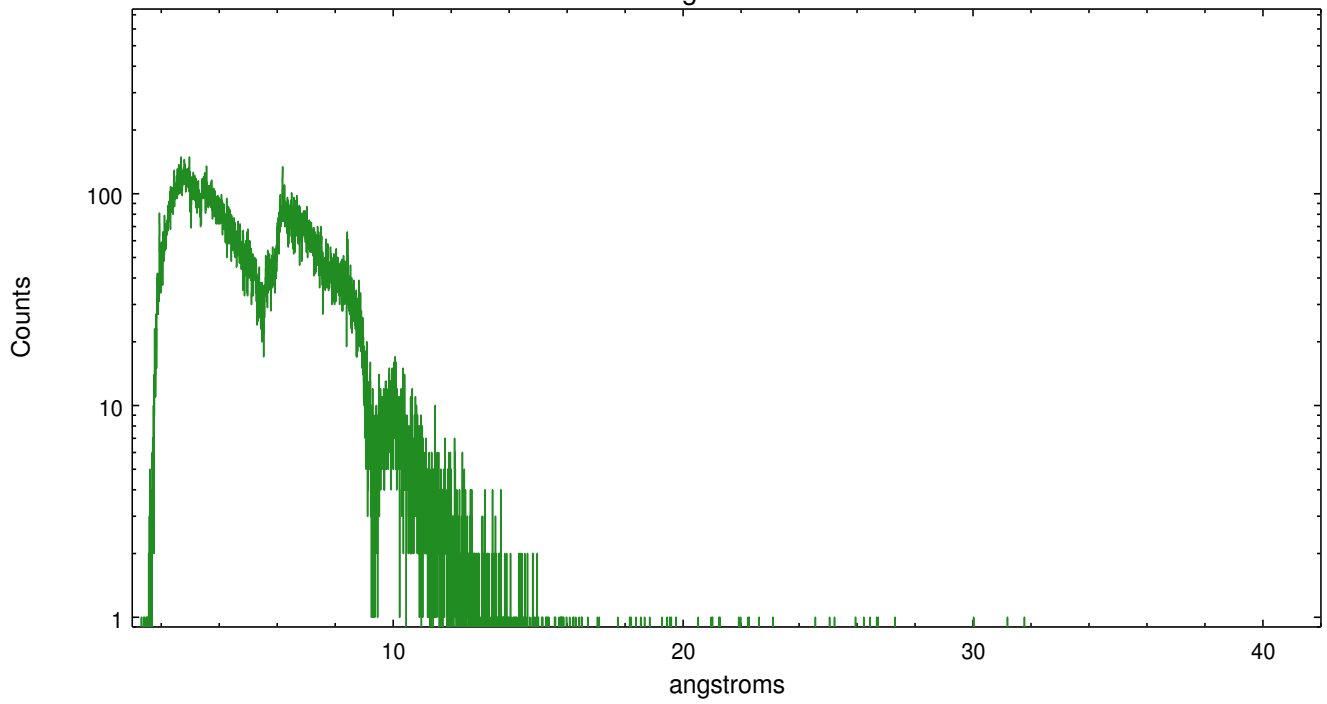
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	9984	4019	86883	32838	101870	3515	8227



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.05.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	39.9455998

A.2 Comments

Zeroth order piled up and cratered. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates ($x=4077.44$, $y=4109.18$) into the `*src1a.fits` file table. These corrected coordinates were determined using a software tool developed by CXC called `findzero`, which is expected to be released in CIAO (currently in ISIS). The tool calculates the point of intersection of the readout streak and the meg arm (preferred position), or the readout streak and the heg arm. The zeroth order source position determined by the standard pipeline processing using the tool `tgdetect` was not used in this processing. The newly determined zeroth order coordinates have been placed in the `*src1a.fits` file, replacing the coordinates determined by `tgdetect`. Note that these corrected coordinates of the zeroth order cannot be reproduced by running `tgdetect` on the data.

===Bad-events image shows faint grating arms, which means that the grating spectra are somewhat piled.