

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 12474 - L2 Version 3
Chandra X-Ray Center

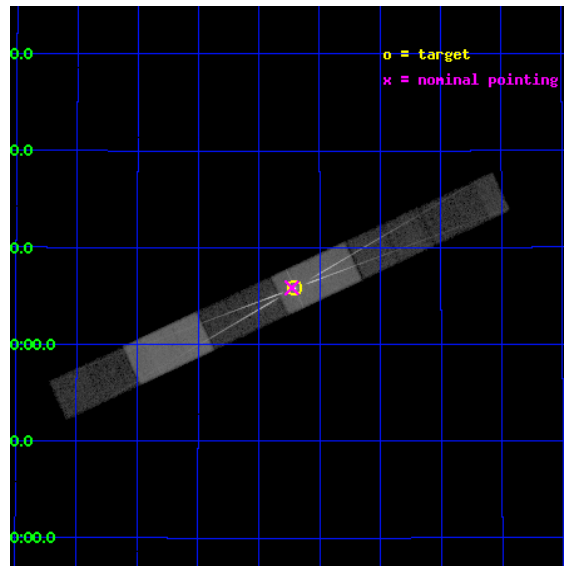
L2 Processing Date : Jul 19 2012

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
3	Gratings	17
3.1	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

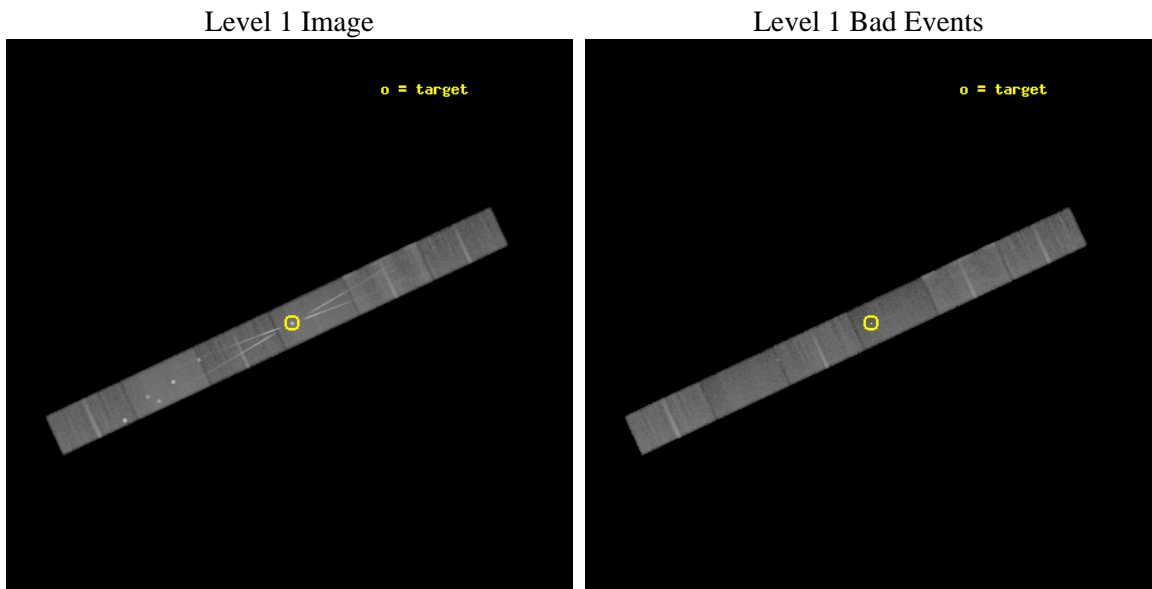
seq_num	401215	Sequence number
obs_id	12474	Observation id
title	Exposing the symbiosis of 3A 1954+319	Proposal title
observer	Dr. Katja Pottschmidt	Principal investigator
object	3A 1954+319	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	298.92625	Observer's specified target RA [deg]
dec_targ	32.097	Observer's specified target Dec [deg]
ra_nom	298.93195571093	Nominal RA [deg]
dec_nom	32.097555047006	Nominal Dec [deg]
roll_nom	334.97869603537	Nominal Roll [deg]
revision	3	Processing version of data
ontime	37509.838823318	Sum of GTIs [s]
livetime	36625.652483367	Livetime [s]
ontime4	37509.879863322	Sum of GTIs [s]
ontime5	37509.797783315	Sum of GTIs [s]
ontime6	37509.756743312	Sum of GTIs [s]
ontime7	37509.838823318	Sum of GTIs [s]
ontime8	37509.715703309	Sum of GTIs [s]
ontime9	37509.674663305	Sum of GTIs [s]
l2events	327320	Number of level 2 events



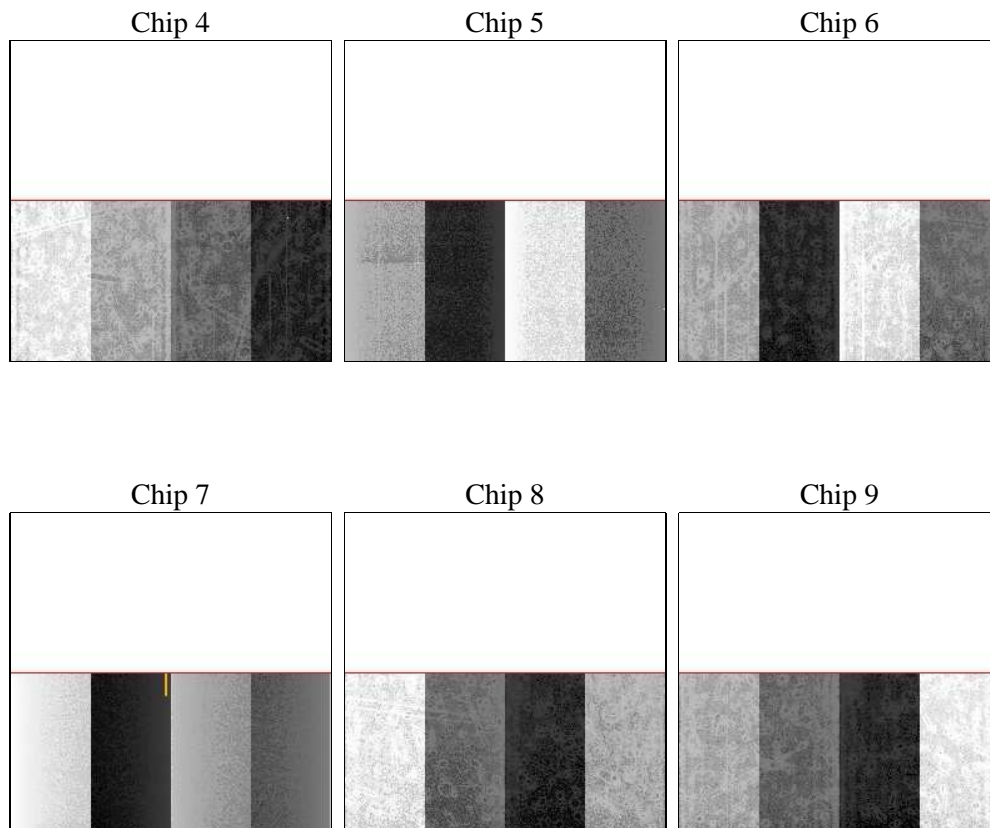
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37435.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	37509.838823318	Sum of GTIs [s]
caldsver	4.5.0	 	ontime4	37509.879863322	Sum of GTIs [s]
date	2012-07-08T21:54:11	Date and time of file creation	ontime5	37509.797783315	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	37509.756743312	Sum of GTIs [s]
			ontime7	37509.838823318	Sum of GTIs [s]
			ontime8	37509.715703309	Sum of GTIs [s]
			ontime9	37509.674663305	Sum of GTIs [s]
			l1events	1124009	Number of level 1 events

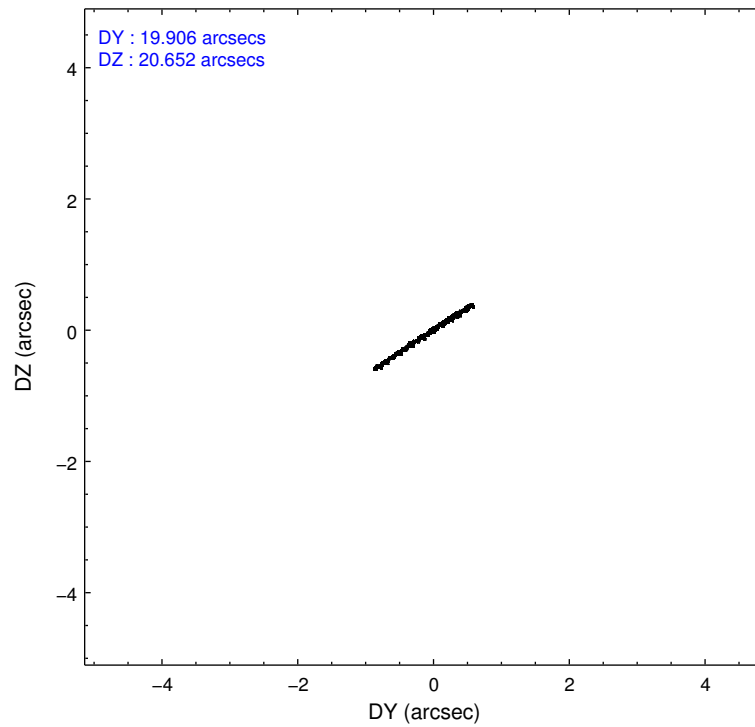
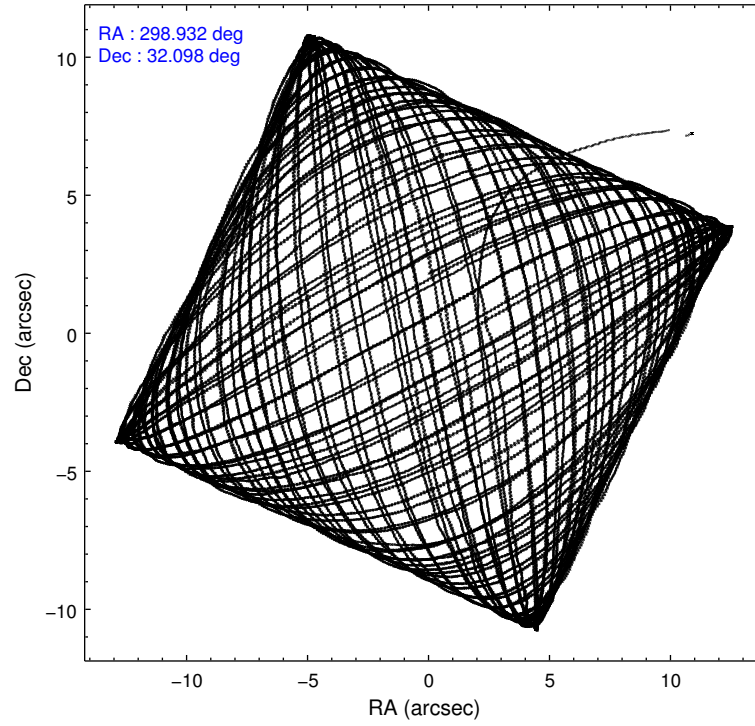
2.1.4 Events

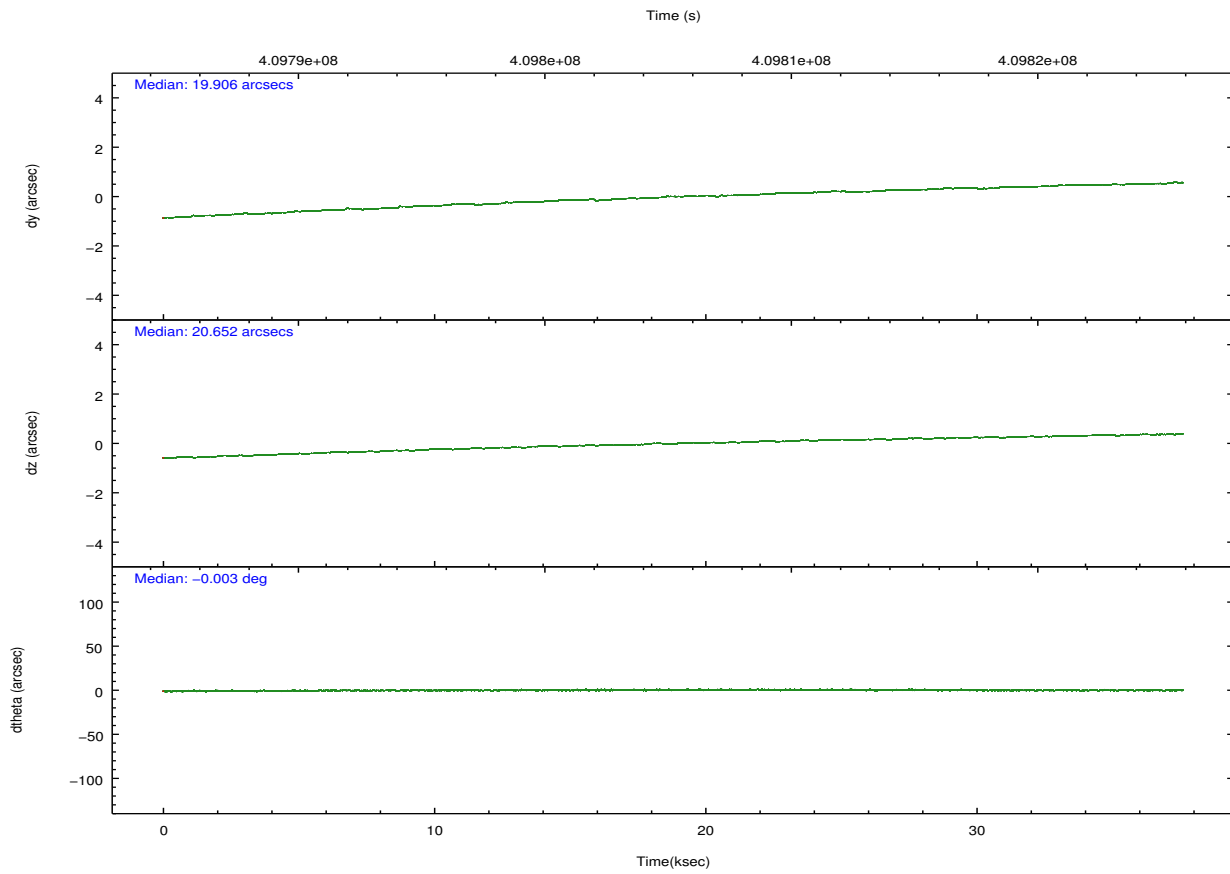
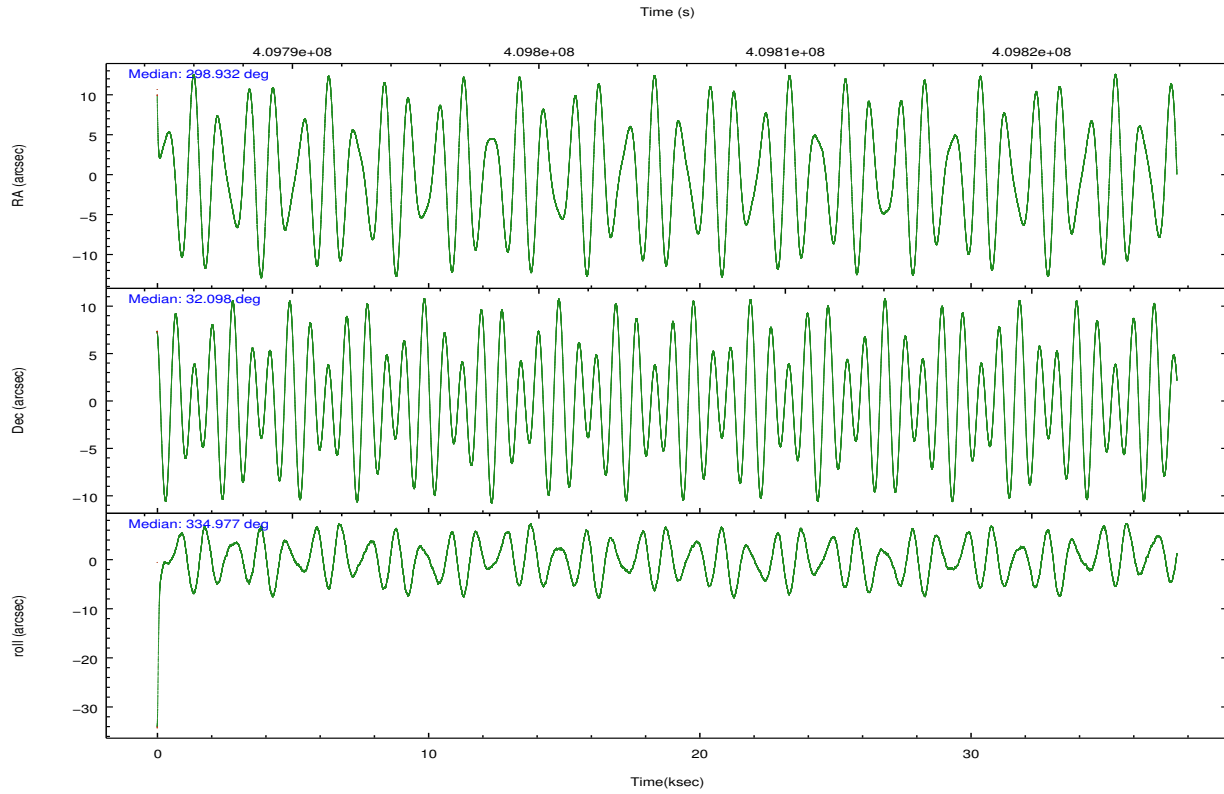
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	173789	220759	173263	228147	193610	134441	grade 0 events	19010	24113	27729	17955	18415	6545
rejected events	143268	102426	123789	94974	138368	116439		10%	10%	16%	7%	9%	4%
rejected %	82%	46%	71%	41%	71%	86%	grade 1 events	143	706	147	672	137	66
								0%	0%	0%	0%	0%	0%
							grade 2 events	4477	29358	8358	29315	11969	3815
								2%	13%	4%	12%	6%	2%
							grade 3 events	2028	6269	3580	13122	5729	2069
								1%	2%	2%	5%	2%	1%
							grade 4 events	1888	6134	3618	12941	5301	2078
								1%	2%	2%	5%	2%	1%
							grade 5 events	5772	17740	5971	19385	8733	6441
								3%	8%	3%	8%	4%	4%
							grade 6 events	3120	52462	6190	59841	13829	3495
								1%	23%	3%	26%	7%	2%
							grade 7 events	137351	83977	117670	74916	129497	109932
								79%	38%	67%	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	298.899822	298.9319557109326	CCD I2 on	N	N
[deg] Pointing Dec	32.094812	32.09755504700556	CCD I3 on	N	N
[deg] Pointing Roll	334.839150	334.9786960353736	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	-183.992523	-183.9875365069546	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-6.14	-6.144986076053243	CCD S4 on	Y	Y
[s] Observation start time (MET)	409786556.184000	409785061.12475	CCD S5 on	Y	Y
Observation start date	2010-12-26T21:34:50	2010-12-26T21:11:01	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	409823991.184000	409824923.37681	On-chip summing requested	N	N
Observation end date	2010-12-27T07:58:45	2010-12-27T08:15:23	Subarray requested	CUSTOM	1/2
Read mode	TIMED	TIMED	Subarray start row	1	1
			Subarray row count	512	512
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.7

2.3 Aspect



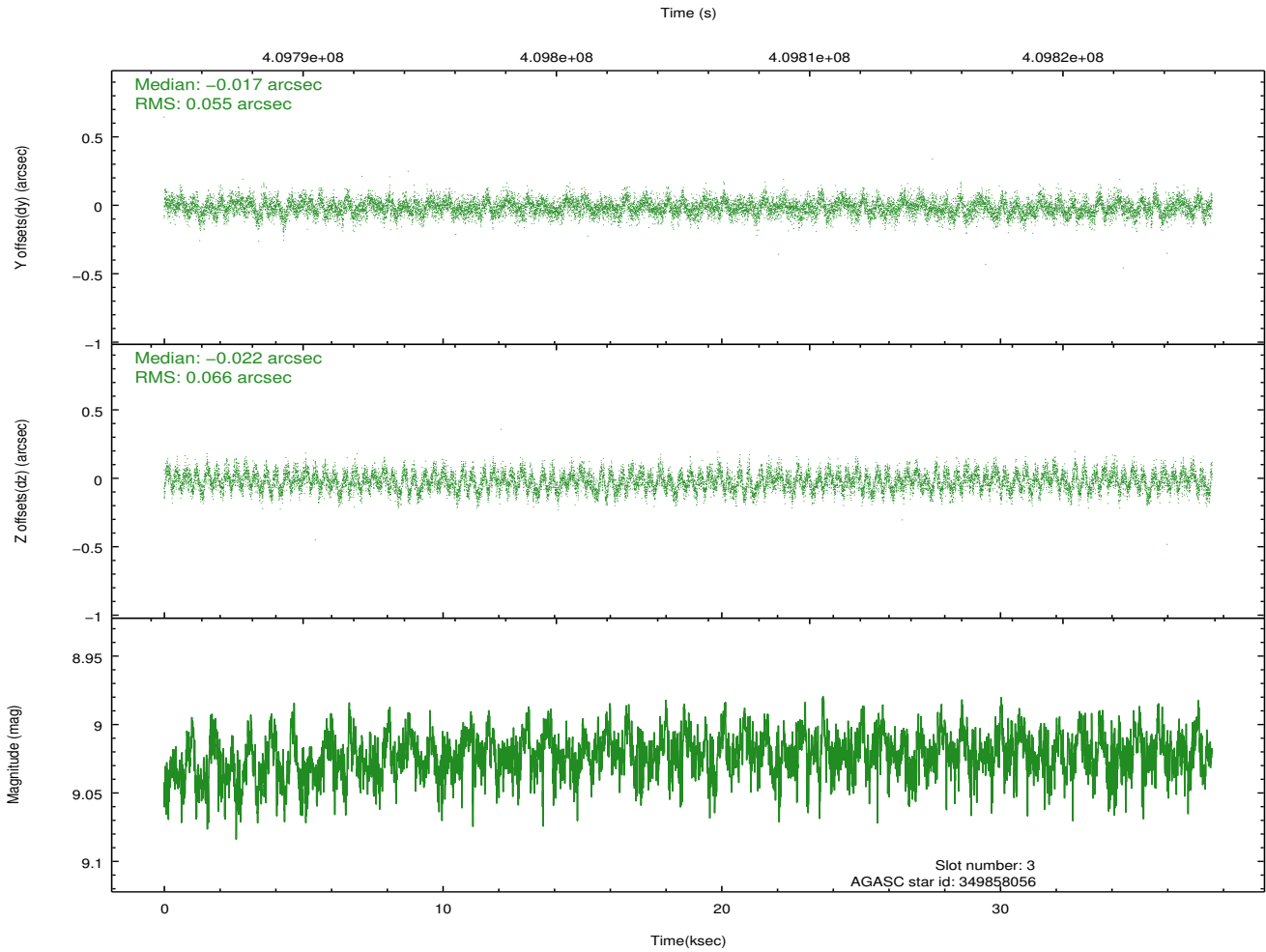
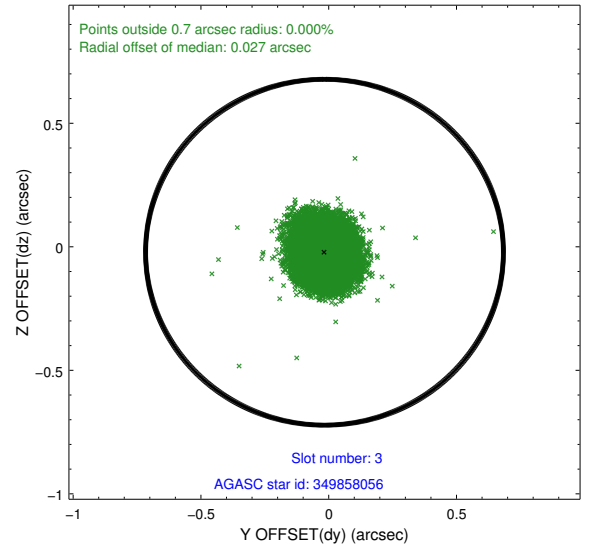
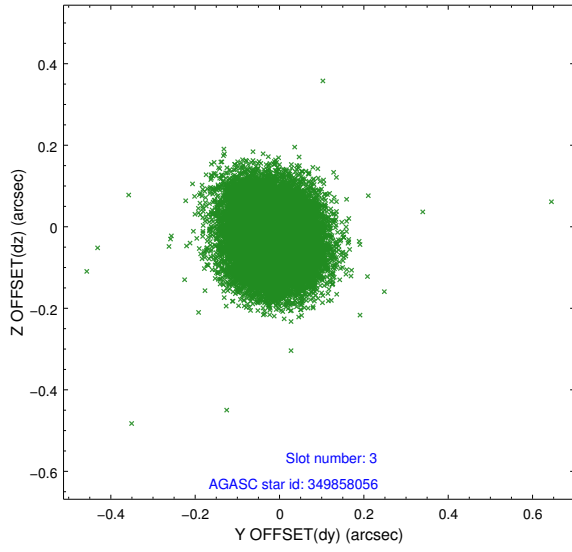


Slot Statistics

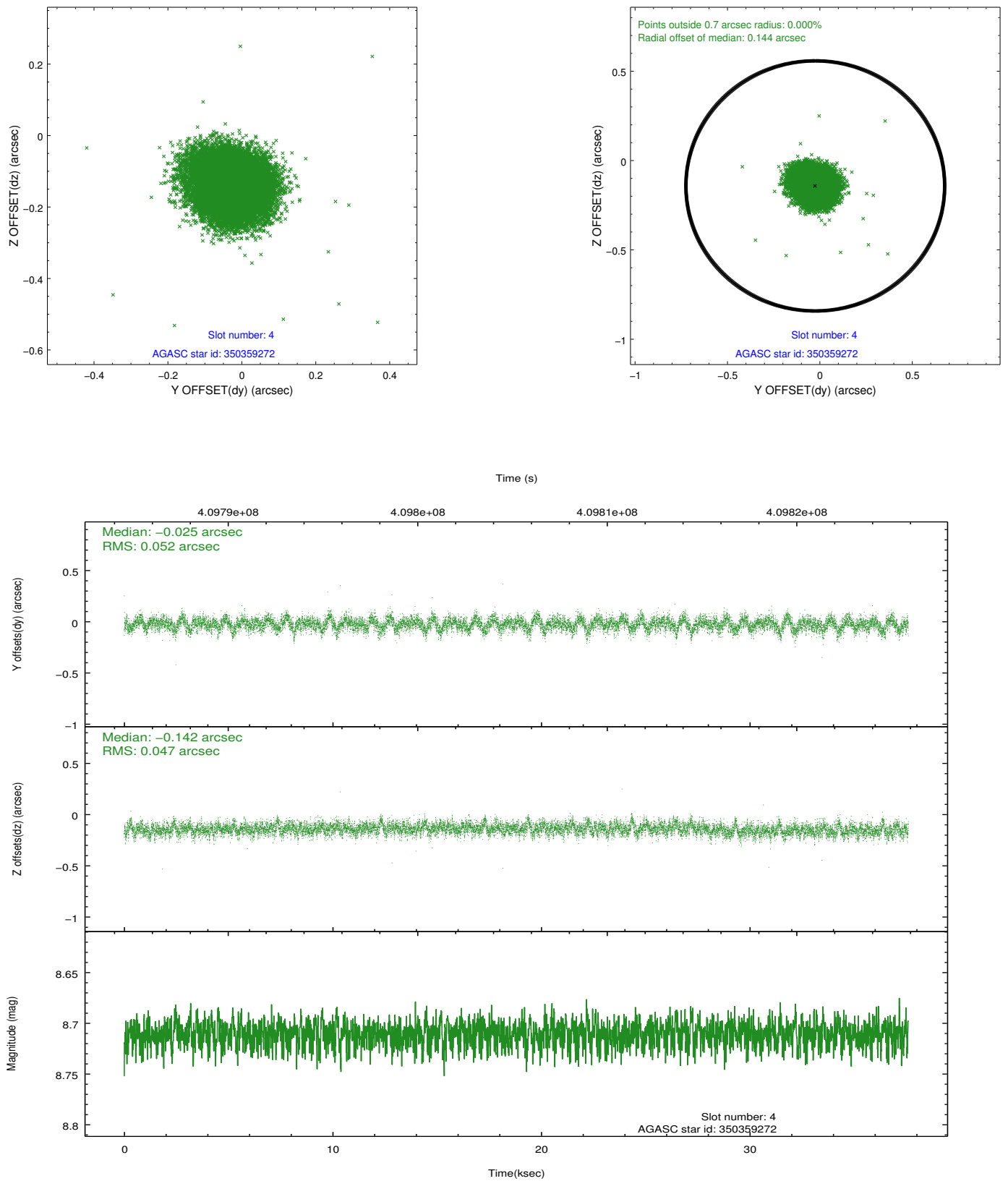
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.88	9172	-0.090	-0.113	0.017	0.025	0.000000	0.000000	-772.63	-1868.90
1	FID	ACIS-S-4	6.95	9172	0.239	0.074	0.013	0.032	0.000000	0.000000	2140.99	39.67
2	FID	ACIS-S-5	7.01	9172	-0.180	0.051	0.013	0.025	0.000000	0.000000	-1825.49	33.41
3	GUIDE	349858056	9.02	18326	-0.017	-0.022	0.092	0.148	299.115460	31.506741	1499.42	-1634.00
4	GUIDE	350359272	8.71	18326	-0.025	-0.142	0.074	0.121	299.002899	32.399371	-182.14	1125.69
5	GUIDE	350359416	8.85	18335	0.038	0.135	0.091	0.144	298.163115	32.169694	-2149.31	-703.23
6	GUIDE	349836912	8.26	18333	-0.007	-0.049	0.091	0.143	298.000867	31.707270	-1903.33	-2423.00
7	GUIDE	349963408	8.98	18331	0.014	0.076	0.106	0.166	299.534365	31.670641	2406.92	-550.19

2.4 Star Slots

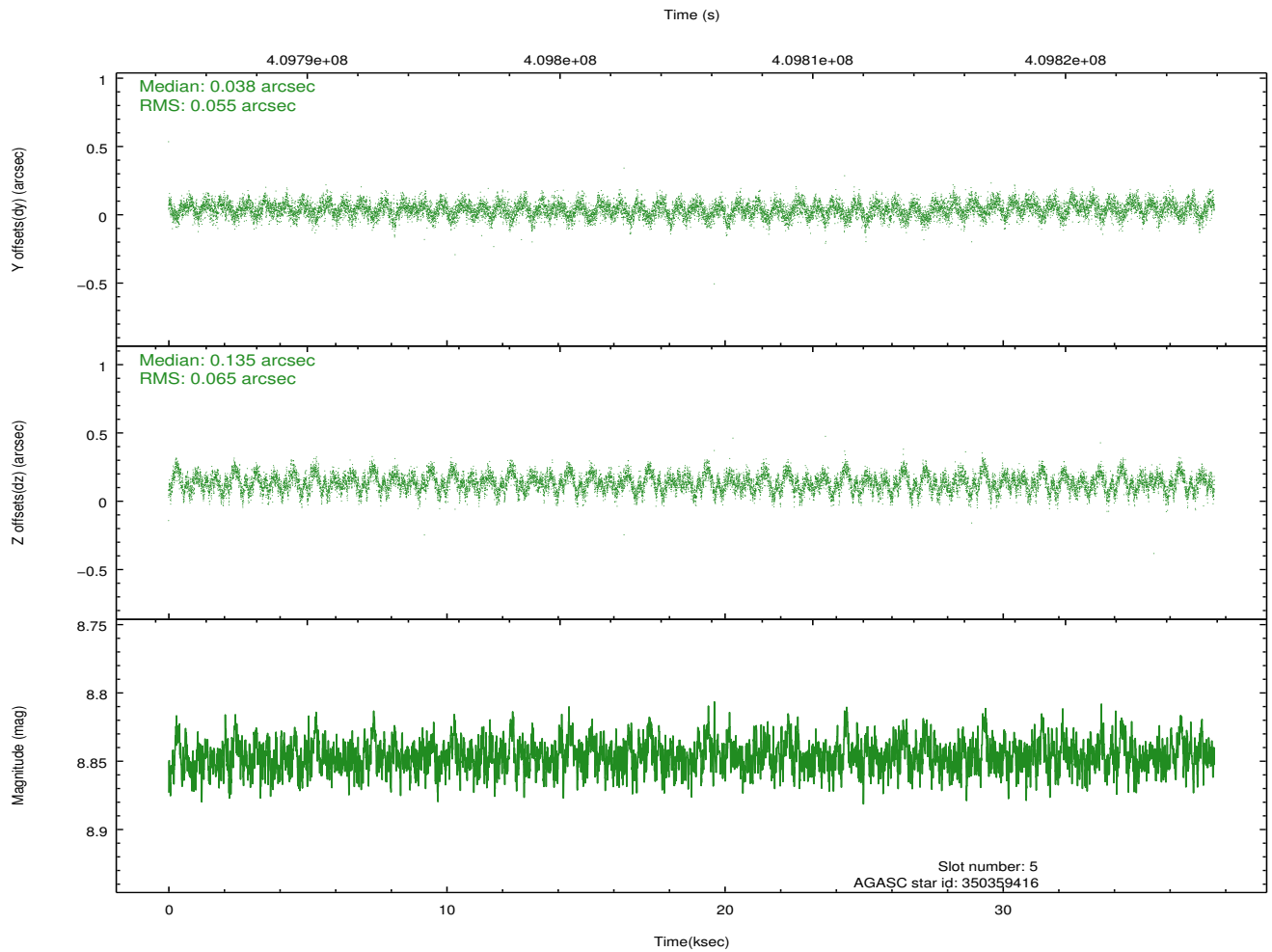
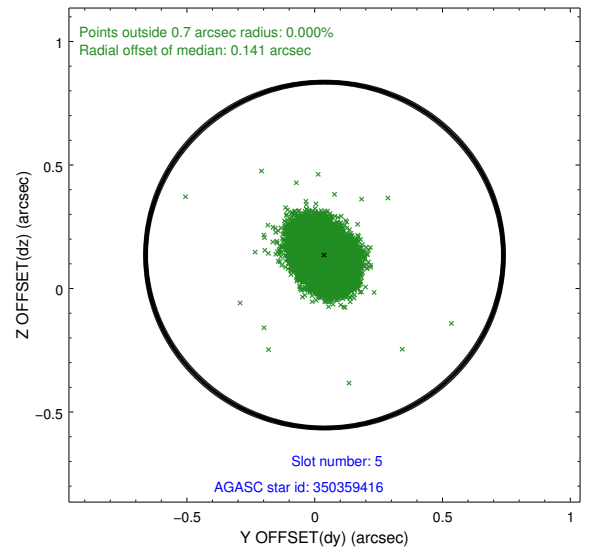
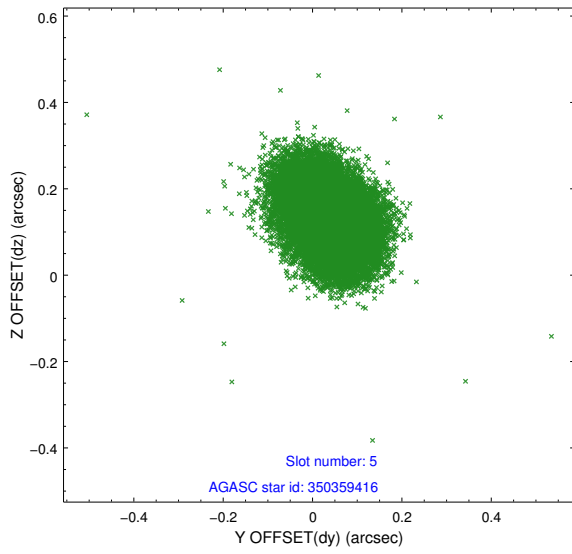
2.4.1 Slot 3



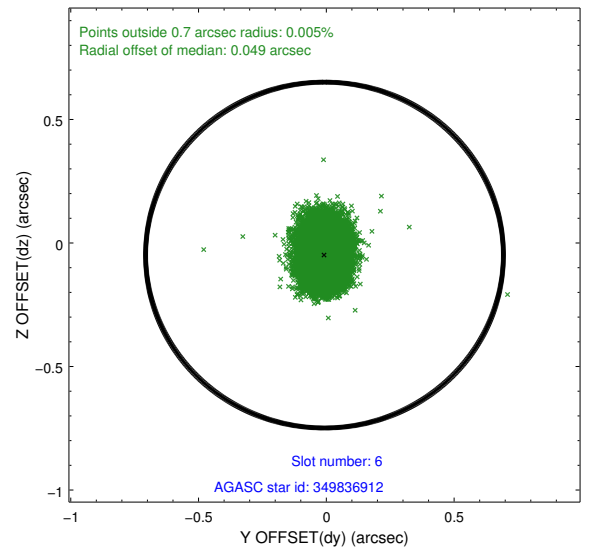
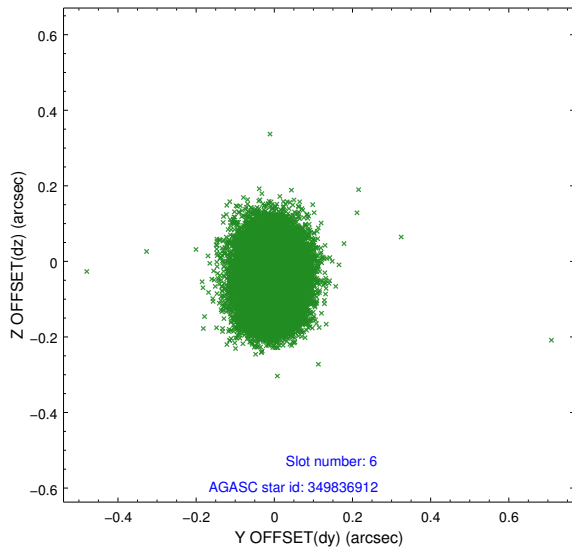
2.4.2 Slot 4



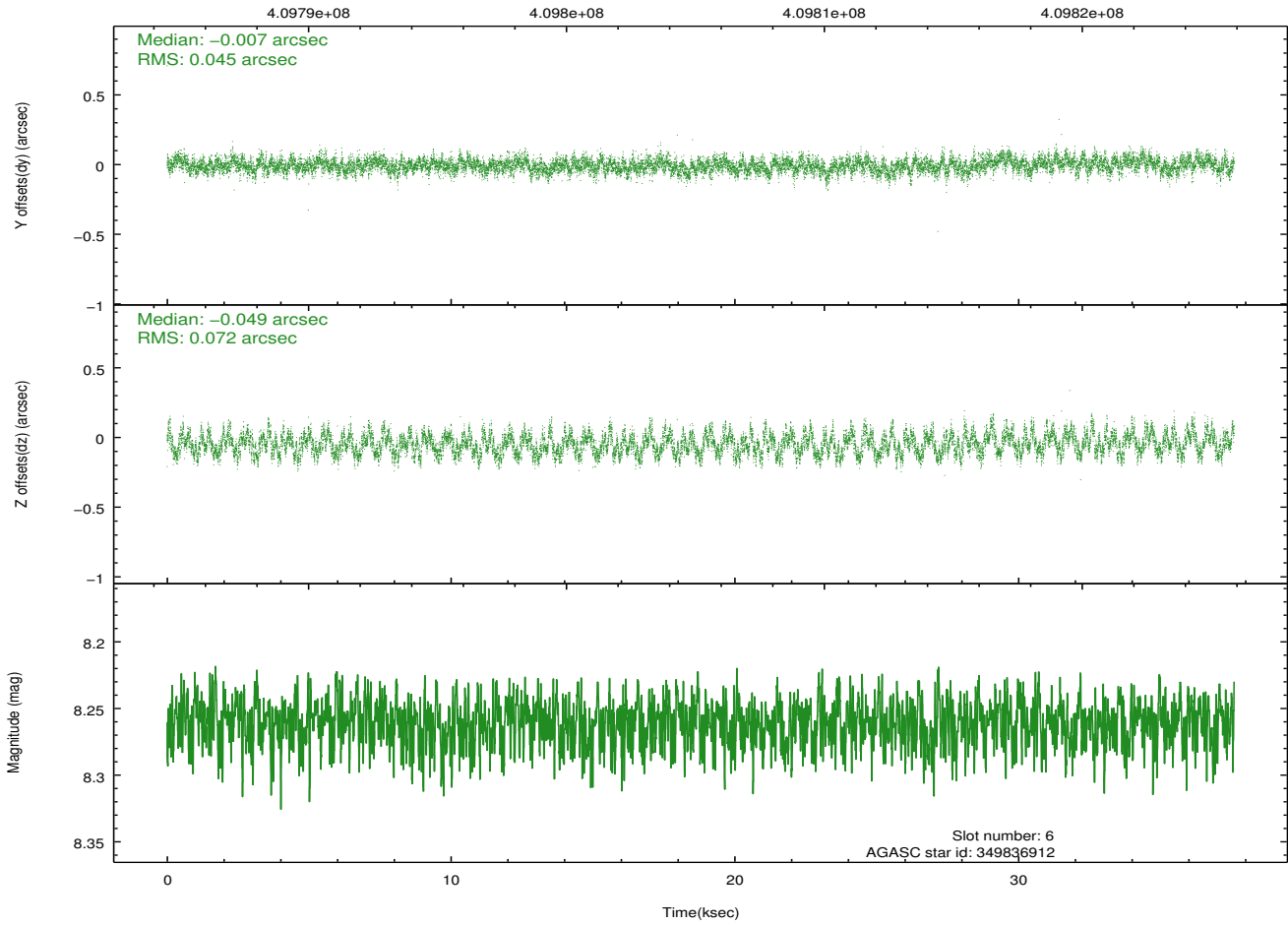
2.4.3 Slot 5



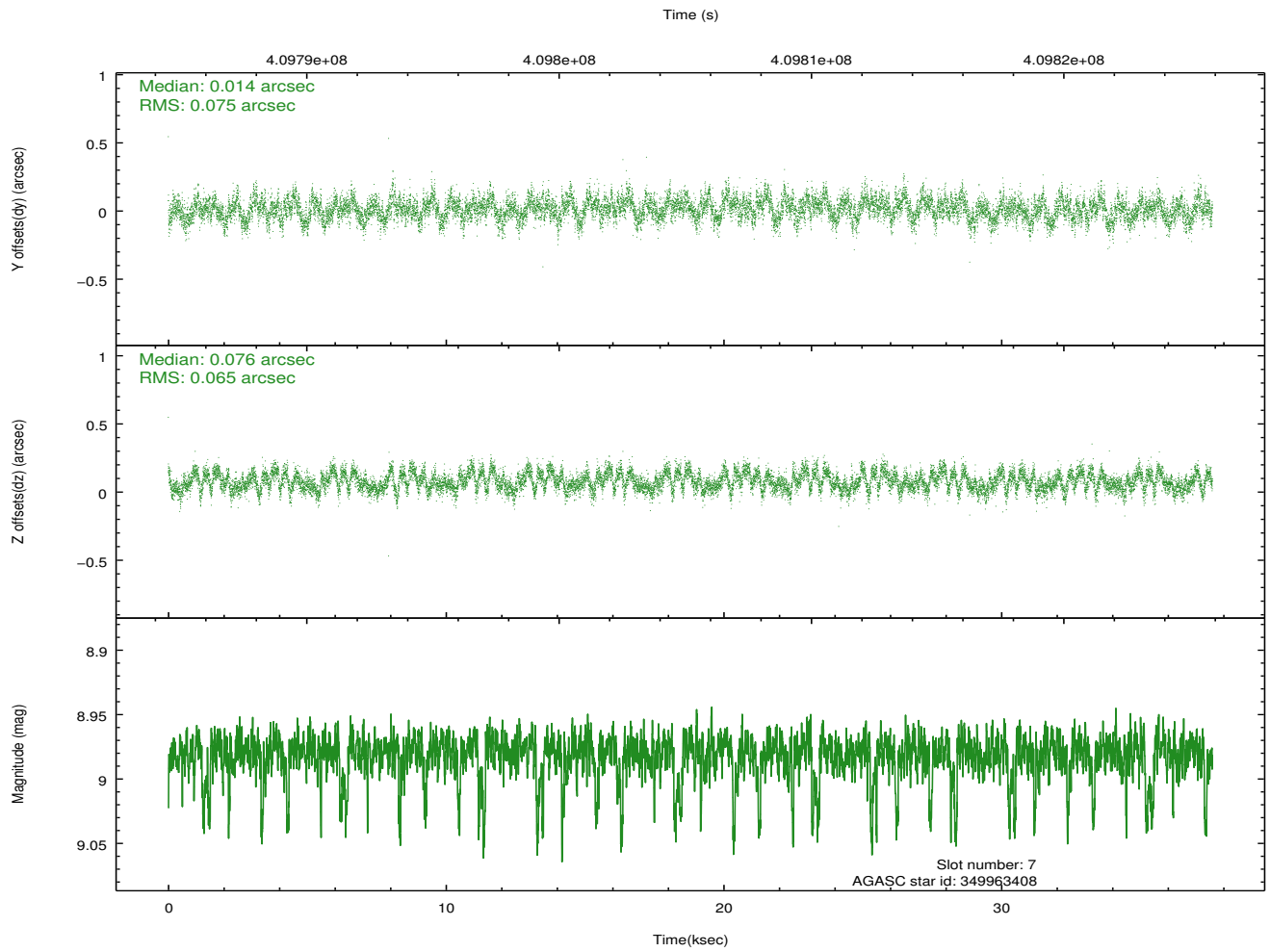
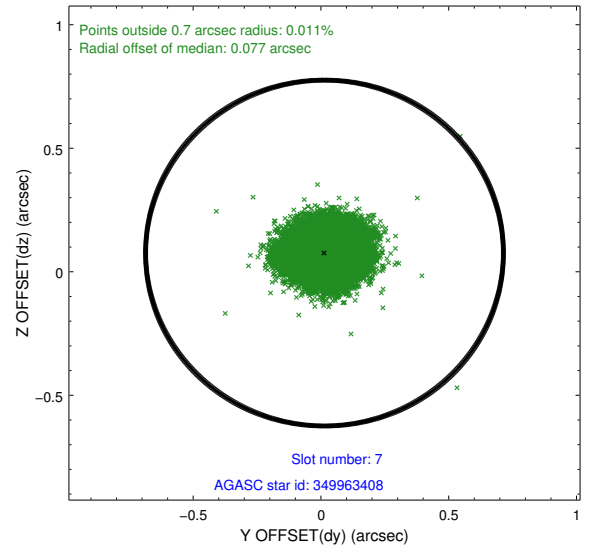
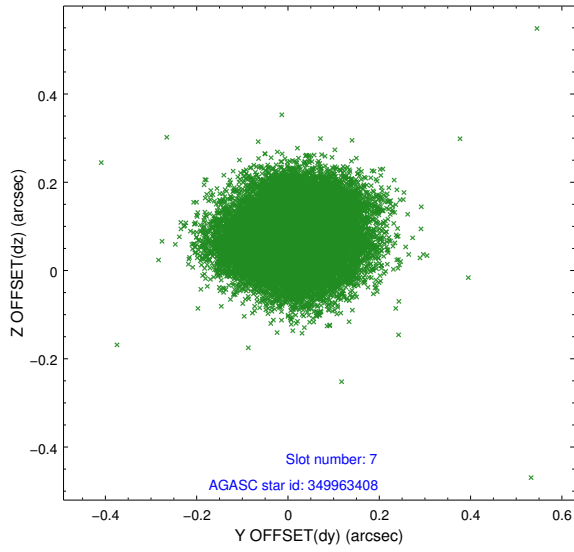
2.4.4 Slot 6



Time (s)

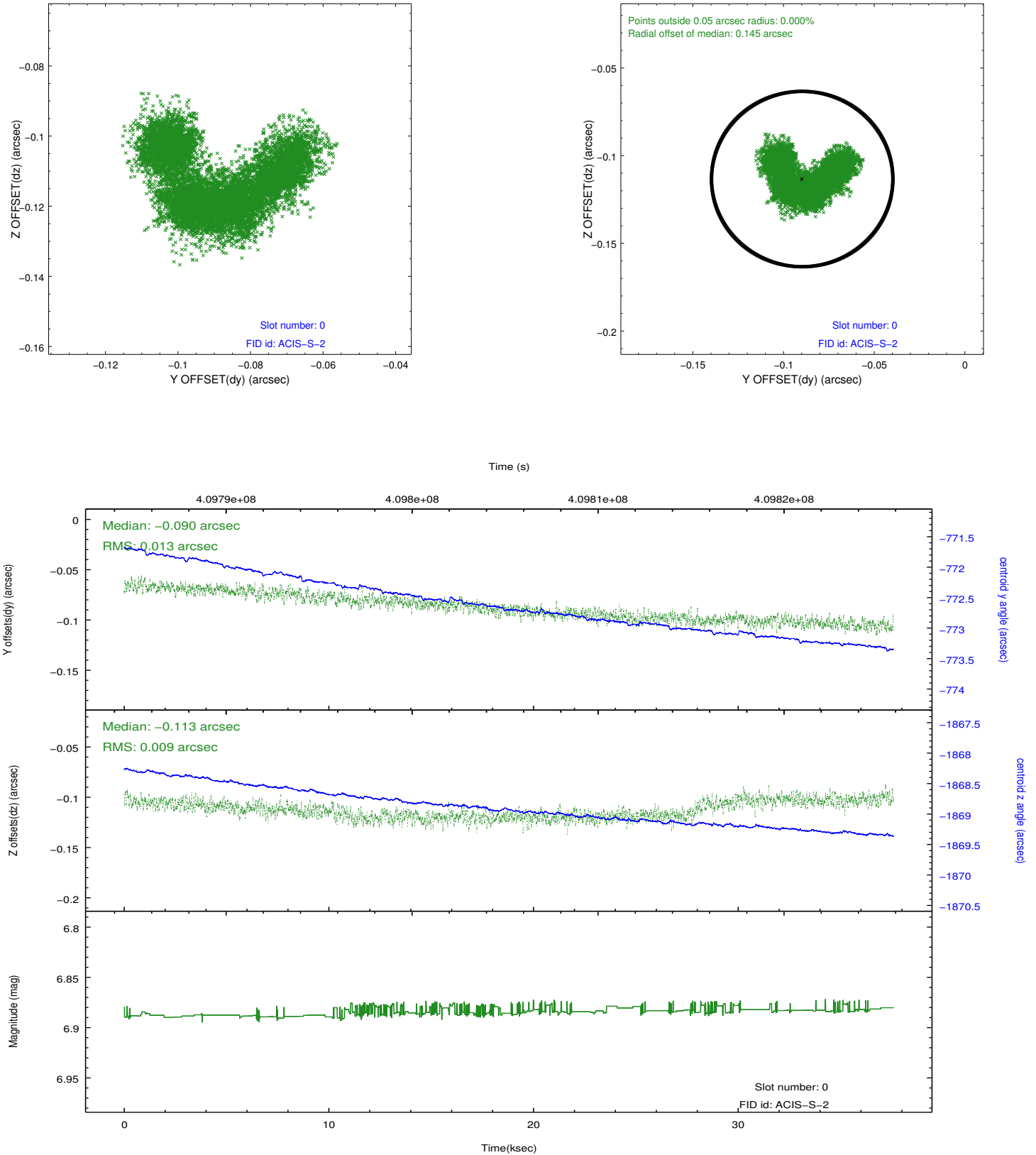


2.4.5 Slot 7

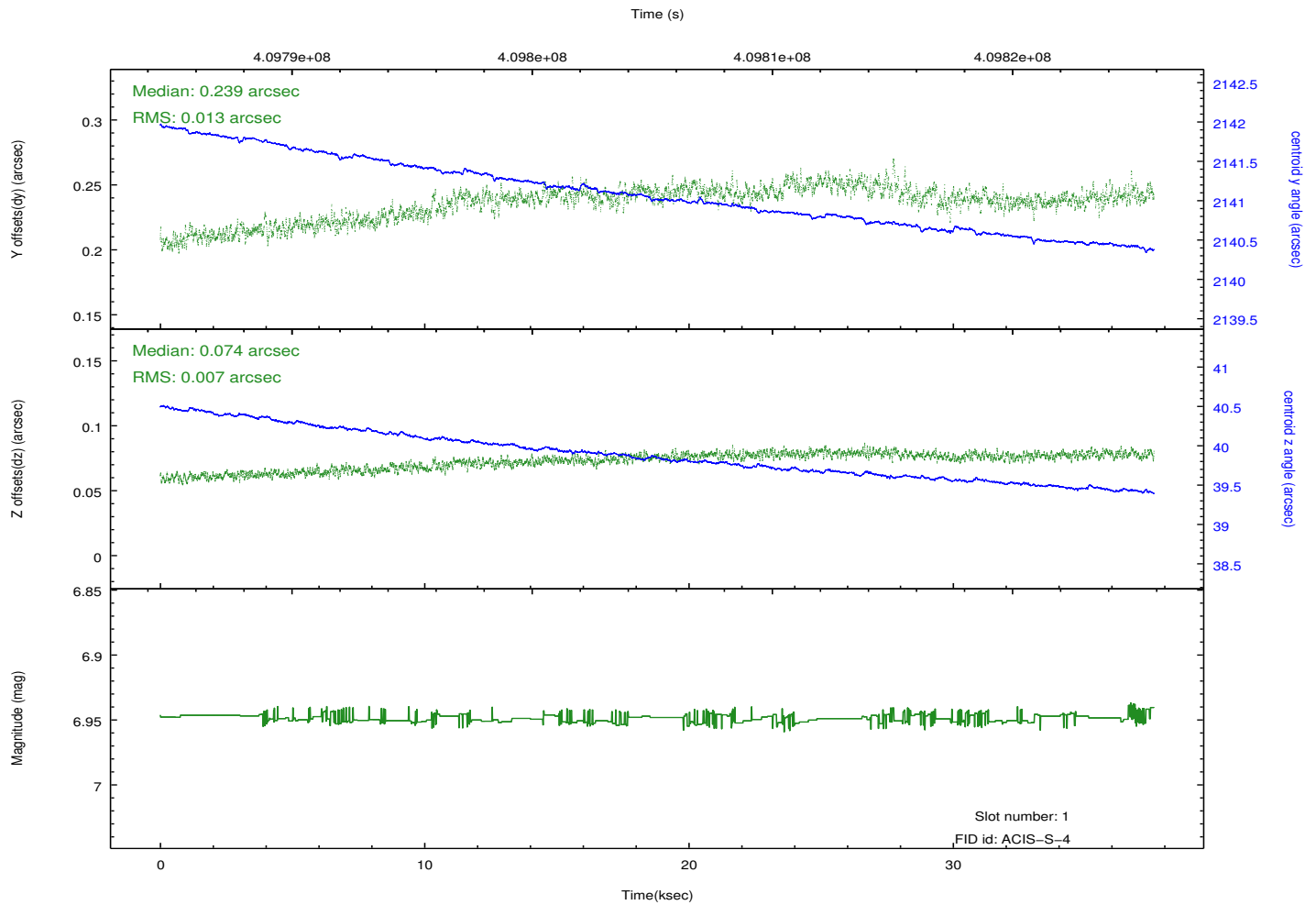
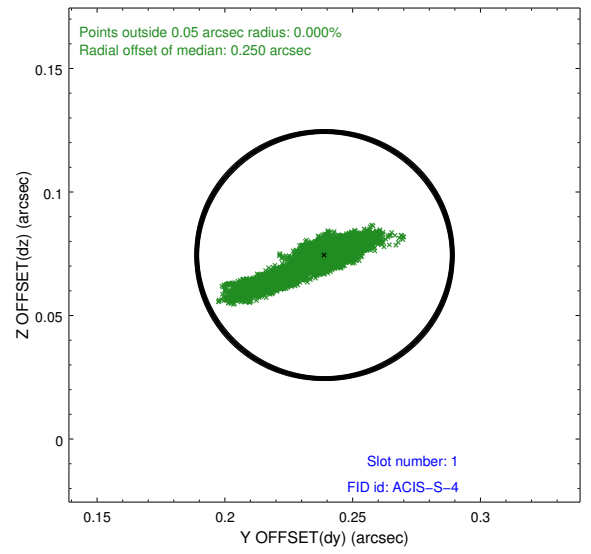
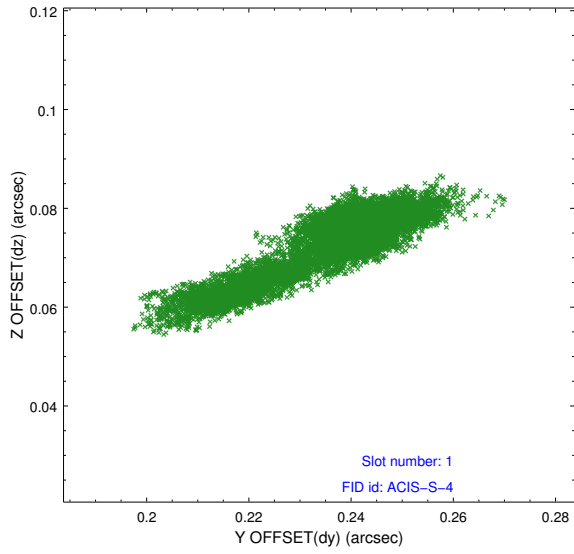


2.5 FID Slots

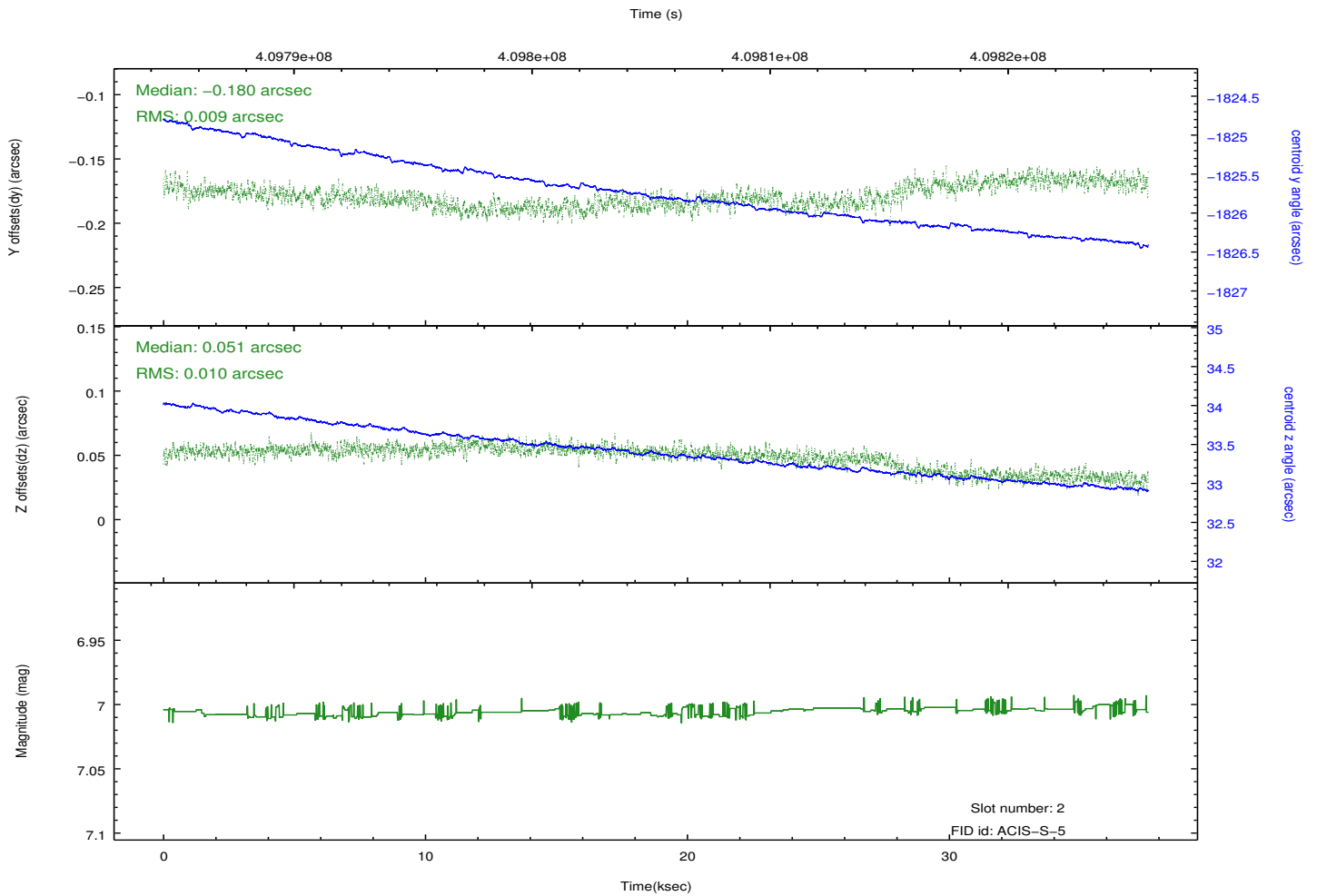
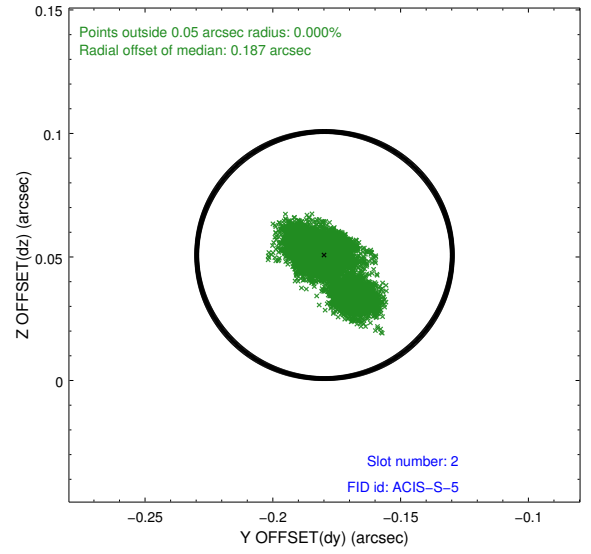
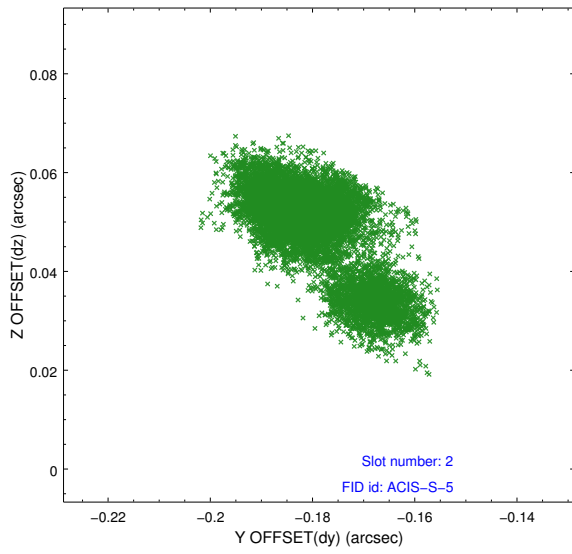
2.5.1 Slot 0



2.5.2 Slot 1

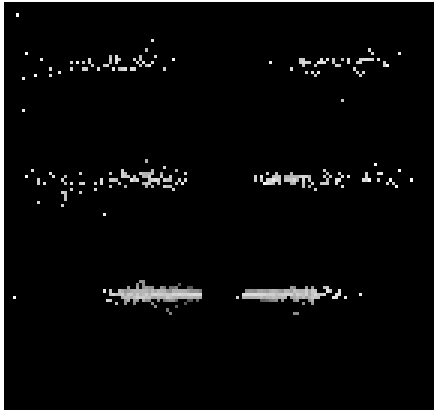


2.5.3 Slot 2

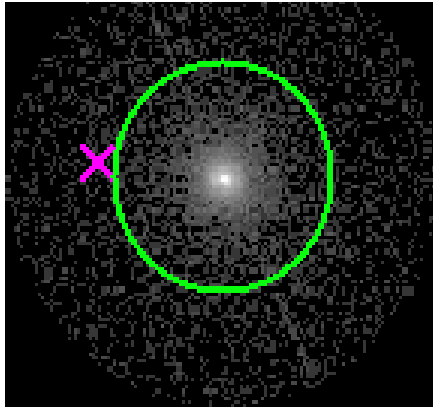


3 Gratings

3.1 HEG Arm



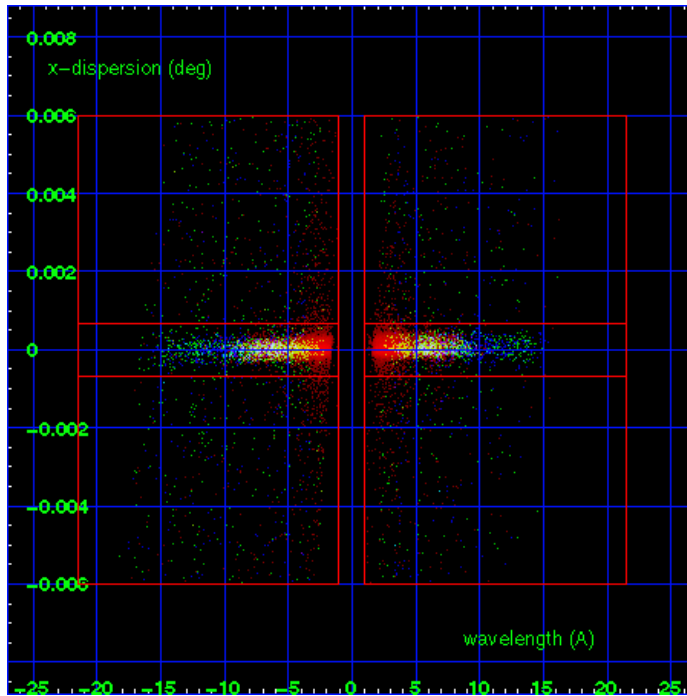
HEG Order Sort 123



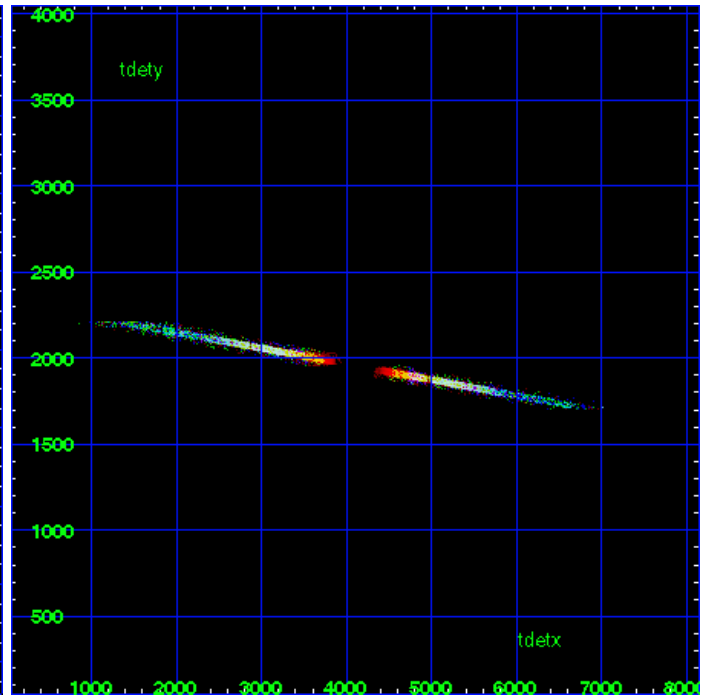
HEG Zero Order



HEG Order Sort ALL

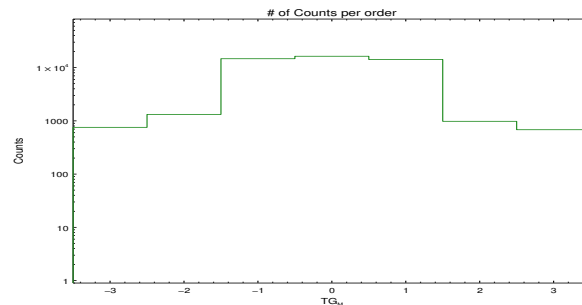


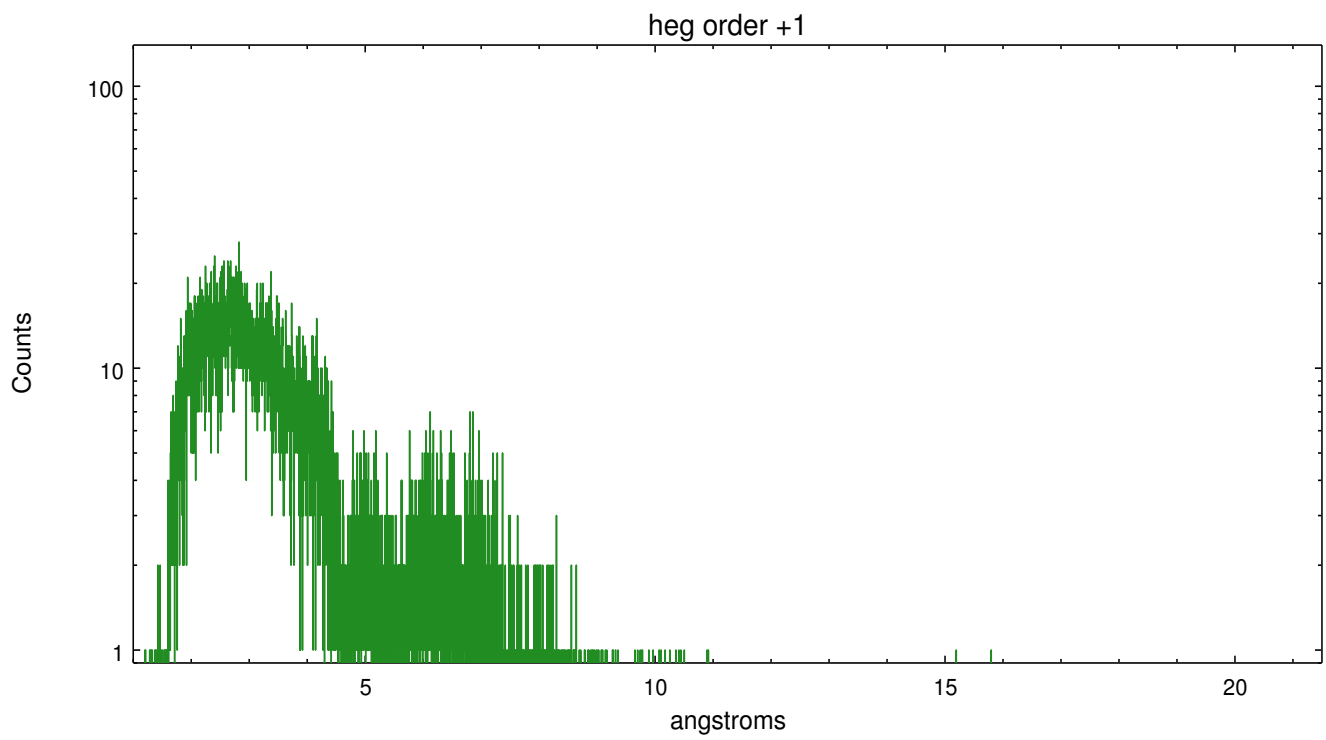
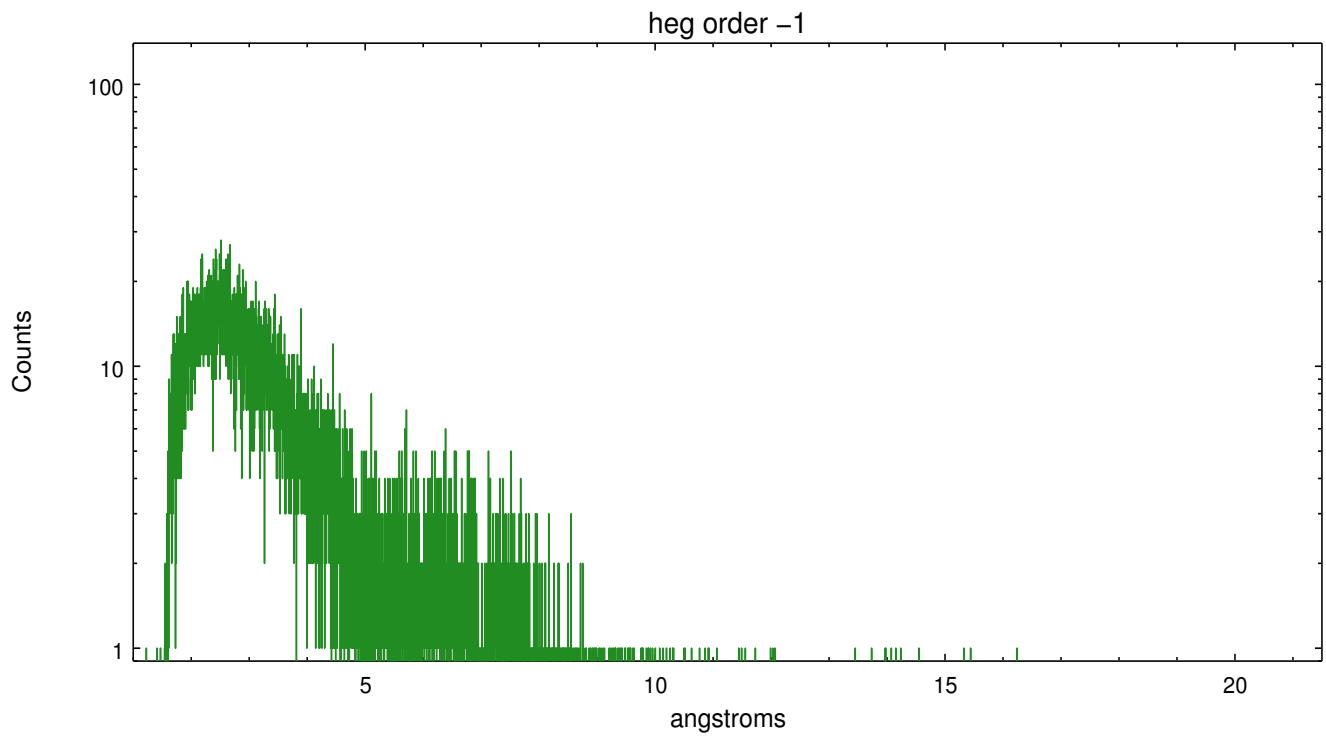
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	755	1322	14692	16328	14190	980	682

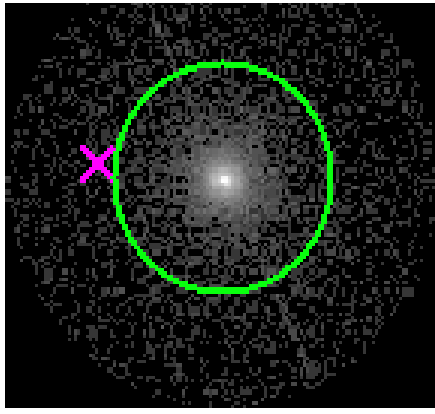




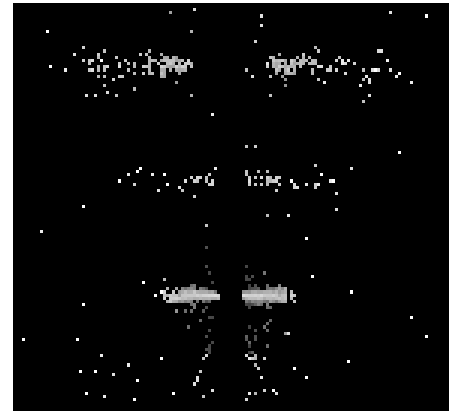
3.2 MEG Arm



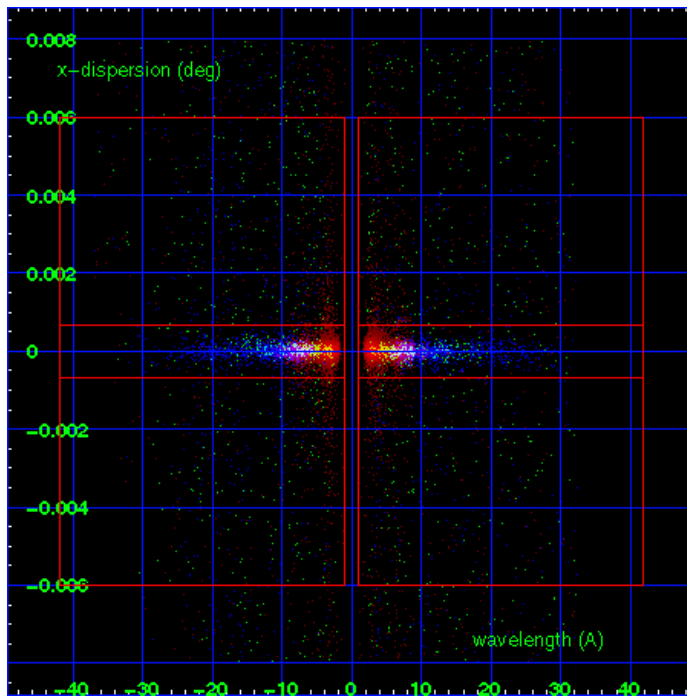
MEG Order Sort 123



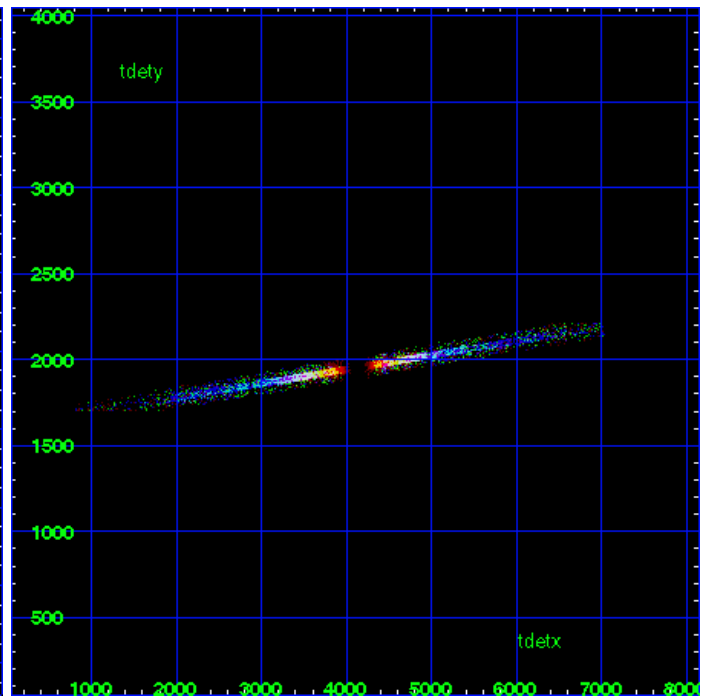
MEG Zero Order



MEG Order Sort ALL

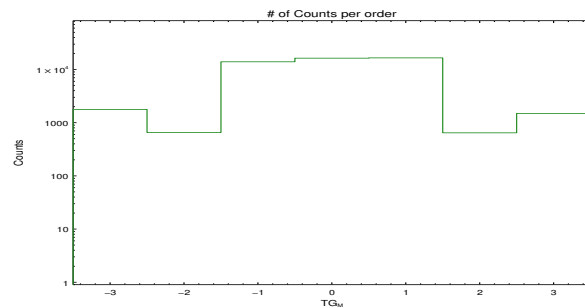


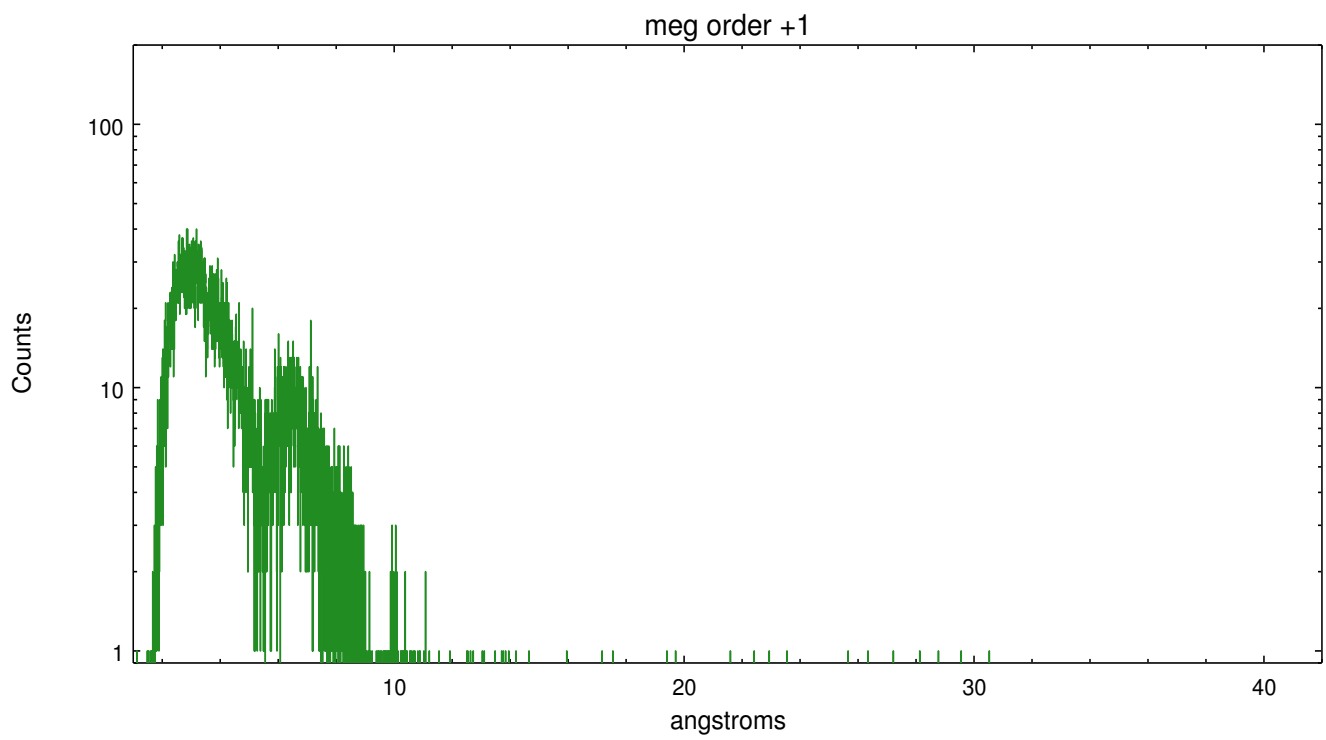
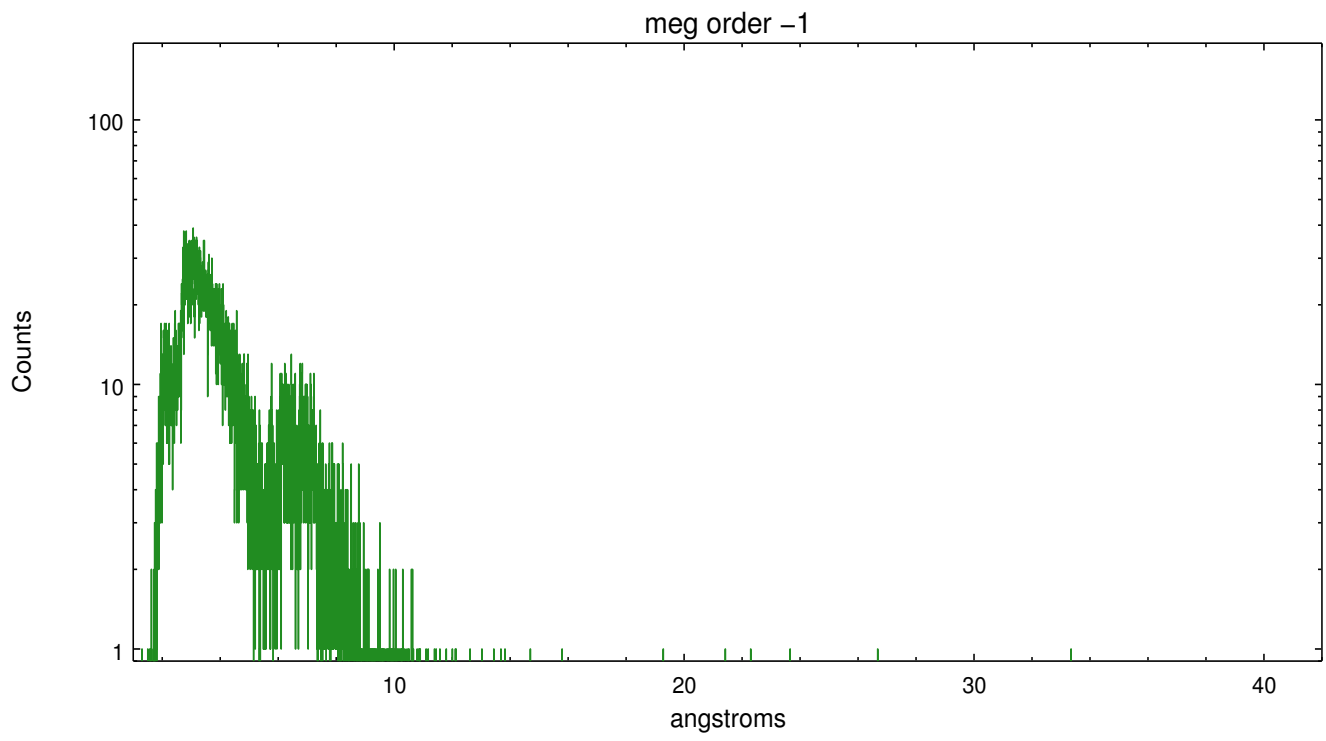
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1771	653	13967	16328	16553	645	1493





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.07.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	37.509838826239

A.2 Comments

Zeroth order piled up. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates ($x=4131.37$, $y=4091.79$) 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.