

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 9571 - L2 Version 3
Chandra X-Ray Center

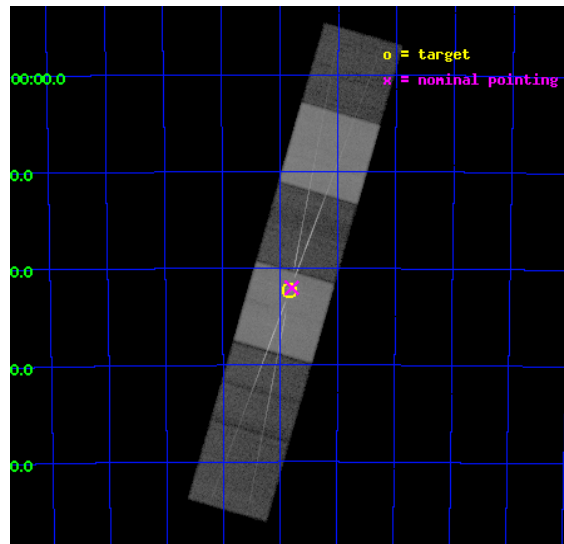
L2 Processing Date : Apr 30 2012

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1 Front

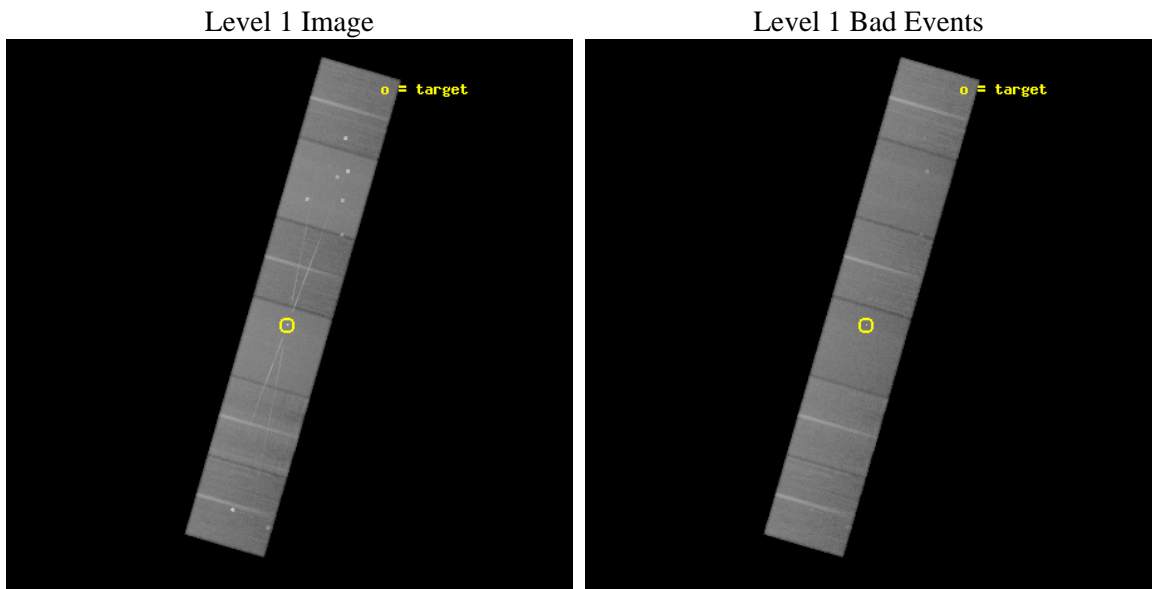
seq_num	400618	Sequence number
obs_id	9571	Observation id
title	A Chandra HETGS Study of LMC X-4 : Binary Disk and Wind Properties and Studies of Grain Distribution at Small Angles	Proposal title
observer	Prof. Julia Lee	Principal investigator
object	LMC X-4	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.2075	Observer's specified target RA [deg]
dec_targ	-66.3705	Observer's specified target Dec [deg]
ra_nom	83.19855188842	Nominal RA [deg]
dec_nom	-66.367235444348	Nominal Dec [deg]
roll_nom	106.14843117424	Nominal Roll [deg]
revision	3	Processing version of data
ontime	47087.438435614	Sum of GTIs [s]
livetime	46491.188937491	Livetime [s]
ontime4	47087.479475617	Sum of GTIs [s]
ontime5	47087.397395611	Sum of GTIs [s]
ontime6	47087.356355608	Sum of GTIs [s]
ontime7	47087.438435614	Sum of GTIs [s]
ontime8	47087.315315604	Sum of GTIs [s]
ontime9	47087.274275601	Sum of GTIs [s]
l2events	805669	Number of level 2 events



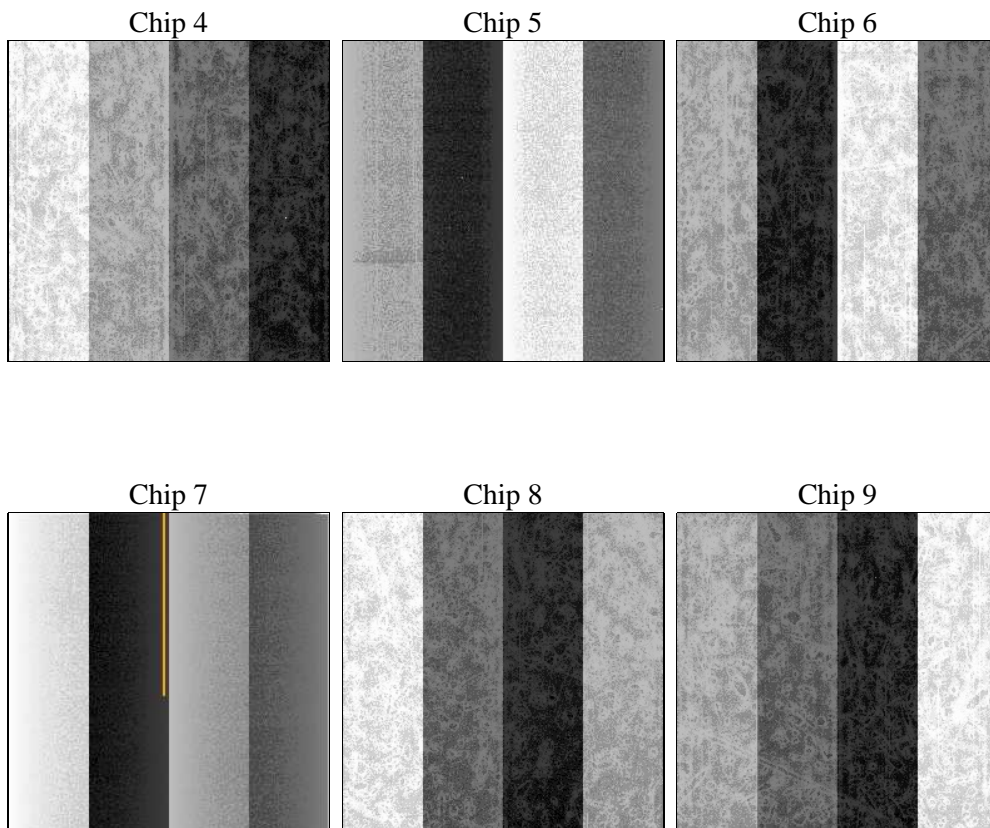
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	47000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	47087.438435614	Sum of GTIs [s]
caldbver	4.4.9	 	ontime4	47087.479475617	Sum of GTIs [s]
date	2012-04-30T13:49:15	Date and time of file creation	ontime5	47087.397395611	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	47087.356355608	Sum of GTIs [s]
			ontime7	47087.438435614	Sum of GTIs [s]
			ontime8	47087.315315604	Sum of GTIs [s]
			ontime9	47087.274275601	Sum of GTIs [s]
			l1events	3420978	Number of level 1 events

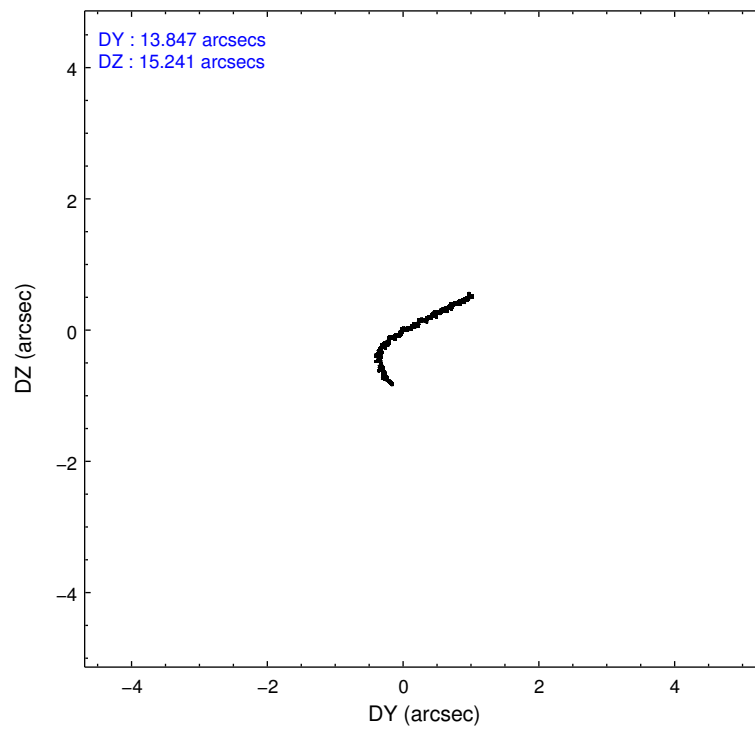
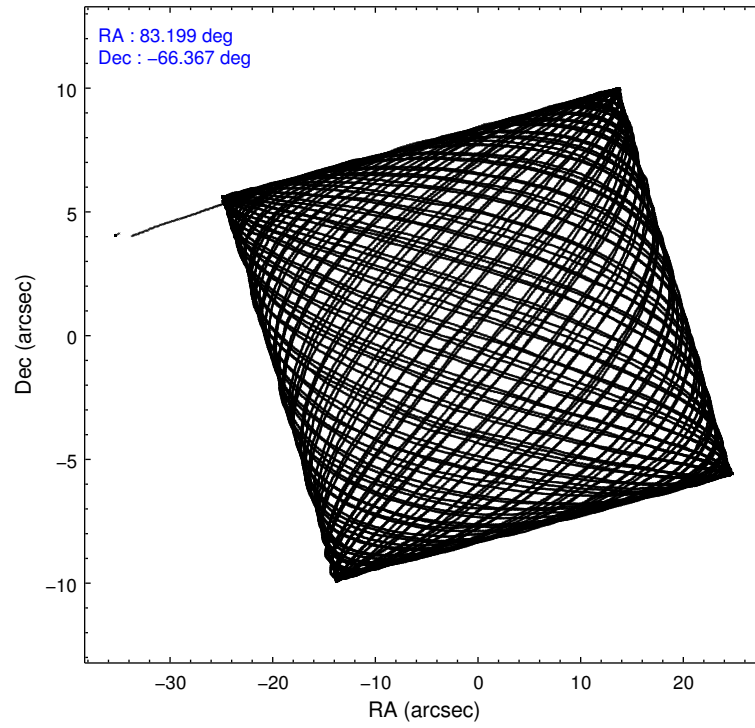
2.1.4 Events

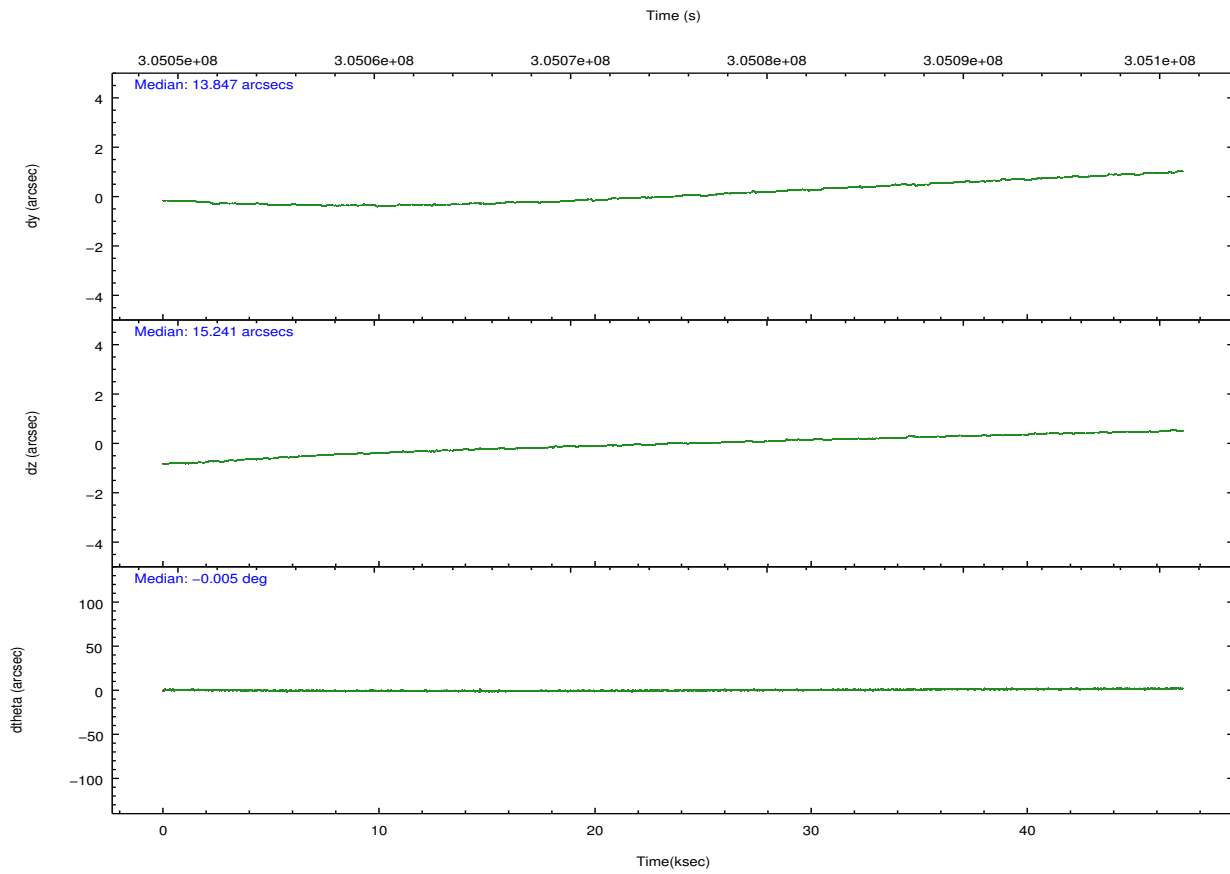
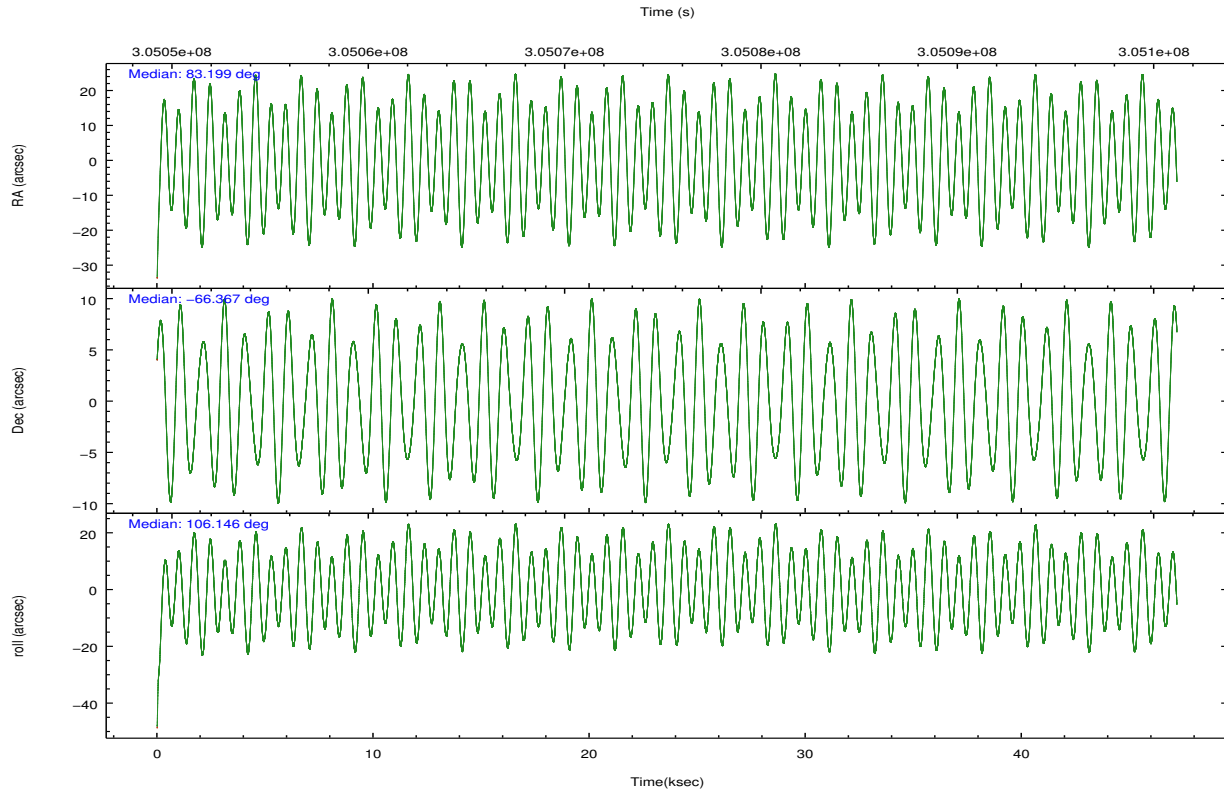
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	517205	712287	474645	654233	585999	476609	grade 0 events	37220	41990	35553	27972	46061	38618
rejected events	447379	373450	400221	367086	450902	404556		7%	5%	7%	4%	7%	8%
rejected %	86%	52%	84%	56%	76%	84%	grade 1 events	561	2535	339	935	489	457
								0%	0%	0%	0%	0%	0%
							grade 2 events	12257	103903	14603	59482	29481	11358
								2%	14%	3%	9%	5%	2%
							grade 3 events	5753	11847	6003	24679	13648	5727
								1%	1%	1%	3%	2%	1%
							grade 4 events	5664	11436	6004	24477	12607	5297
								1%	1%	1%	3%	2%	1%
							grade 5 events	20742	48676	21329	59818	28619	23193
								4%	6%	4%	9%	4%	4%
							grade 6 events	8940	169687	12268	150557	33305	11061
								1%	23%	2%	23%	5%	2%
							grade 7 events	426068	322213	378546	306313	421789	380898
								82%	45%	79%	46%	71%	79%

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	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	83.248397	83.19855188841952	Subarray requested	NONE	NONE
[deg] Pointing Dec	-66.385913	-66.36723544434783	Alternating exposures requested	N	N
[deg] Pointing Roll	106.037472	106.1484311742371	[s] Primary exposure time	0.000000	3.2
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1400660498719			
[mm] SIM translation stage offset	0	0.00754346686406393			
[s] Observation start time (MET)	305051820.184000	305050789.32211			
Observation start date	2007-09-01T16:35:55	2007-09-01T16:19:49			
[s] Observation end time (MET)	305098820.184000	305099807.38697			
Observation end date	2007-09-02T05:39:15	2007-09-02T05:56:47			
Read mode	TIMED	TIMED			

2.3 Aspect



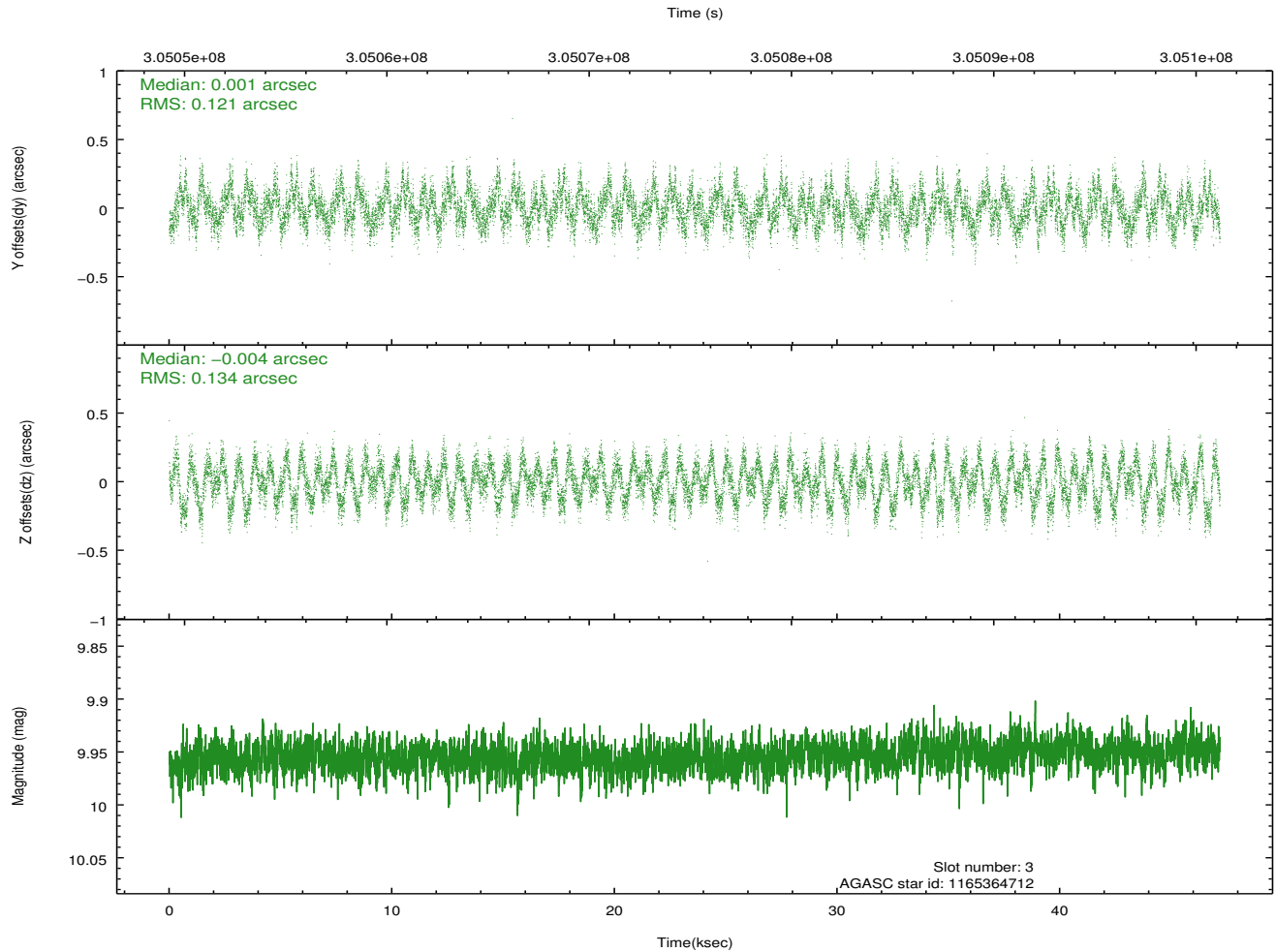
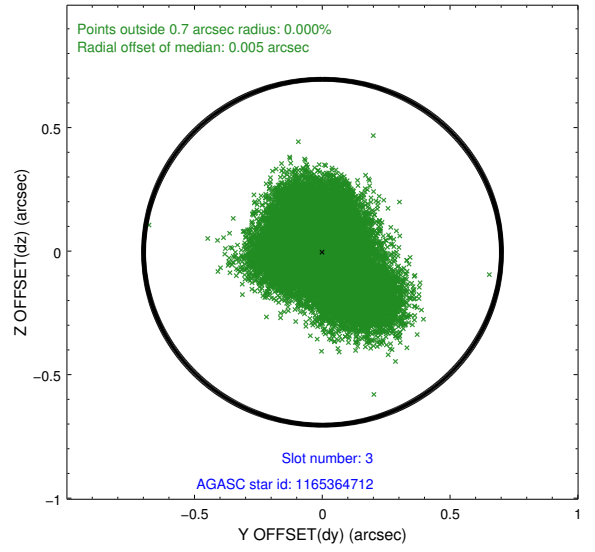
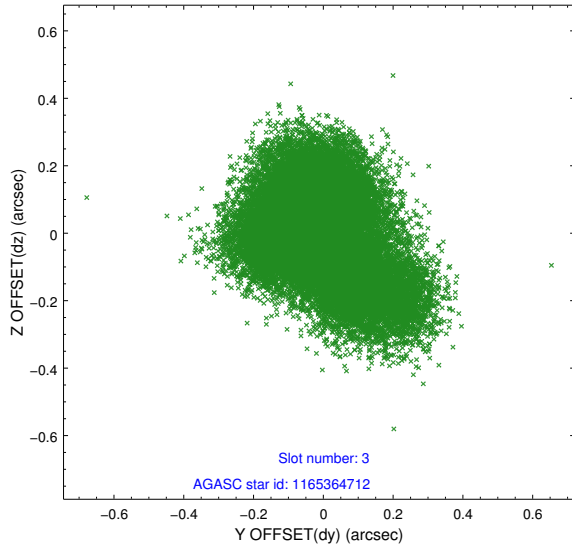


Slot Statistics

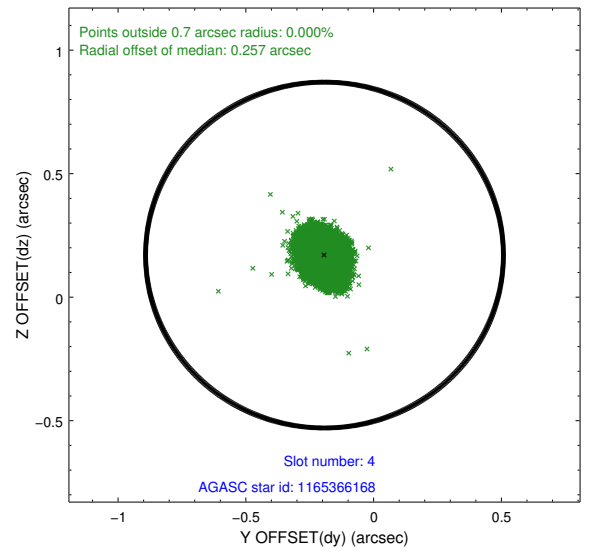
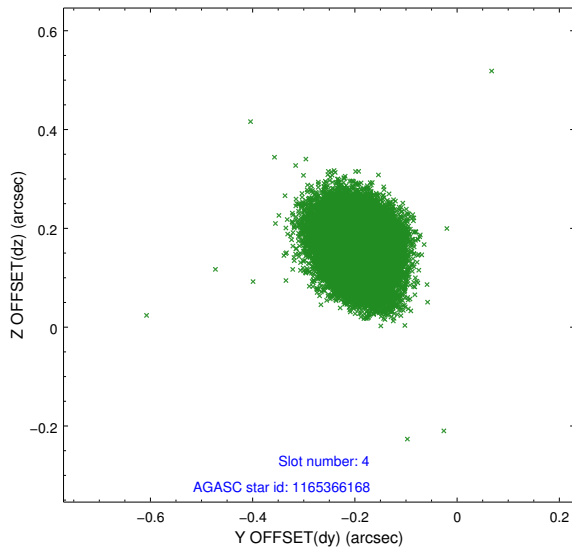
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	11511	-0.075	-0.037	0.018	0.027	0.000000	0.000000	-766.98	-1736.62
1	FID	ACIS-S-4	7.19	11509	0.216	0.047	0.009	0.017	0.000000	0.000000	2146.58	171.99
2	FID	ACIS-S-5	7.22	11510	-0.169	-0.002	0.017	0.025	0.000000	0.000000	-1819.95	165.56
3	GUIDE	1165364712	9.95	22982	0.001	-0.004	0.194	0.304	82.070456	-66.128810	1348.09	1398.13
4	GUIDE	1165366168	7.69	23017	-0.192	0.170	0.065	0.108	83.133276	-65.825610	1985.47	-393.63
5	GUIDE	1165367920	6.78	23019	-0.044	-0.003	0.107	0.163	84.229085	-66.560284	-1001.64	-1173.17
6	GUIDE	1165382424	8.35	23014	0.041	0.005	0.088	0.139	82.355152	-66.439036	162.45	1290.74
7	GUIDE	1165388496	10.10	22983	0.197	-0.149	0.323	0.461	82.286138	-66.879588	-1342.23	1801.11

2.4 Star Slots

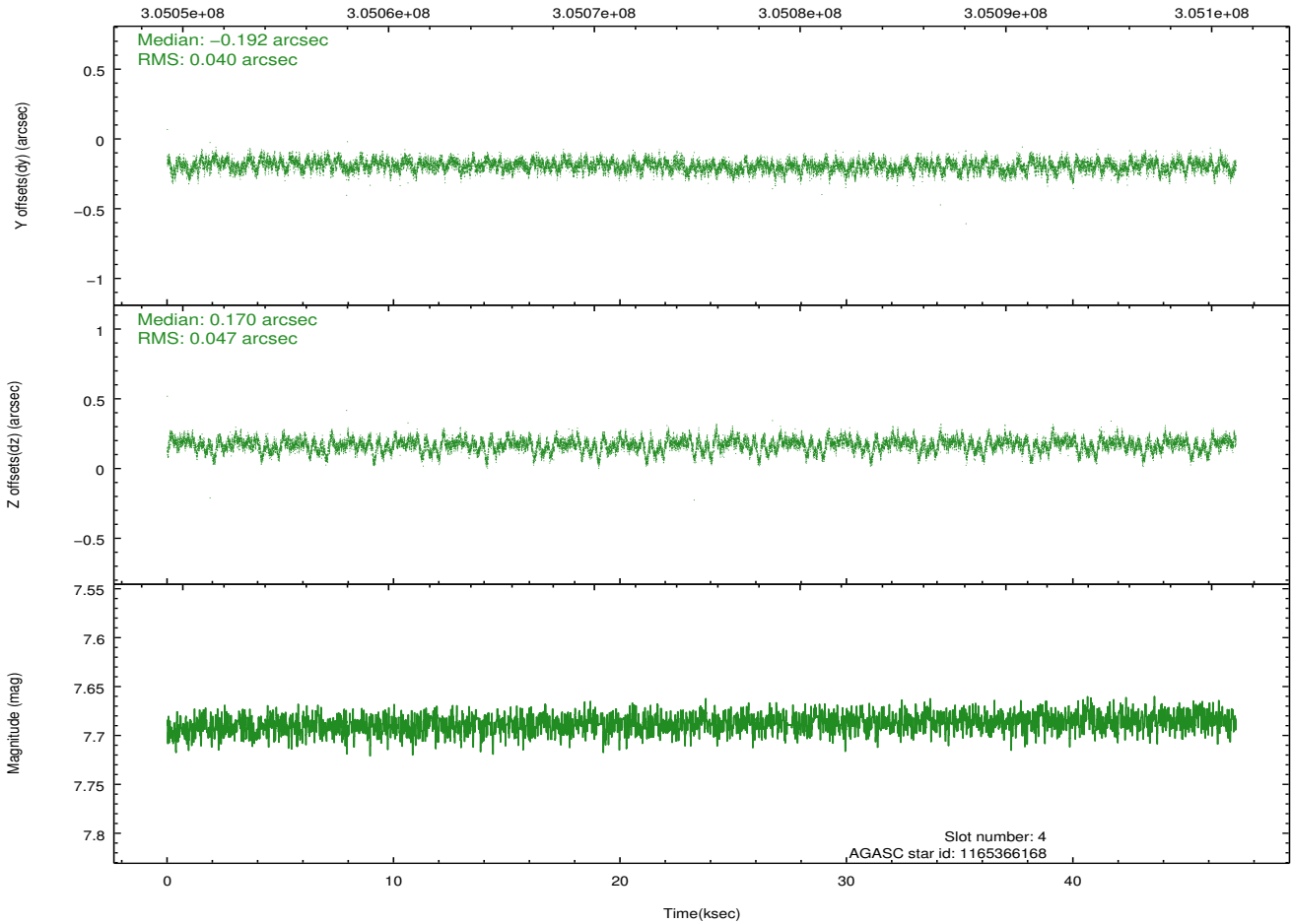
2.4.1 Slot 3



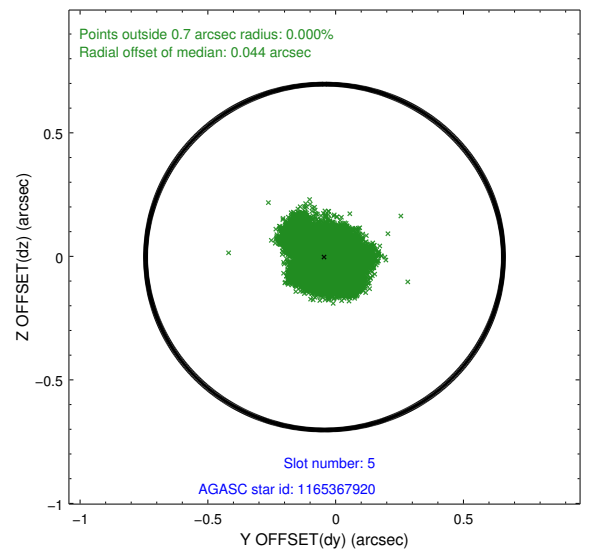
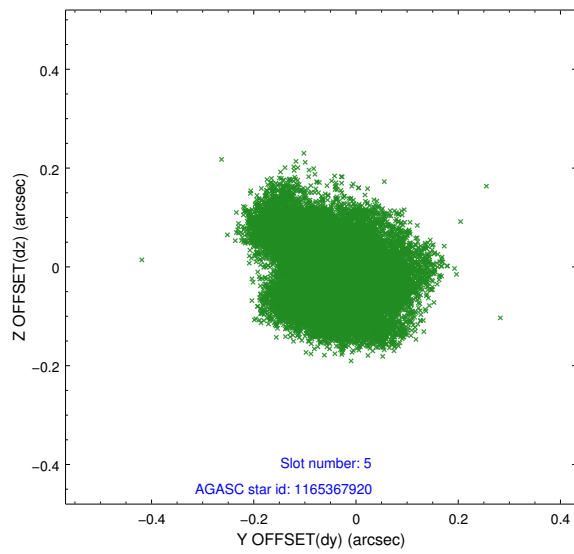
2.4.2 Slot 4



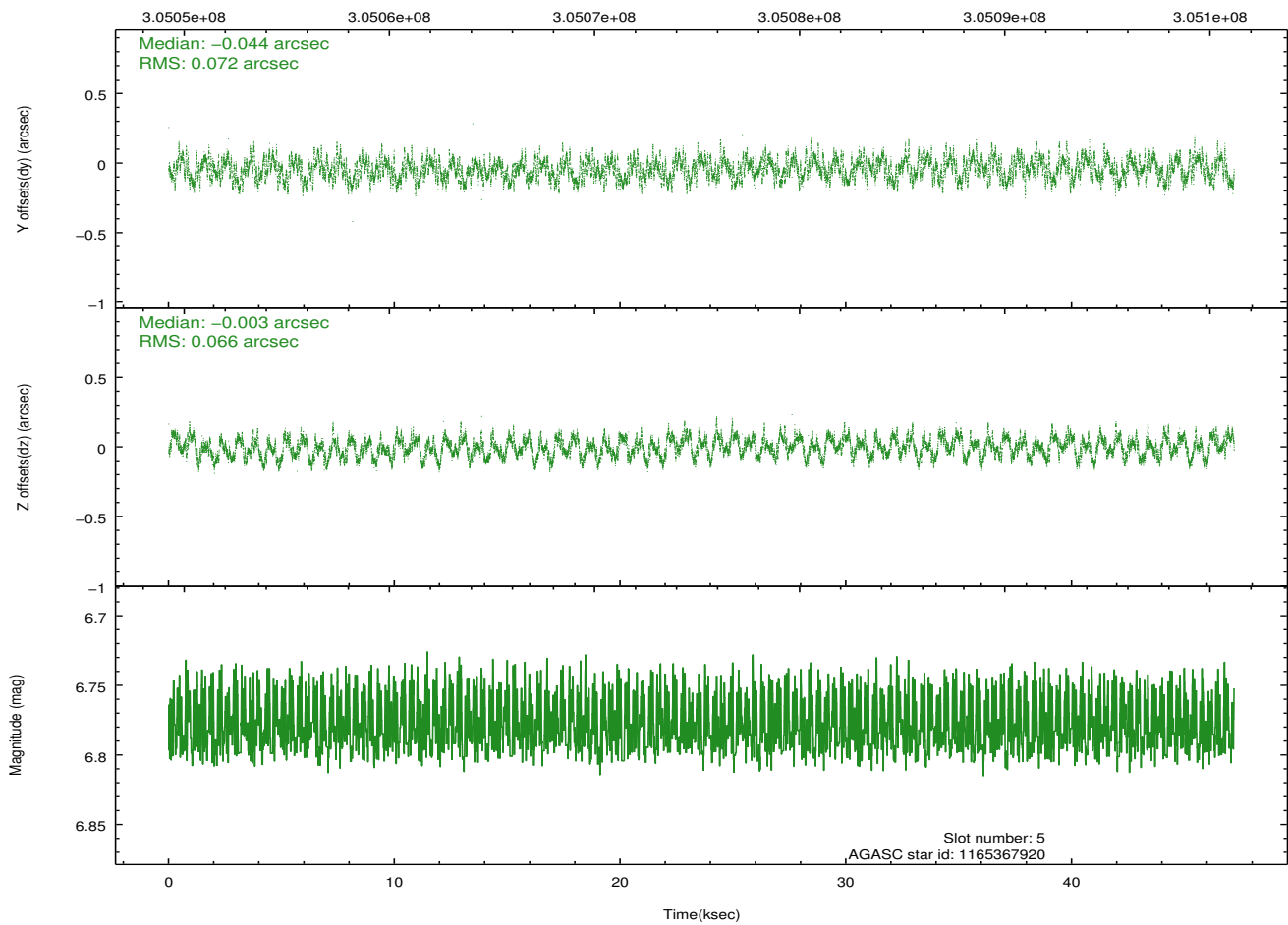
Time (s)



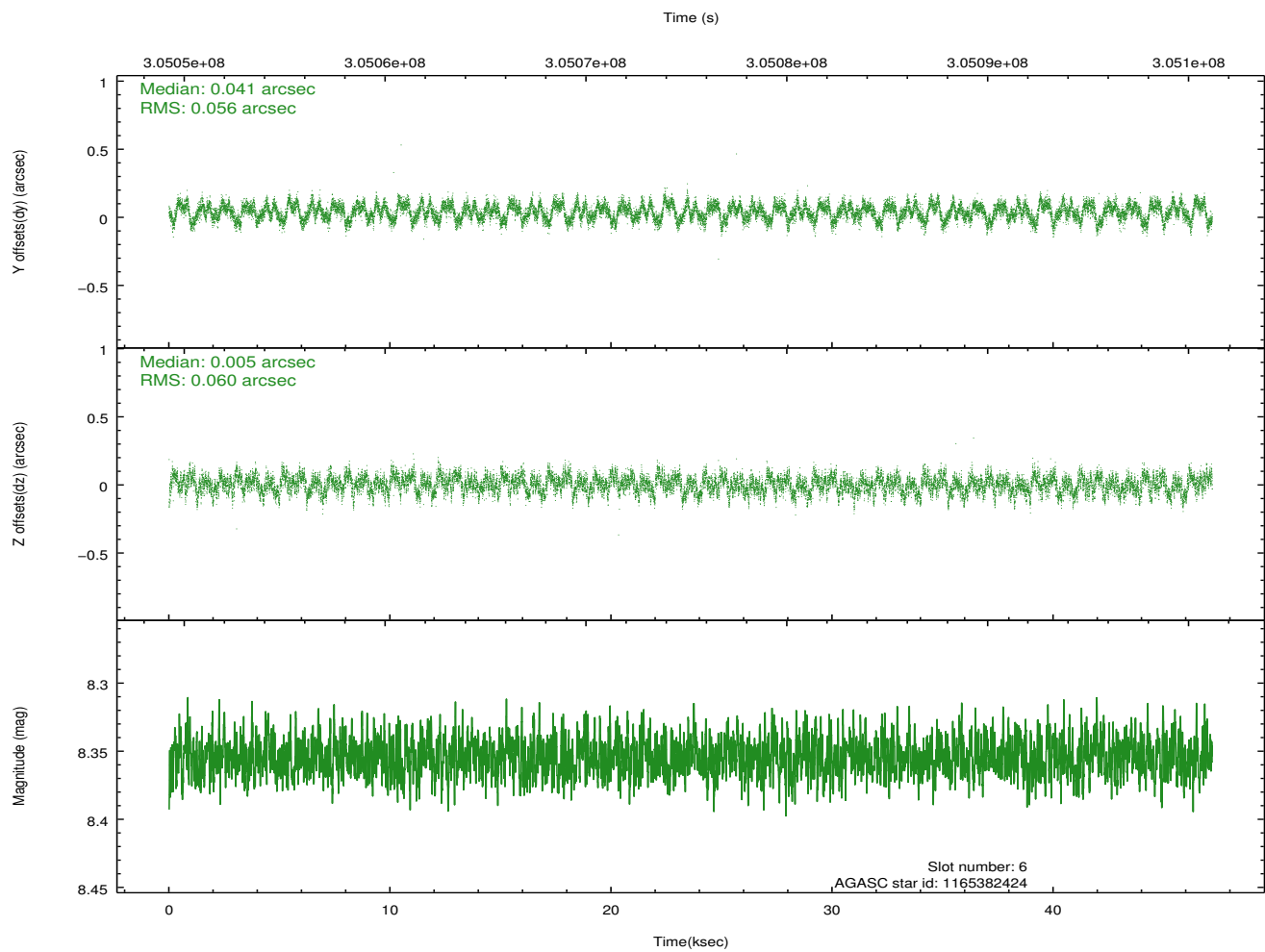
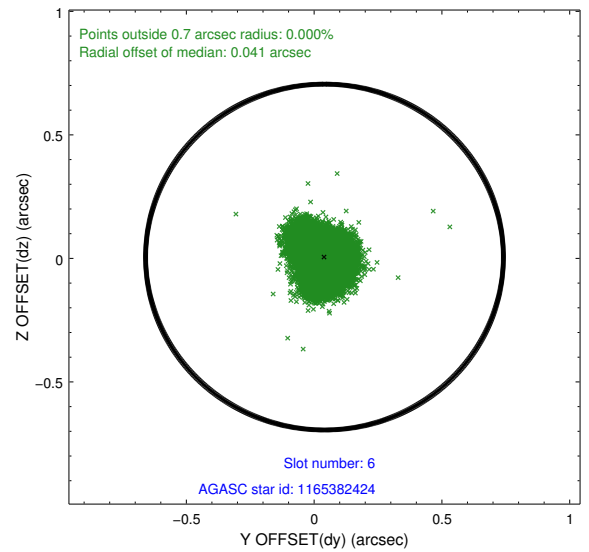
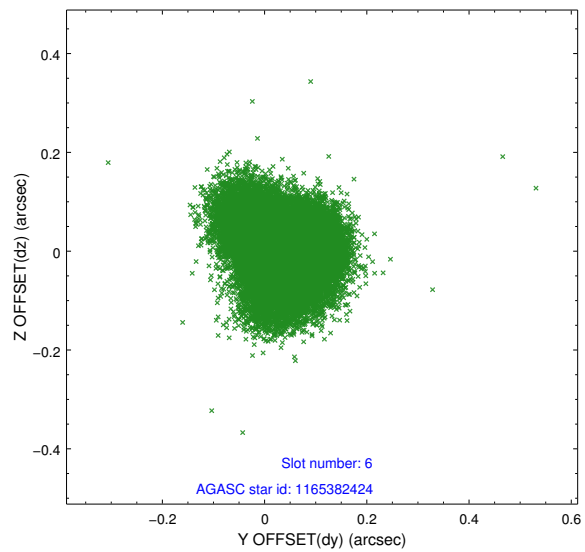
2.4.3 Slot 5



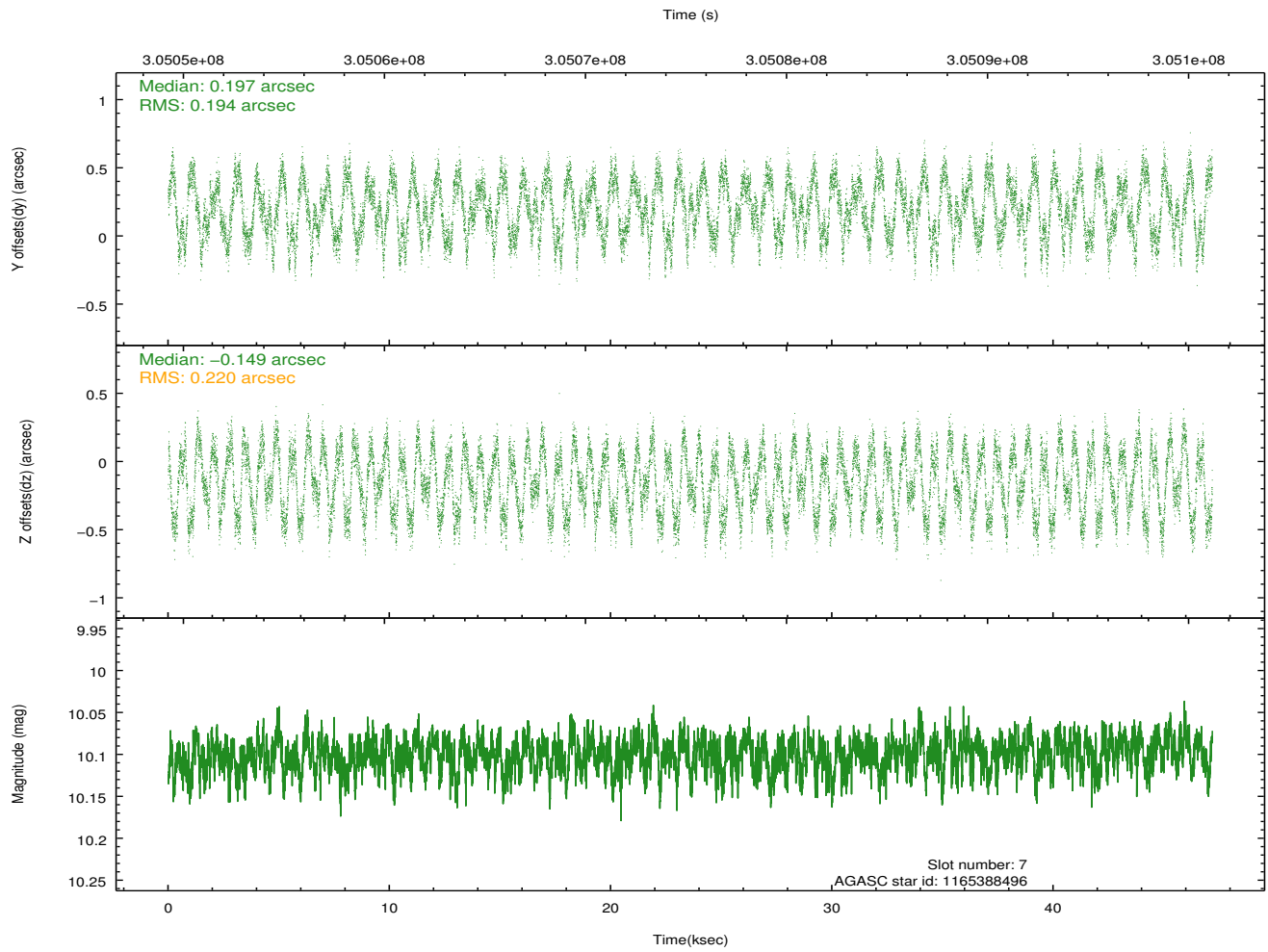
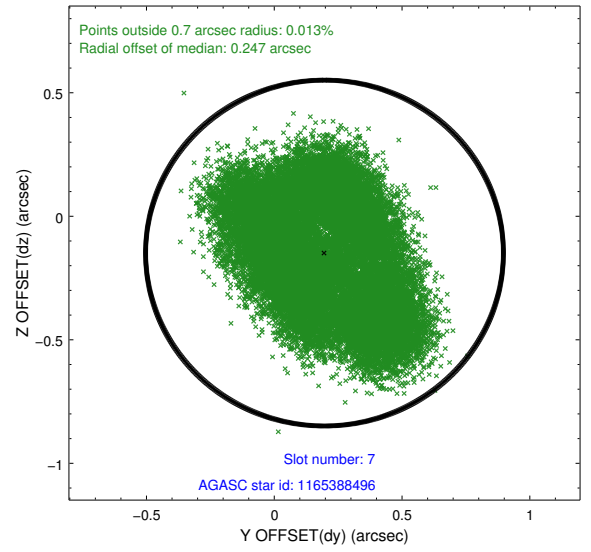
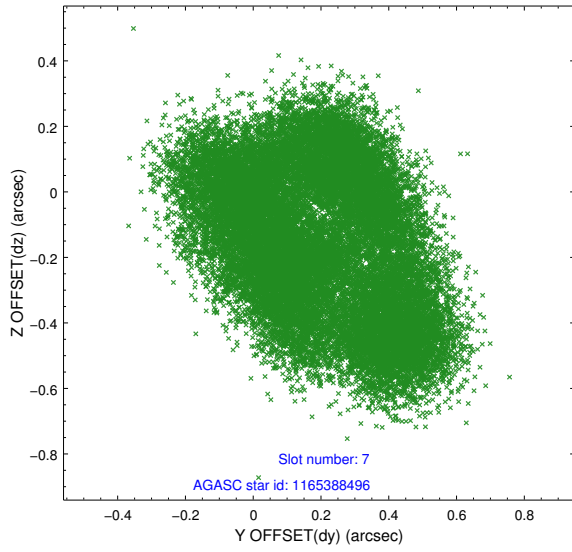
Time (s)



2.4.4 Slot 6

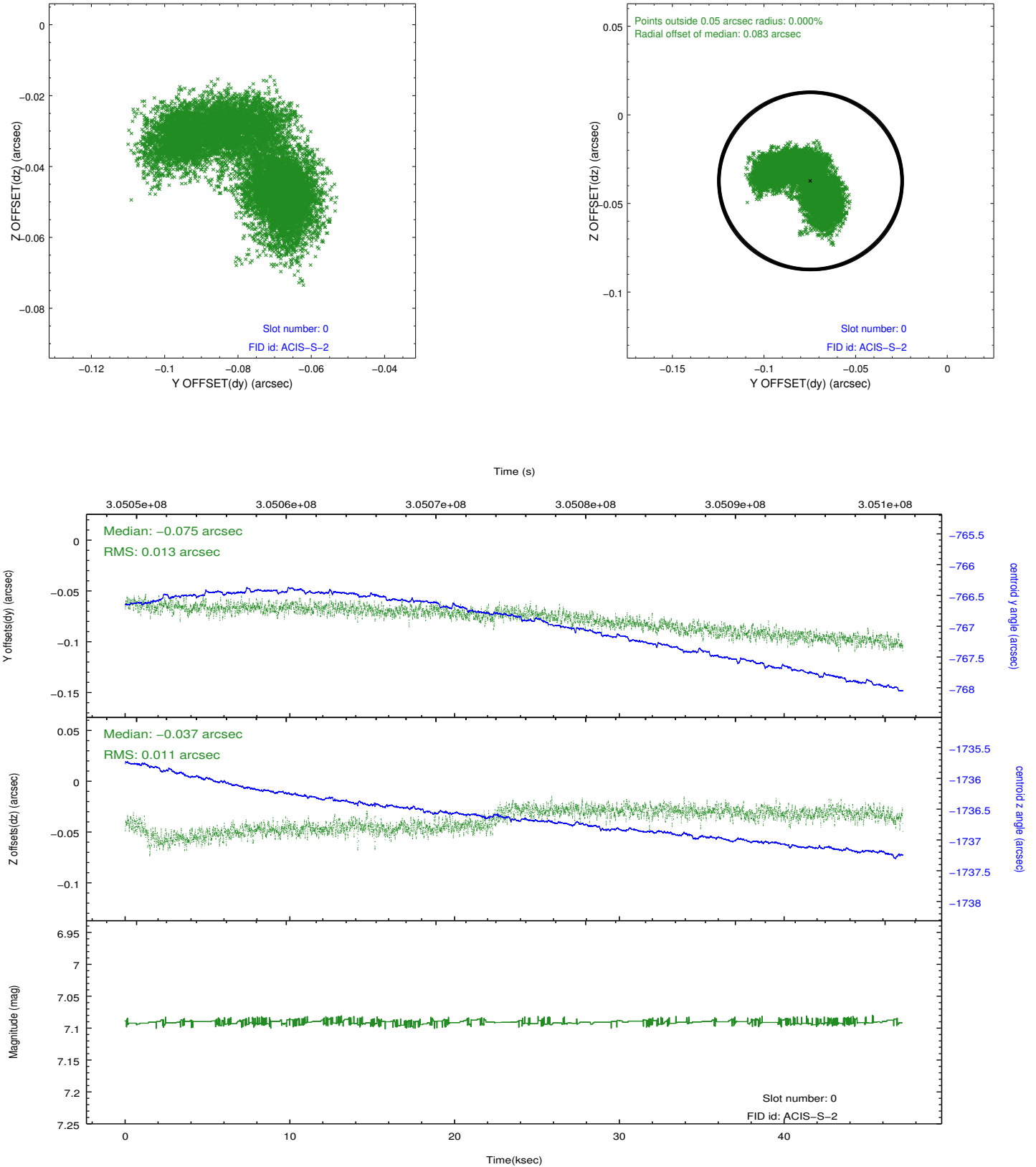


2.4.5 Slot 7

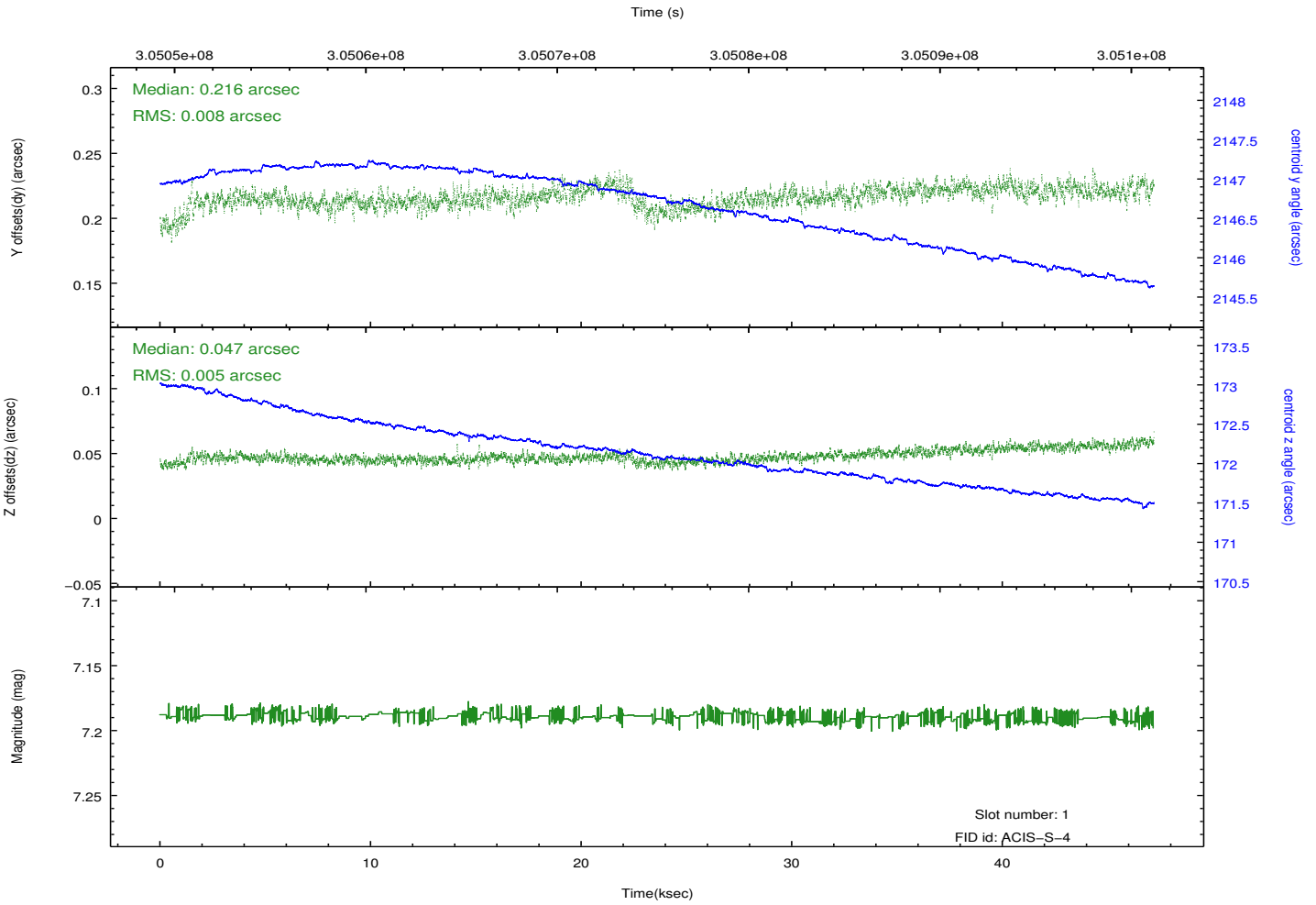
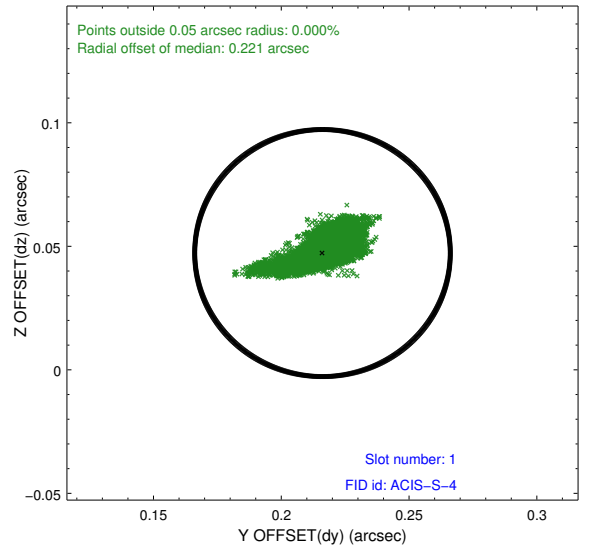
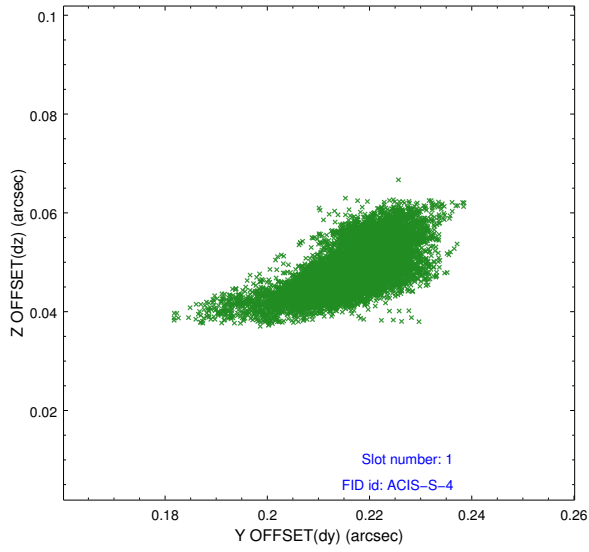


2.5 FID Slots

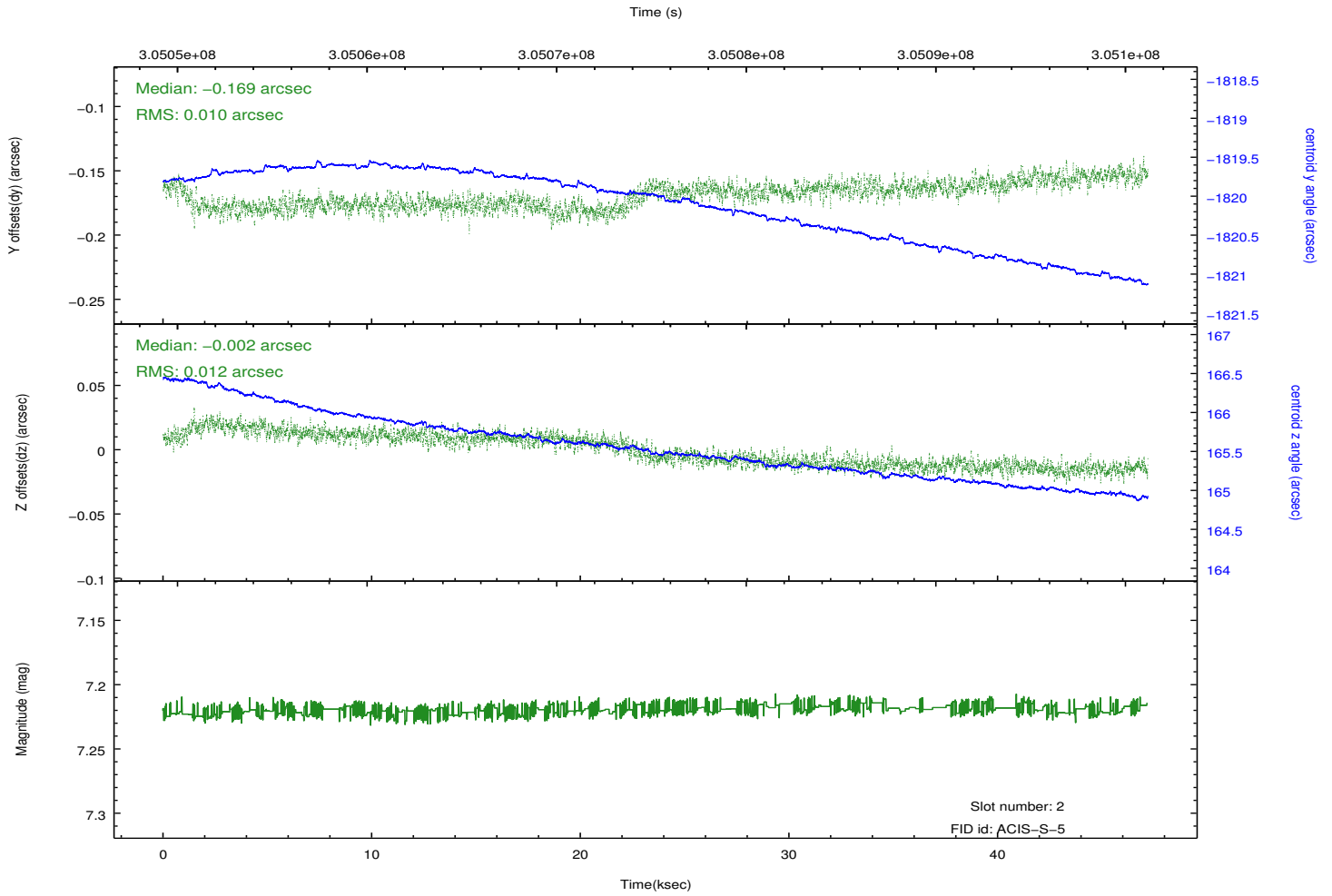
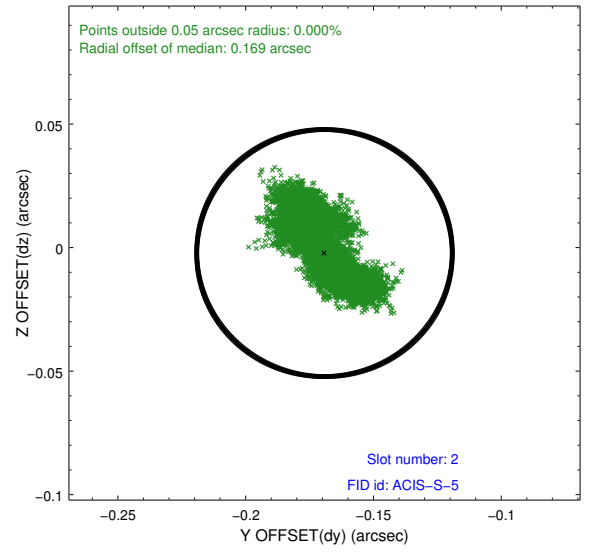
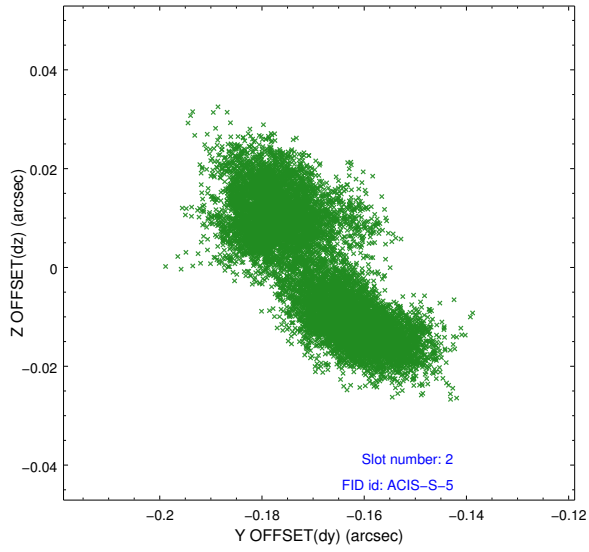
2.5.1 Slot 0



2.5.2 Slot 1

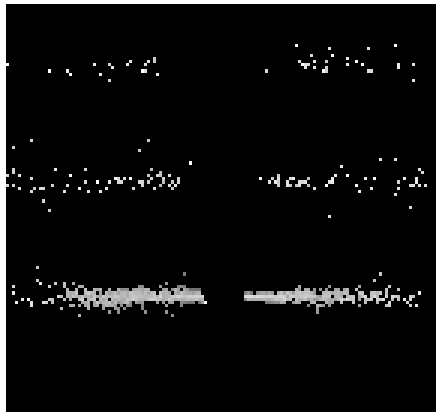


2.5.3 Slot 2

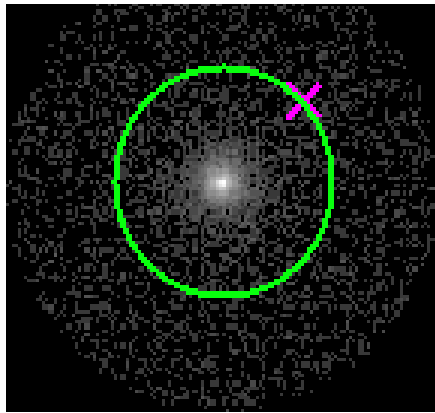


3 Gratings

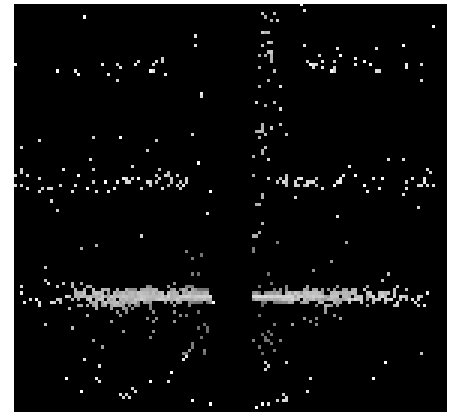
3.1 HEG Arm



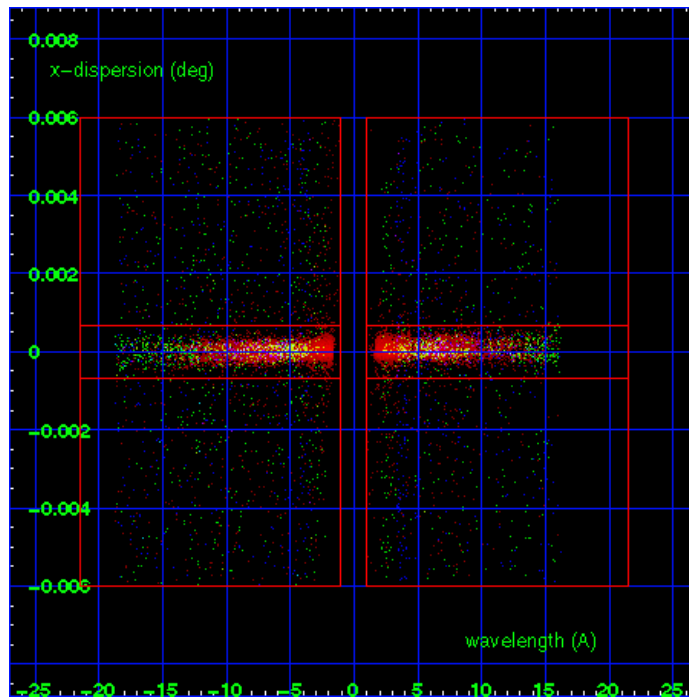
HEG Order Sort 123



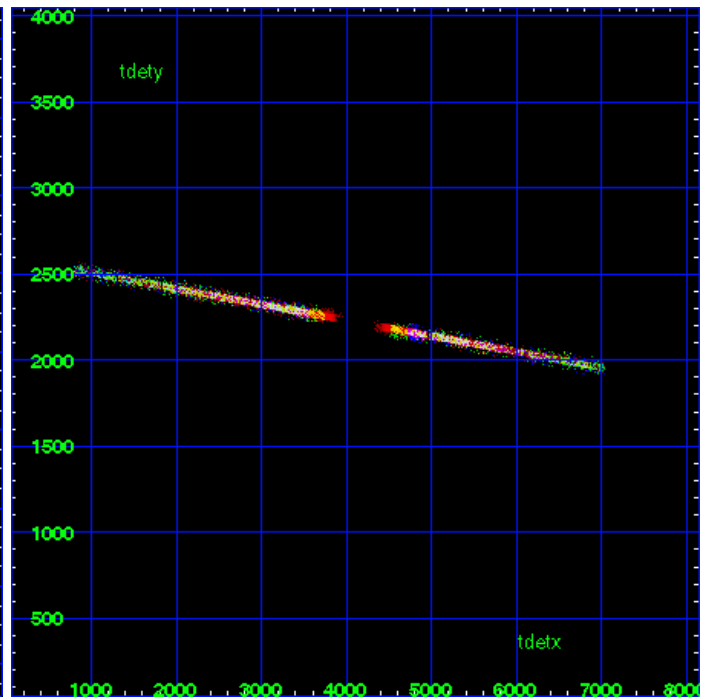
HEG Zero Order



HEG Order Sort ALL

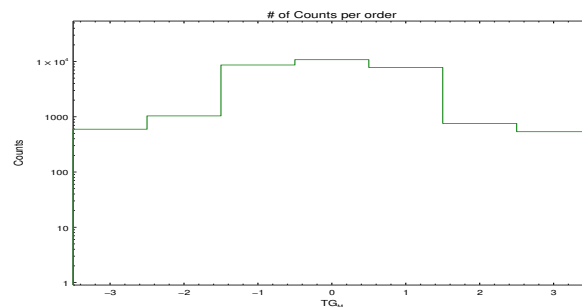


Spot Image HEG

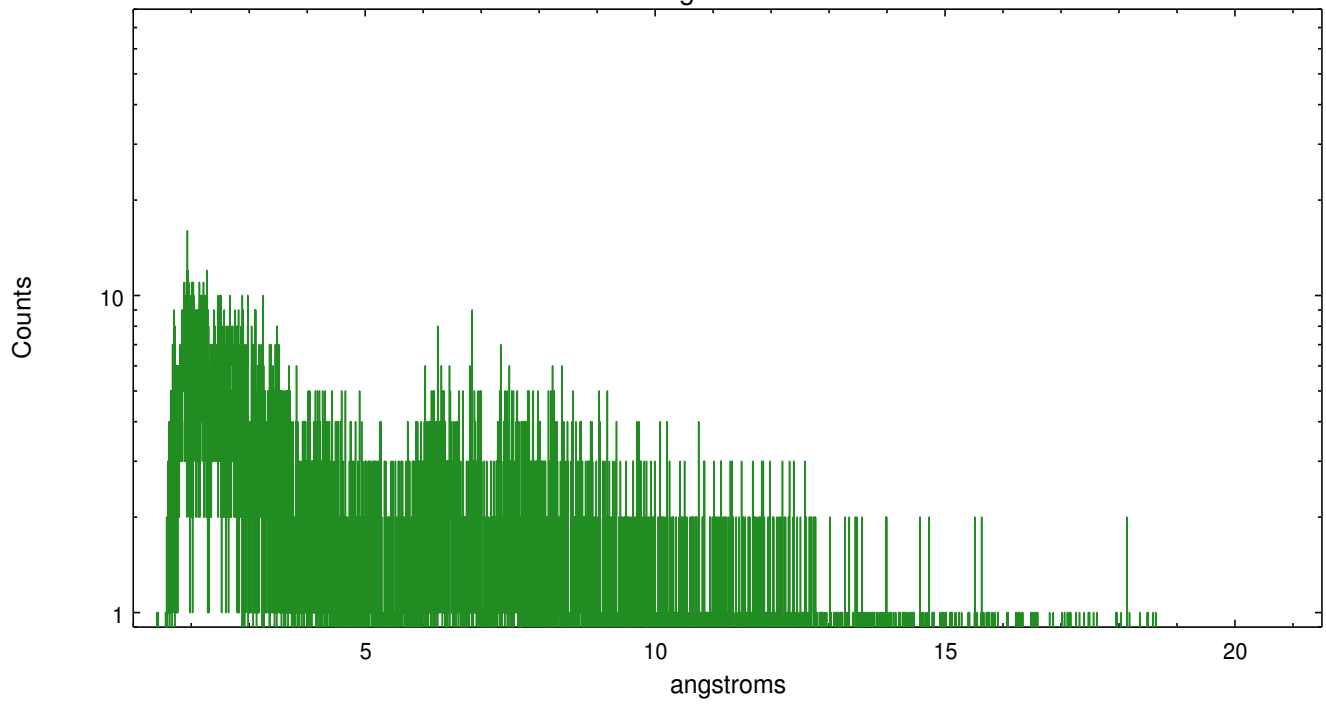


Full Detector HEG

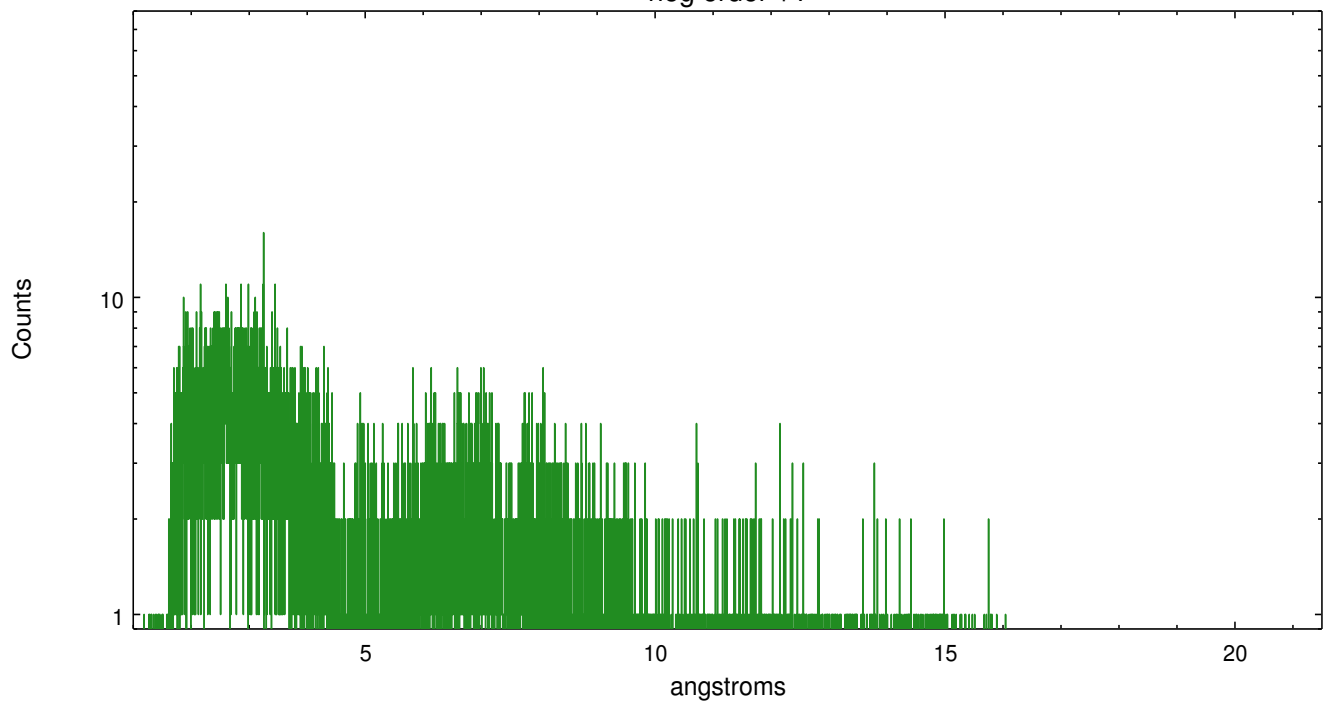
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	595	1037	8651	10802	7799	758	537



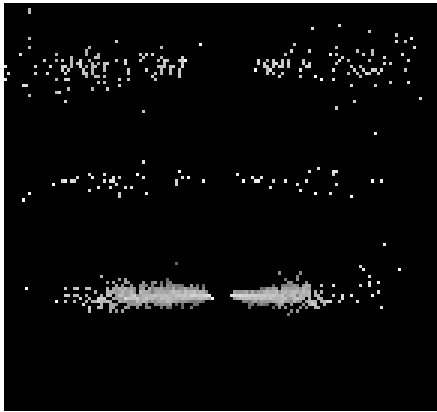
heg order -1



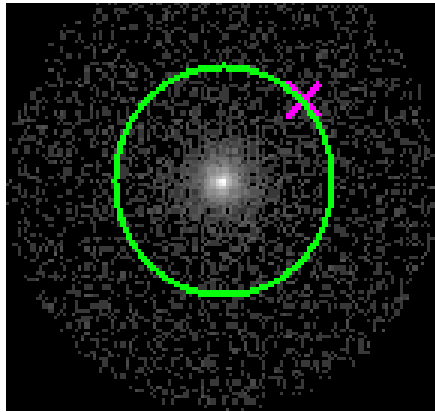
heg order +1



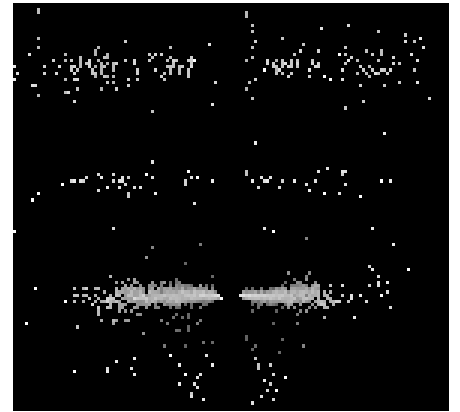
3.2 MEG Arm



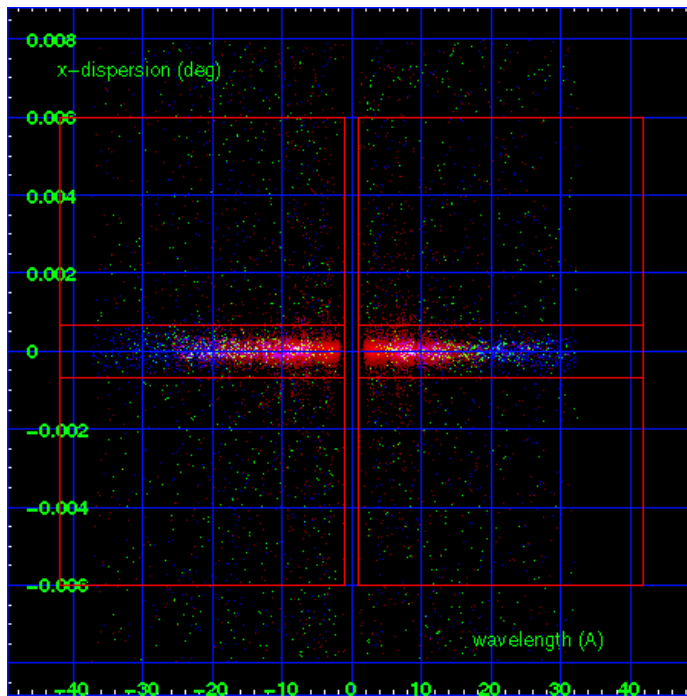
MEG Order Sort 123



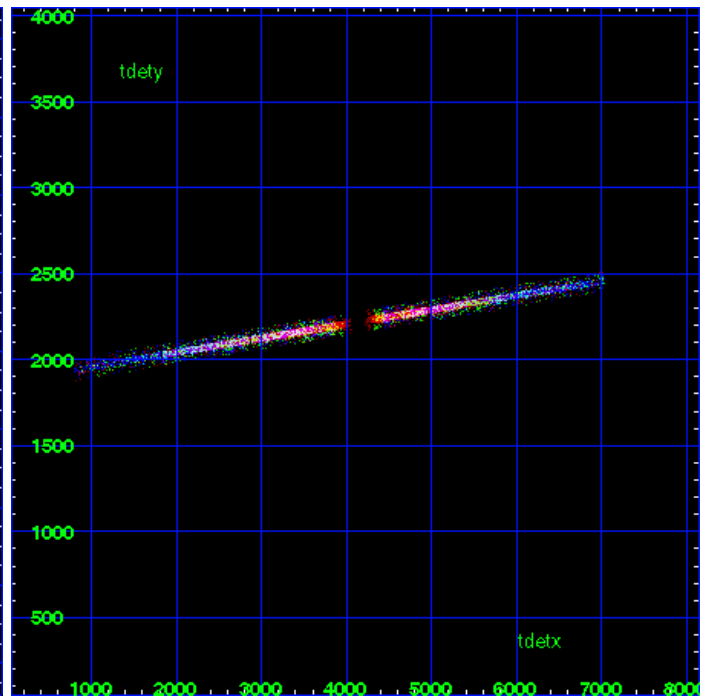
MEG Zero Order



MEG Order Sort ALL

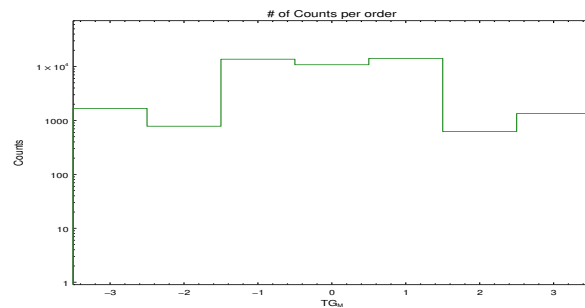


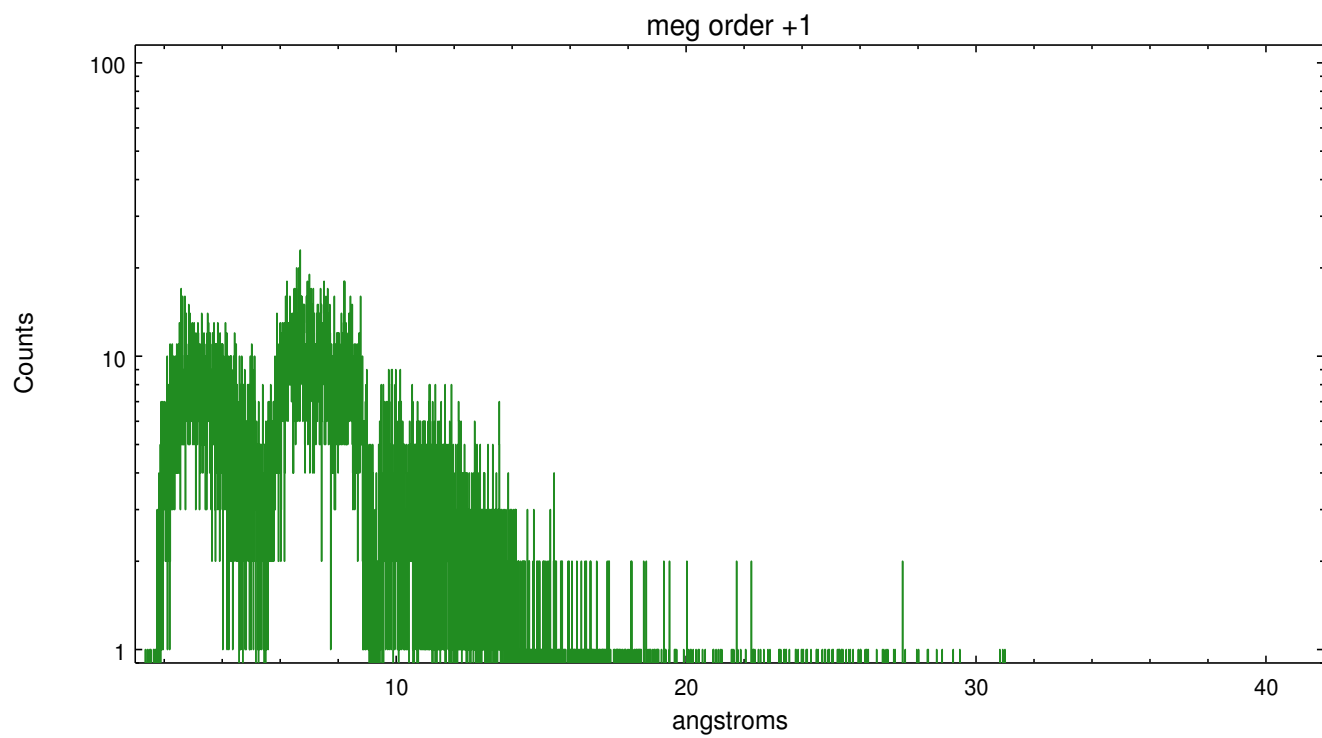
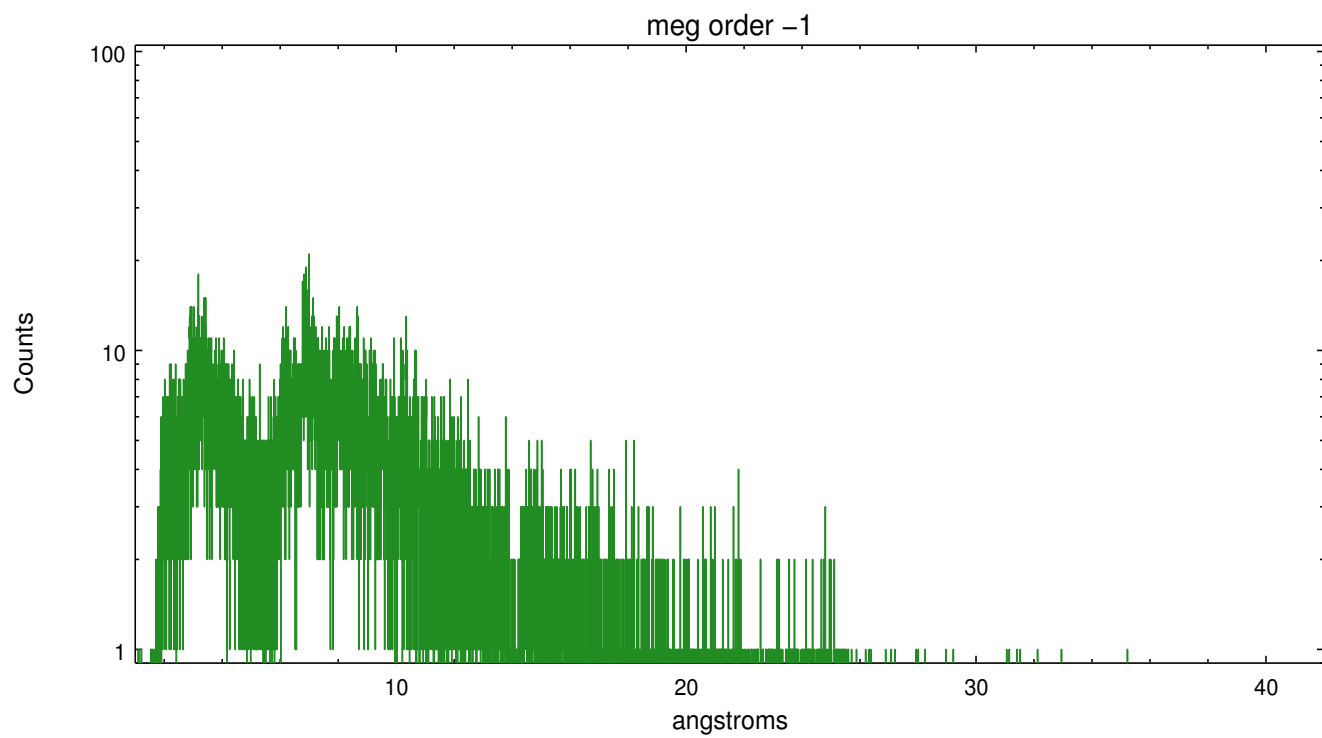
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1670	781	13674	10802	14170	622	1343





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	47.0879998

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 ($x=4073.33$, $y=4074.03$) 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.