

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 3454 - L2 Version 3
Chandra X-Ray Center

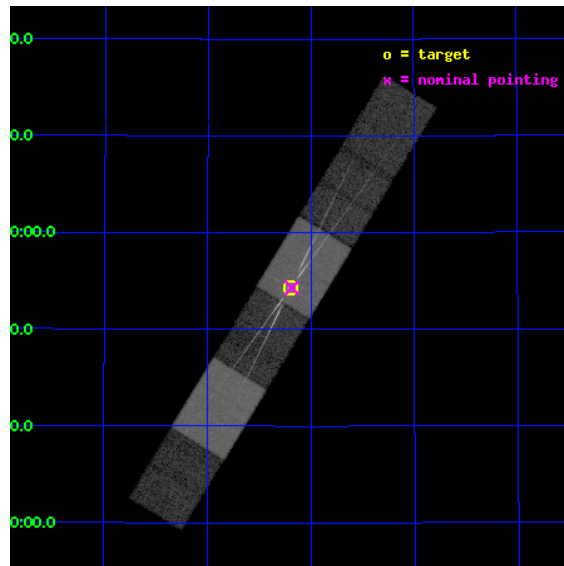
L2 Processing Date : Oct 5 2012

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1 Front

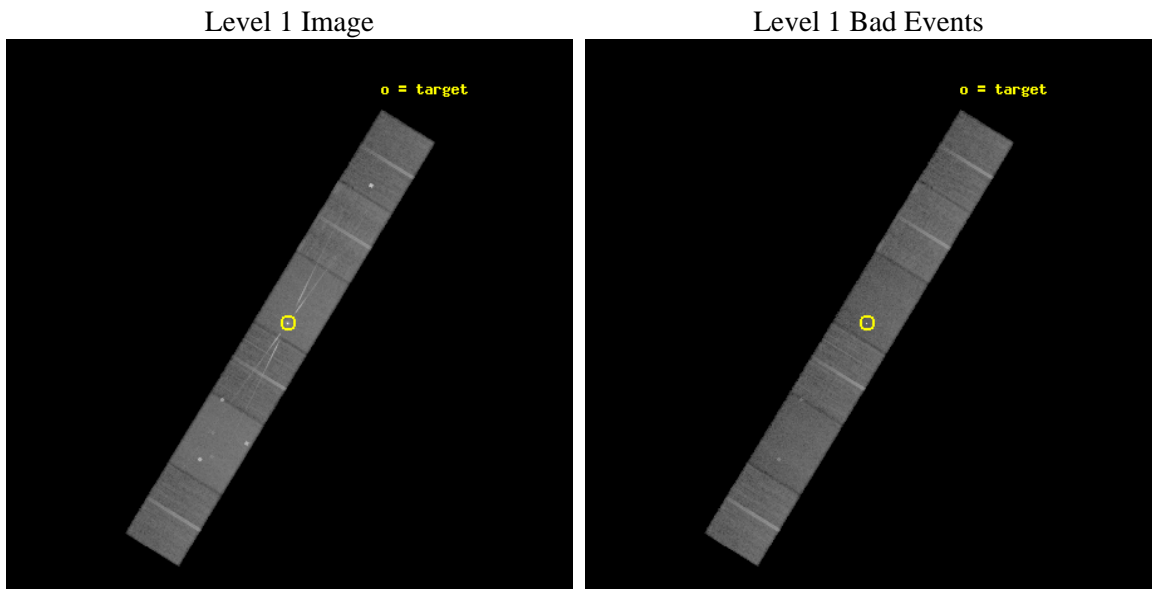
seq_num	300089	Sequence number
obs_id	3454	Observation id
title	CHANDRA HETG SPECTROSCOPY OF GK PER IN OUTBURST	Proposal title
observer	Christopher Mauche	Principal investigator
object	GK PER	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	52.799167	Observer's specified target RA [deg]
dec_targ	43.904667	Observer's specified target Dec [deg]
ra_nom	52.796131021756	Nominal RA [deg]
dec_nom	43.905009754974	Nominal Dec [deg]
roll_nom	301.440454243	Nominal Roll [deg]
revision	3	Processing version of data
ontime	32099.958999842	Sum of GTIs [s]
livetime	31581.51681973	Livetime [s]
ontime4	32102.5	Sum of GTIs [s]
ontime5	32099.958999842	Sum of GTIs [s]
ontime6	32102.5	Sum of GTIs [s]
ontime7	32099.958999842	Sum of GTIs [s]
ontime8	32102.5	Sum of GTIs [s]
ontime9	32099.958999842	Sum of GTIs [s]
l2events	277346	Number of level 2 events



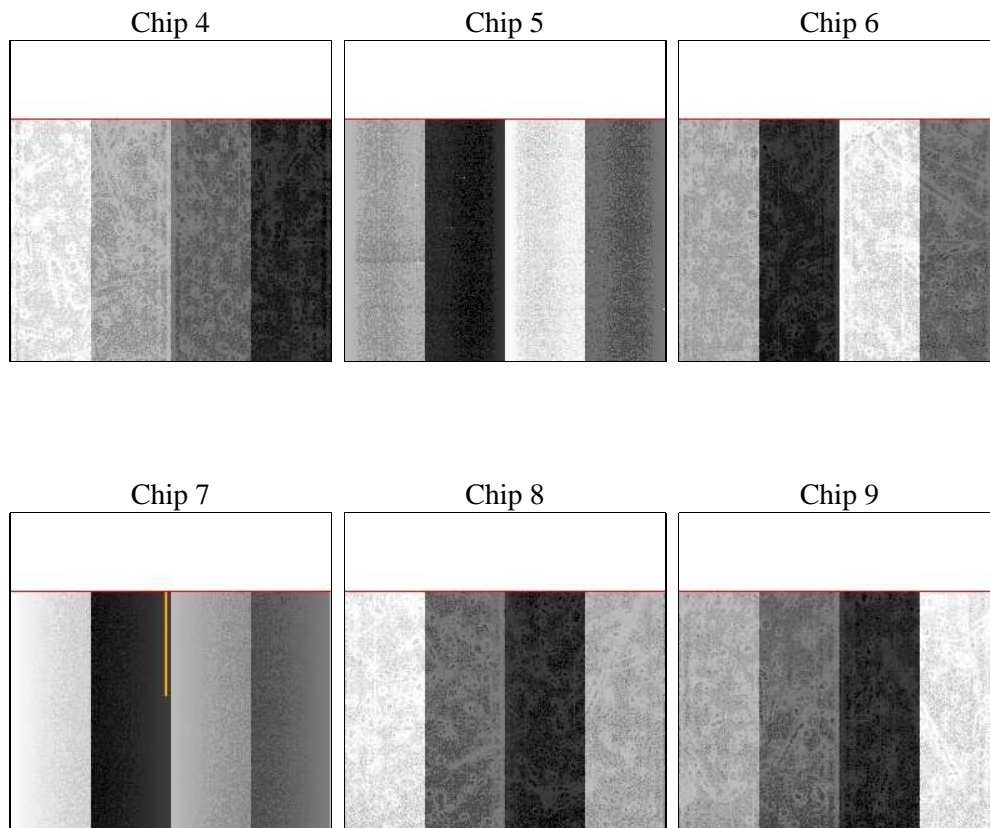
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	32340.530000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	32099.958999842	Sum of GTIs [s]
caldbver	4.5.2	 	ontime4	32102.5	Sum of GTIs [s]
date	2012-10-04T17:06:35	Date and time of file creation	ontime5	32099.958999842	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	32102.5	Sum of GTIs [s]
			ontime7	32099.958999842	Sum of GTIs [s]
			ontime8	32102.5	Sum of GTIs [s]
			ontime9	32099.958999842	Sum of GTIs [s]
			l1events	1138376	Number of level 1 events

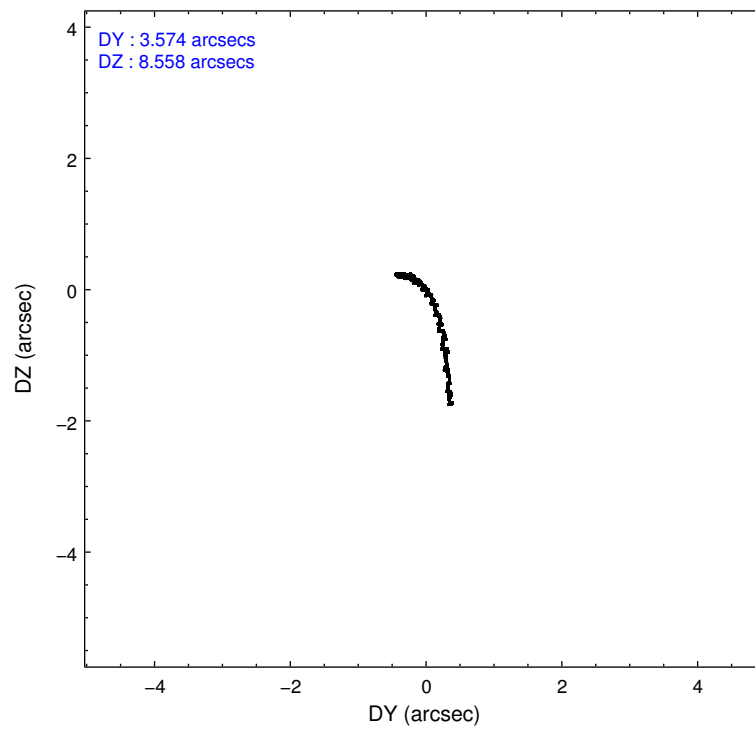
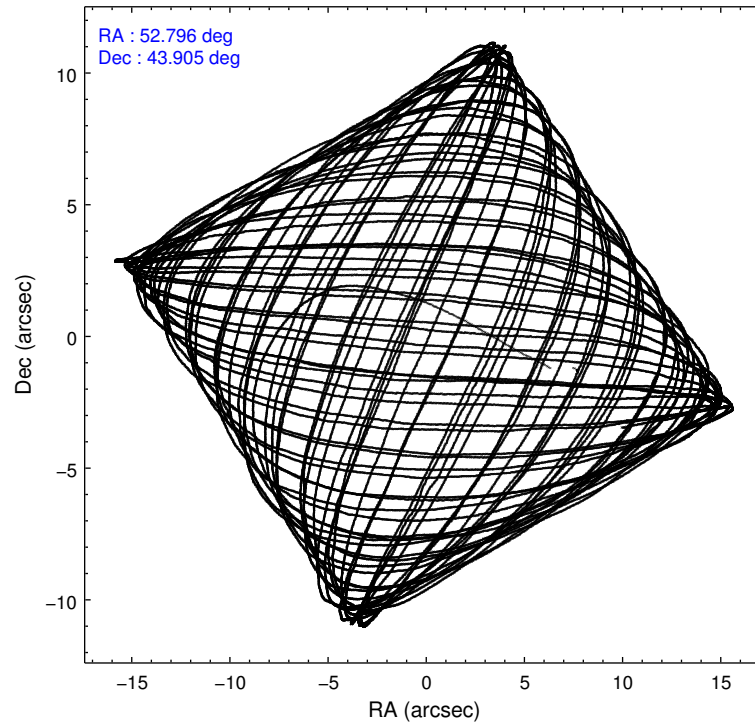
2.1.4 Events

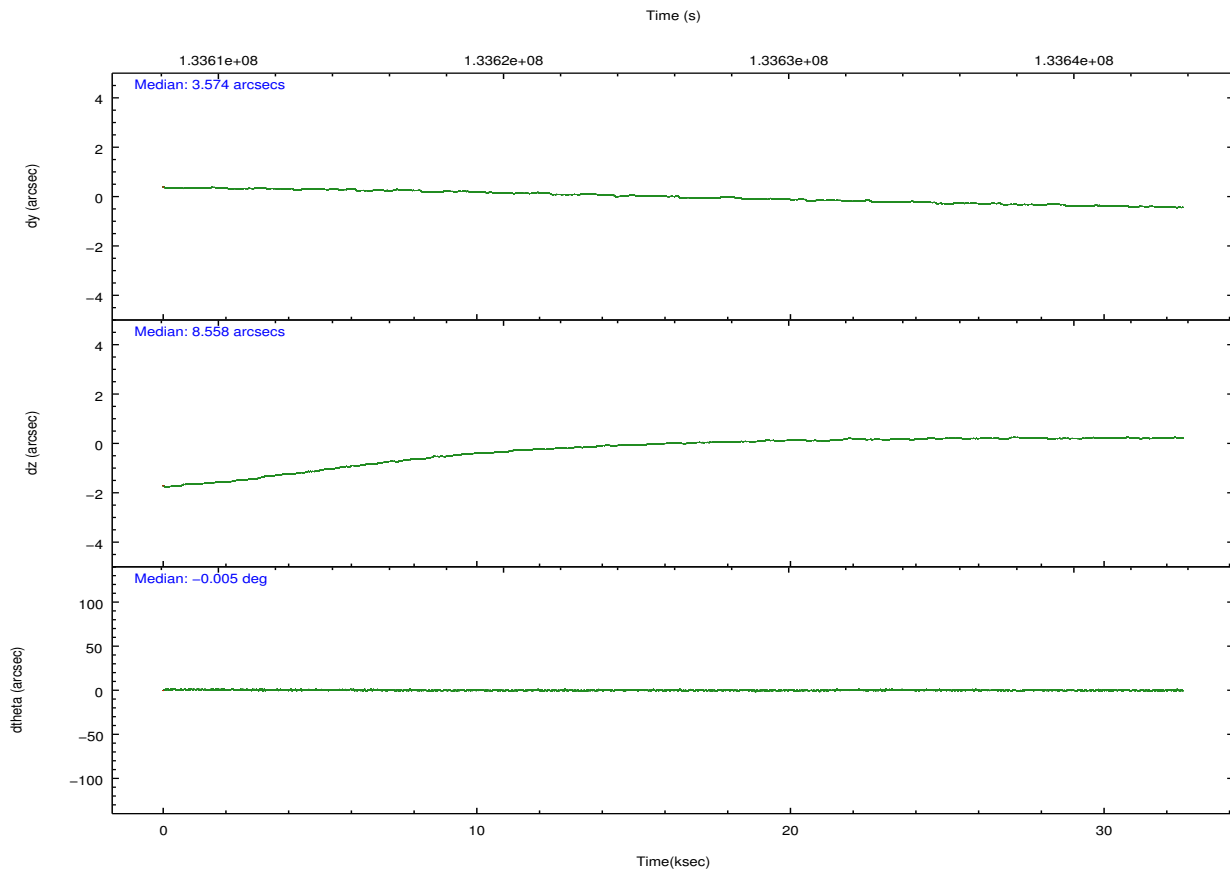
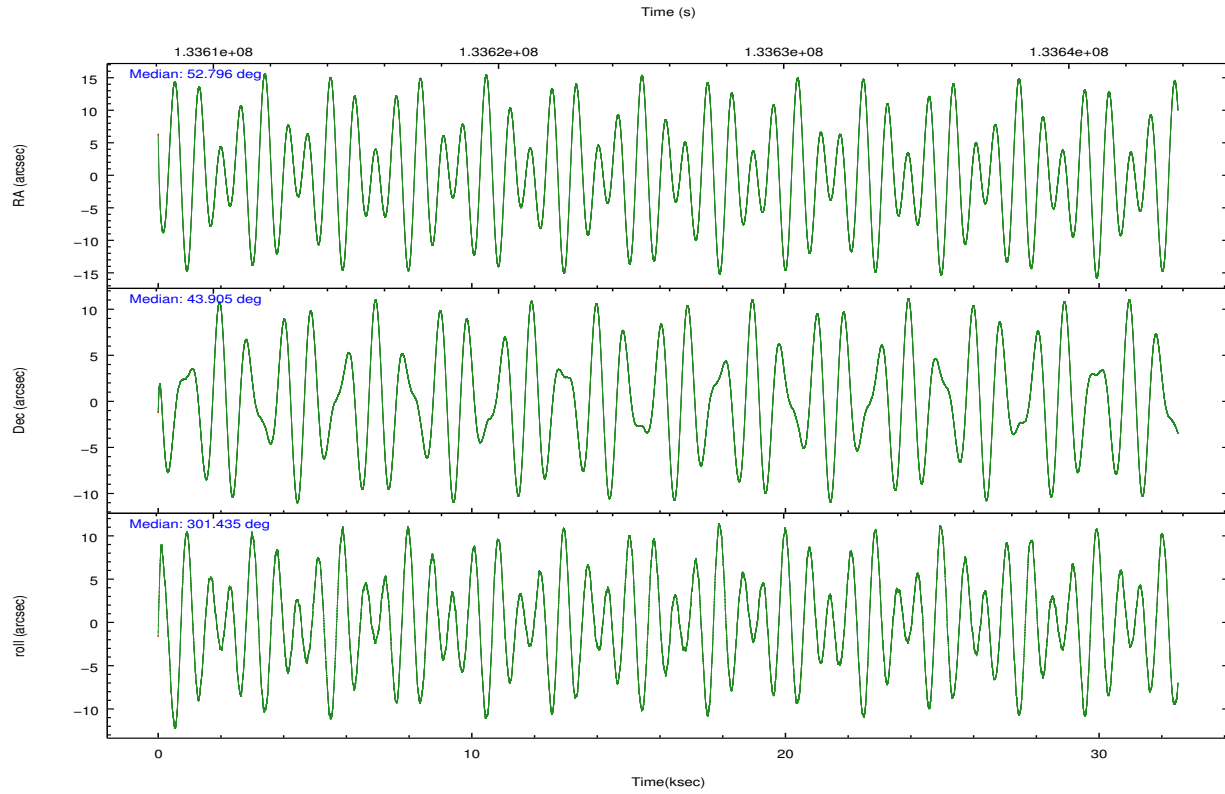
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	164397	224658	169366	225923	196113	157919	grade 0 events	7216	18682	15126	13249	12834	15389
rejected events	146170	116549	137795	117556	155533	130683		4%	8%	8%	5%	6%	9%
rejected %	88%	51%	81%	52%	79%	82%	grade 1 events	75	1045	85	516	112	68
								0%	0%	0%	0%	0%	0%
							grade 2 events	4189	28287	5861	22161	8758	4604
								2%	12%	3%	9%	4%	2%
							grade 3 events	1849	4992	2705	10075	4129	1962
								1%	2%	1%	4%	2%	1%
							grade 4 events	1789	4865	2633	10083	3908	1872
								1%	2%	1%	4%	1%	1%
							grade 5 events	5298	17096	6489	20267	8223	6515
								3%	7%	3%	8%	4%	4%
							grade 6 events	3185	51294	5247	52805	10952	3411
								1%	22%	3%	23%	5%	2%
							grade 7 events	140796	98397	131220	96767	147197	124098
								85%	43%	77%	42%	75%	78%

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	52.762681	52.79613102175644	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	43.917756	43.90500975497406	Subarray start row	1	1
[deg] Pointing Roll	301.307026	301.4404542430026	Subarray row count	774	774
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	2.5
[mm] SIM translation stage pos	-187.132523	-187.1254020033014			
[mm] SIM translation stage offset	-3	-3.007120579706367			
[s] Observation start time (MET)	133609861.184000	133608837.32212			
Observation start date	2002-03-27T09:49:57	2002-03-27T09:33:57			
[s] Observation end time (MET)	133642202.184000	133642516.26099			
Observation end date	2002-03-27T18:48:58	2002-03-27T18:55:16			
Read mode	TIMED	TIMED			

2.3 Aspect



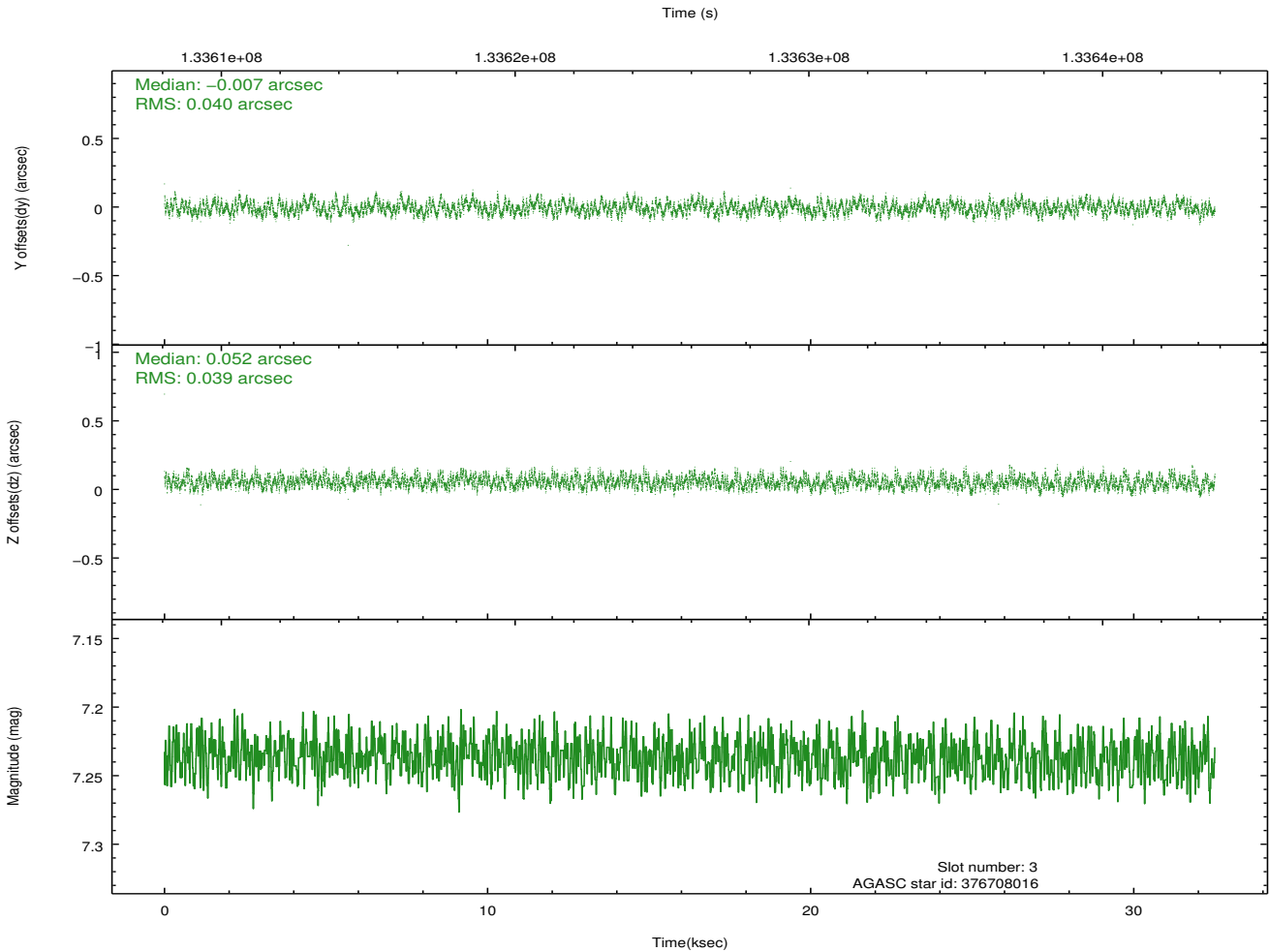
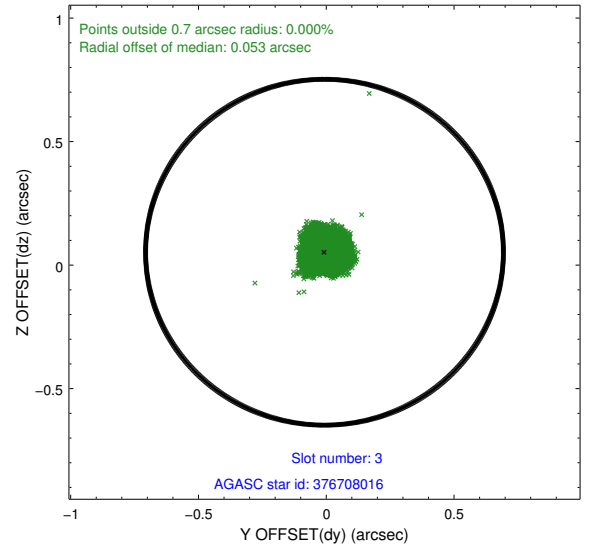
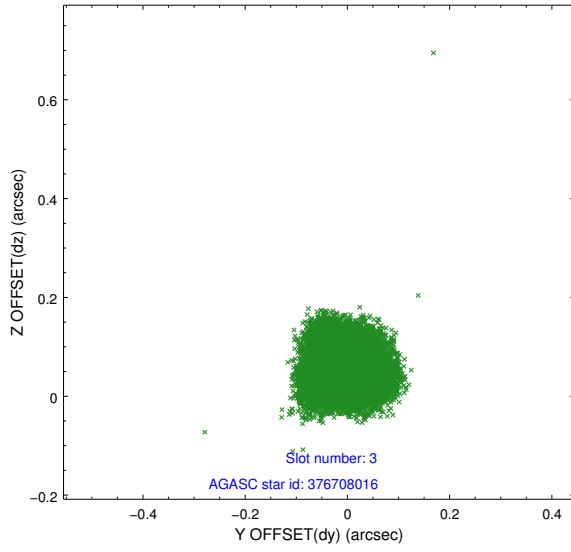


Slot Statistics

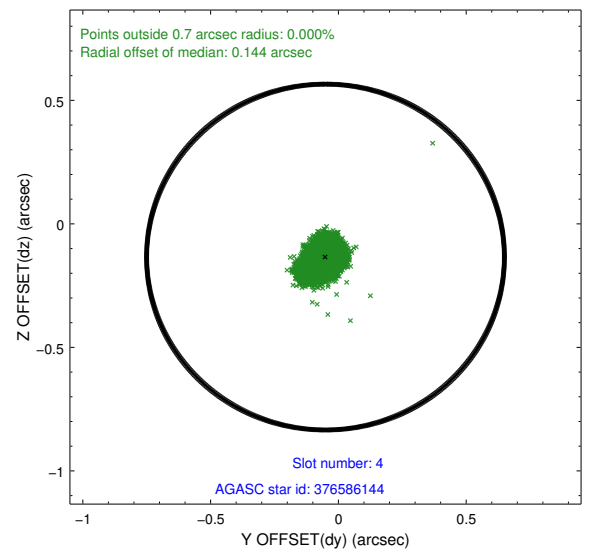
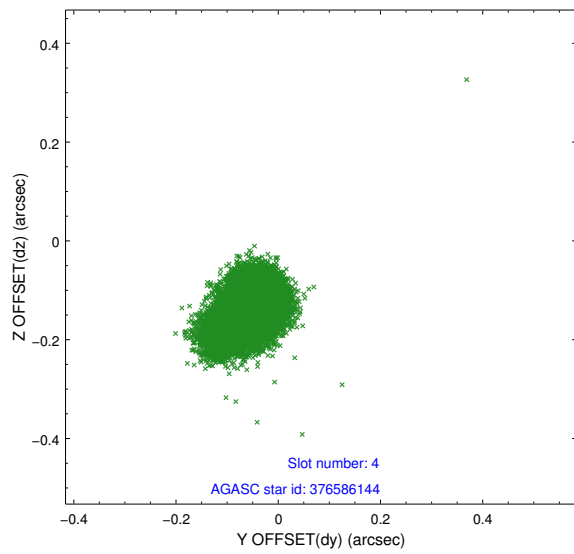
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	7929	-0.050	-0.034	0.013	0.019	0.000000	0.000000	-756.03	-1791.60
1	FID	ACIS-S-4	7.20	7928	0.016	0.033	0.013	0.021	0.000000	0.000000	2157.26	116.93
2	FID	ACIS-S-6	7.38	7930	0.007	0.007	0.009	0.016	0.000000	0.000000	406.04	754.33
3	GUIDE	376708016	7.24	15860	-0.007	0.052	0.061	0.093	53.836874	43.847951	1649.39	2261.75
4	GUIDE	376586144	7.52	15861	-0.051	-0.134	0.052	0.092	52.137991	43.753592	-342.97	-1691.92
5	GUIDE	376576840	8.76	15858	-0.139	0.068	0.064	0.103	52.014072	44.339588	-2305.31	-853.55
6	GUIDE	376570704	9.16	15847	0.136	-0.058	0.078	0.126	52.383963	43.230715	1596.62	-2132.84
7	GUIDE	376709472	9.24	15853	0.063	0.071	0.080	0.126	53.555484	43.741943	1605.01	1438.00

2.4 Star Slots

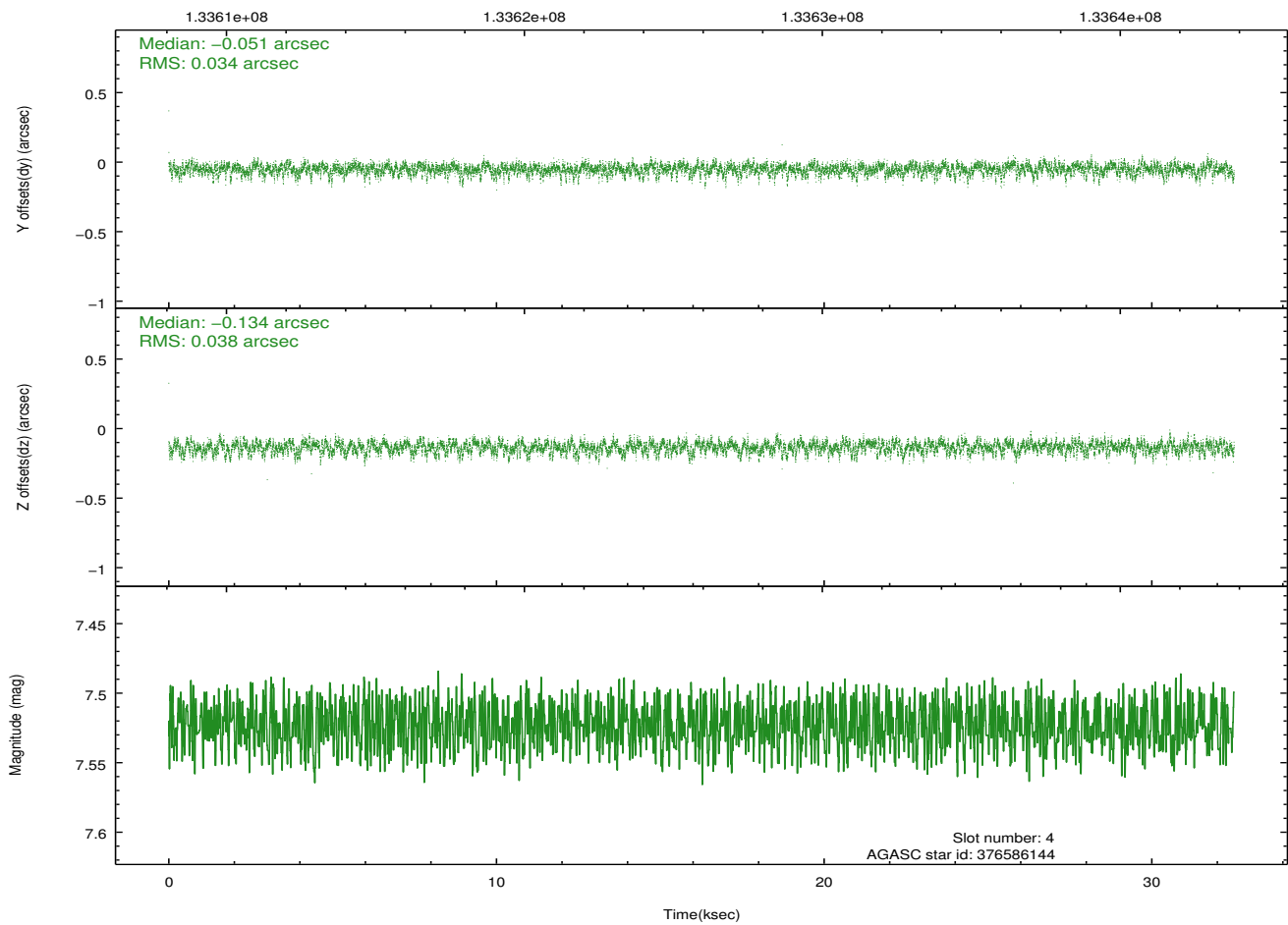
2.4.1 Slot 3



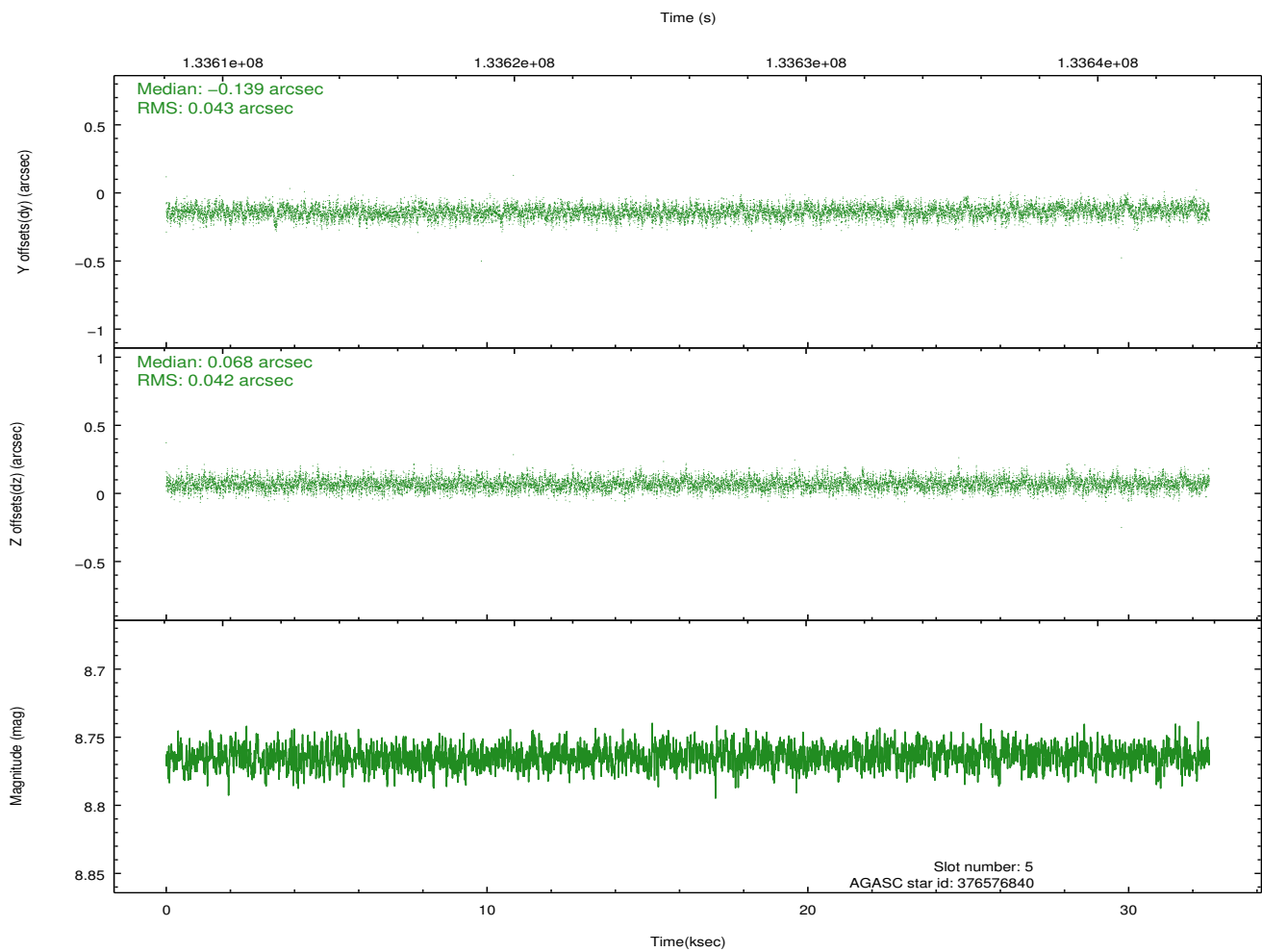
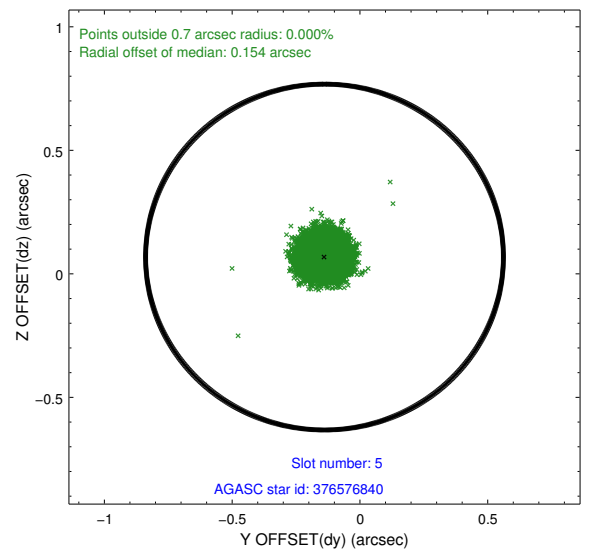
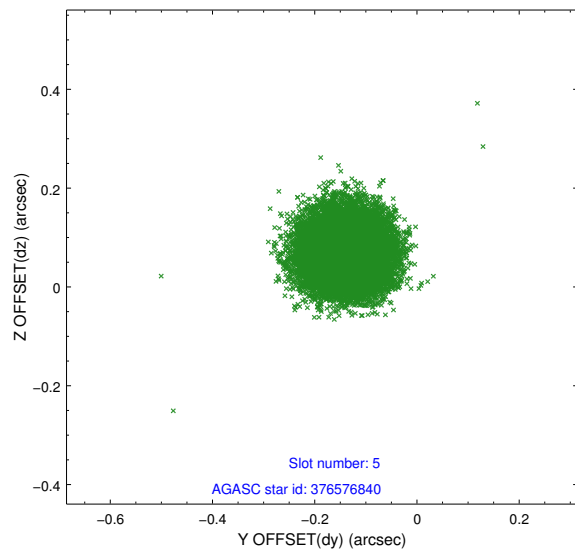
2.4.2 Slot 4



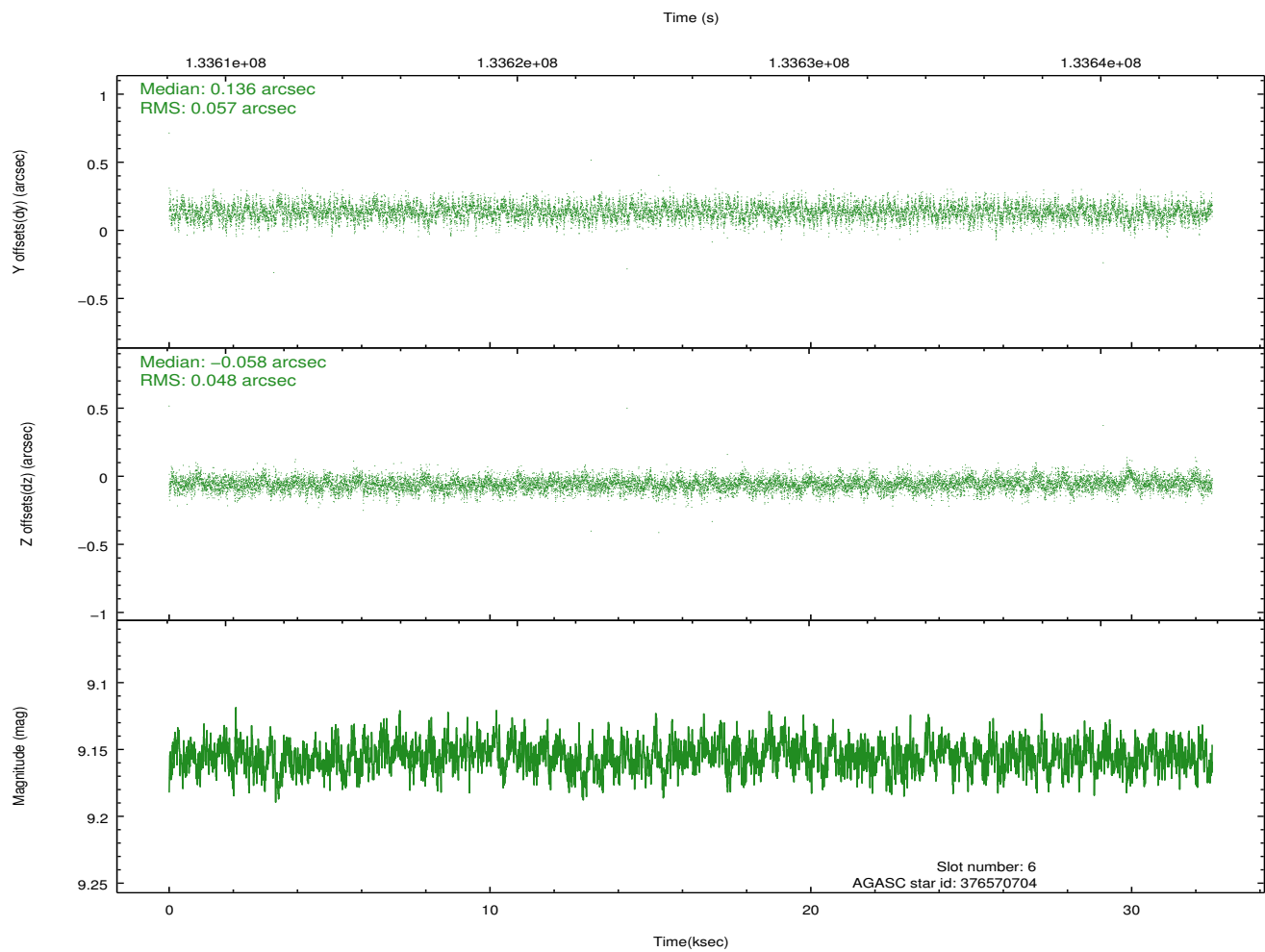
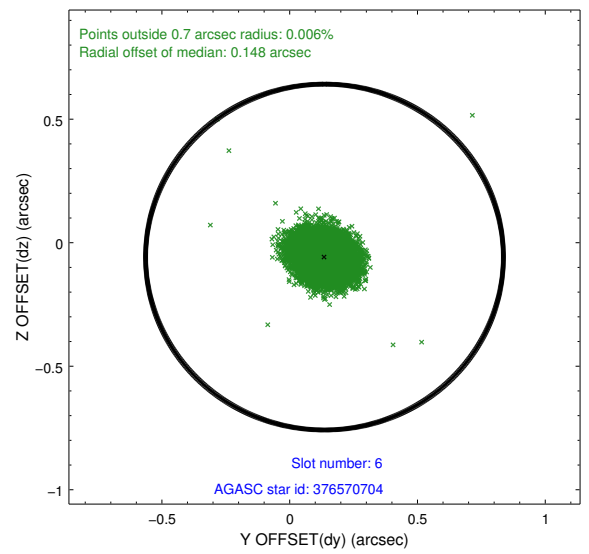
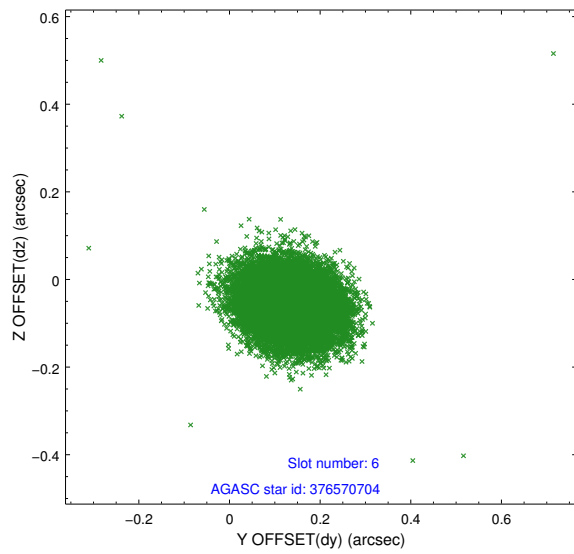
Time (s)



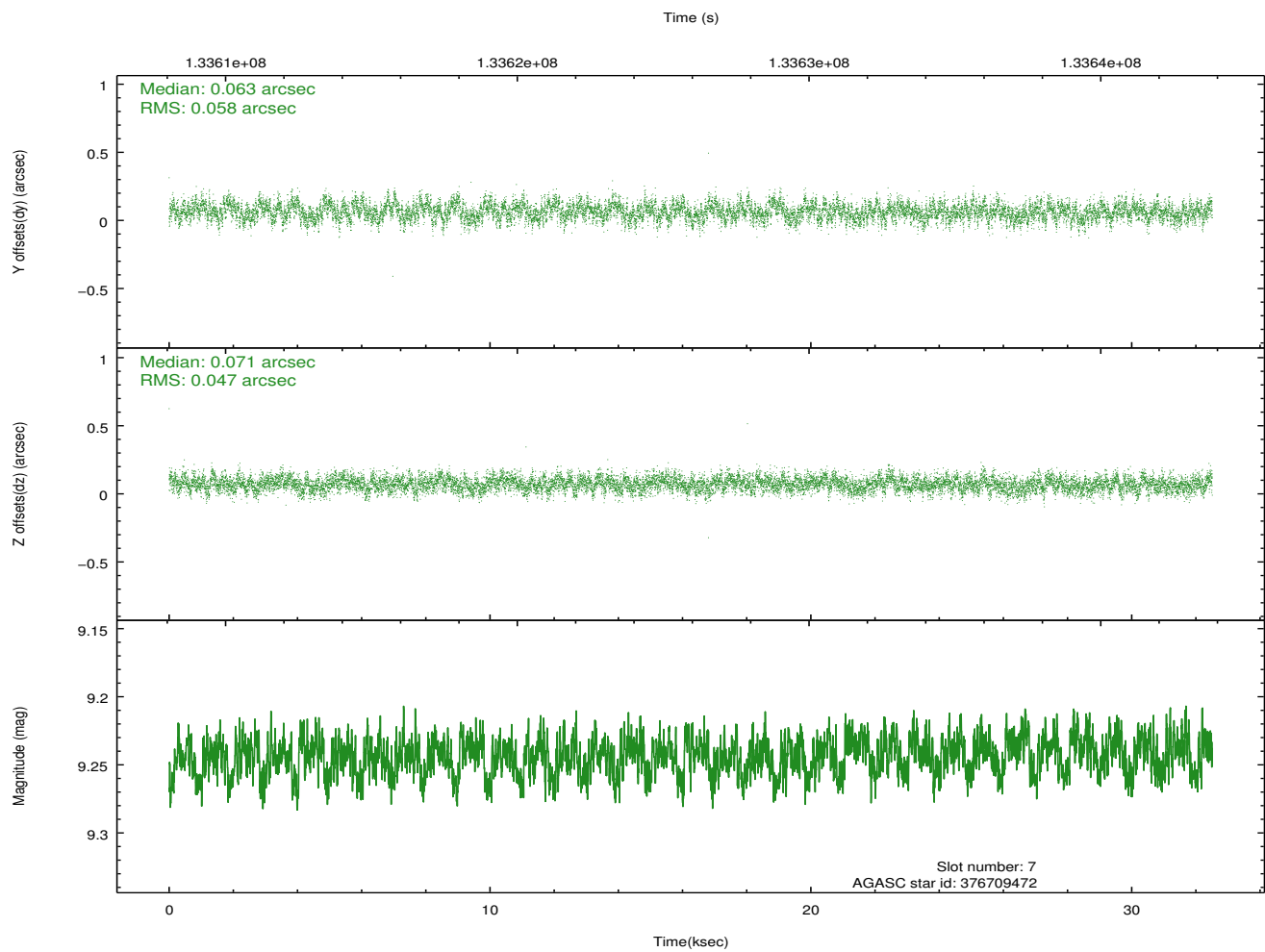
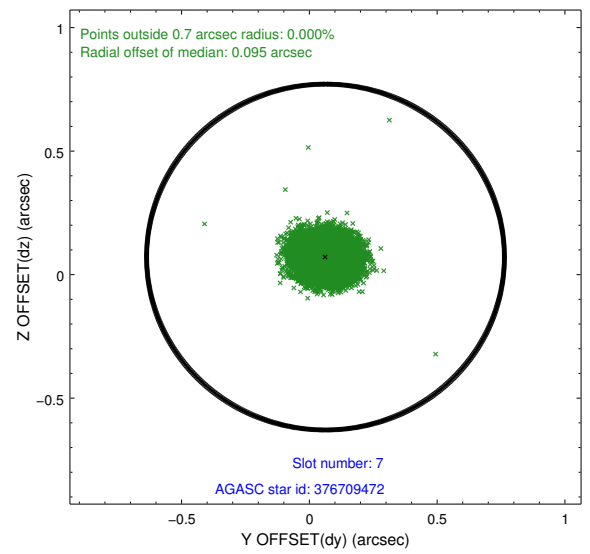
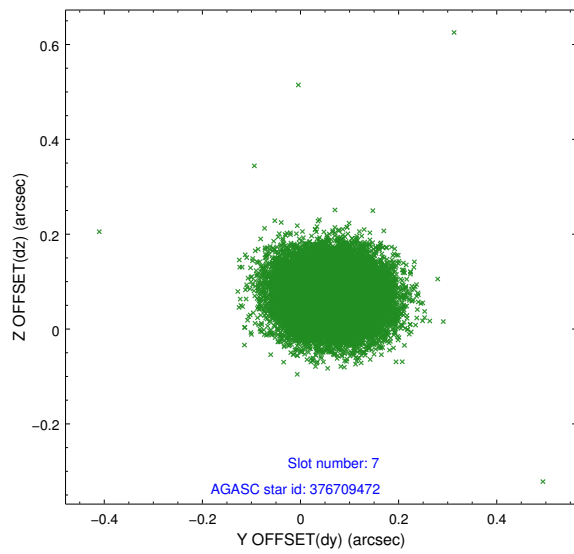
2.4.3 Slot 5



2.4.4 Slot 6

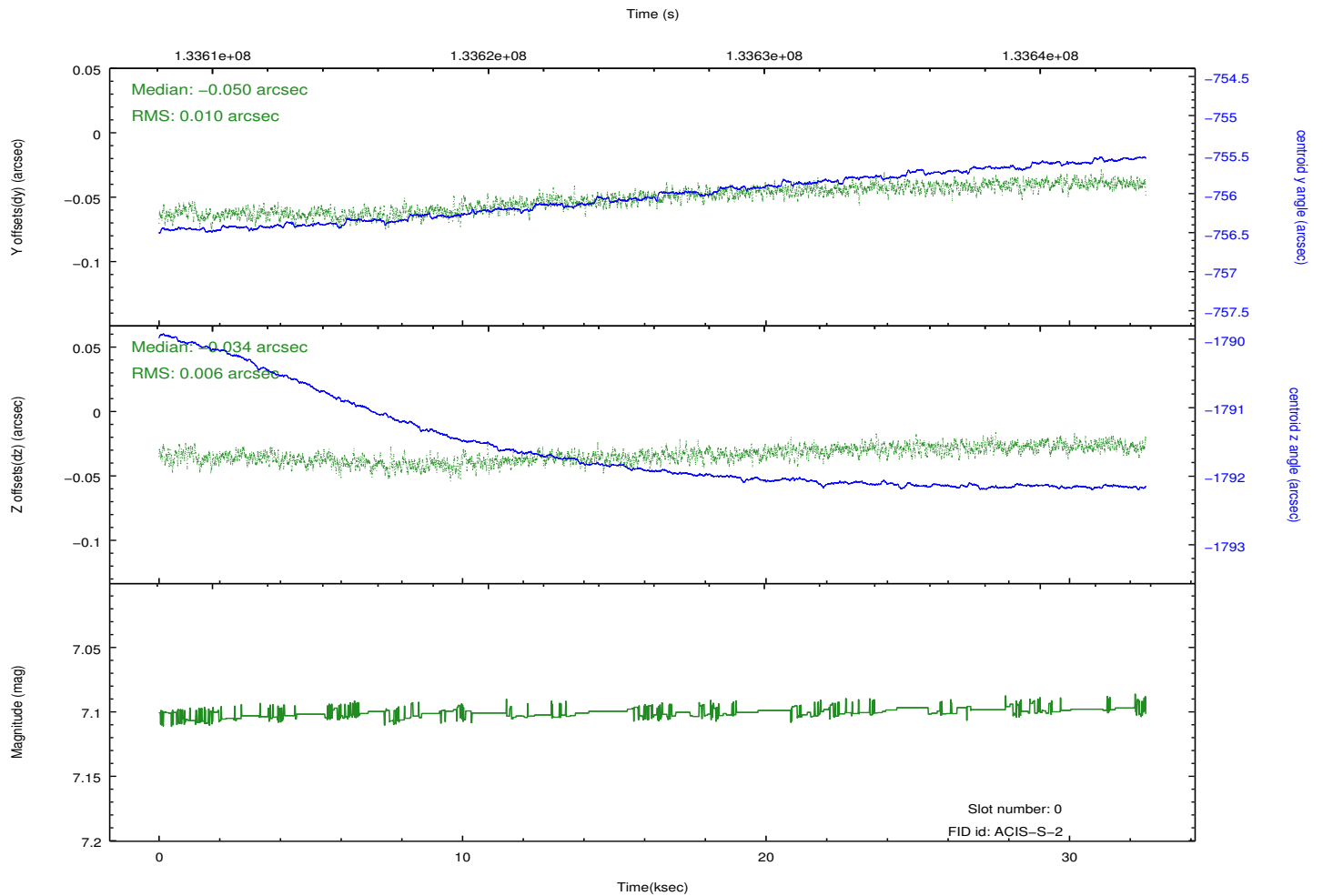
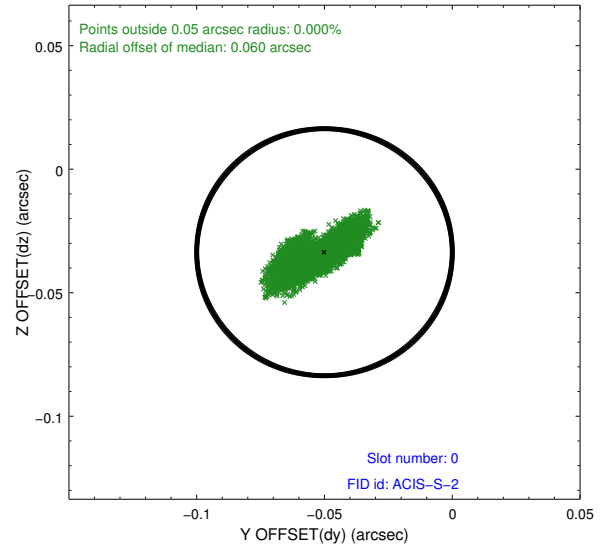
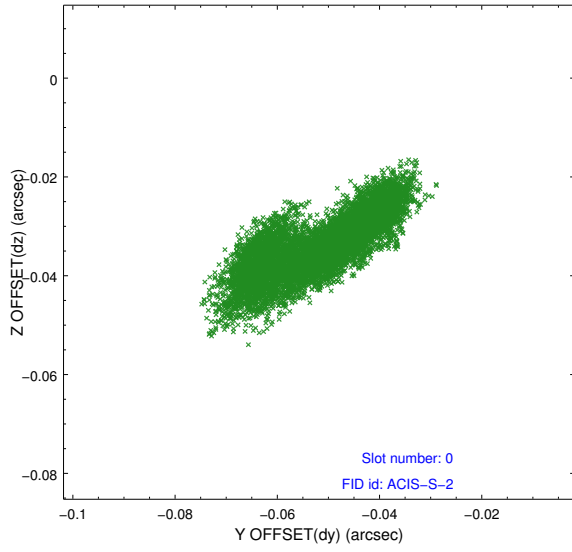


2.4.5 Slot 7

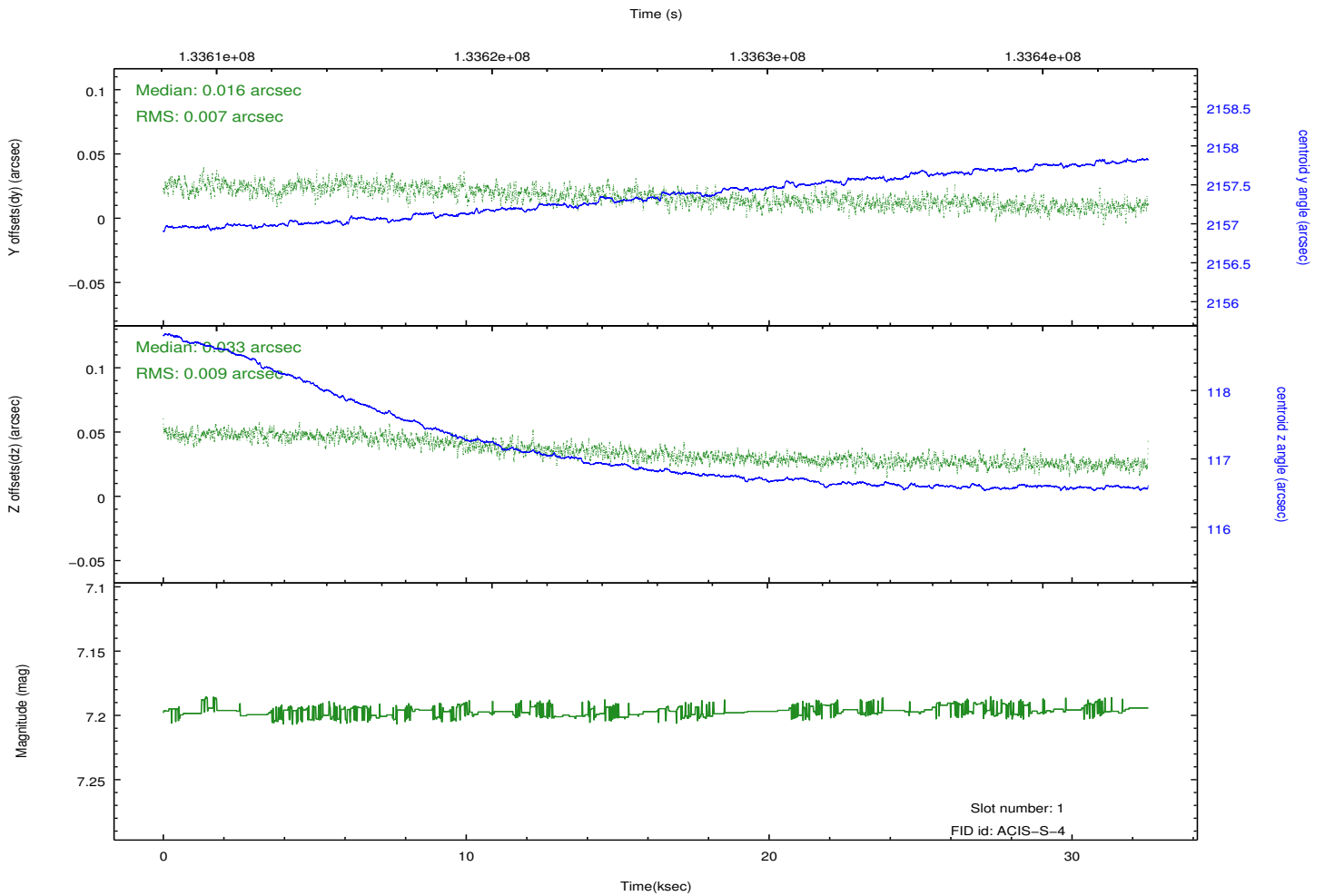
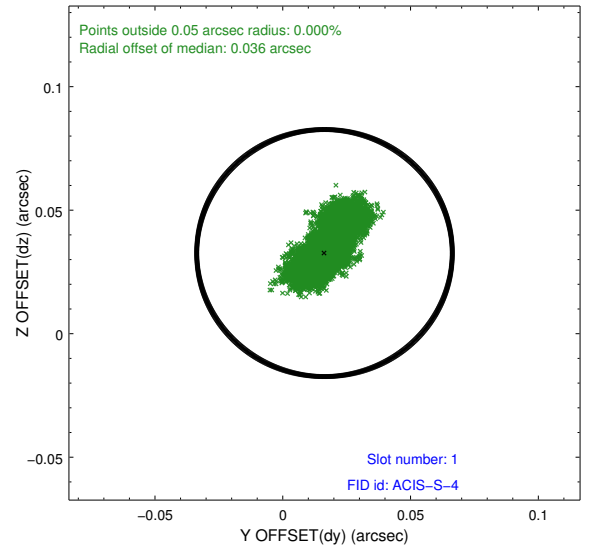
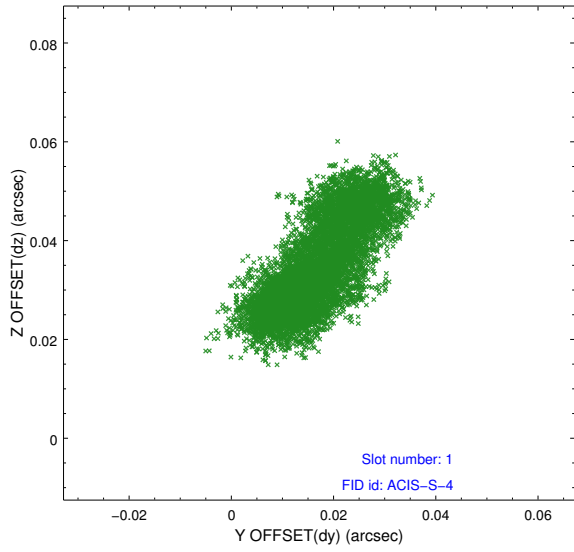


2.5 FID Slots

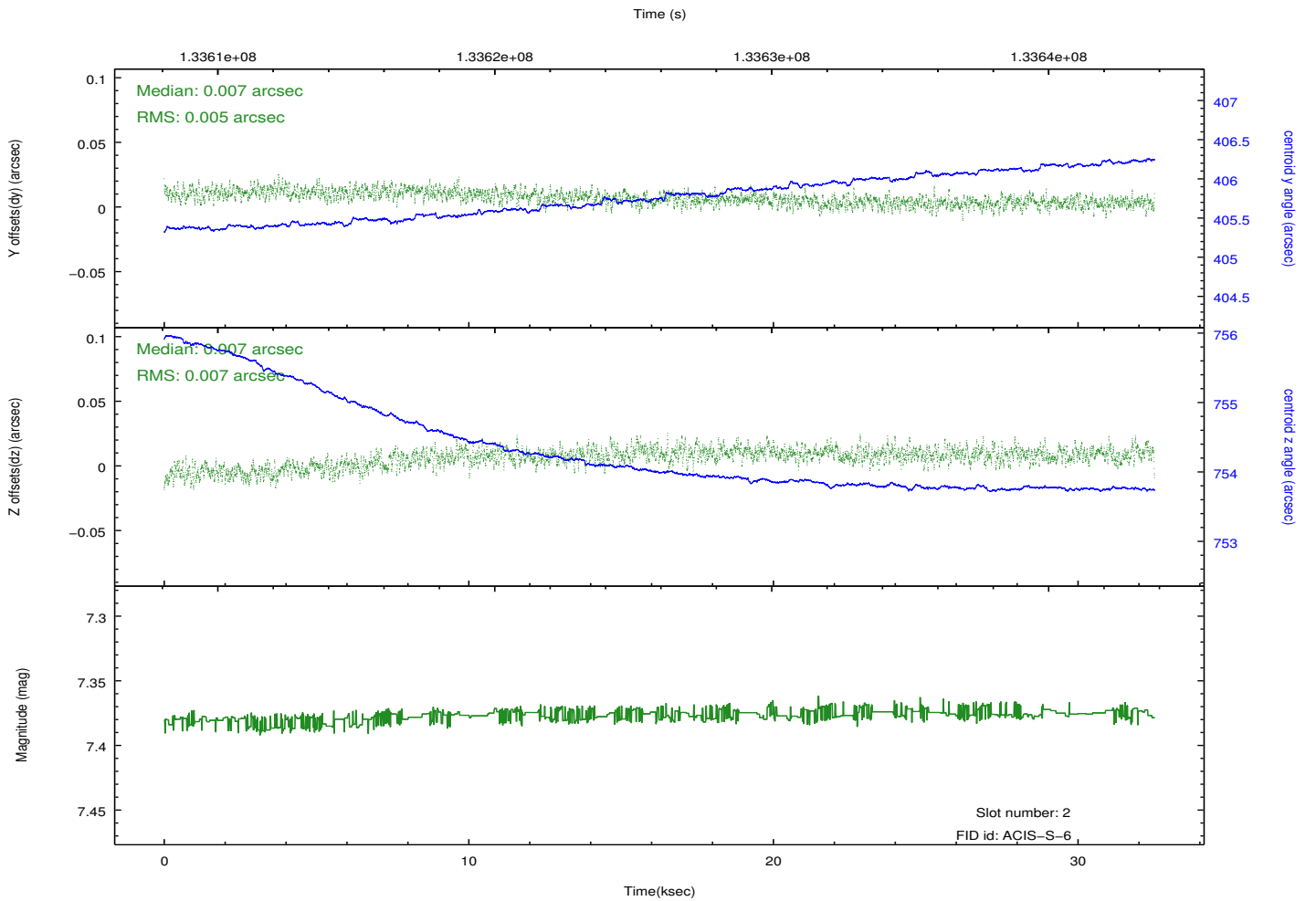
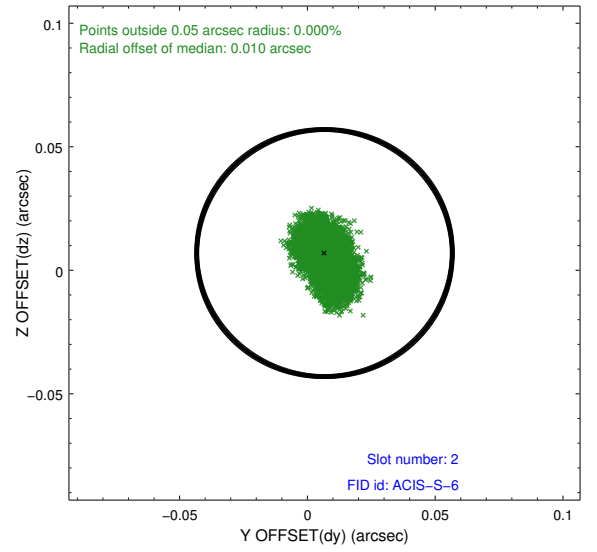
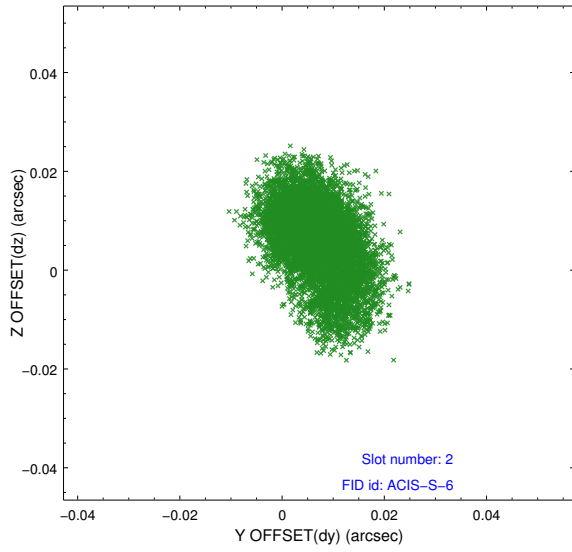
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

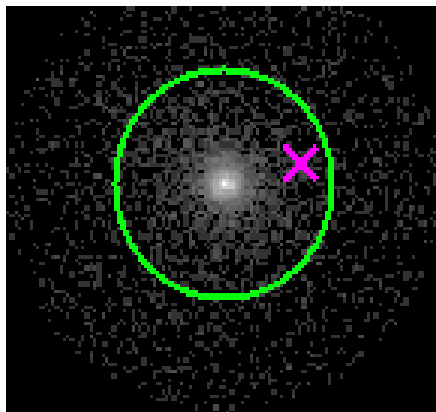


3 Gratings

3.1 HEG Arm



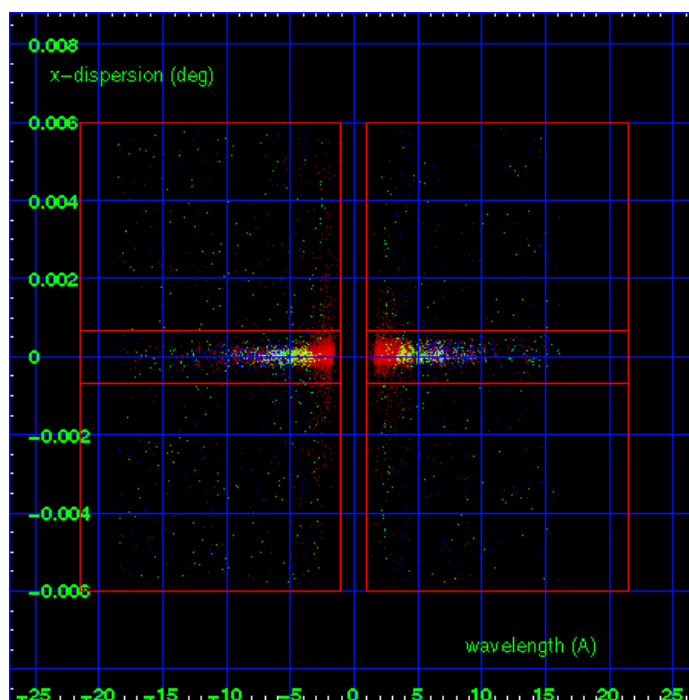
HEG Order Sort 123



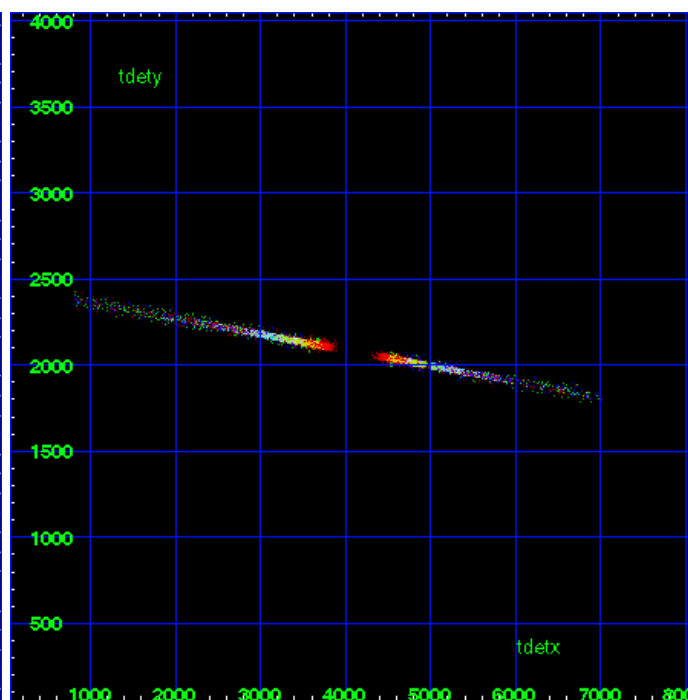
HEG Zero Order



HEG Order Sort ALL

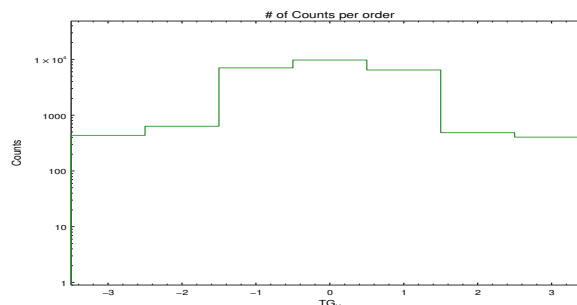


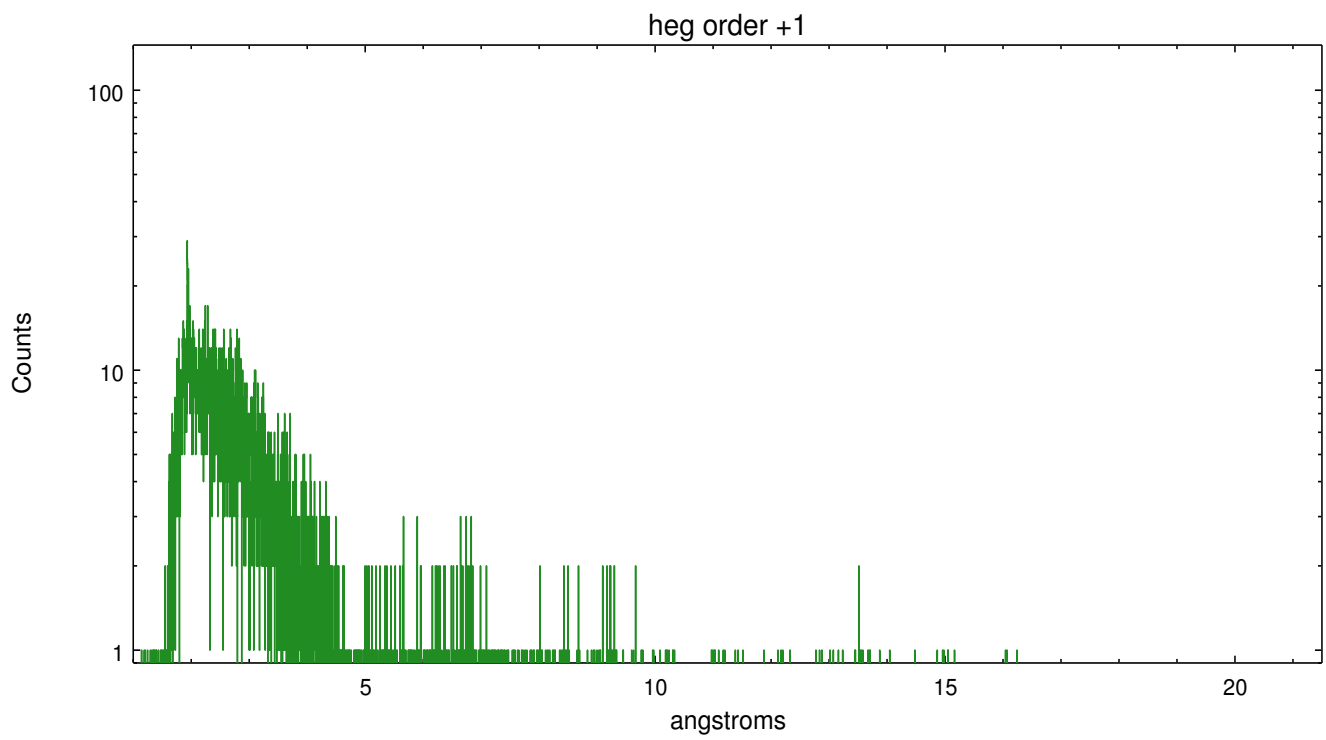
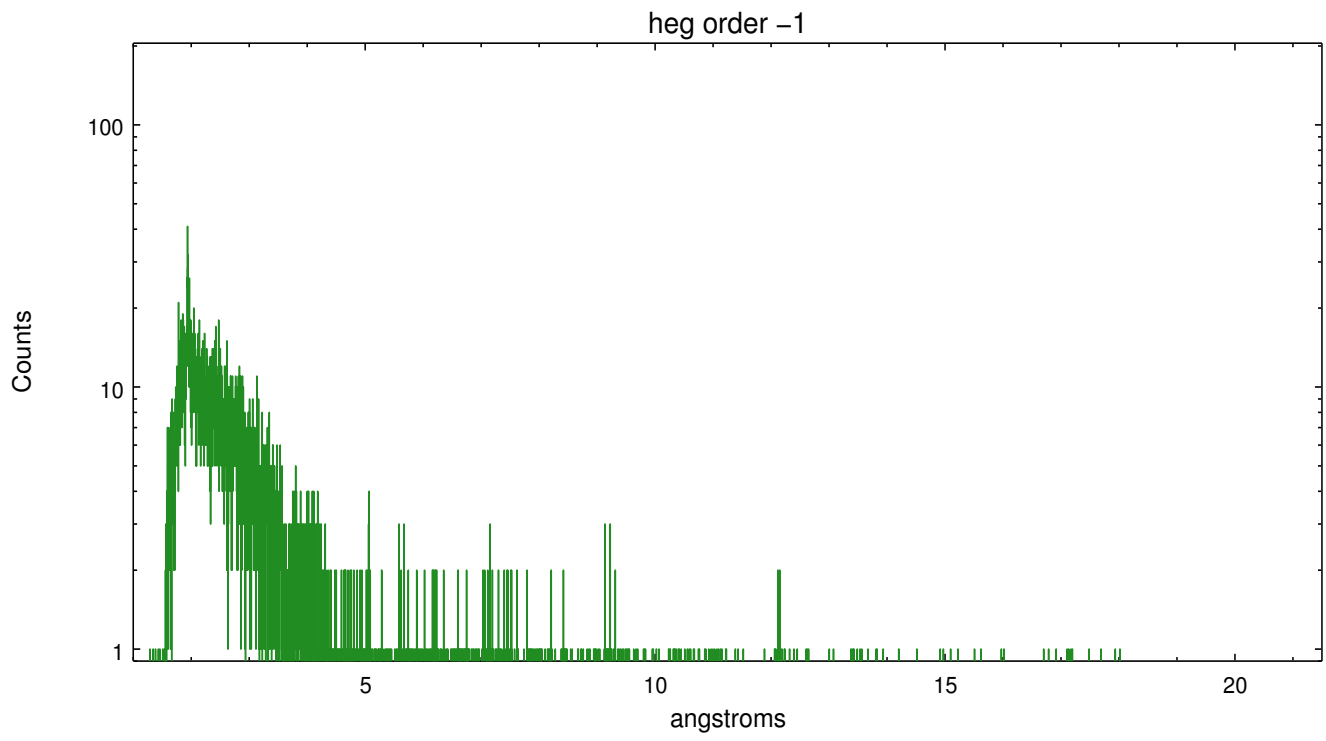
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	435	633	7053	9747	6458	485	404

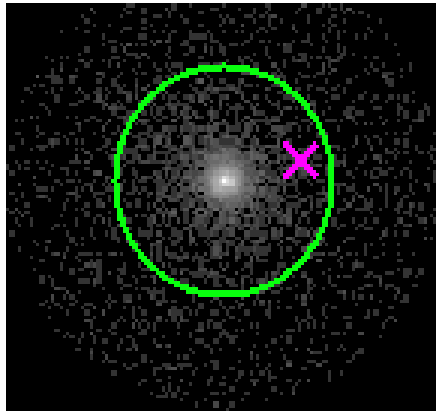




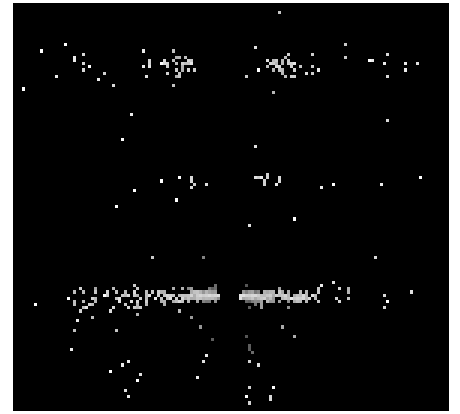
3.2 MEG Arm



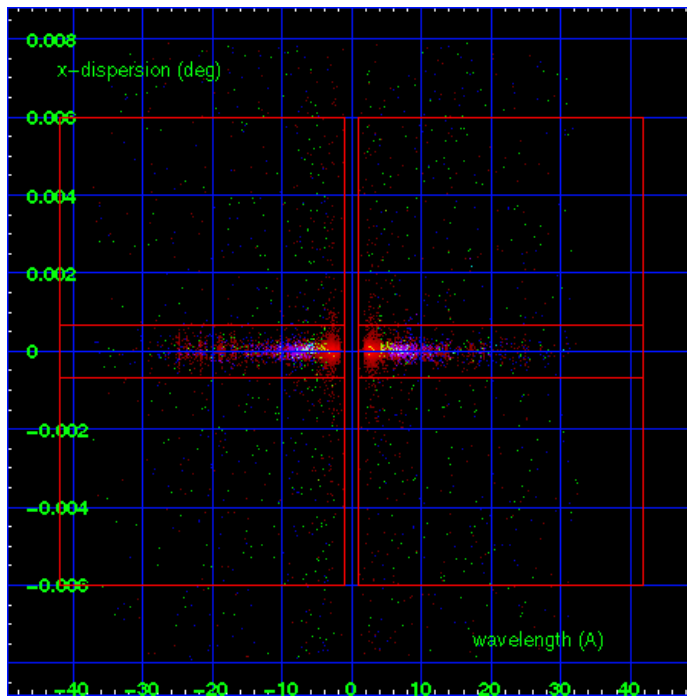
MEG Order Sort 123



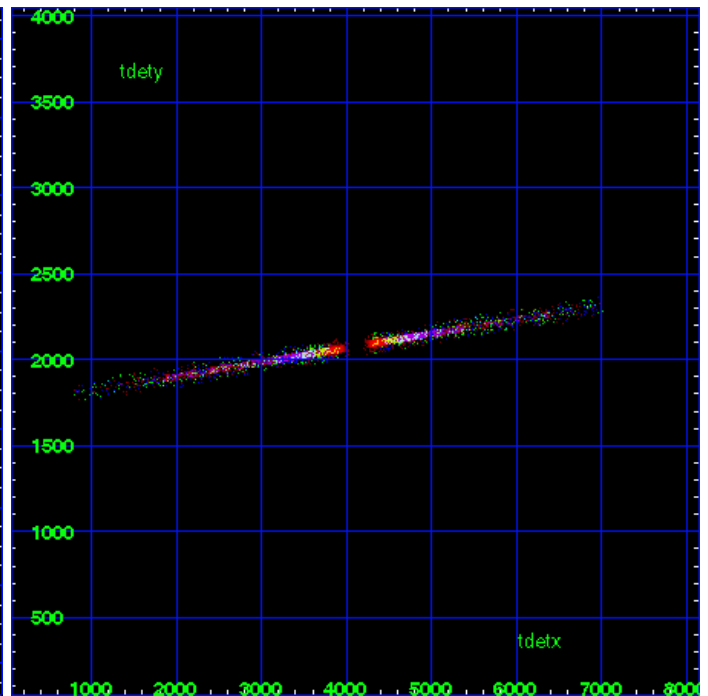
MEG Zero Order



MEG Order Sort ALL

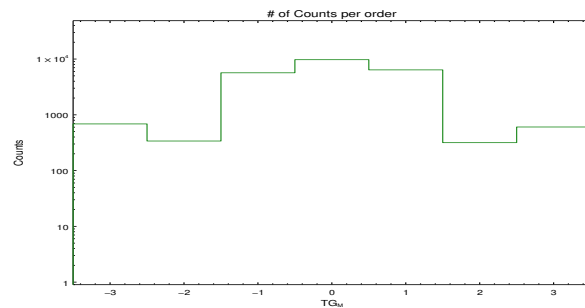


Spot Image MEG

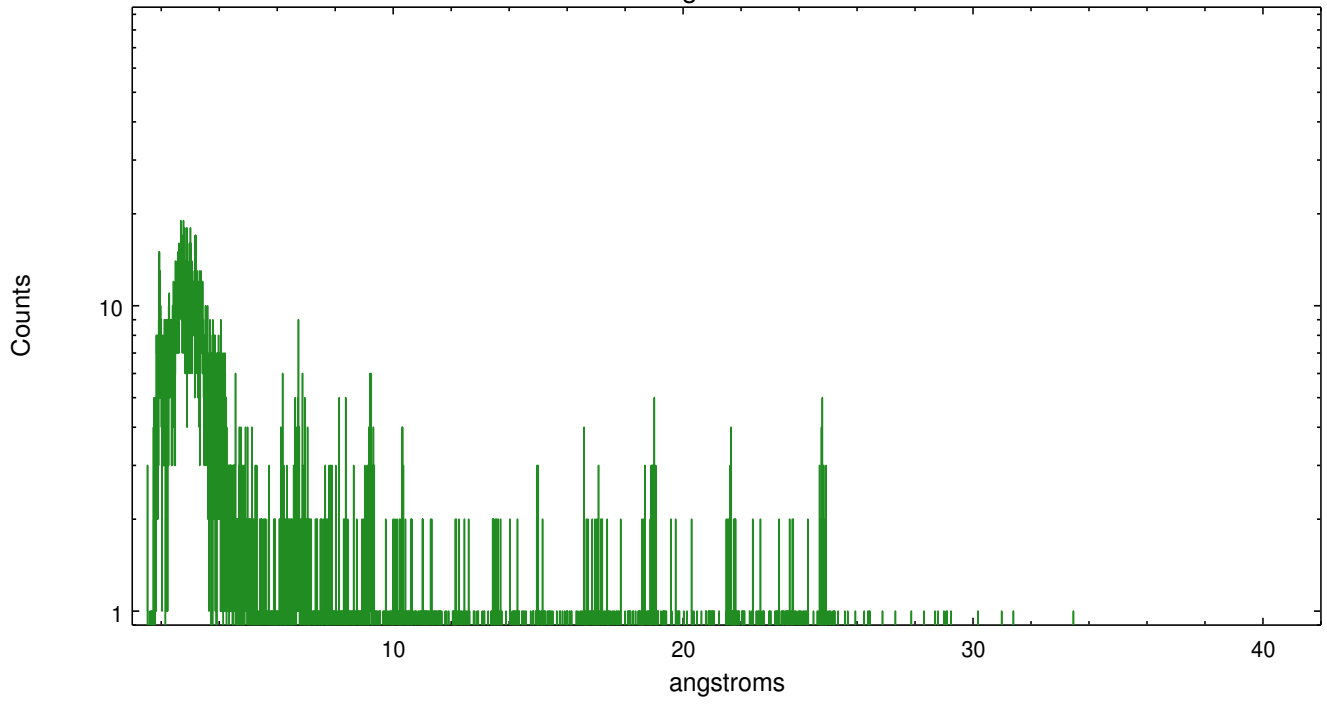


Full Detector MEG

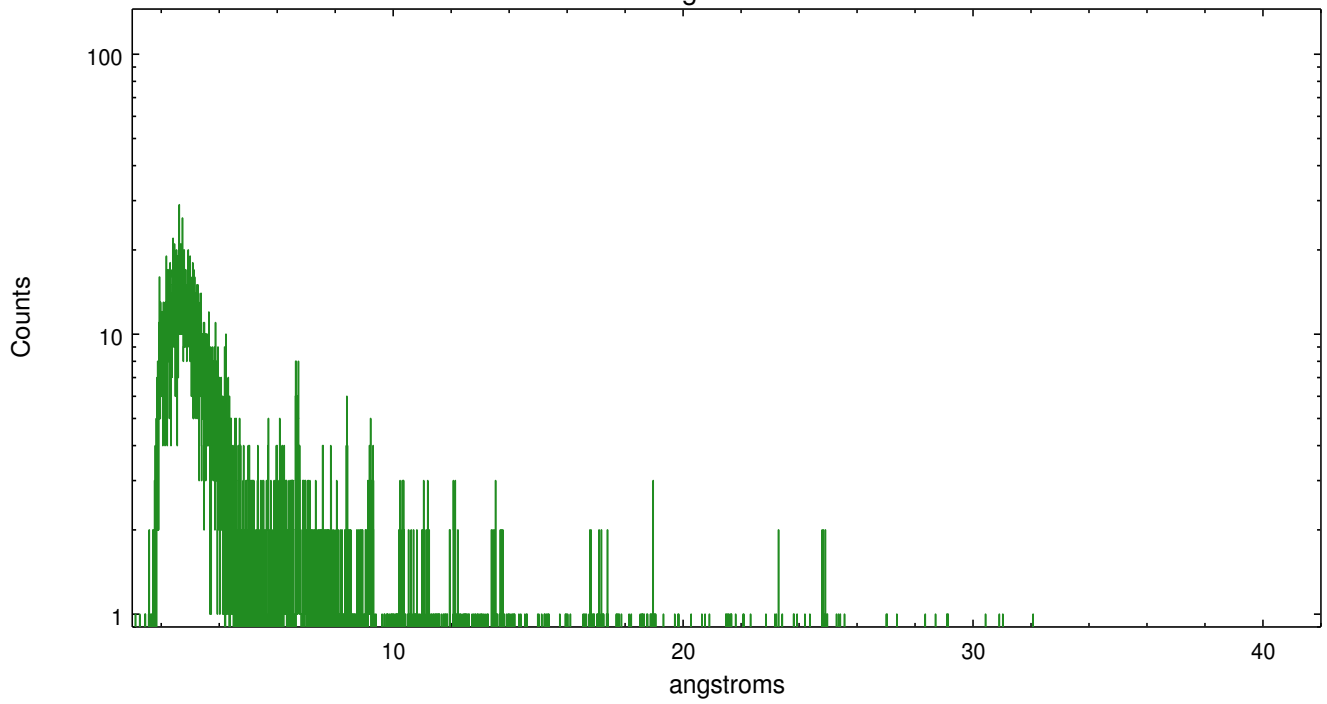
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	687	339	5671	9747	6396	317	605



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.10.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	32.102

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 ($x=4075.76$, $y=4091.06$) 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 as `tg_findzo` (currently in ISIS as `findzo`). The tool calculates the point of intersection of the readout streak and the meg 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.