

V&V Reference Report

L2 ASCDS Version : 8.4.3

Observation 13717 - L2 Version 2
Chandra X-Ray Center

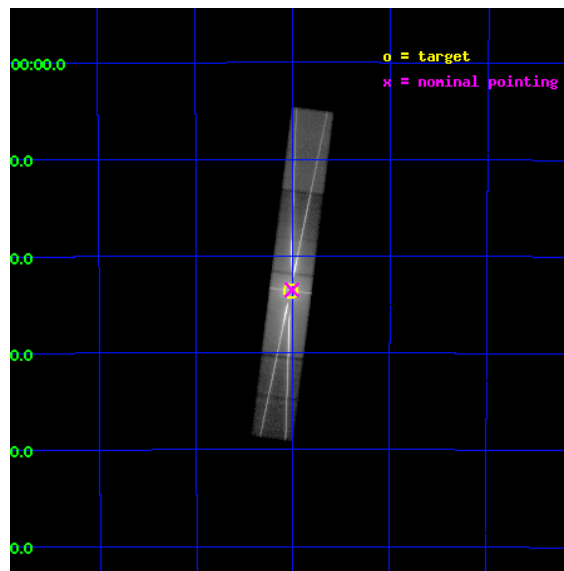
L2 Processing Date : Feb 2 2012

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1 Front

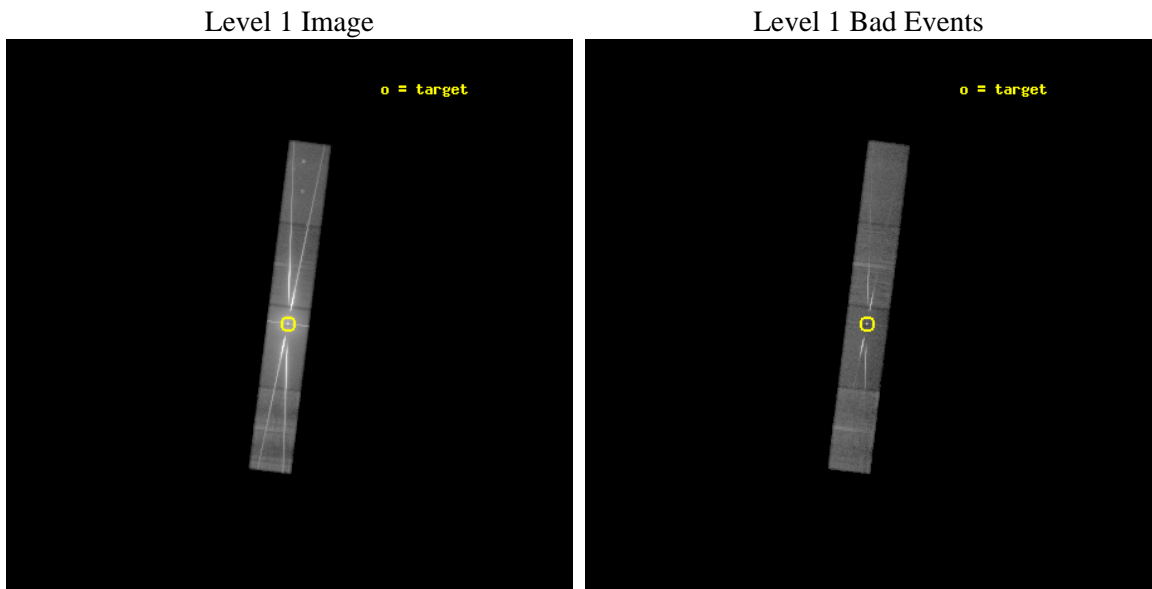
seq_num	401403	Sequence number
obs_id	13717	Observation id
title	Testing the Wind-Jet Connection in a Black Hole Transient	Proposal
observer	Dr Joey Neilsen	Principal investigator
object	4U 1630-47	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	248.506708	Observer's specified target RA [deg]
dec_targ	-47.393	Observer's specified target Dec [deg]
ra_nom	248.50266261051	Nominal RA [deg]
dec_nom	-47.391705628788	Nominal Dec [deg]
roll_nom	97.093807891159	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30190.400449872	Sum of GTIs [s]
livetime	29435.382879025	Livetime [s]
ontime5	30190.397865474	Sum of GTIs [s]
ontime6	30190.356825471	Sum of GTIs [s]
ontime7	30190.400449872	Sum of GTIs [s]
ontime8	30190.315785468	Sum of GTIs [s]
l2events	2047579	Number of level 2 events



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Parameters

obi_num	1	Obi number	sched_exp_time	30161.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	30190.400449872	Sum of GTIs [s]
caldsver	4.4.7	 	ontime5	30190.397865474	Sum of GTIs [s]
date	2012-01-31T13:37:59	Date and time of file creation	ontime6	30190.356825471	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	30190.400449872	Sum of GTIs [s]
			ontime8	30190.315785468	Sum of GTIs [s]
			l1events	2593530	Number of level 1 events

2.1.3 Events

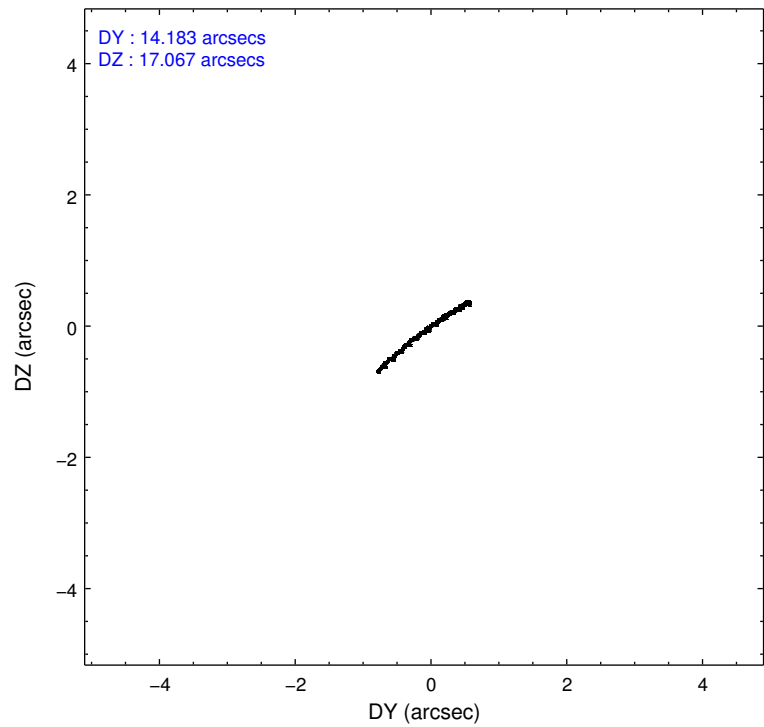
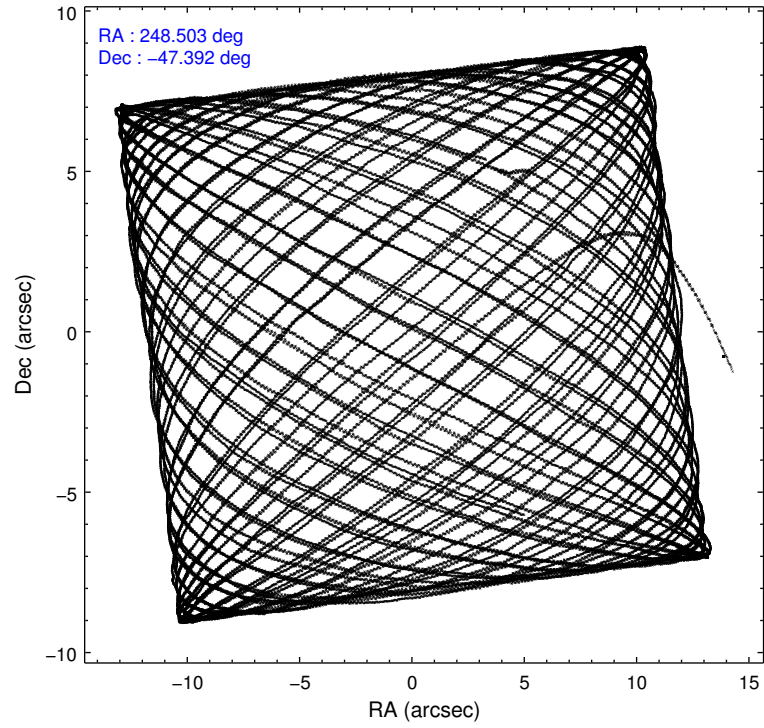
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	205006	857943	1243151	287430
rejected events	80833	120797	117889	108595
rejected %	39%	14%	9%	37%

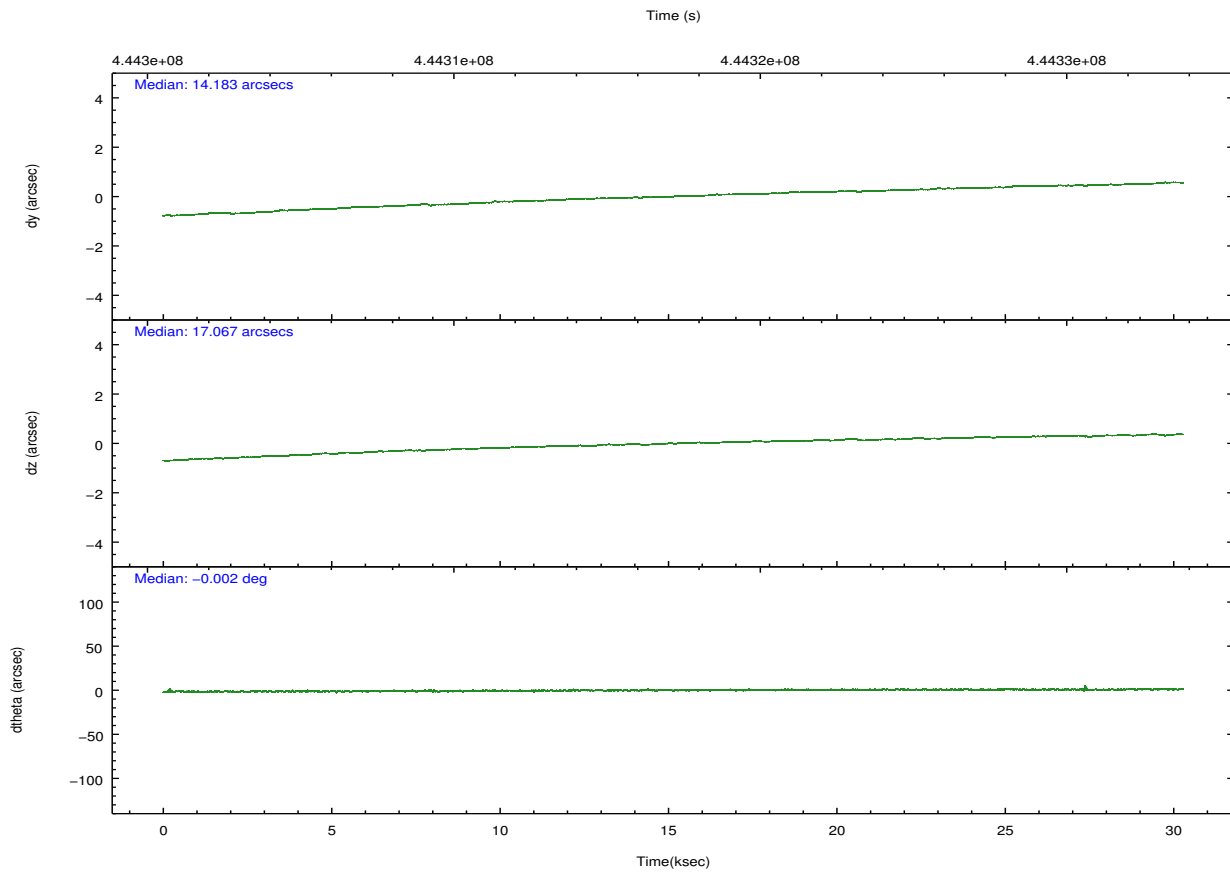
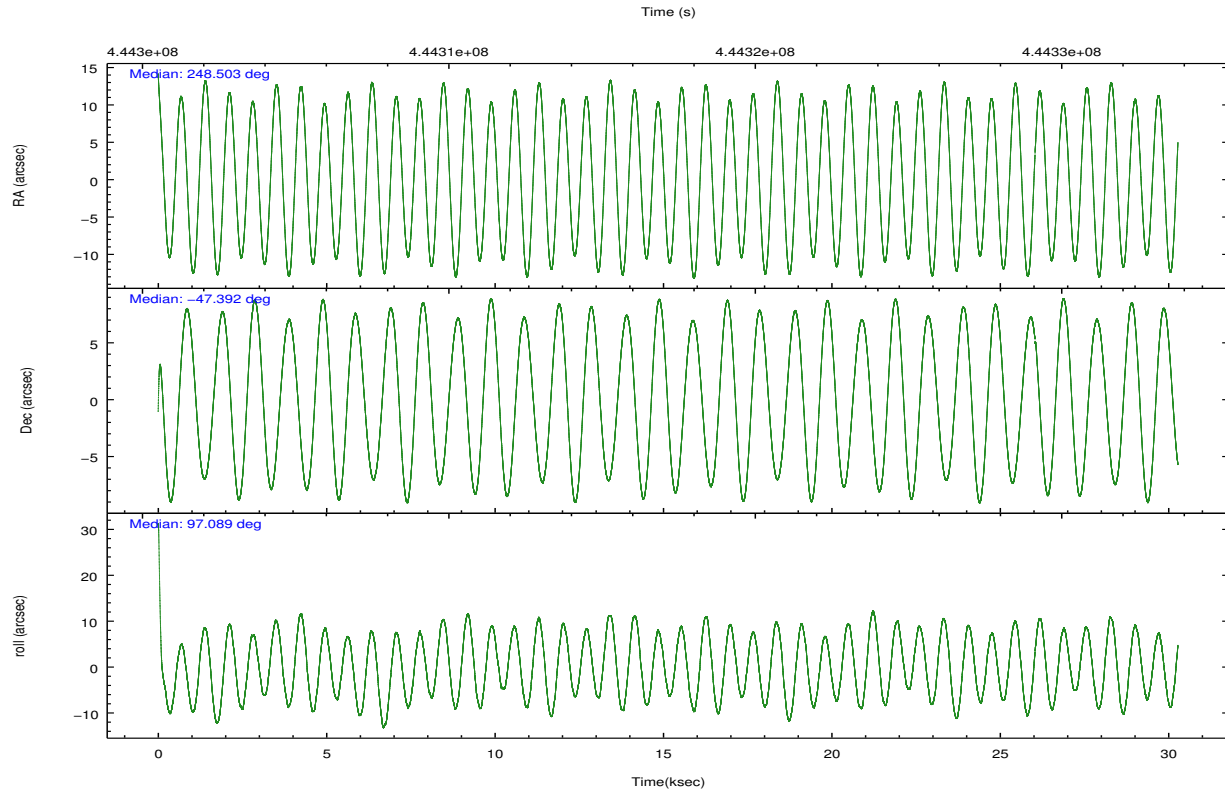
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	14560	487430	169172	95073
	7%	56%	13%	33%
grade 1 events	262	7772	2265	394
	0%	0%	0%	0%
grade 2 events	42850	116049	305684	27808
	20%	13%	24%	9%
grade 3 events	5596	38283	100194	16101
	2%	4%	8%	5%
grade 4 events	5472	37968	98352	14890
	2%	4%	7%	5%
grade 5 events	9509	12542	26029	6798
	4%	1%	2%	2%
grade 6 events	55709	57503	451986	24986
	27%	6%	36%	8%
grade 7 events	71048	100396	89469	101380
	34%	11%	7%	35%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-5678	ACIS-5678	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	GRADED	GRADED	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	248.527470	248.5026626105062	Subarray requested	CUSTOM	1/2
[deg] Pointing Dec	-47.413276	-47.39170562878752	Subarray start row	1	1
[deg] Pointing Roll	96.955437	97.09380789115926	Subarray row count	512	512
[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	1.6
[mm] SIM translation stage pos	-183.992523	-183.9875365069546			
[mm] SIM translation stage offset	-6.14	-6.144986076053243			
[s] Observation start time (MET)	444302127.184000	444300586.90496			
Observation start date	2012-01-30T09:14:21	2012-01-30T08:49:46			
[s] Observation end time (MET)	444332288.184000	444332666.33165			
Observation end date	2012-01-30T17:37:02	2012-01-30T17:44:26			
Read mode	TIMED	TIMED			

2.3 Aspect



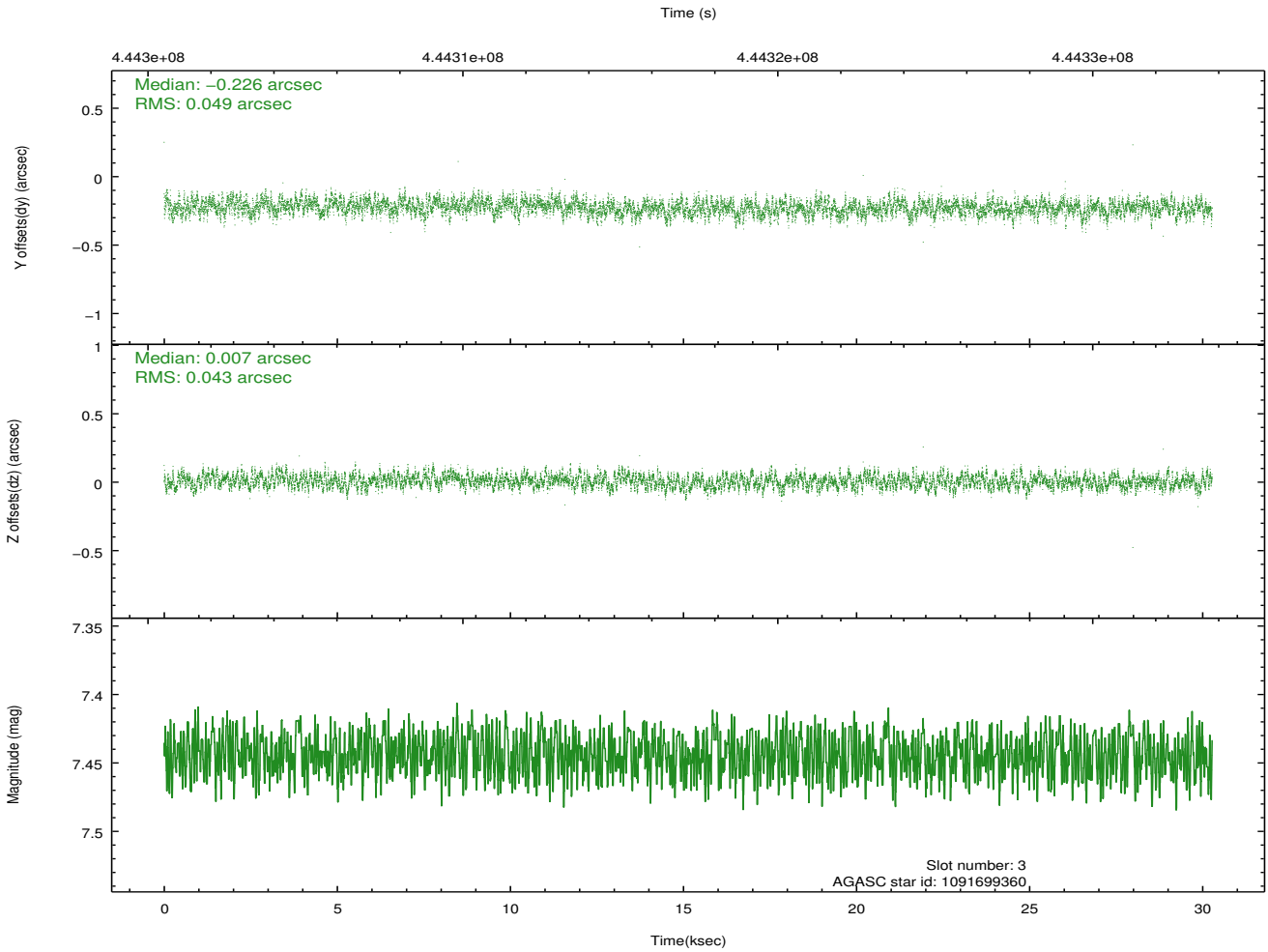
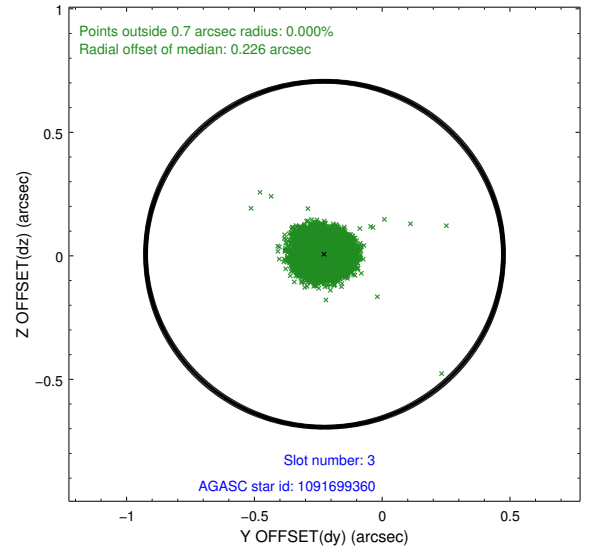
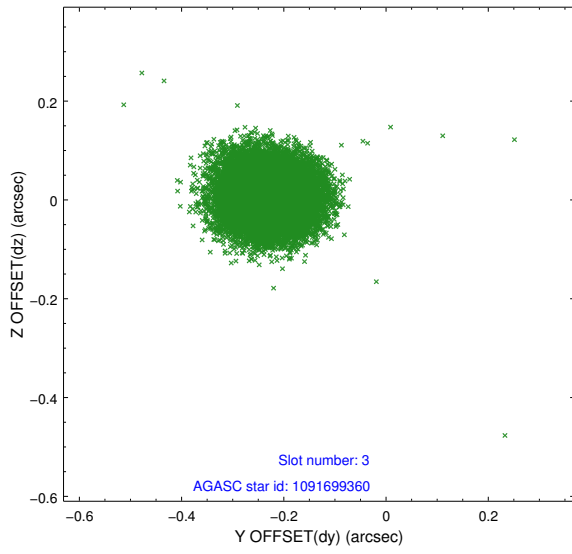


Slot Statistics

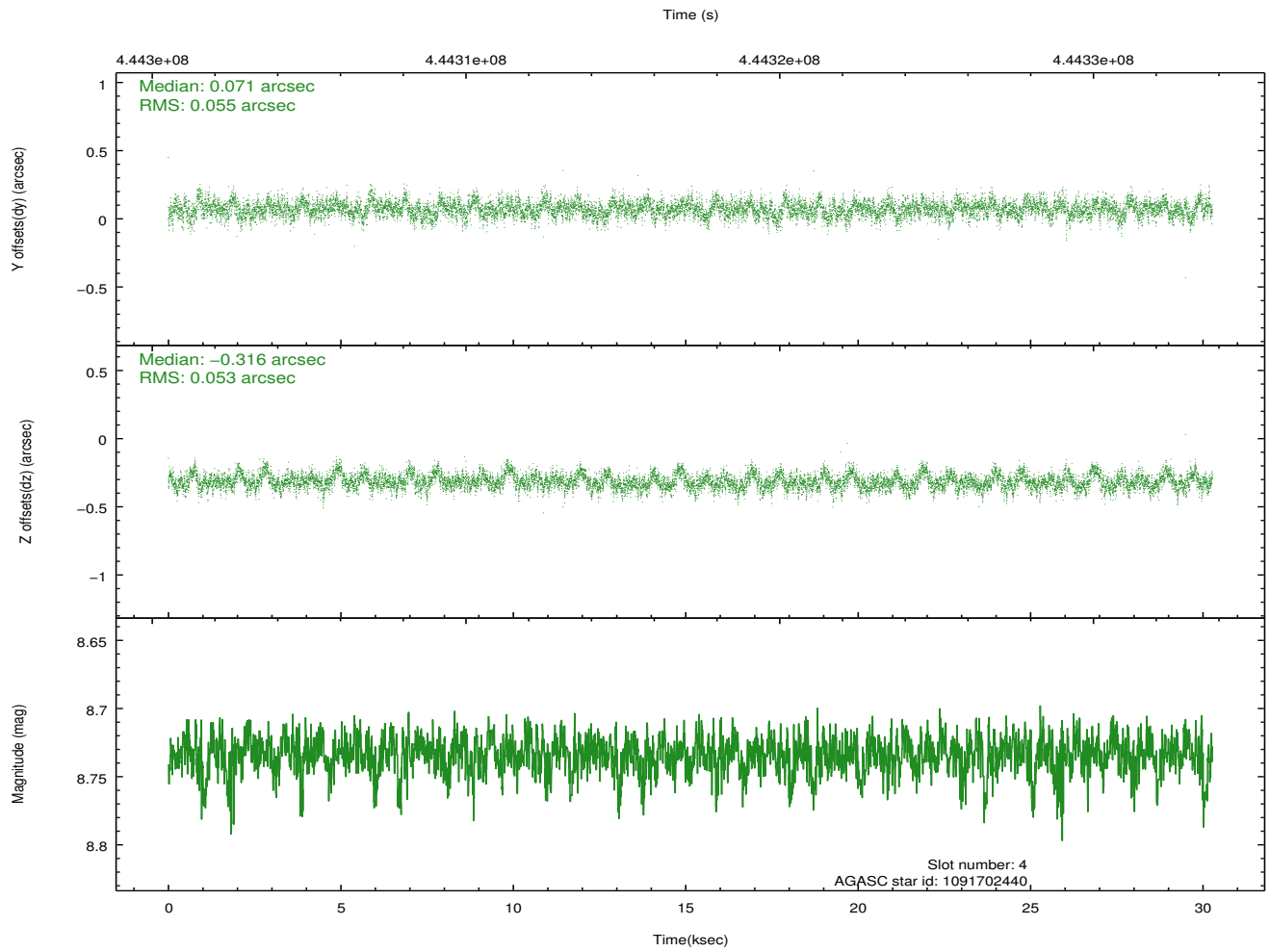
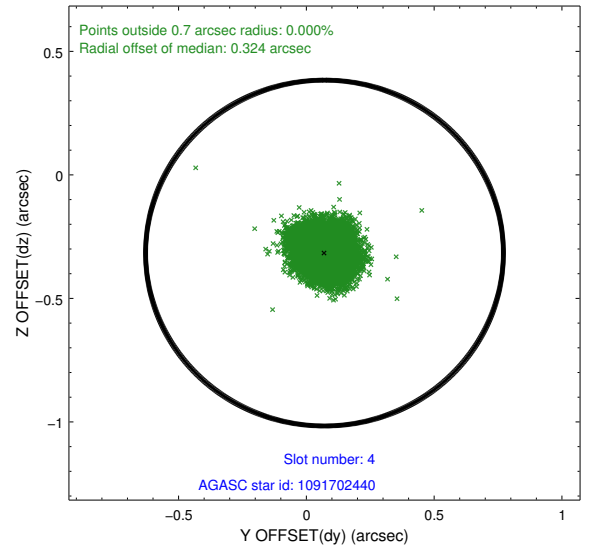
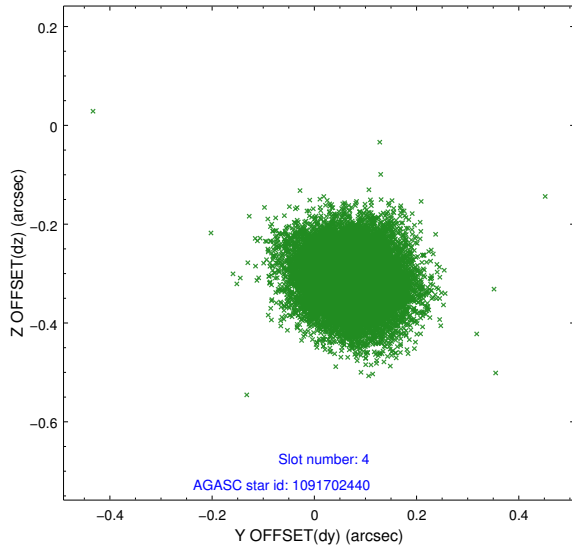
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.87	7383	-0.158	-0.092	0.010	0.016	0.000000	0.000000	-766.88	-1865.17
1	FID	ACIS-S-4	6.93	7385	0.142	0.108	0.012	0.020	0.000000	0.000000	2146.72	43.32
2	FID	ACIS-S-6	7.14	7384	-0.011	-0.011	0.015	0.026	0.000000	0.000000	395.42	680.74
3	GUIDE	1091699360	7.44	14769	-0.226	0.007	0.070	0.110	248.660725	-47.004364	1421.51	-502.55
4	GUIDE	1091702440	8.73	14761	0.071	-0.316	0.081	0.131	248.295809	-47.683380	-897.83	675.24
5	GUIDE	1091705224	9.20	14755	0.046	-0.289	0.095	0.150	248.613211	-47.940846	-1910.26	24.81
6	GUIDE	1091709768	7.71	14767	0.078	0.169	0.053	0.087	249.435228	-47.706899	-1328.22	-2052.98
7	GUIDE	1091699976	9.21	14762	0.032	0.430	0.107	0.172	249.617486	-47.776281	-1634.50	-2456.70

2.4 Star Slots

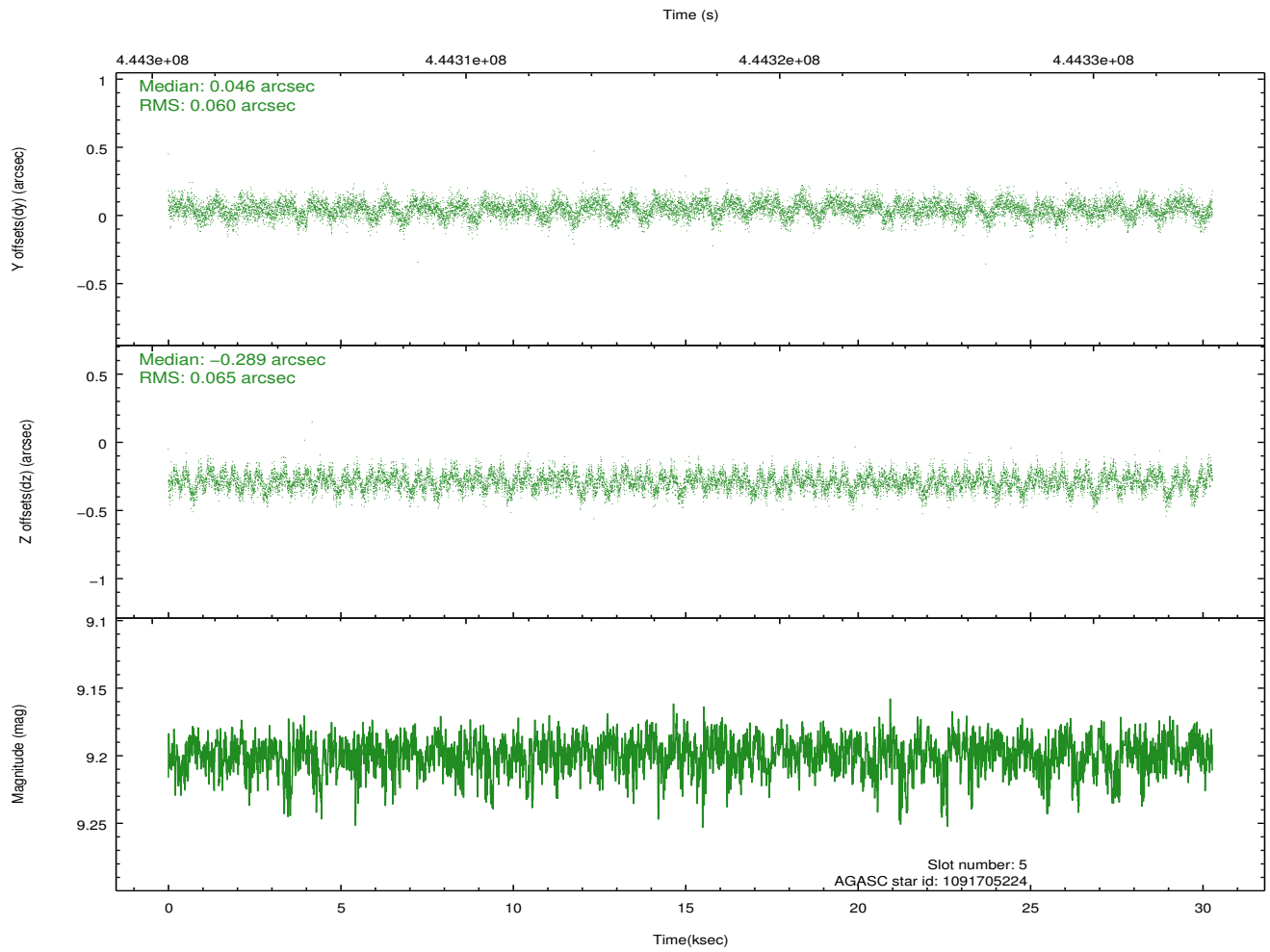
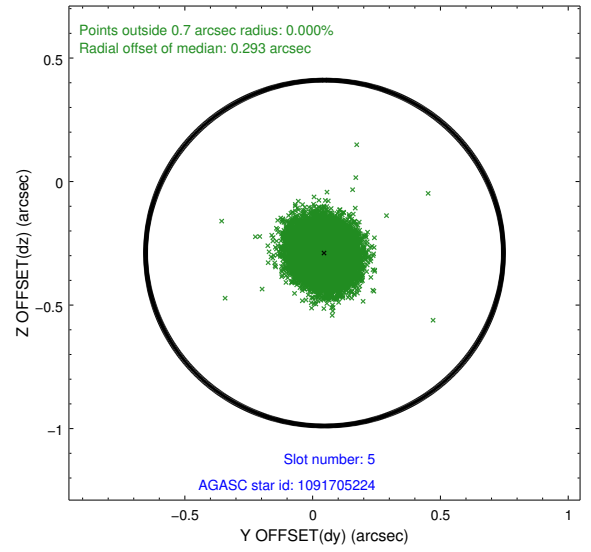
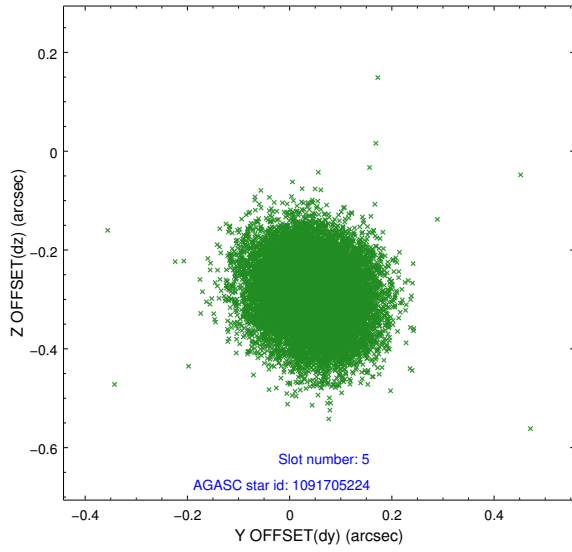
2.4.1 Slot 3



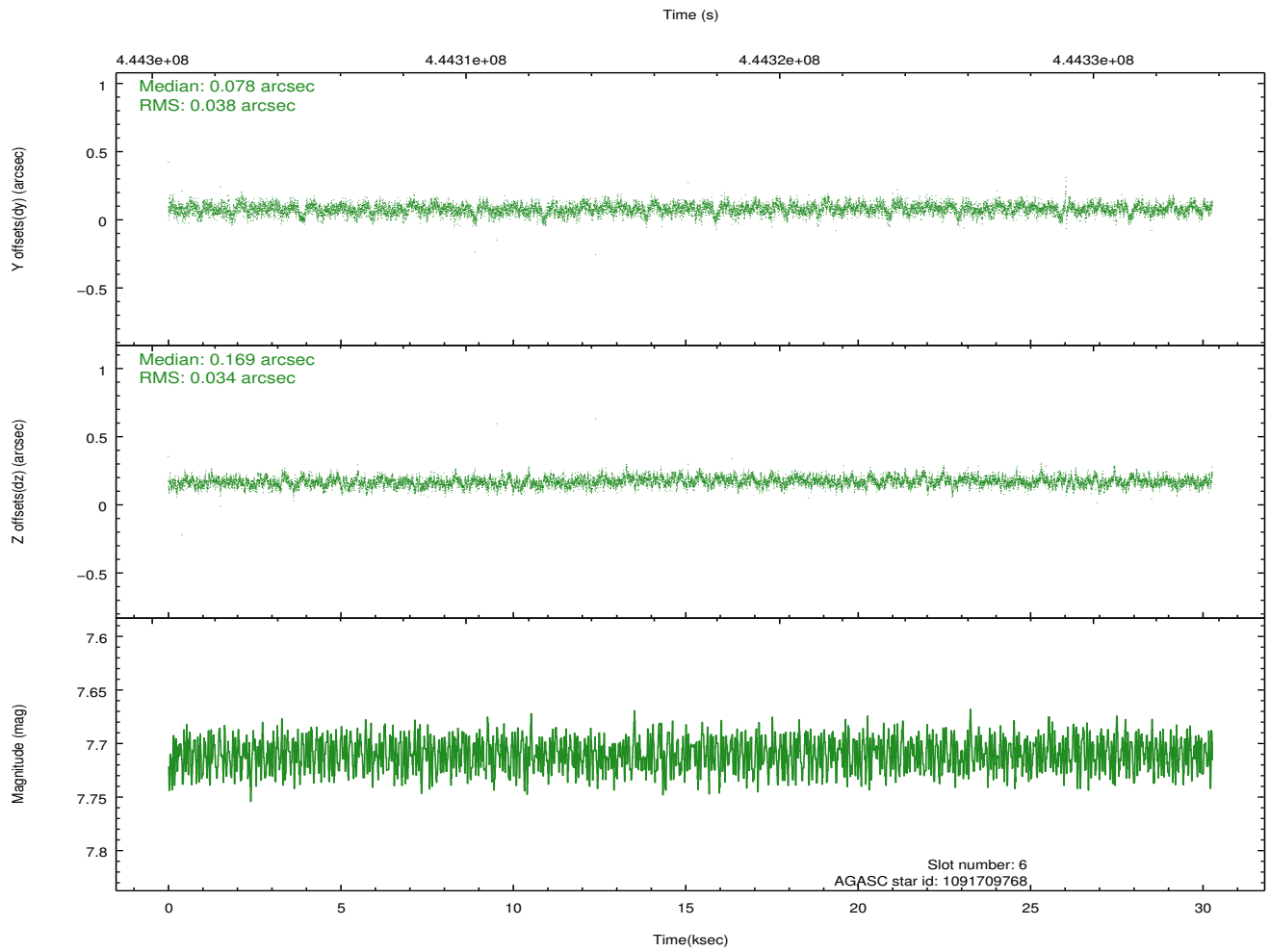
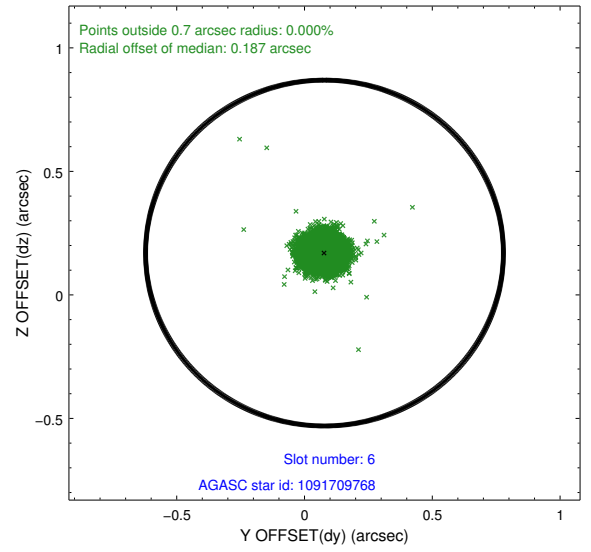
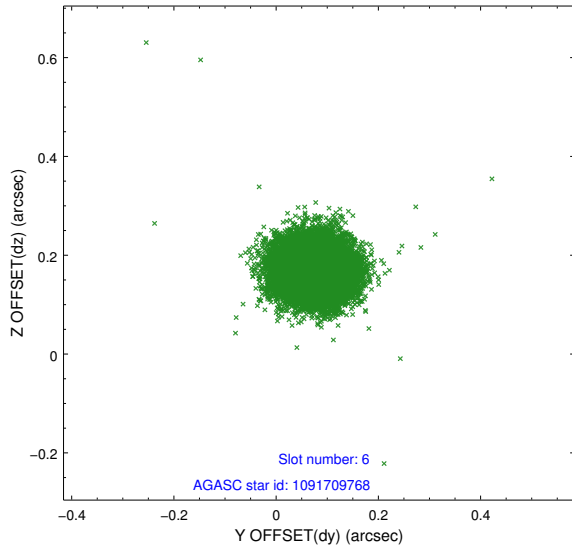
2.4.2 Slot 4



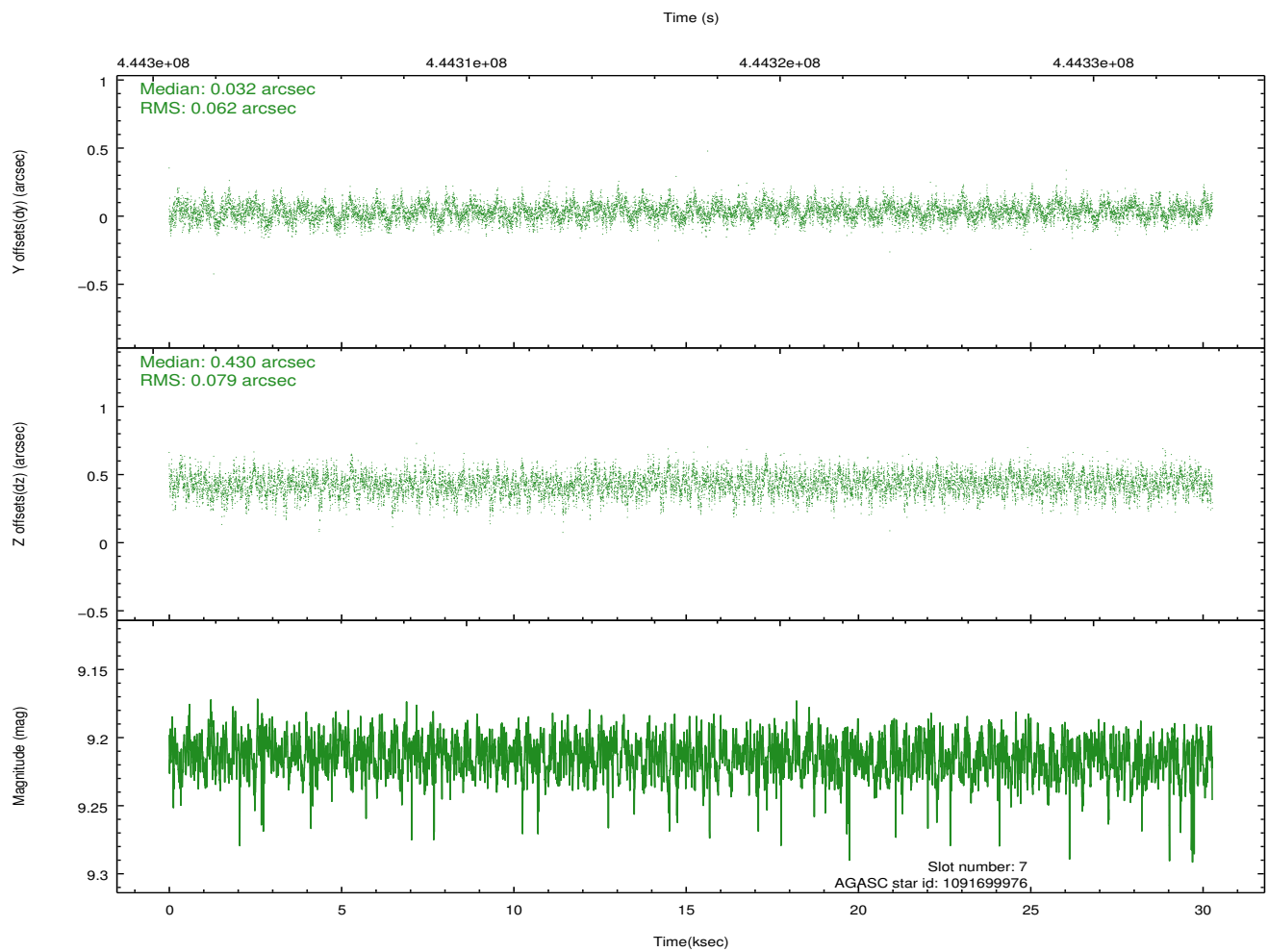
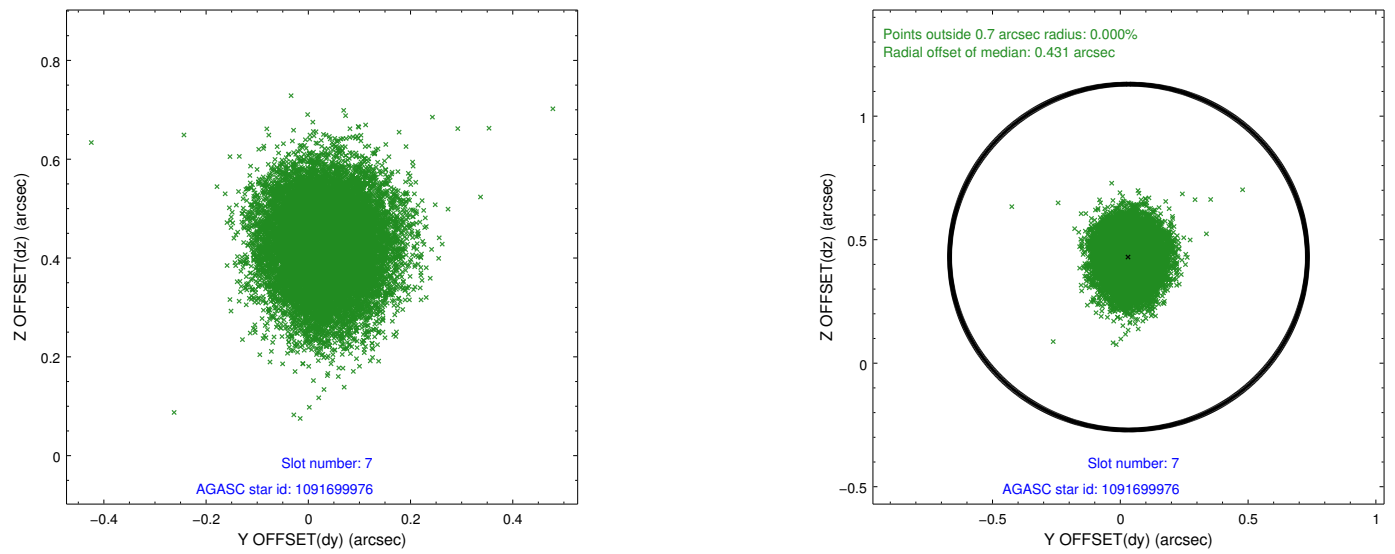
2.4.3 Slot 5



2.4.4 Slot 6

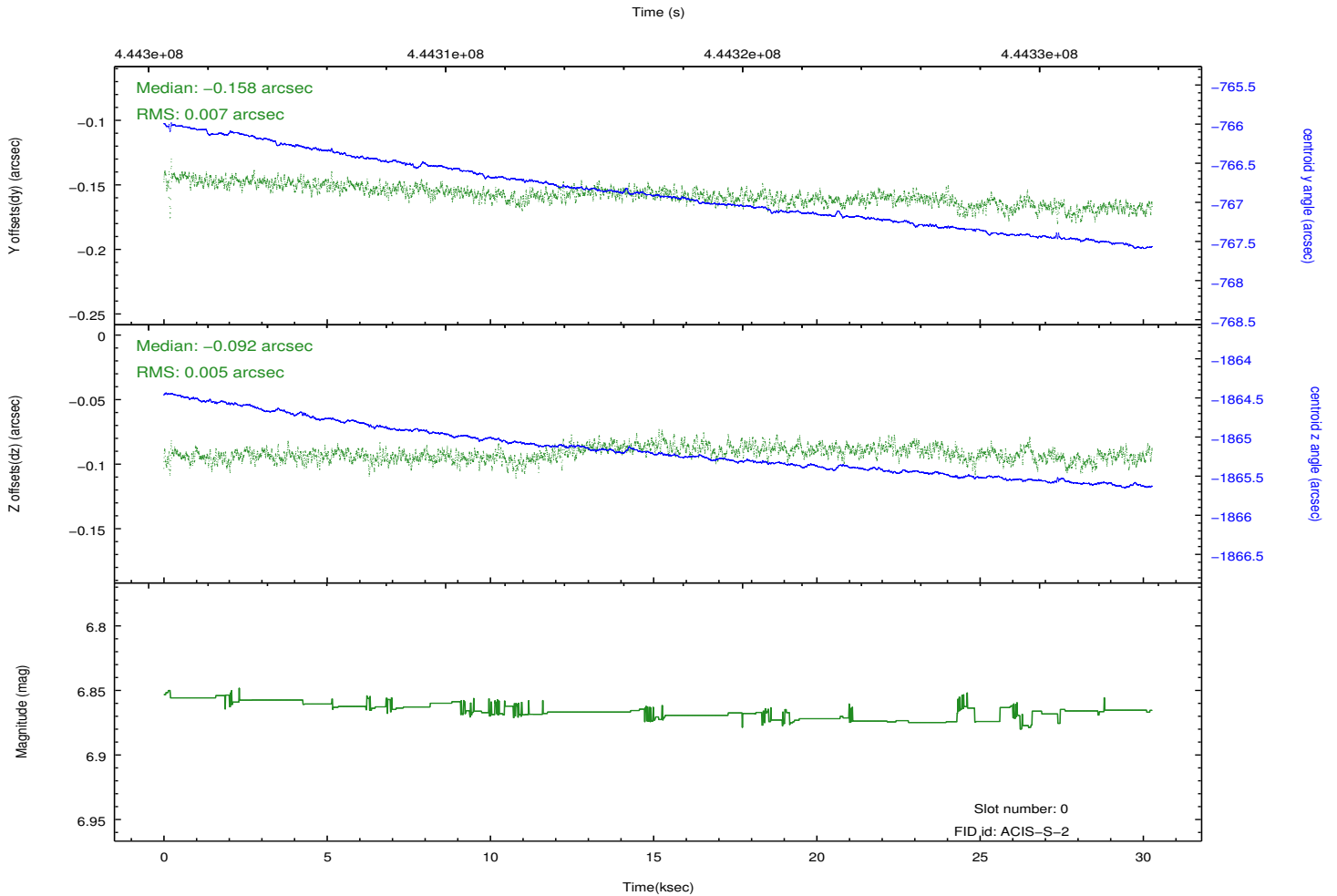
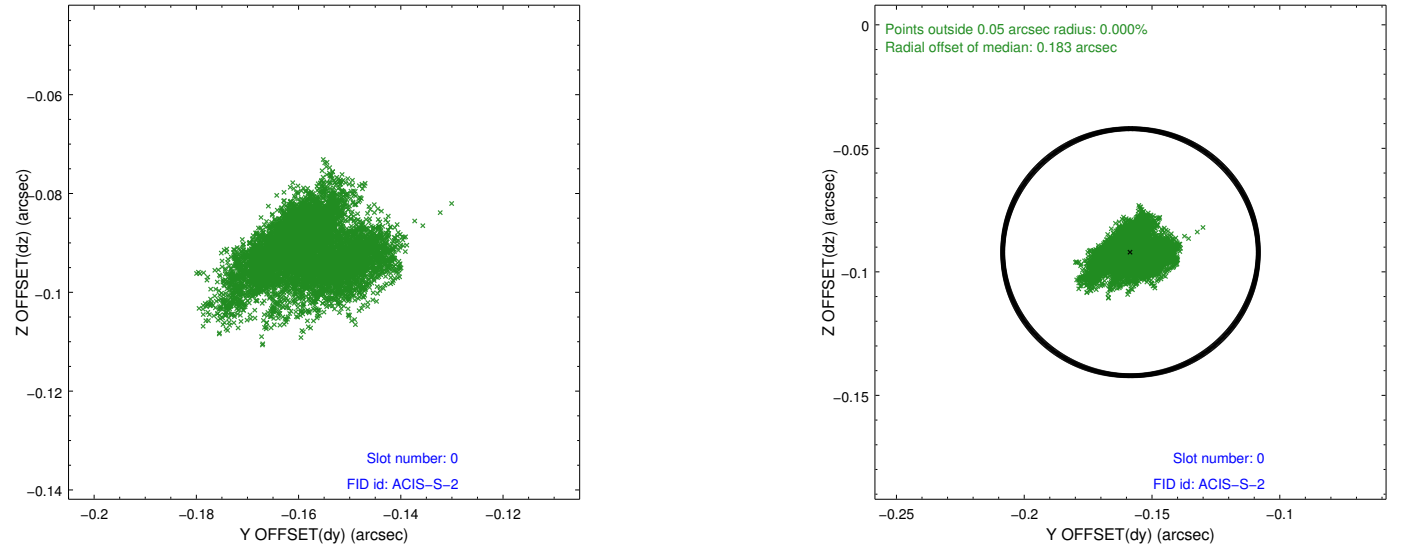


2.4.5 Slot 7

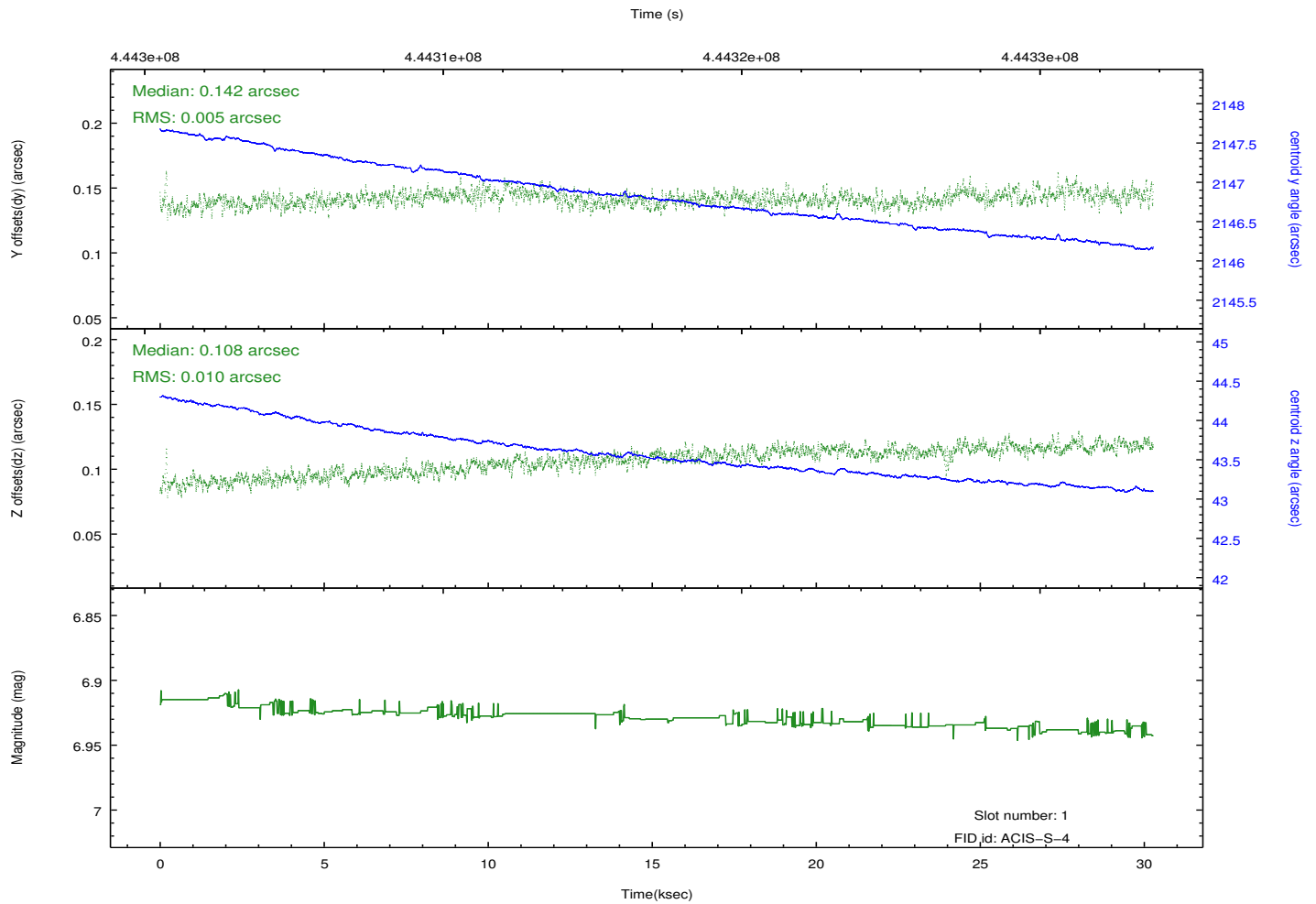
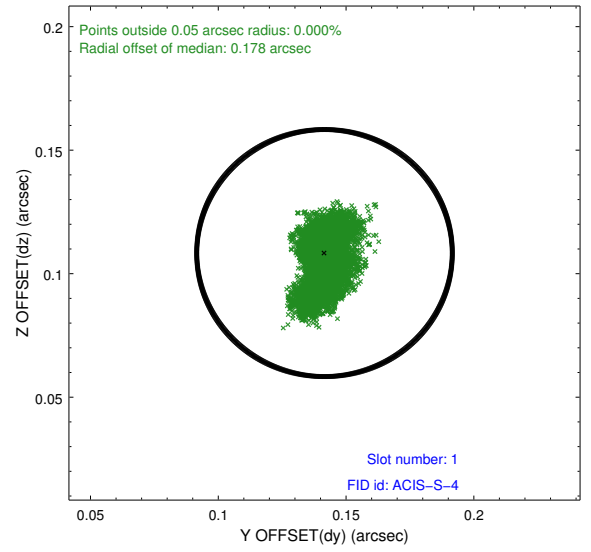
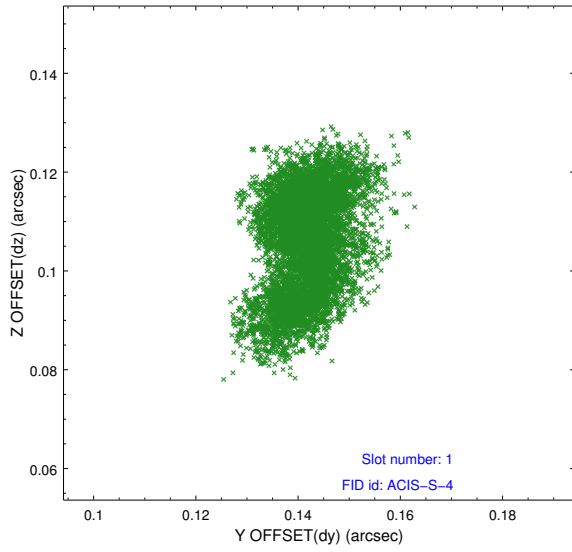


2.5 FID Slots

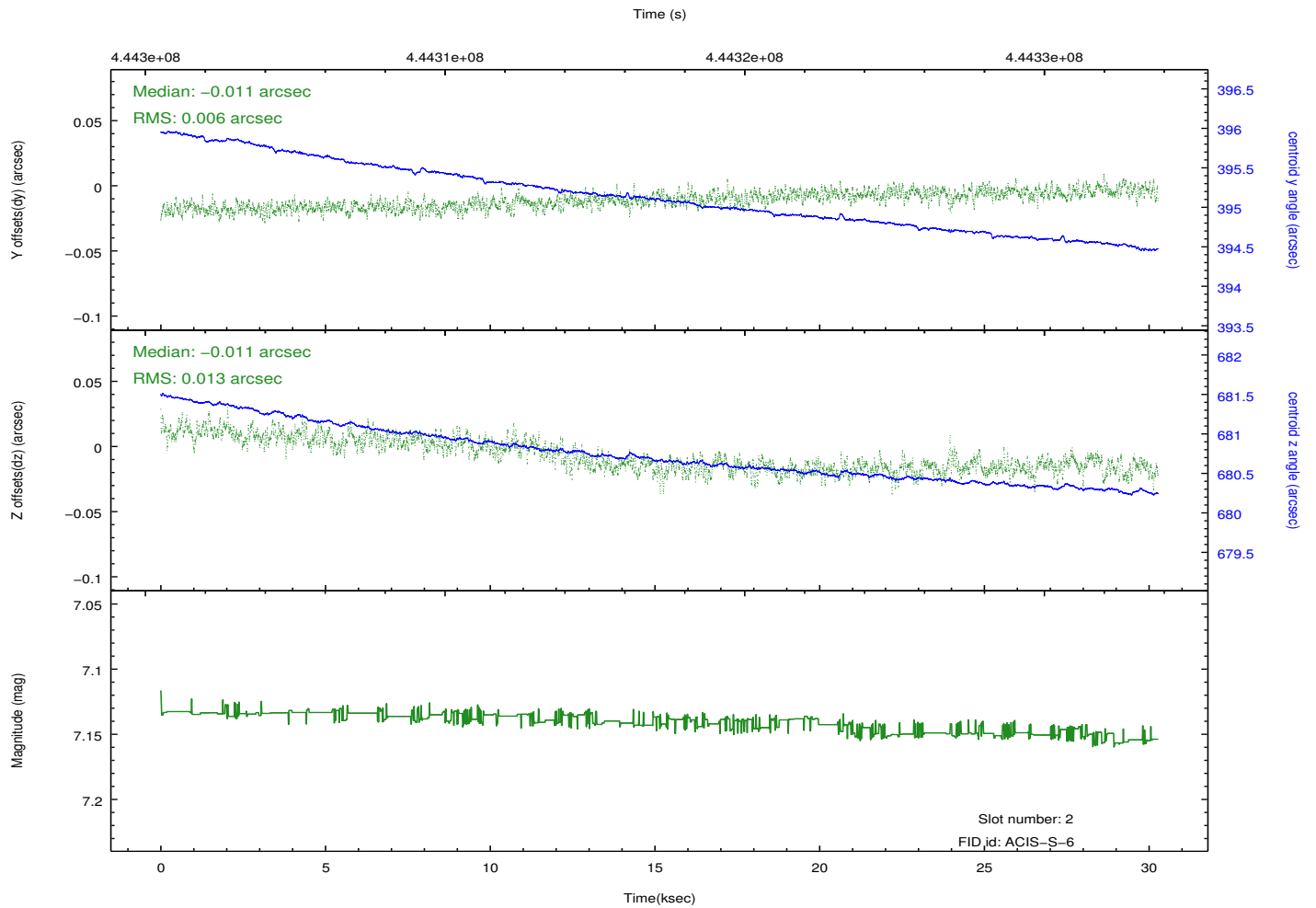
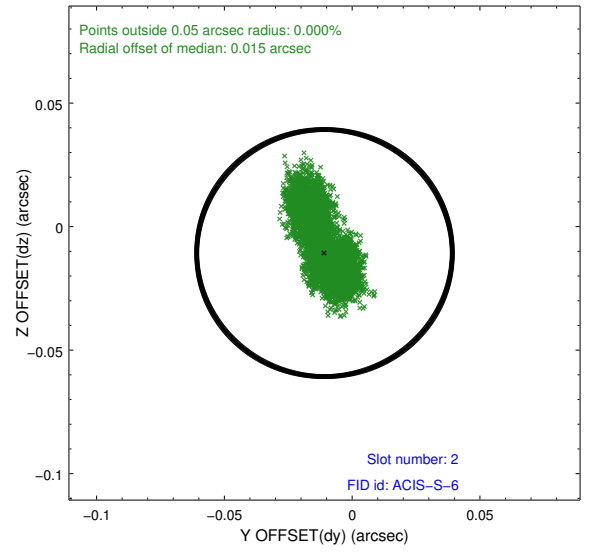
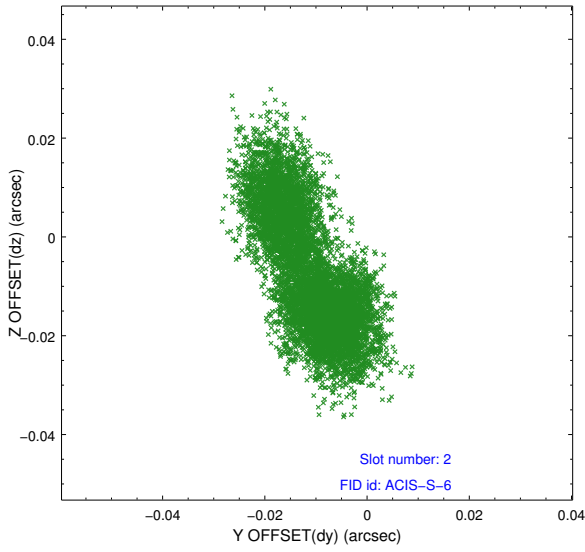
2.5.1 Slot 0



2.5.2 Slot 1

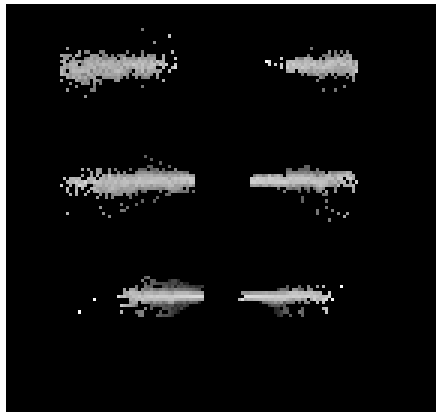


2.5.3 Slot 2

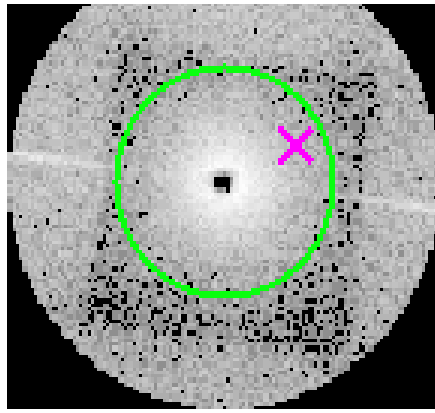


3 Gratings

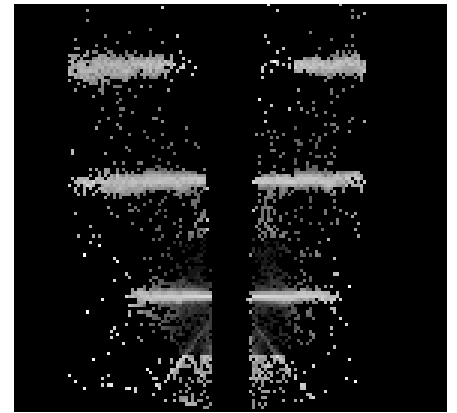
3.1 HEG Arm



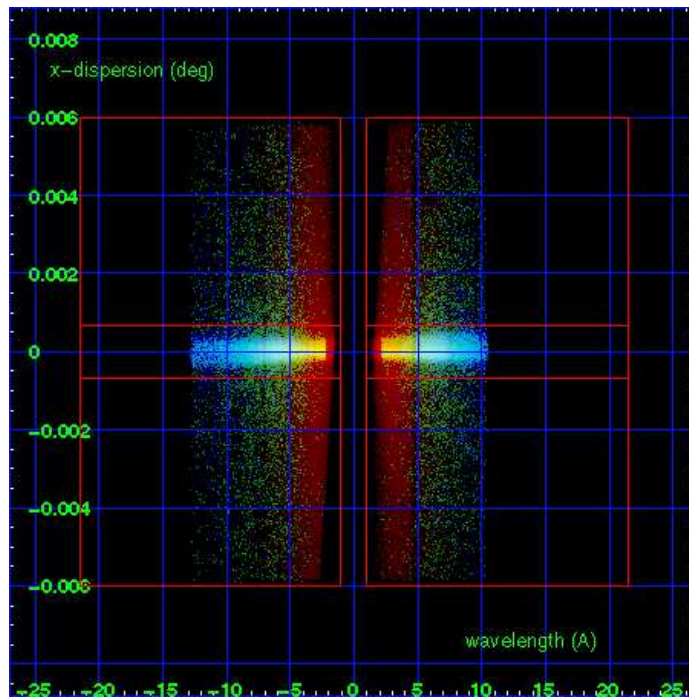
HEG Order Sort 123



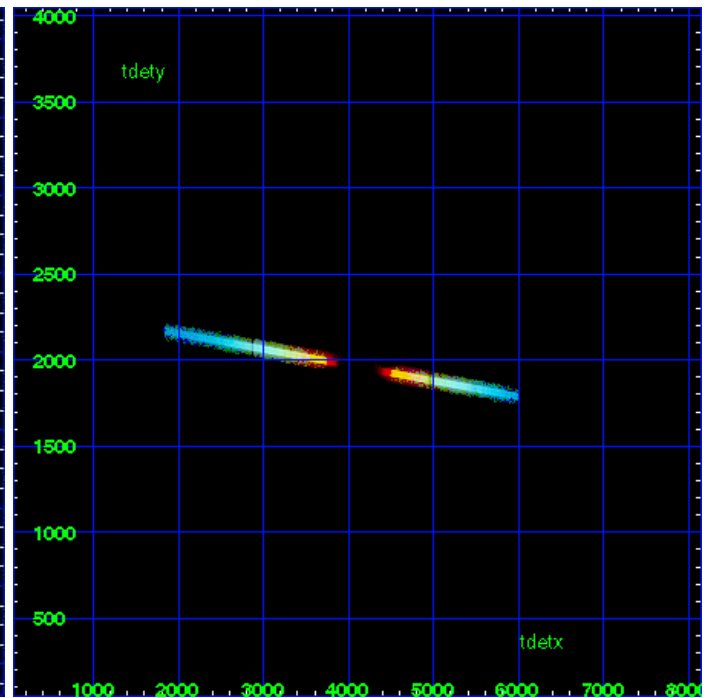
HEG Zero Order



HEG Order Sort ALL

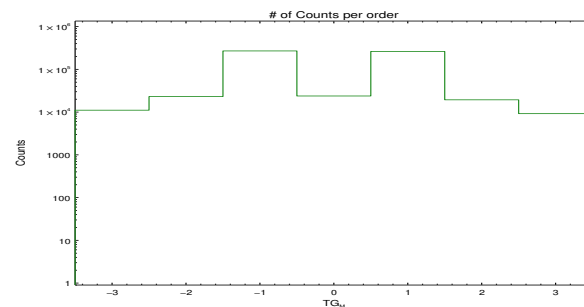


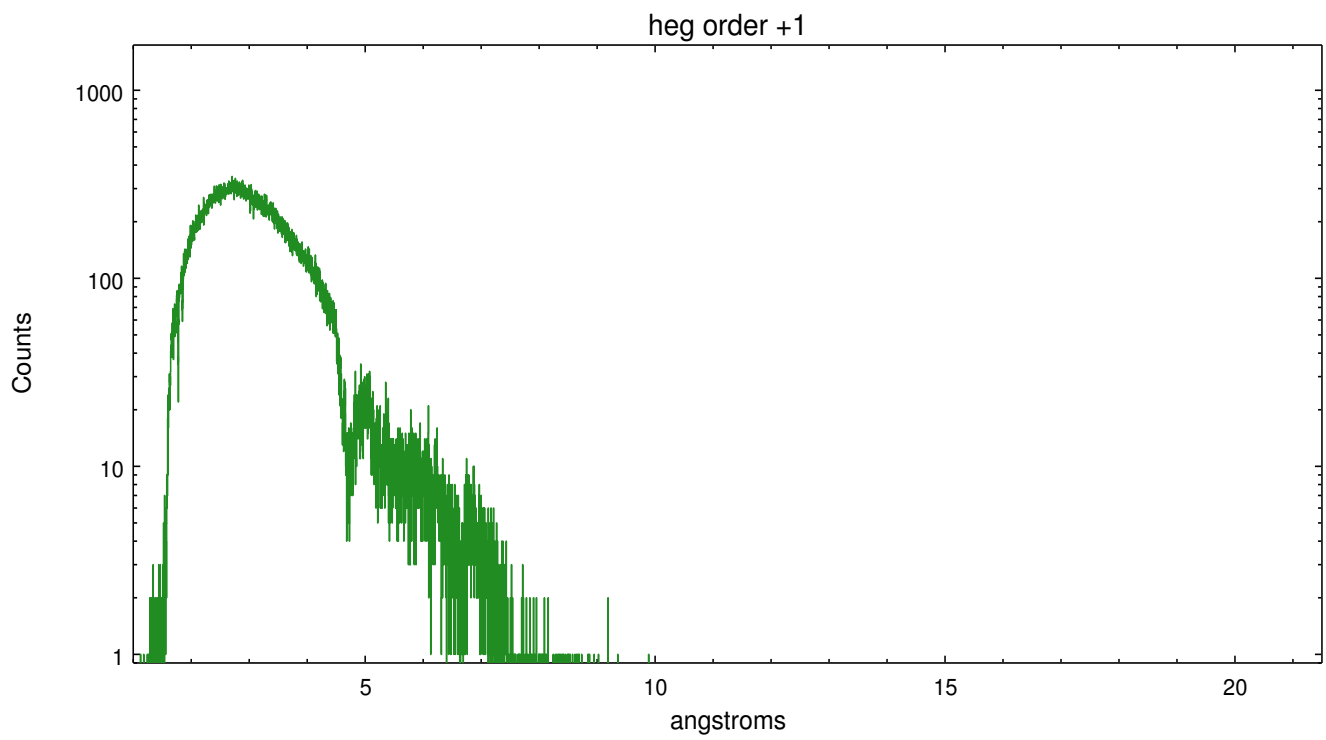
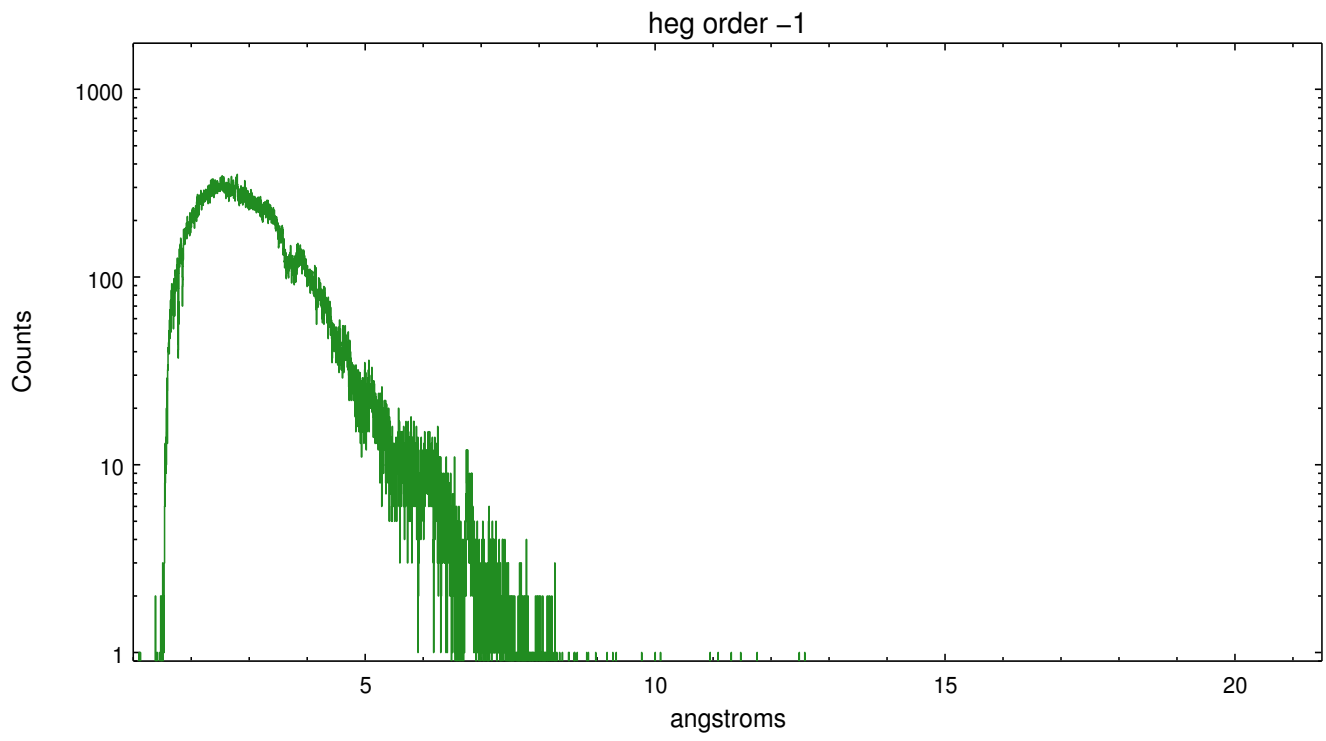
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	11077	23097	269873	23828	262424	19391	9209

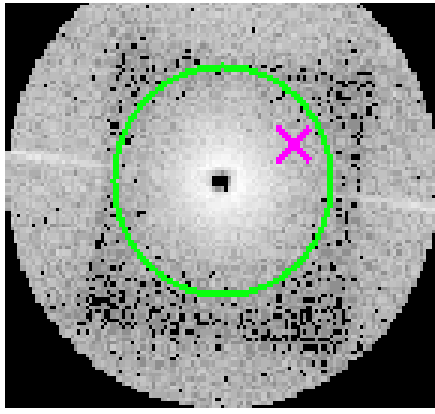




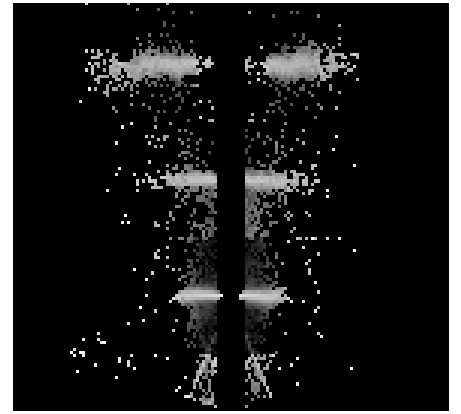
3.2 MEG Arm



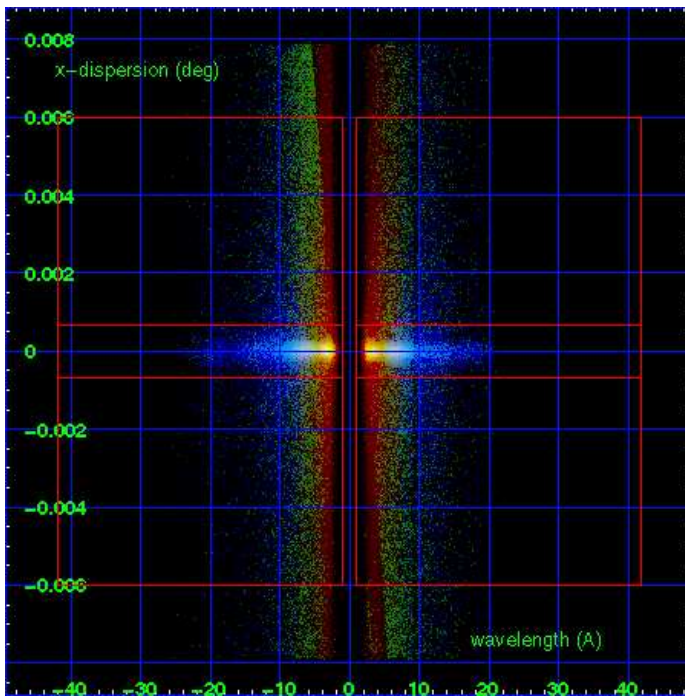
MEG Order Sort 123



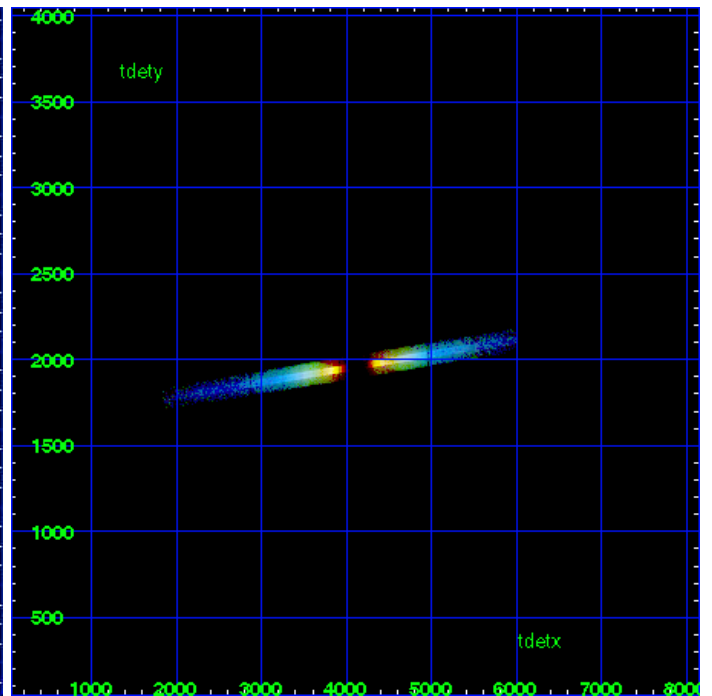
MEG Zero Order



MEG Order Sort ALL

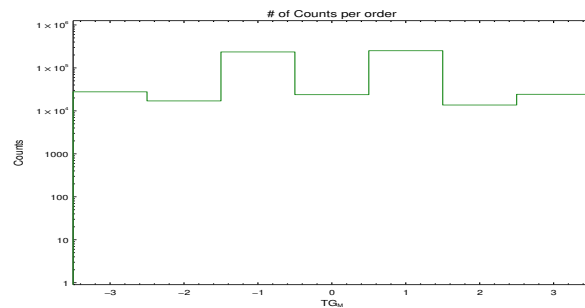


Spot Image MEG

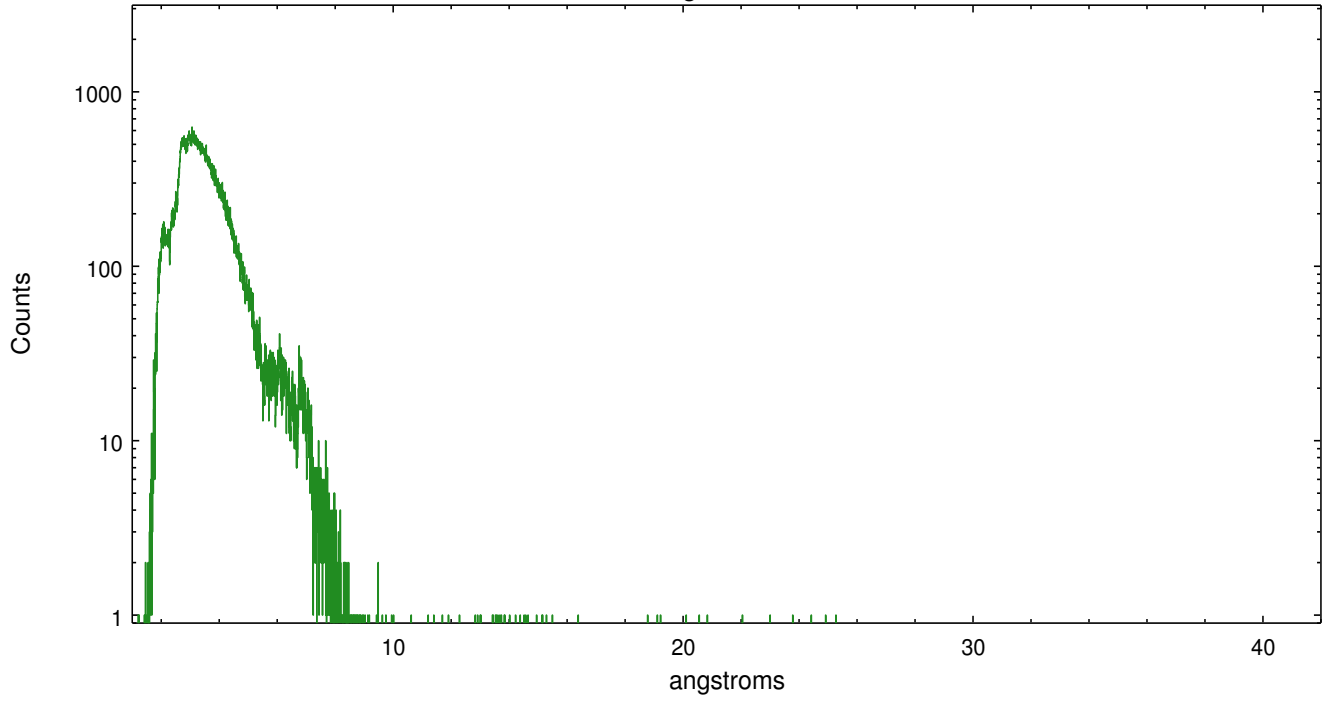


Full Detector MEG

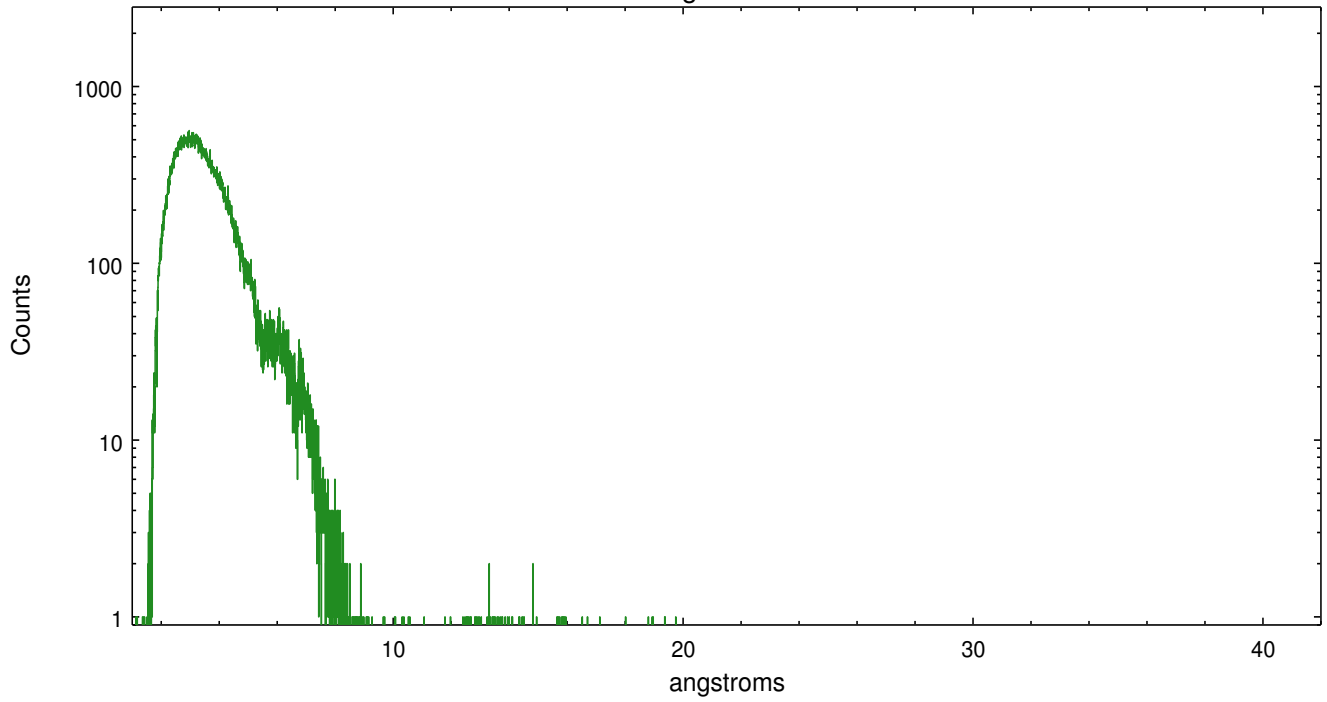
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	27742	17050	235340	23828	251283	13681	24294



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.02.03
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.190400449872

A.2 Comments

Standard data processing software did not correctly locate the zeroth order because a spatial exclusion window was used to limit the zeroth order image to 1 in 10 events. Manual intervention was used to input the correct sky coordinates (x=4076.74, y=4086.98) 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. == Faint grating spectra can be seen in an image of bad events. This is probably due to pileup in the spectrum, causing migration to bad grades. This should be considered in analysis. The data for this observation have been processed using the 'EDSER' sub-pixel event-repositioning algorithm of Li et al. (2004, ApJ, 610, 1204). Small-scale features should become sharper for sources near the aim point. The improvement will be less noticeable for off-axis sources where the size of the point-spread function is comparable to or larger than the size of an ACIS pixel. To take full advantage of the improvement, images should be binned on spatial scales smaller than the size of an ACIS pixel. Note that, at present, the point-spread function has not been calibrated for data to which the EDSER algorithm has been applied. If dither was disabled for the observation, then the algorithm can introduce artificial aliasing effects on spatial scales smaller than a pixel. If you would prefer to use no sub-pixel adjustment or to apply a coordinate randomization, then use acis_process_events to reprocess the data with the parameter pix_adj=NONE or RANDOMIZE, respectively.