

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 10663 - L2 Version 3
Chandra X-Ray Center

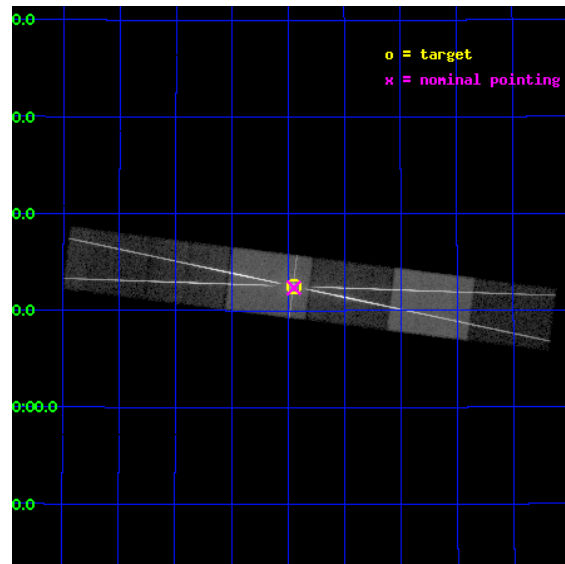
L2 Processing Date : Jun 25 2012

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1 Front

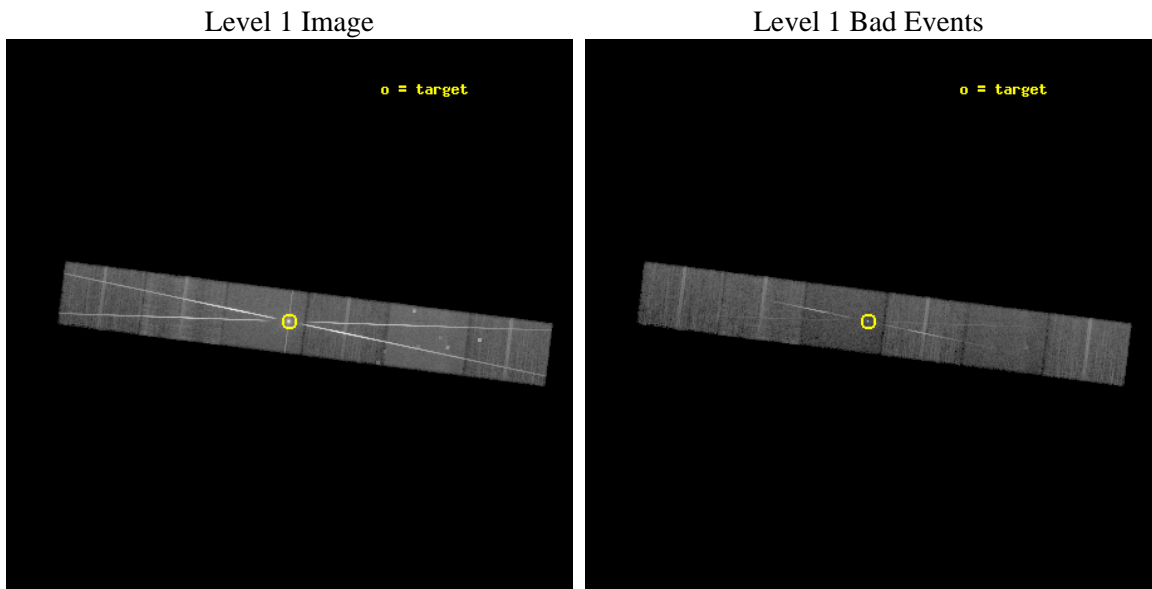
seq_num	790200	Sequence number
obs_id	10663	Observation id
title	AO-10 Calibration Observations of PKS2155-304	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	Mkn421	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.11208945834	Nominal RA [deg]
dec_nom	38.206085452387	Nominal Dec [deg]
roll_nom	187.15743680009	Nominal Roll [deg]
revision	3	Processing version of data
ontime	15127.5	Sum of GTIs [s]
liveltime	14883.17775399	Livetime [s]
ontime4	15127.5	Sum of GTIs [s]
ontime5	15127.5	Sum of GTIs [s]
ontime6	15127.5	Sum of GTIs [s]
ontime7	15127.5	Sum of GTIs [s]
ontime8	15127.5	Sum of GTIs [s]
ontime9	15127.5	Sum of GTIs [s]
l2events	757393	Number of level 2 events



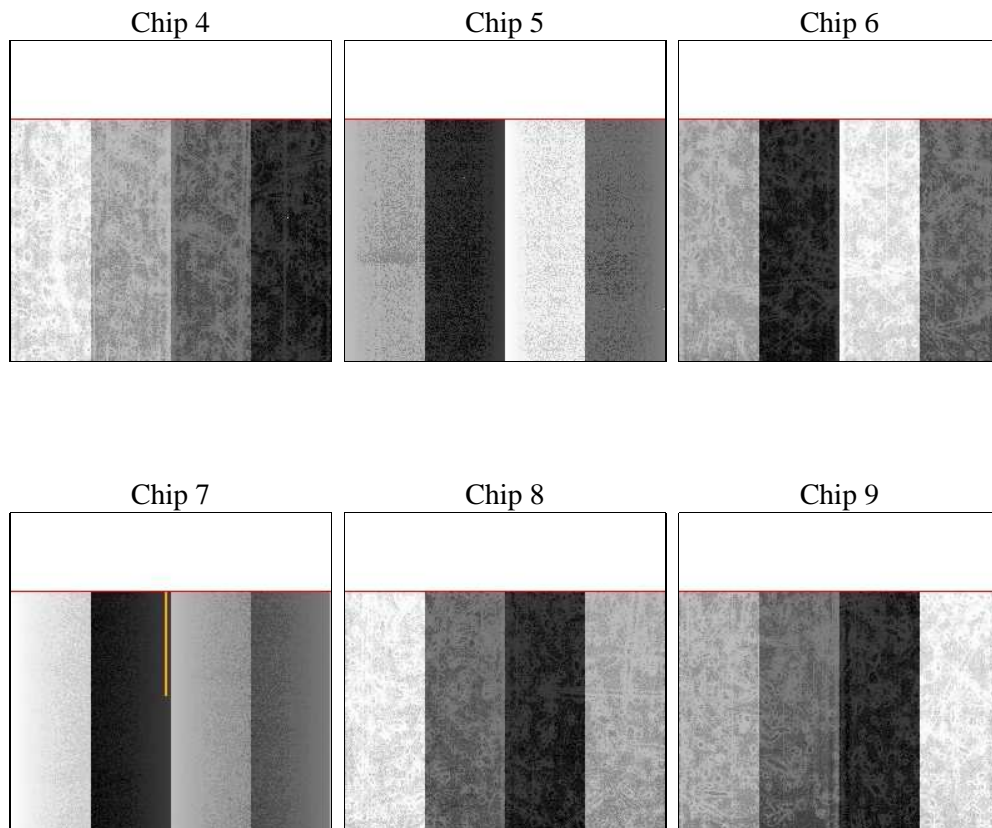
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	15000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	15127.5	Sum of GTIs [s]
caldsver	4.4.10	 	ontime4	15127.5	Sum of GTIs [s]
date	2012-06-22T16:38:25	Date and time of file creation	ontime5	15127.5	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	15127.5	Sum of GTIs [s]
			ontime7	15127.5	Sum of GTIs [s]
			ontime8	15127.5	Sum of GTIs [s]
			ontime9	15127.5	Sum of GTIs [s]
			l1events	1367473	Number of level 1 events

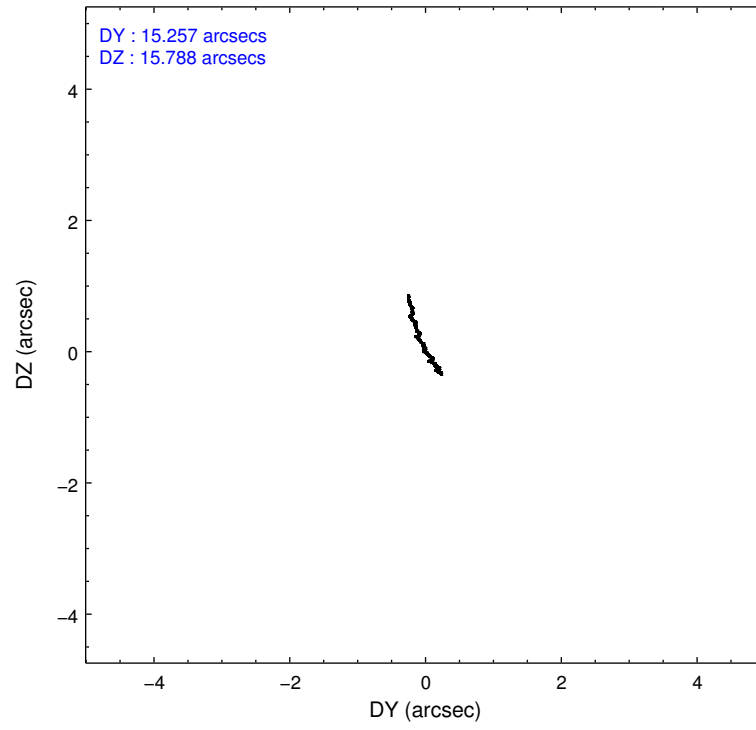
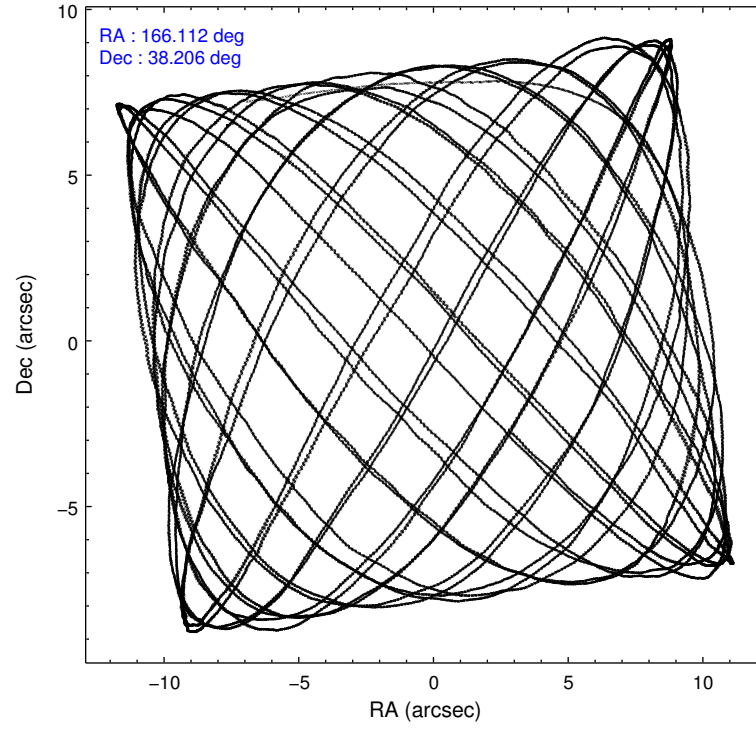
2.1.4 Events

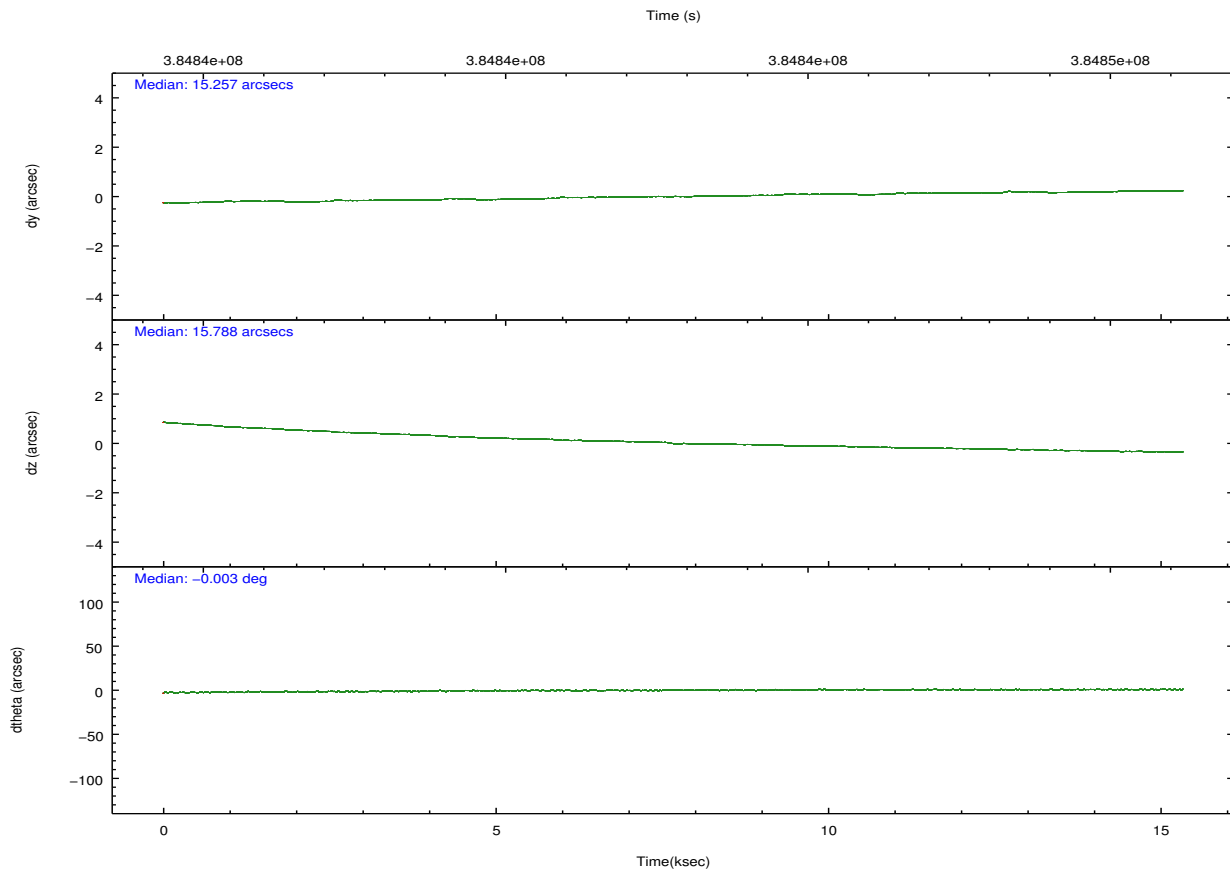
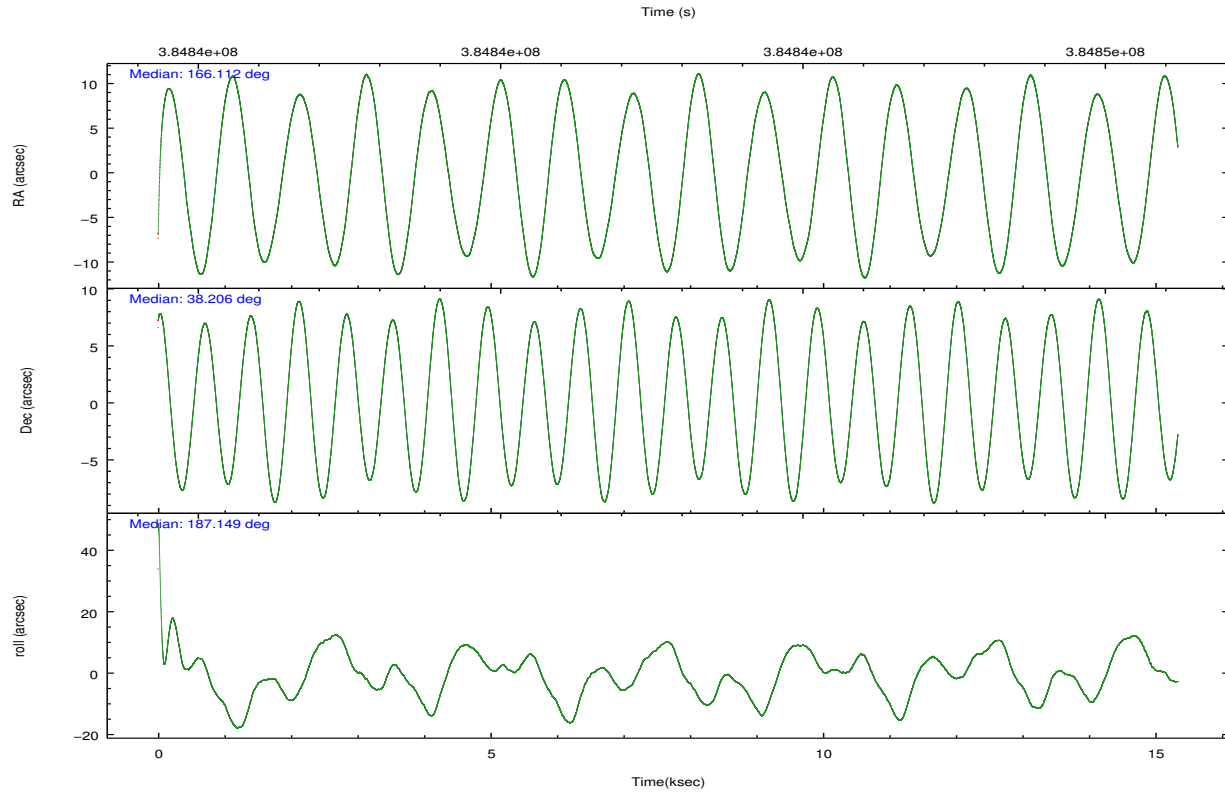
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	132332	231623	318831	315367	248276	121044	grade 0 events	23525	43933	170198	51792	109114	26250
rejected events	100578	80425	100499	77783	100148	84405		17%	18%	53%	16%	43%	21%
rejected %	76%	34%	31%	24%	40%	69%	grade 1 events	163	456	3090	1394	1081	157
								0%	0%	0%	0%	0%	0%
							grade 2 events	4382	45742	26225	59709	18729	4945
								3%	19%	8%	18%	7%	4%
							grade 3 events	1791	11390	9113	26750	6910	1975
								1%	4%	2%	8%	2%	1%
							grade 4 events	1676	11300	9033	26399	6811	1990
								1%	4%	2%	8%	2%	1%
							grade 5 events	4097	12516	5902	16269	6628	4535
								3%	5%	1%	5%	2%	3%
							grade 6 events	2233	46492	8095	79539	10704	2729
								1%	20%	2%	25%	4%	2%
							grade 7 events	94465	59794	87175	53515	88299	78463
								71%	25%	27%	16%	35%	64%

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	166.139490	166.1120894583403	CCD I2 on	N	N
[deg] Pointing Dec	38.222912	38.20608545238686	CCD I3 on	N	N
[deg] Pointing Roll	186.983819	187.1574368000919	CCD S0 on	O1	Y
[s] Window start time (MET)	378691266.184000	378691266.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	386380866.184000	386380866.184000	CCD S2 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S3 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S4 on	Y	Y
[mm] SIM translation stage pos	-187.132523	-187.1254020033014	CCD S5 on	Y	Y
[mm] SIM translation stage offset	-3	-3.007120579706367	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	384835229.184000	384833532.51036	On-chip summing requested	N	N
Observation start date	2010-03-13T02:39:23	2010-03-13T02:12:12	Subarray requested	CUSTOM	CUSTOM
[s] Observation end time (MET)	384850229.184000	384850677.17373	Subarray start row	1	1
Observation end date	2010-03-13T06:49:23	2010-03-13T06:57:57	Subarray row count	774	774
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	2.5

2.3 Aspect



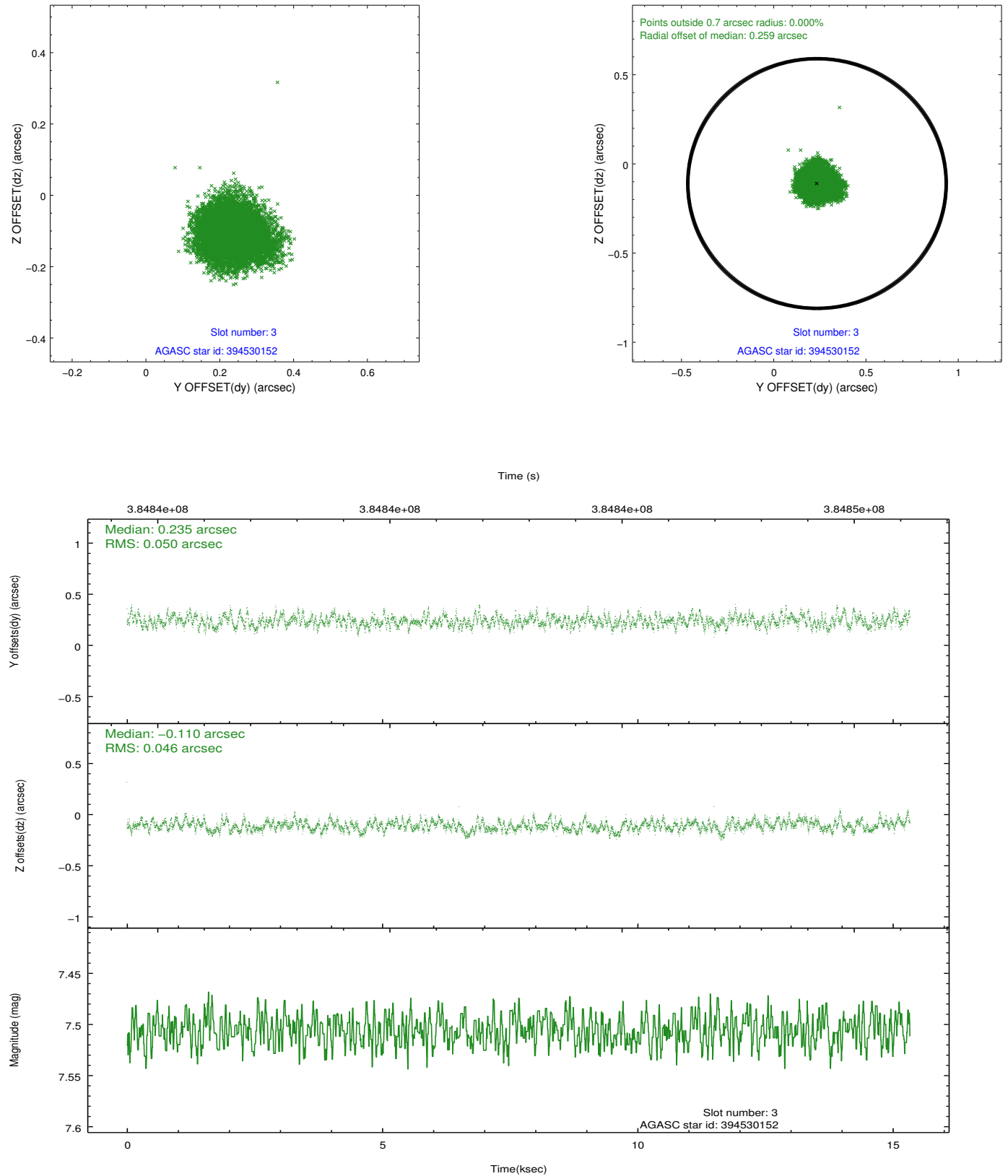


Slot Statistics

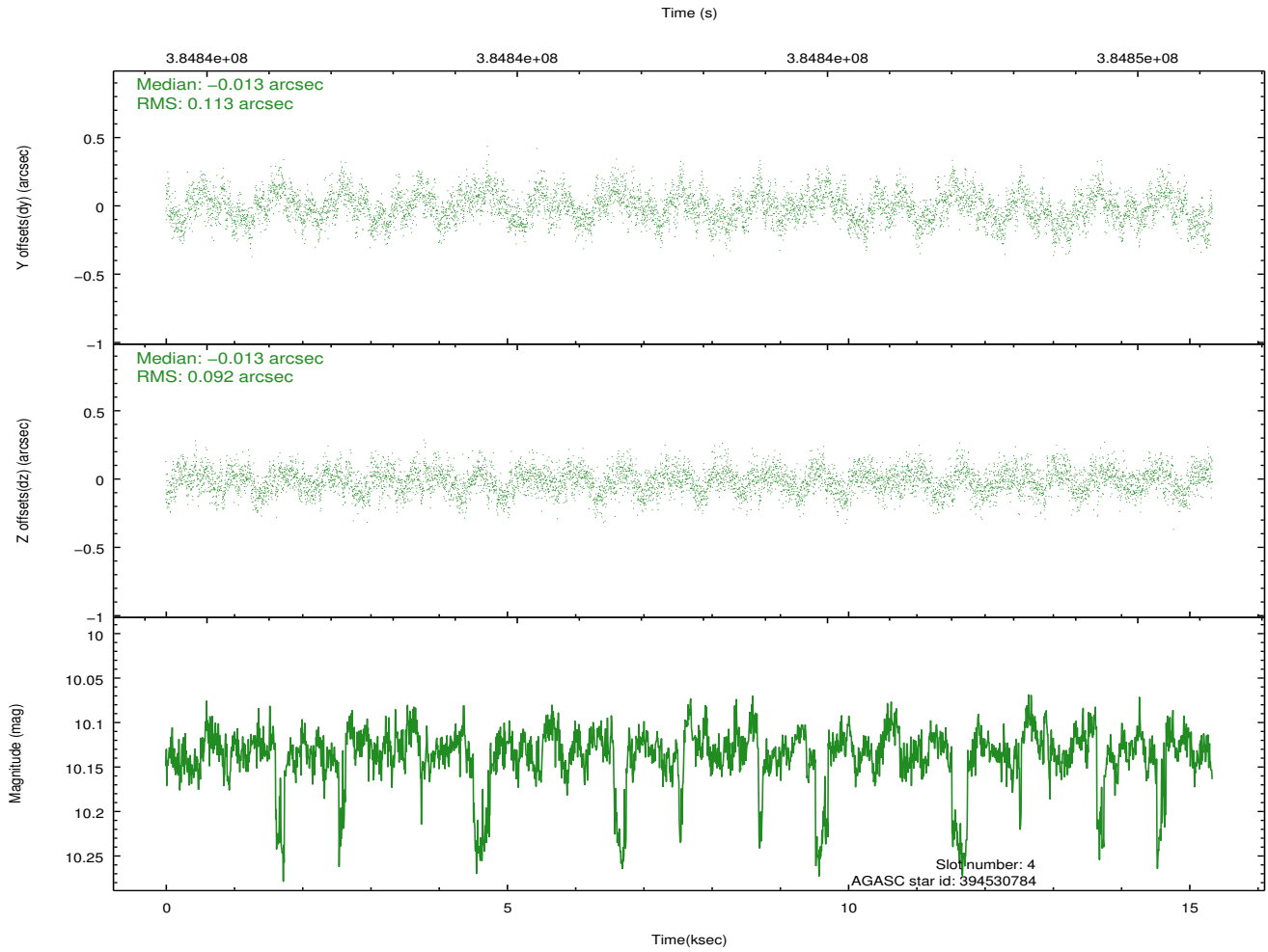
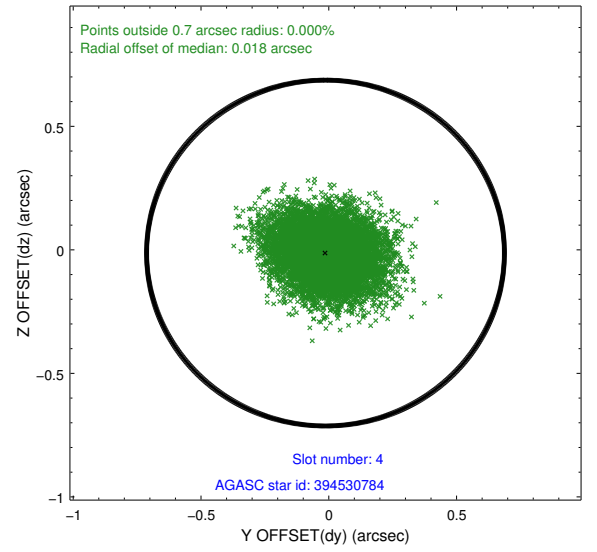
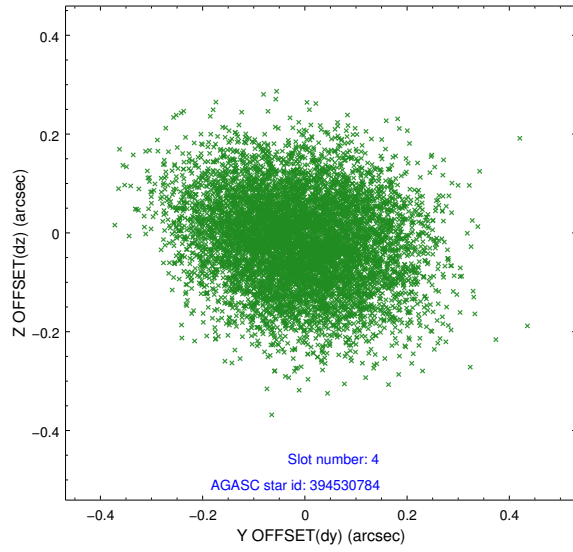
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.89	3741	-0.109	-0.101	0.013	0.021	0.000000	0.000000	-768.15	-1799.46
1	FID	ACIS-S-4	6.97	3741	0.226	0.081	0.015	0.032	0.000000	0.000000	2145.34	108.85
2	FID	ACIS-S-5	7.01	3739	-0.146	0.029	0.012	0.021	0.000000	0.000000	-1820.64	102.84
3	GUIDE	394530152	7.51	7481	0.235	-0.110	0.074	0.114	166.075805	38.868252	-104.38	-2327.73
4	GUIDE	394530784	10.13	7473	-0.013	-0.013	0.155	0.249	165.569172	38.418674	1510.84	-899.99
5	GUIDE	394533848	8.75	7476	-0.026	0.165	0.095	0.146	166.382906	38.276007	-702.31	-107.93
6	GUIDE	394543960	9.79	7472	0.060	-0.107	0.128	0.207	165.802757	37.787371	1141.46	1438.33
7	GUIDE	394546712	6.62	7481	-0.270	0.067	0.069	0.109	166.451462	38.394357	-947.84	-506.72

2.4 Star Slots

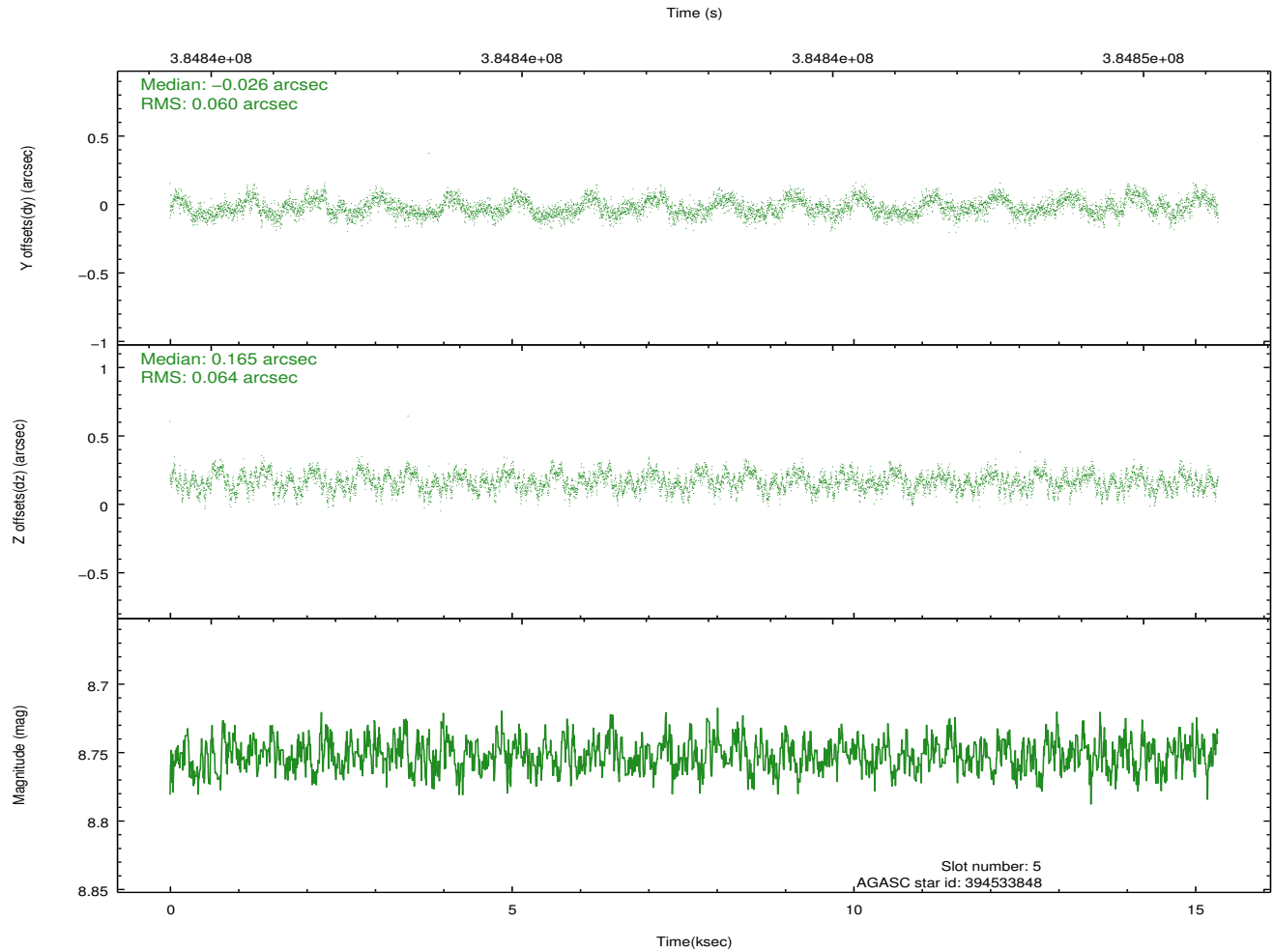
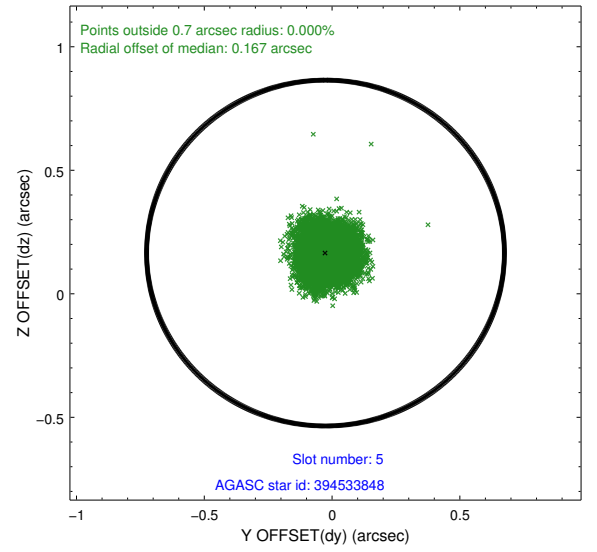
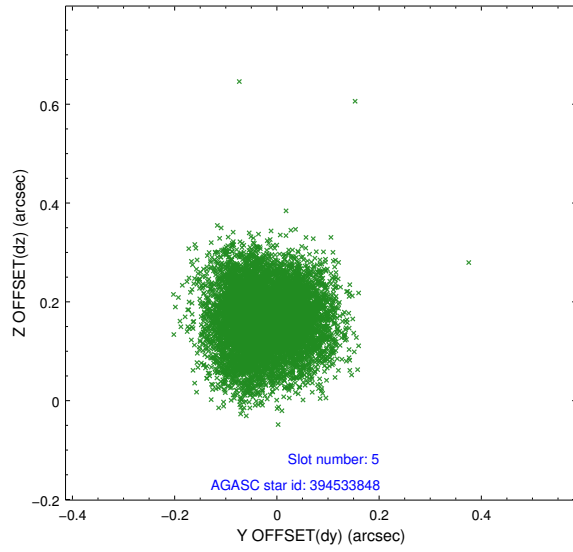
2.4.1 Slot 3



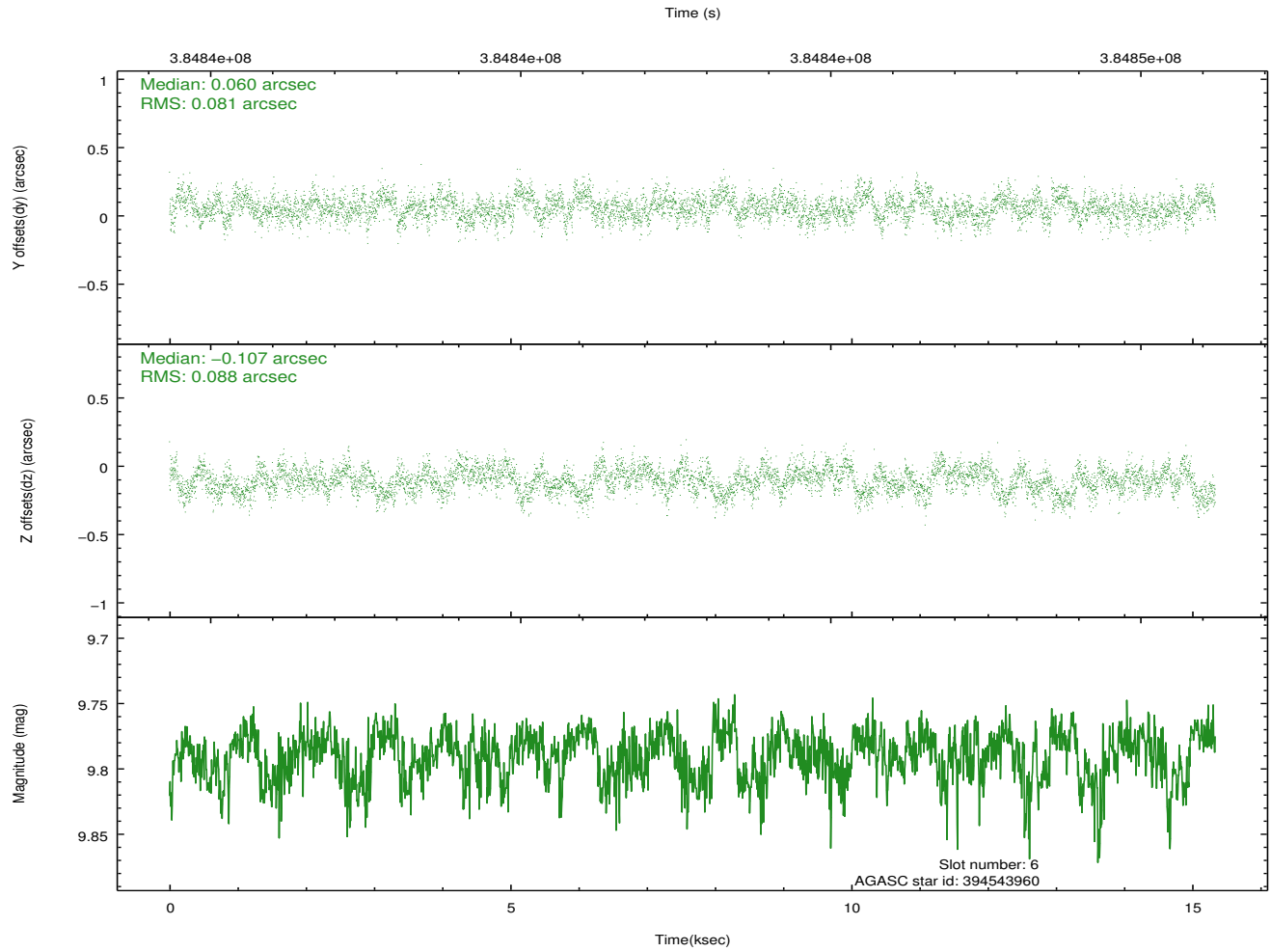
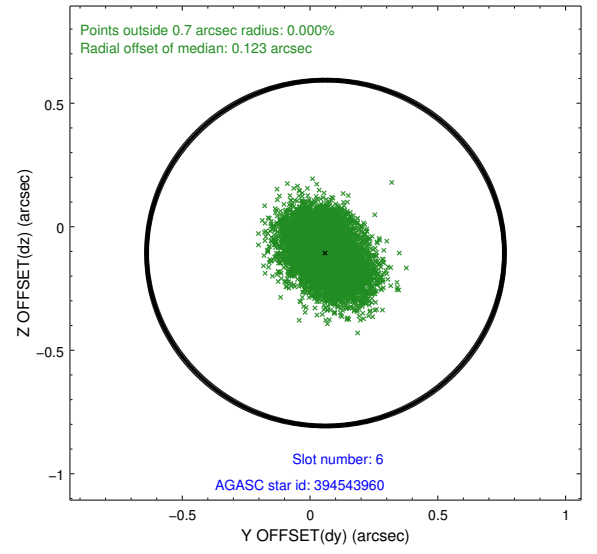
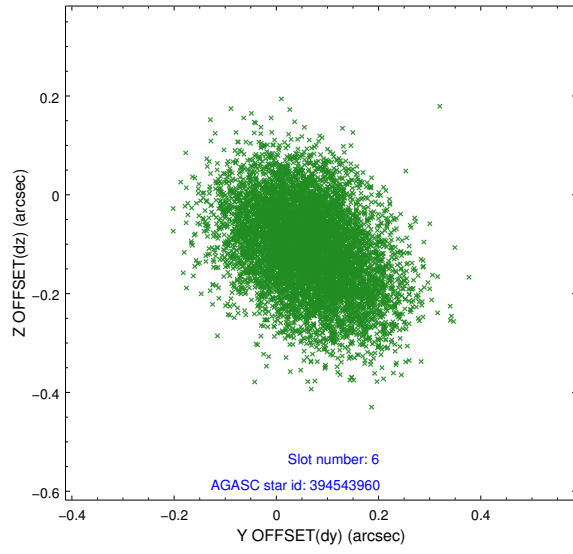
2.4.2 Slot 4



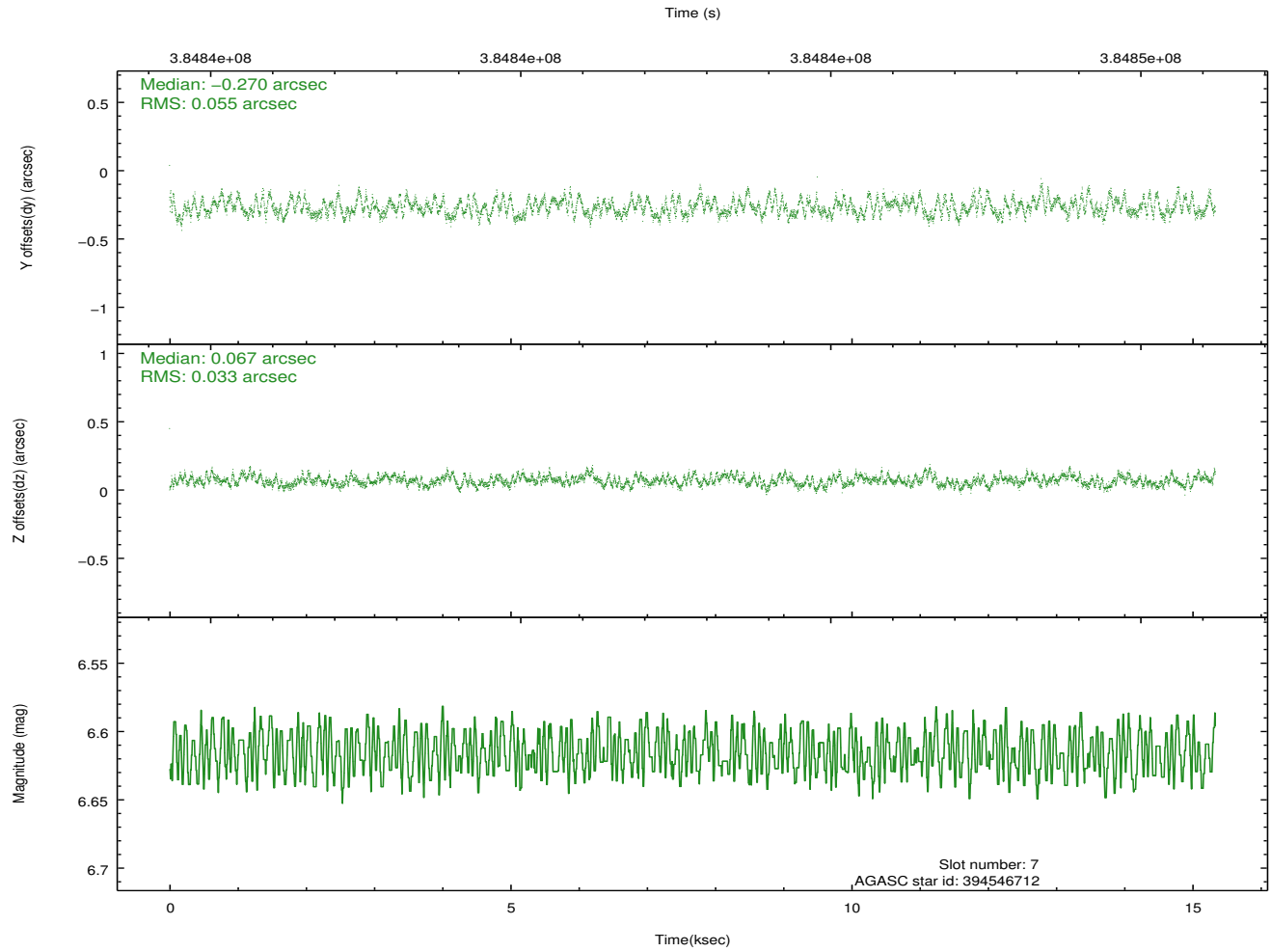
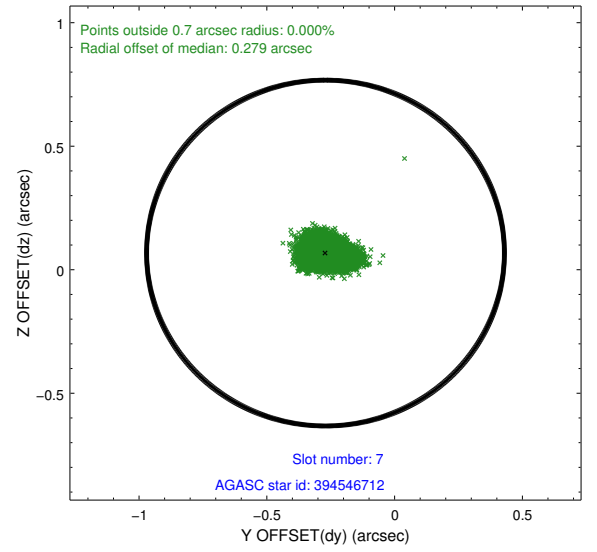
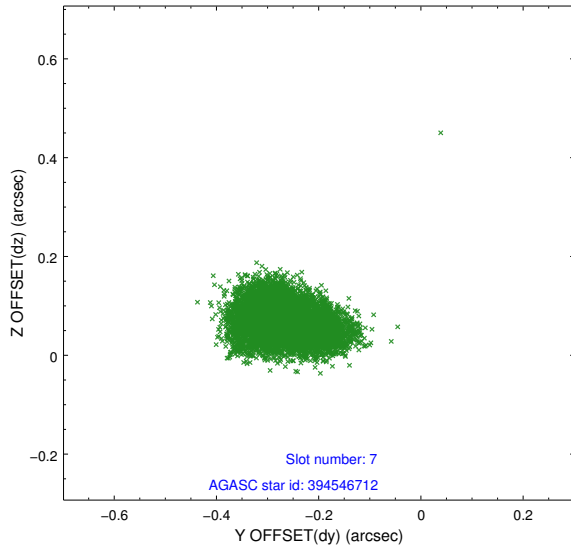
2.4.3 Slot 5



2.4.4 Slot 6

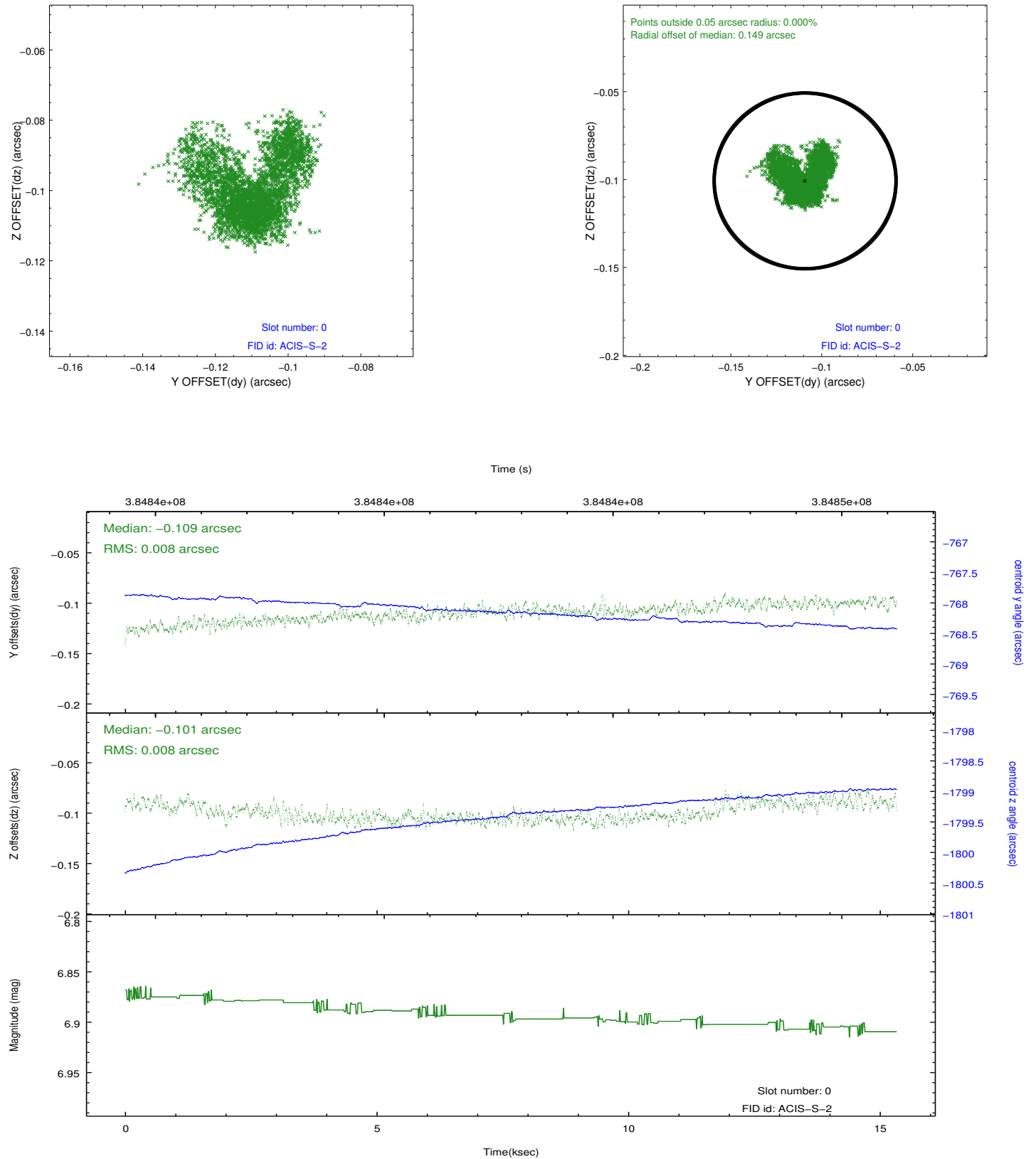


2.4.5 Slot 7

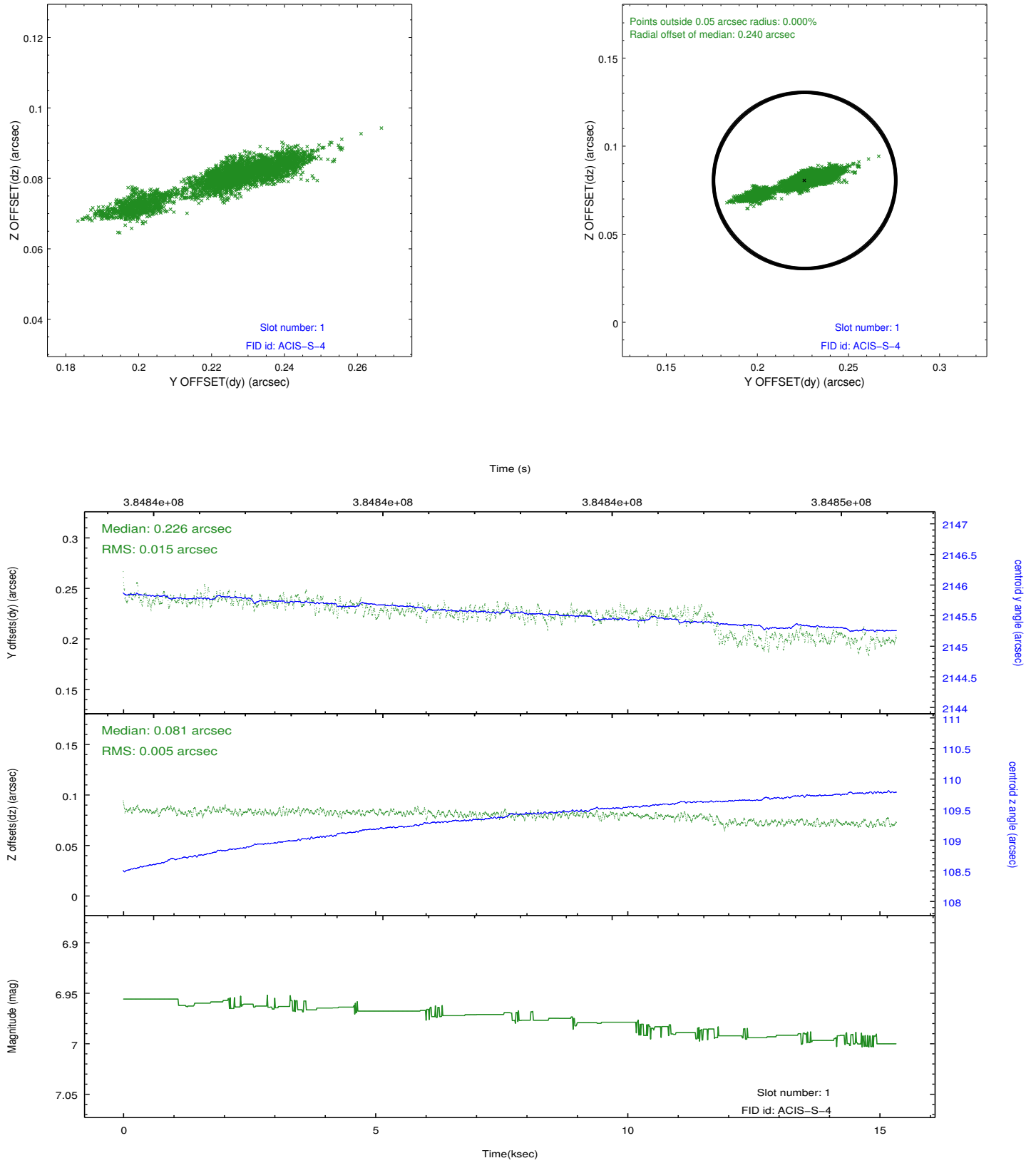


2.5 FID Slots

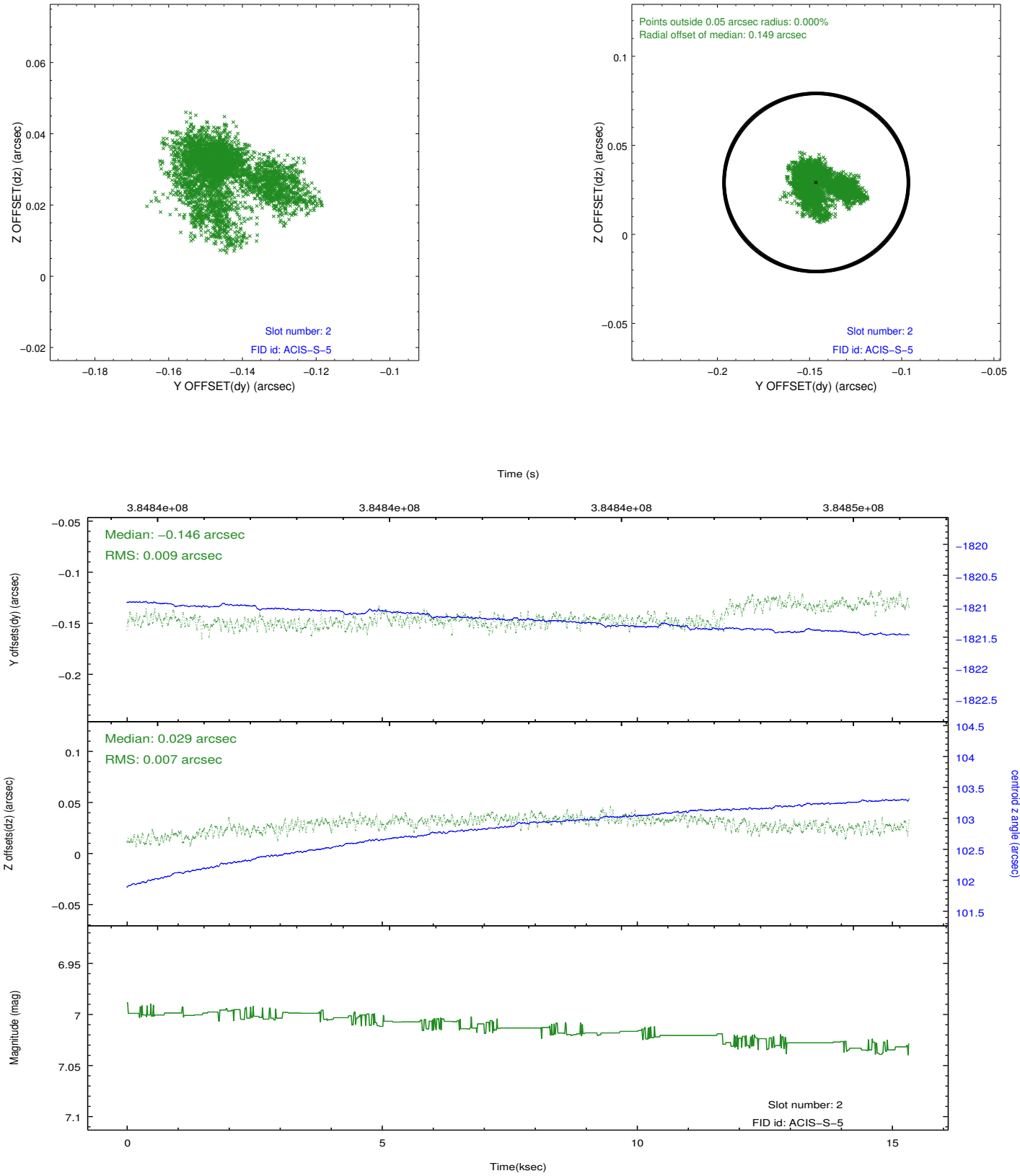
2.5.1 Slot 0



2.5.2 Slot 1

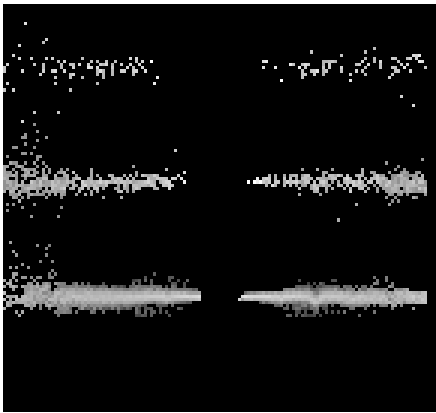


2.5.3 Slot 2

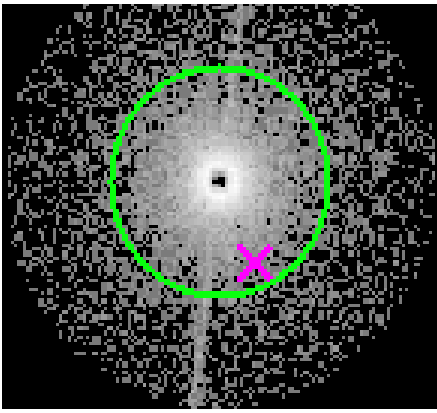


3 Gratings

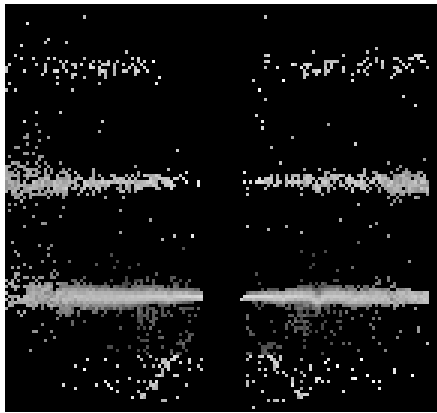
3.1 HEG Arm



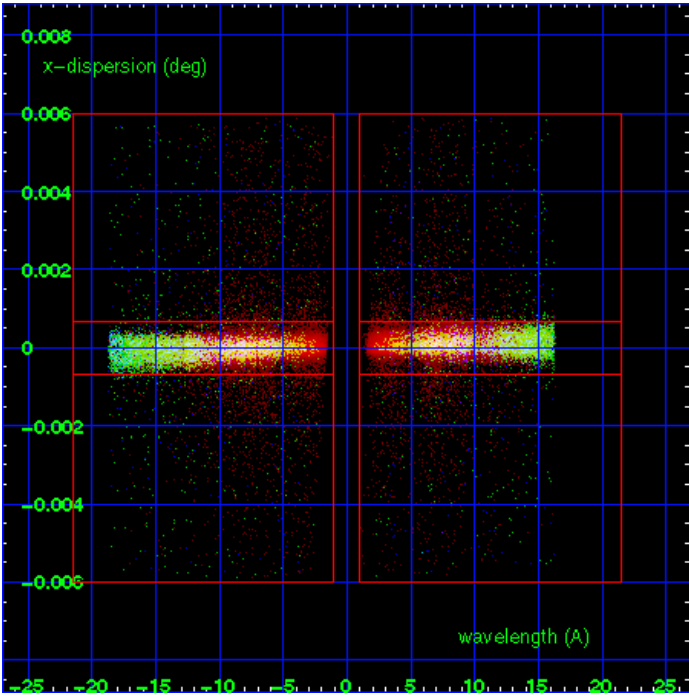
HEG Order Sort 123



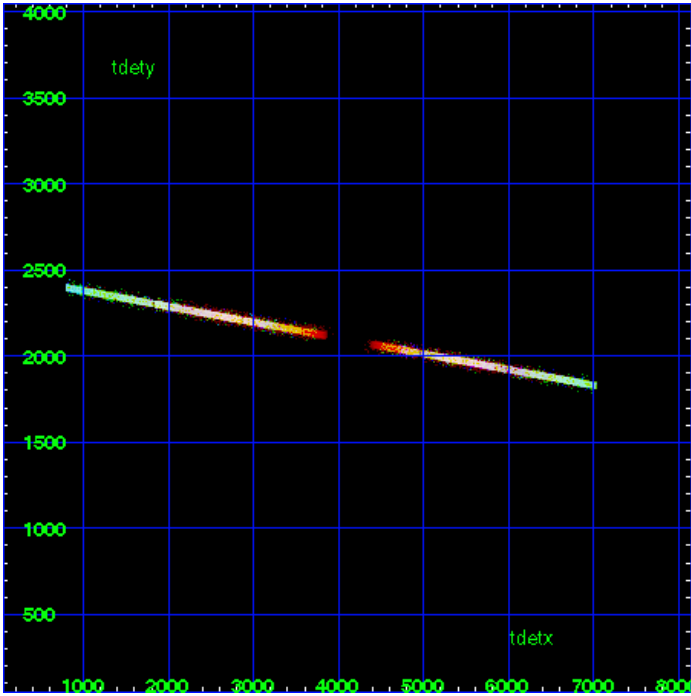
HEG Zero Order



HEG Order Sort ALL

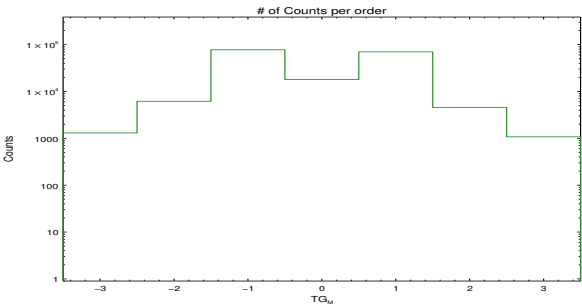


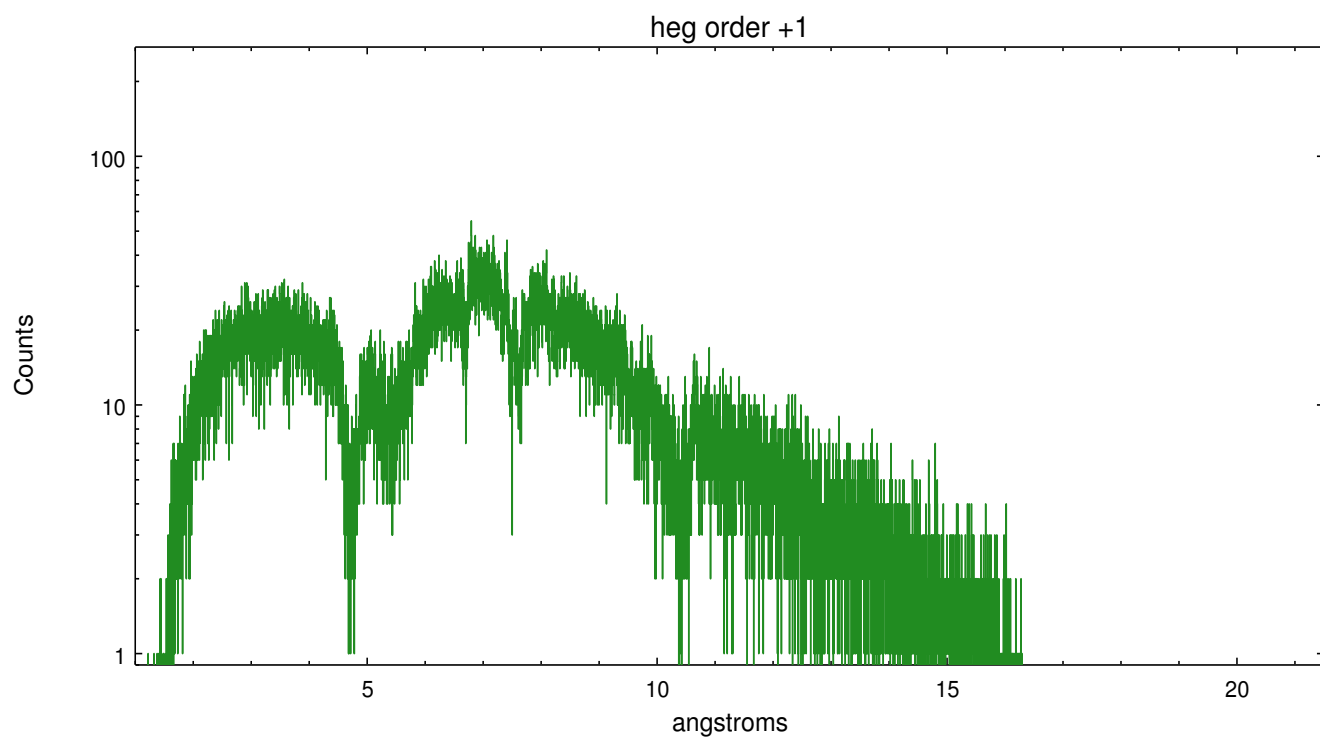
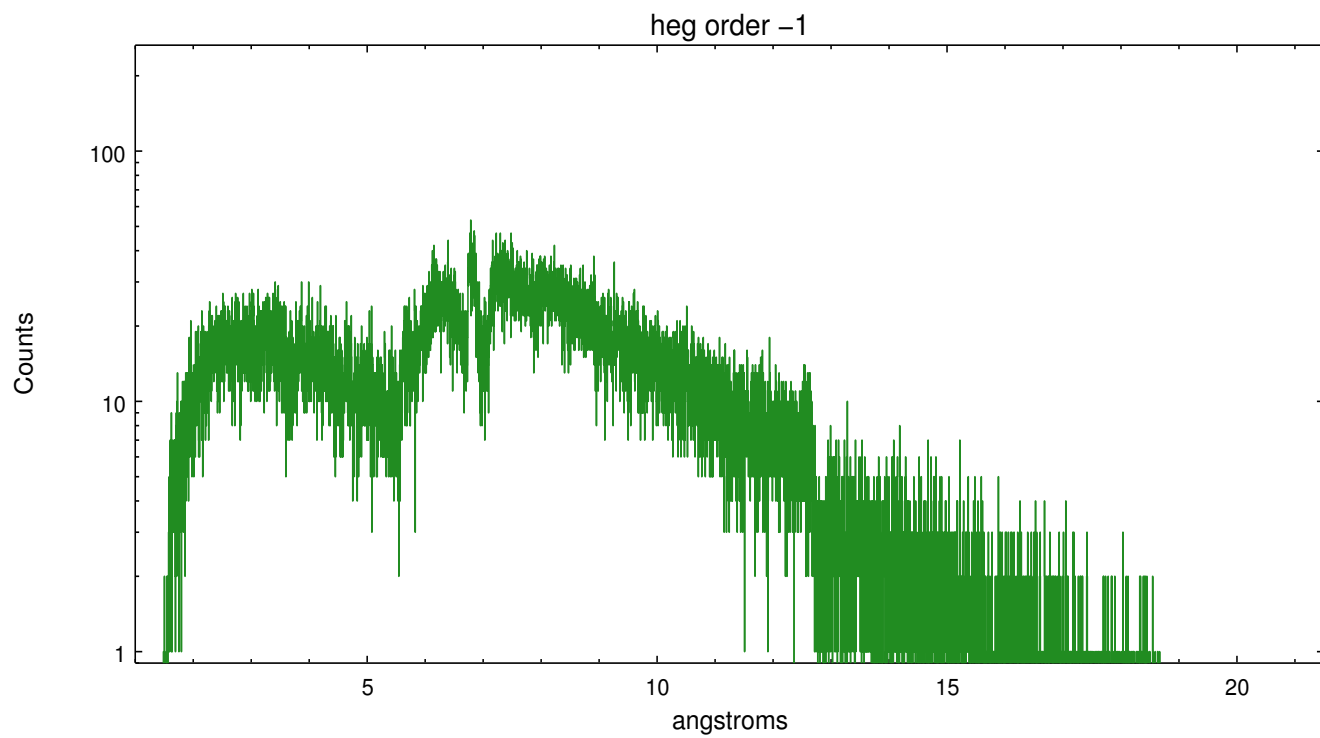
Spot Image HEG



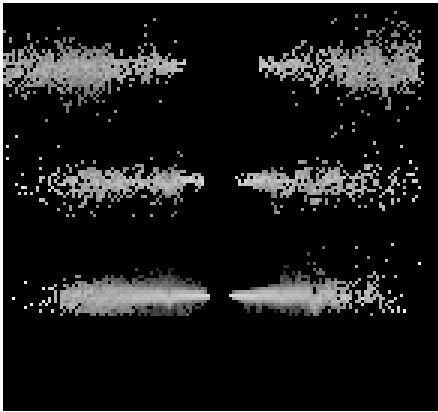
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1303	6171	77460	17957	69920	4581	1077

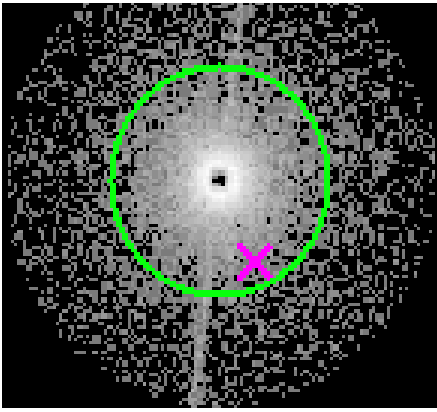




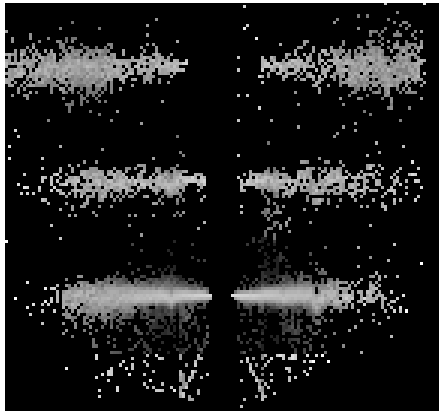
3.2 MEG Arm



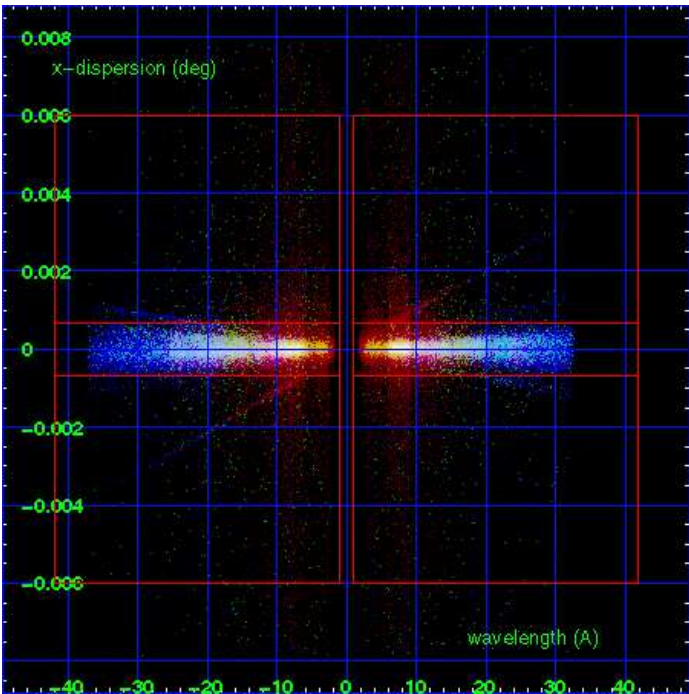
MEG Order Sort 123



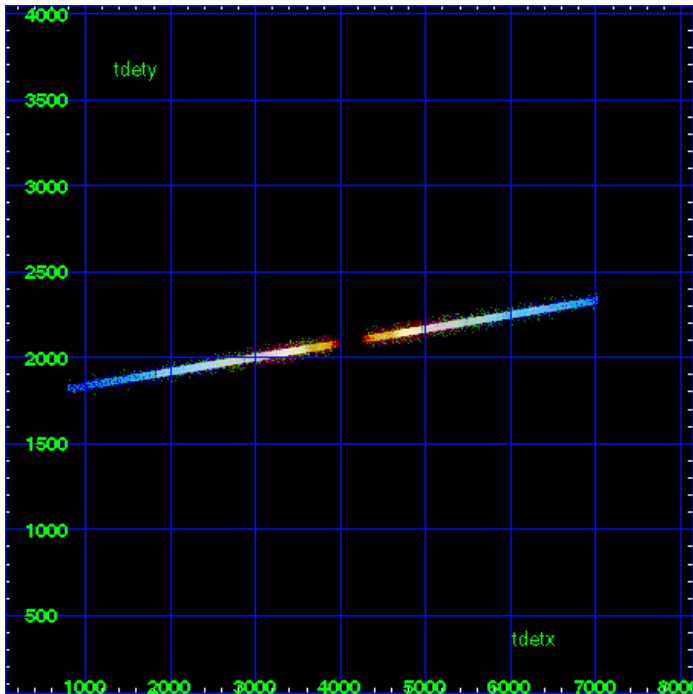
MEG Zero Order



MEG Order Sort ALL

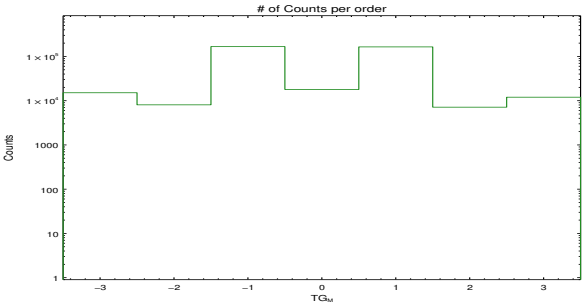


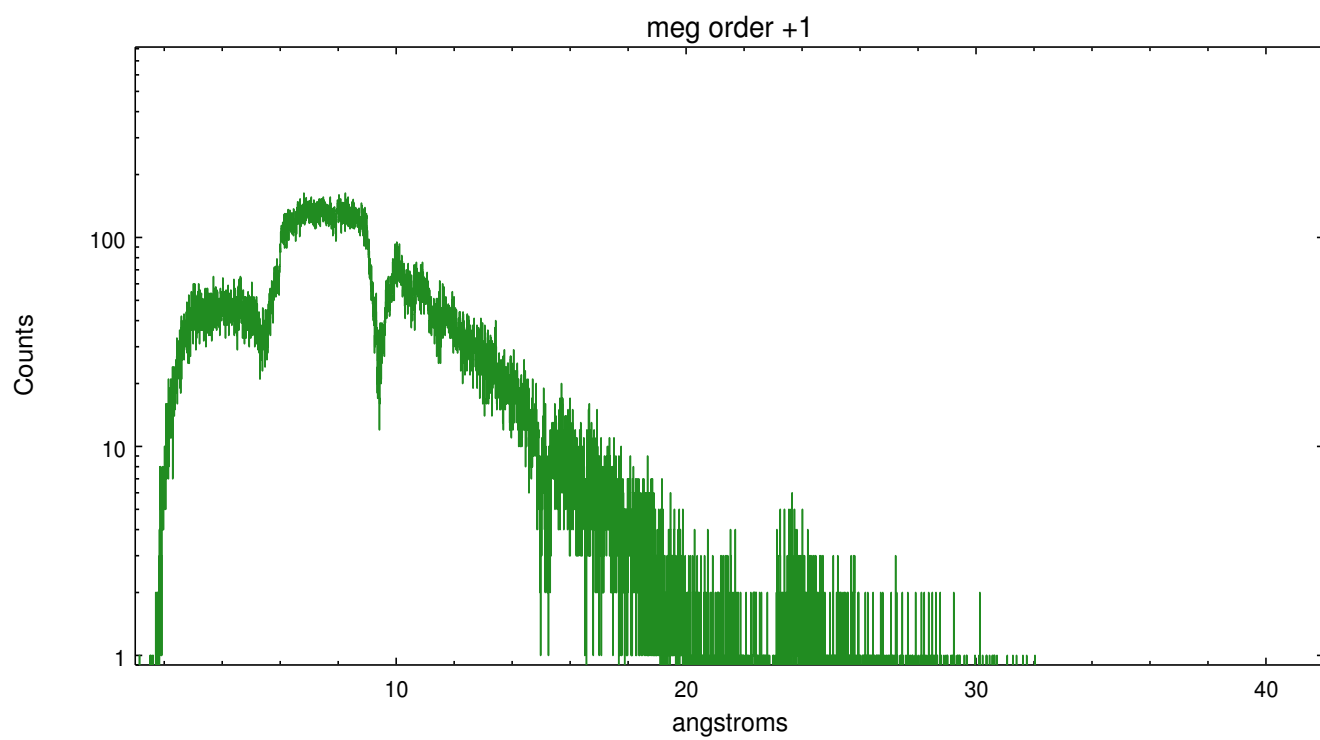
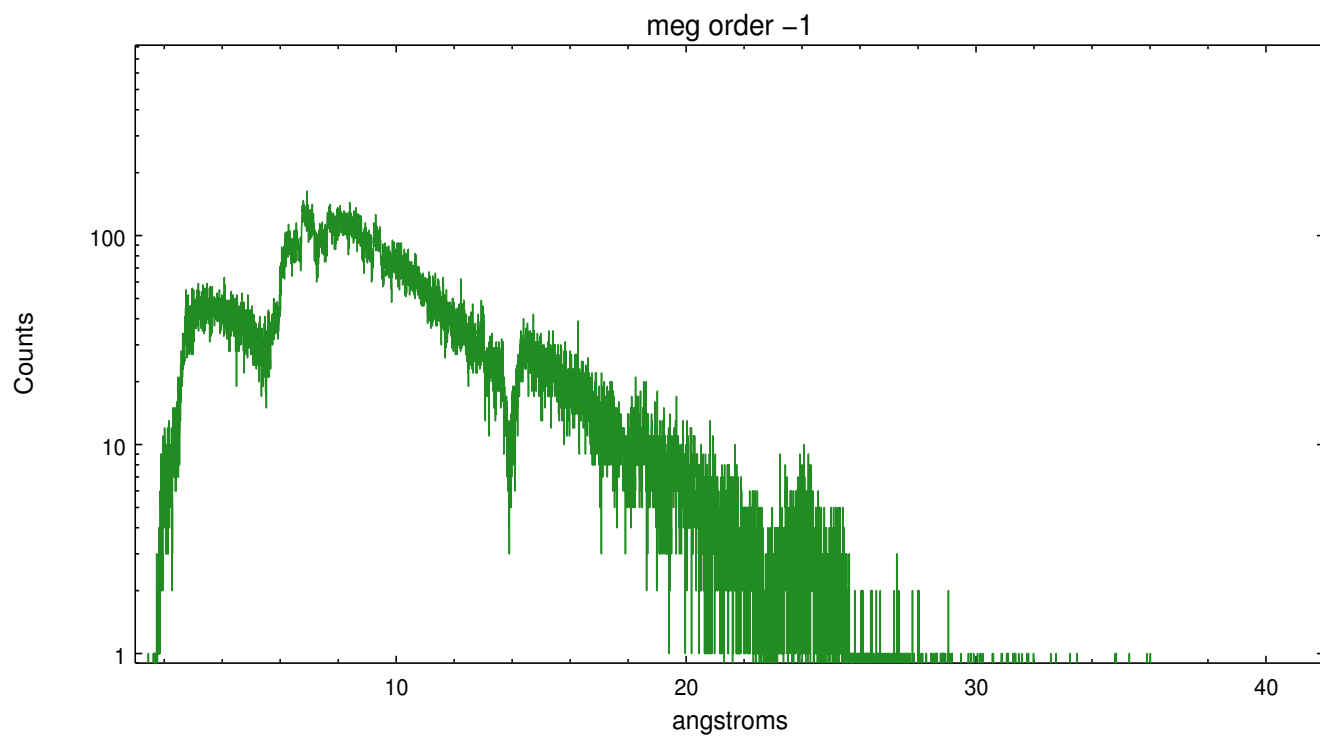
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	15131	8065	166912	17957	164528	7132	11990





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.1275

A.2 Comments

Note: HEG and MEG spectra show faintly in bad-events image, meaning pileup might be an issue. 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=4086.53, y=4116.7) 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.