

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 10670 - L2 Version 3
Chandra X-Ray Center

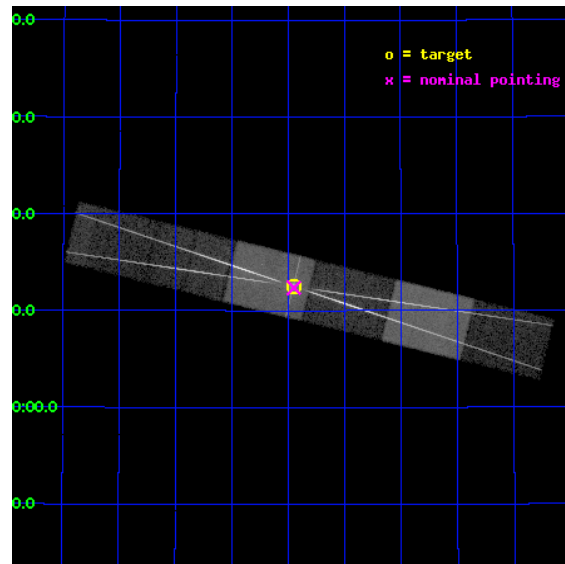
L2 Processing Date : Jun 25 2012

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

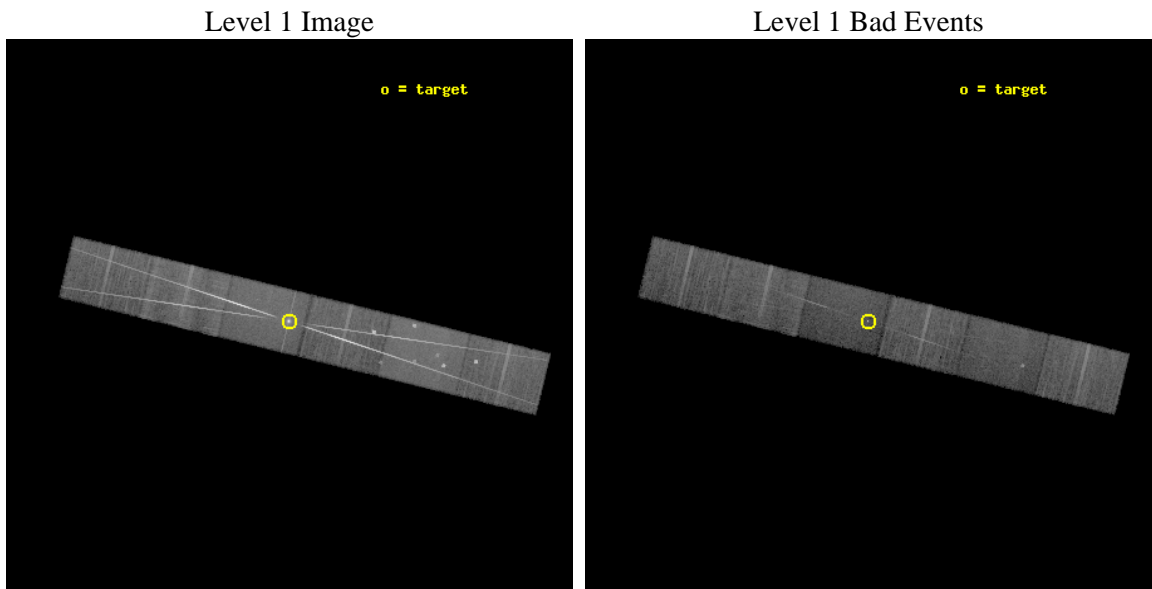
seq_num	790207	Sequence number
obs_id	10670	Observation id
title	AO-10 Calibration Observations of PKS2155-304	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	Mkn421	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.11242760757	Nominal RA [deg]
dec_nom	38.206011326108	Nominal Dec [deg]
roll_nom	193.67644759991	Nominal Roll [deg]
revision	3	Processing version of data
ontime	14799.87303859	Sum of GTIs [s]
livetime	14560.842252178	Livetime [s]
ontime4	14799.914078593	Sum of GTIs [s]
ontime5	14799.831998587	Sum of GTIs [s]
ontime6	14799.790958583	Sum of GTIs [s]
ontime7	14799.87303859	Sum of GTIs [s]
ontime8	14799.74991858	Sum of GTIs [s]
ontime9	14799.708878577	Sum of GTIs [s]
l2events	431360	Number of level 2 events



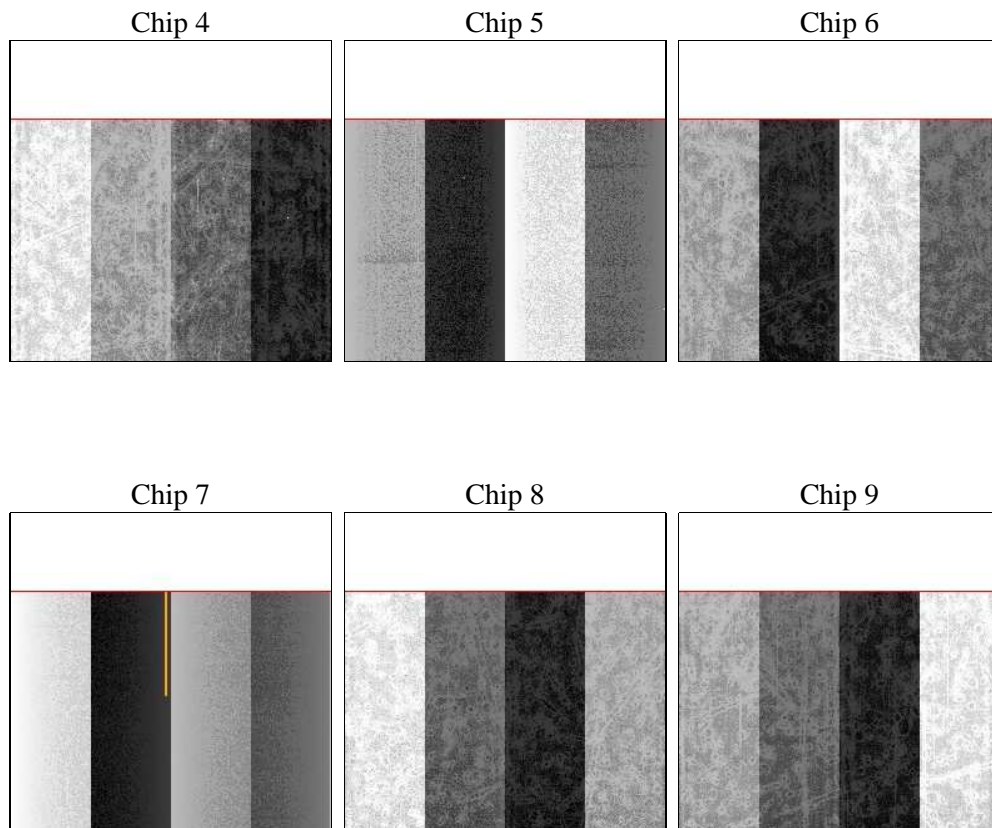
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	14757.008000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	14799.87303859	Sum of GTIs [s]
caldsver	4.4.10	 	ontime4	14799.914078593	Sum of GTIs [s]
date	2012-06-22T16:50:23	Date and time of file creation	ontime5	14799.831998587	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	14799.790958583	Sum of GTIs [s]
			ontime7	14799.87303859	Sum of GTIs [s]
			ontime8	14799.74991858	Sum of GTIs [s]
			ontime9	14799.708878577	Sum of GTIs [s]
			l1events	957599	Number of level 1 events

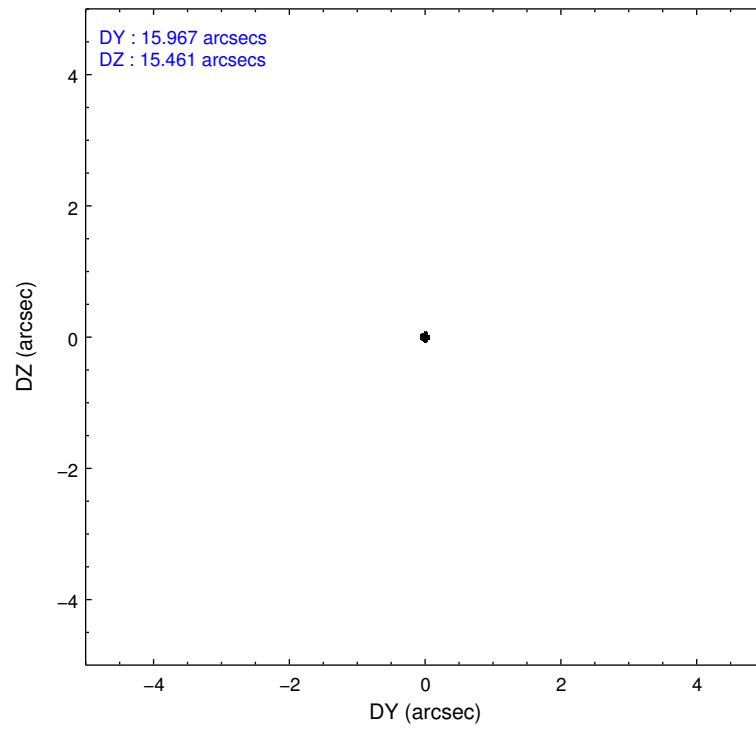
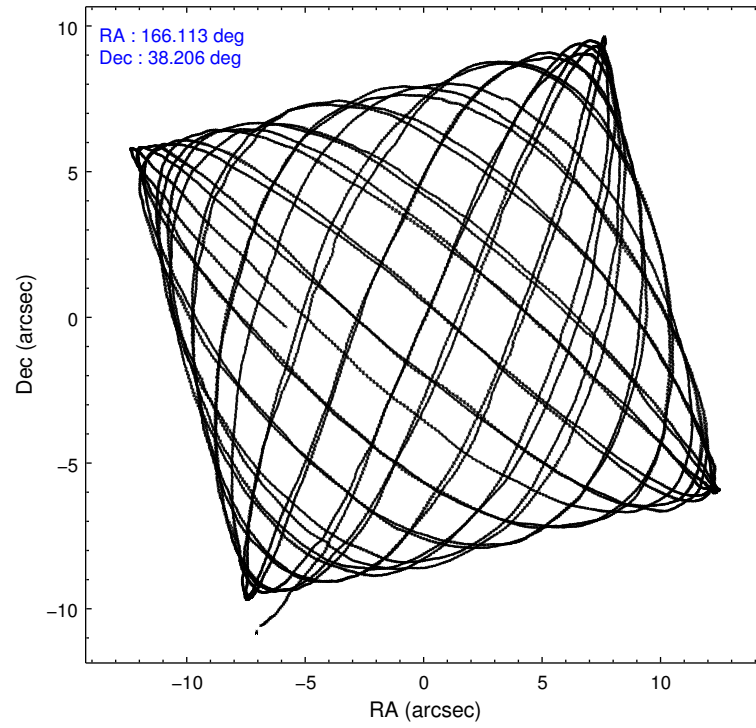
2.1.4 Events

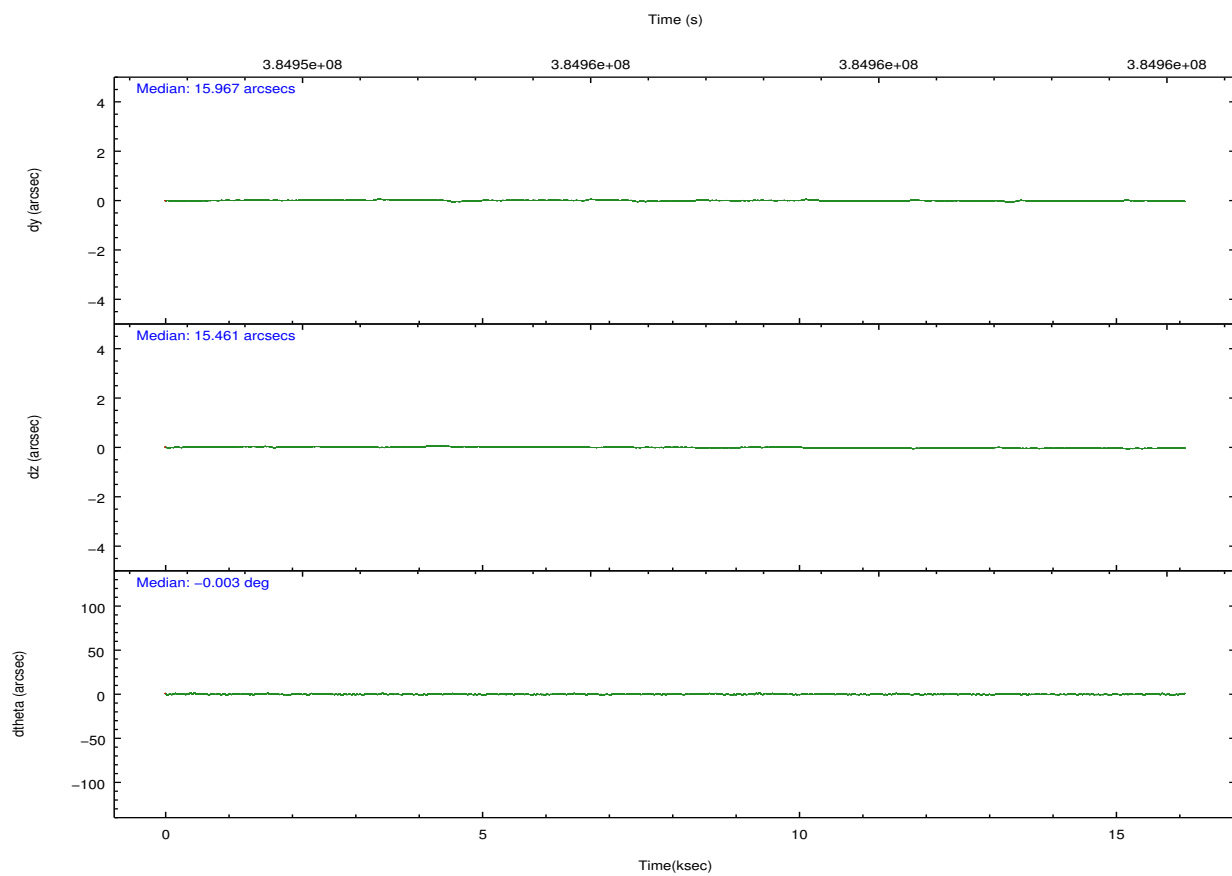
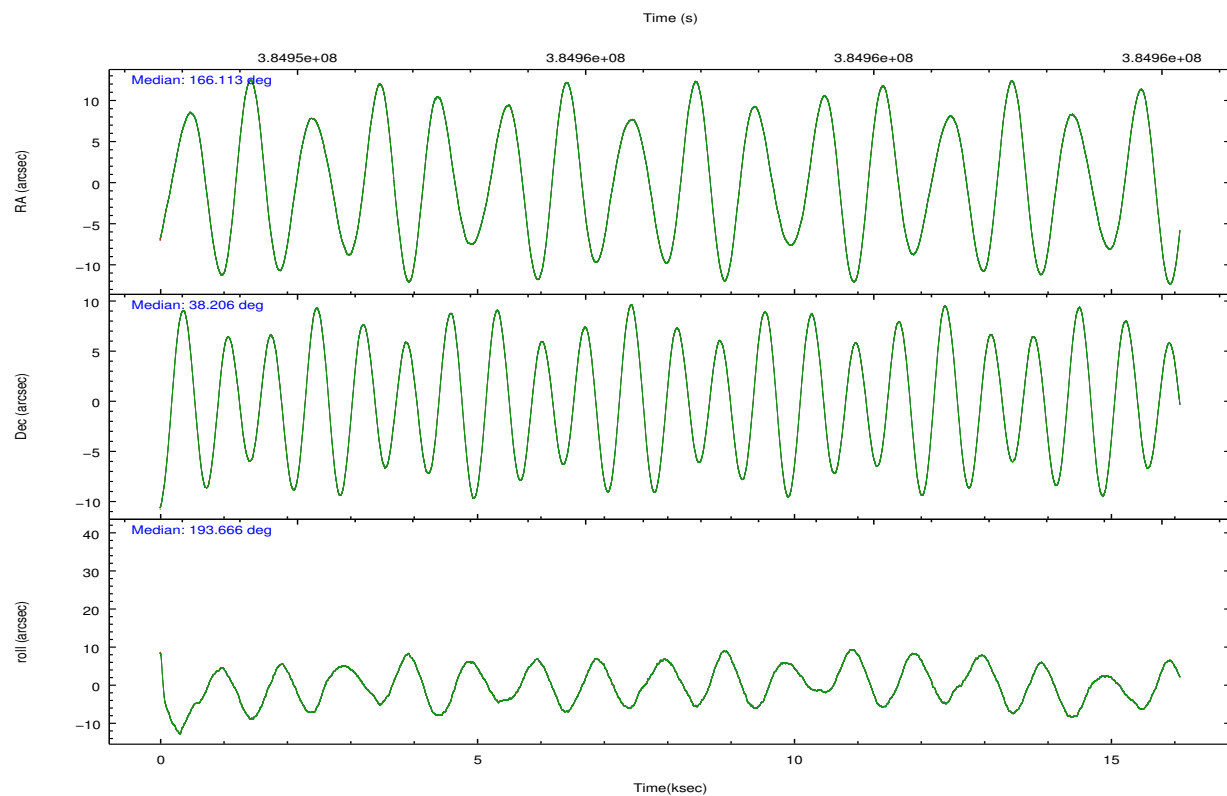
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	114608	178357	194203	194961	174419	101051	grade 0 events	15922	28603	80483	26531	57256	14401
rejected events	90902	66340	82383	60941	87133	78052		13%	16%	41%	13%	32%	14%
rejected %	79%	37%	42%	31%	49%	77%	grade 1 events	116	977	921	533	460	91
								0%	0%	0%	0%	0%	0%
							grade 2 events	3325	31647	18339	31891	11763	3365
								2%	17%	9%	16%	6%	3%
							grade 3 events	1409	6812	4346	14273	4992	1440
								1%	3%	2%	7%	2%	1%
							grade 4 events	1265	6679	4322	14165	4651	1487
								1%	3%	2%	7%	2%	1%
							grade 5 events	3650	10581	4358	12611	5612	4288
								3%	5%	2%	6%	3%	4%
							grade 6 events	1792	38311	4367	47218	8667	2310
								1%	21%	2%	24%	4%	2%
							grade 7 events	87129	54747	77067	47739	81018	73669
								76%	30%	39%	24%	46%	72%

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	166.137279	166.1124276075726	CCD I2 on	N	N
[deg] Pointing Dec	38.225157	38.20601132610815	CCD I3 on	N	N
[deg] Pointing Roll	193.504437	193.6764475999148	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	-187.132523	-187.1228876879999	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-3	-3.009634895007935	CCD S4 on	Y	Y
[s] Observation start time (MET)	384949739.184000	384948094.71617	CCD S5 on	Y	Y
Observation start date	2010-03-14T10:27:53	2010-03-14T10:01:34	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	384964496.184000	384964709.96701	On-chip summing requested	N	N
Observation end date	2010-03-14T14:33:50	2010-03-14T14:38:29	Subarray requested	CUSTOM	CUSTOM
Read mode	TIMED	TIMED	Subarray start row	1	1
			Subarray row count	774	774
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	2.5

2.3 Aspect



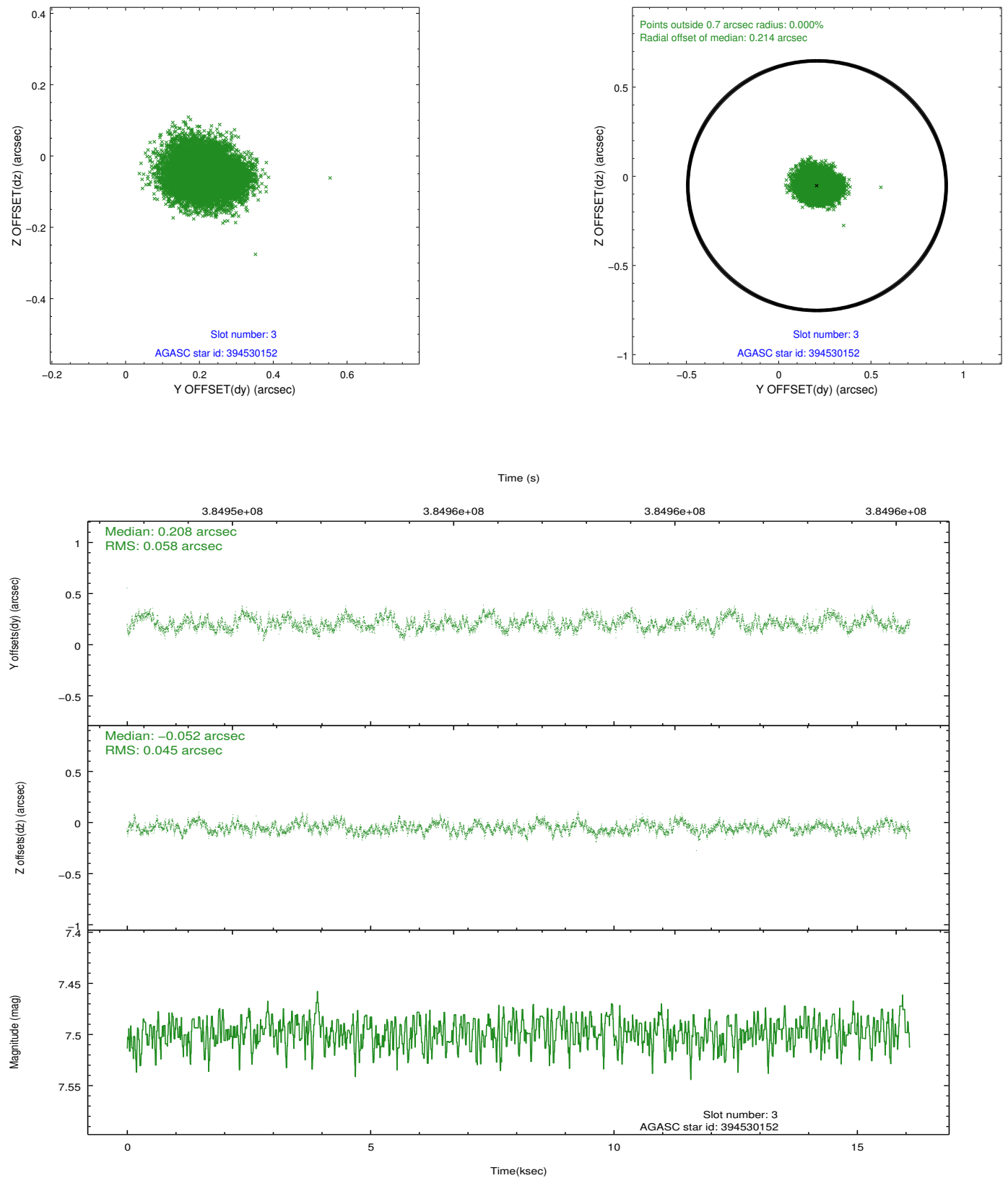


Slot Statistics

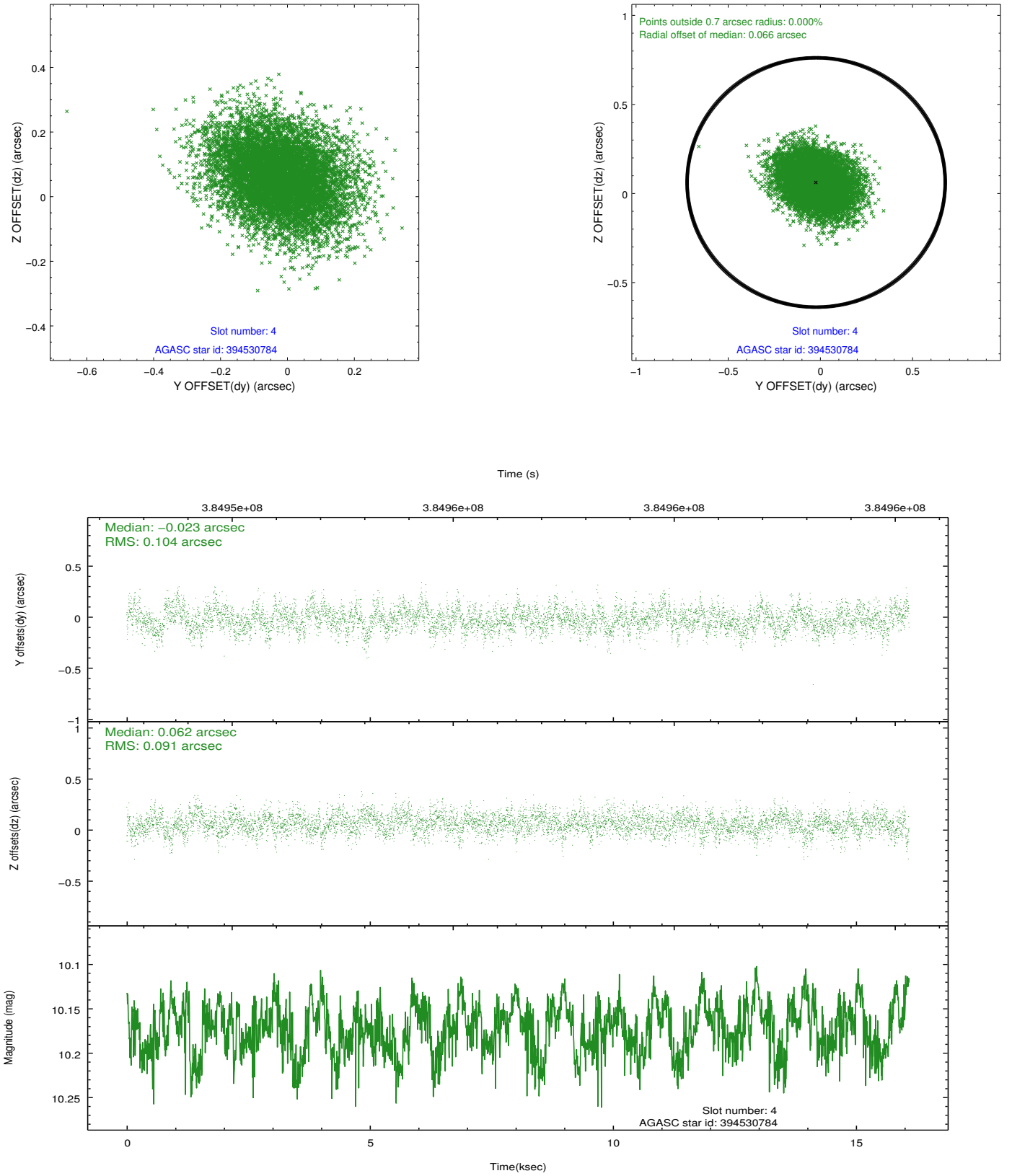
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.97	3925	-0.108	-0.111	0.007	0.012	0.000000	0.000000	-768.88	-1799.09
1	FID	ACIS-S-4	7.06	3925	0.218	0.082	0.007	0.013	0.000000	0.000000	2144.62	109.25
2	FID	ACIS-S-5	7.10	3925	-0.142	0.037	0.007	0.011	0.000000	0.000000	-1821.39	103.23
3	GUIDE	394530152	7.50	7843	0.208	-0.052	0.080	0.120	166.075805	38.868252	-372.15	-2291.25
4	GUIDE	394530784	10.17	7837	-0.023	0.062	0.146	0.244	165.569172	38.418674	1394.71	-1056.07
5	GUIDE	394543960	9.76	7840	0.102	-0.020	0.116	0.187	165.802757	37.787371	1293.47	1308.94
6	GUIDE	394546712	6.62	7849	-0.209	0.171	0.086	0.139	166.451462	38.394357	-1003.39	-386.28
7	GUIDE	394528824	10.05	7806	-0.089	-0.152	0.198	0.350	165.824970	38.140431	930.80	88.89

2.4 Star Slots

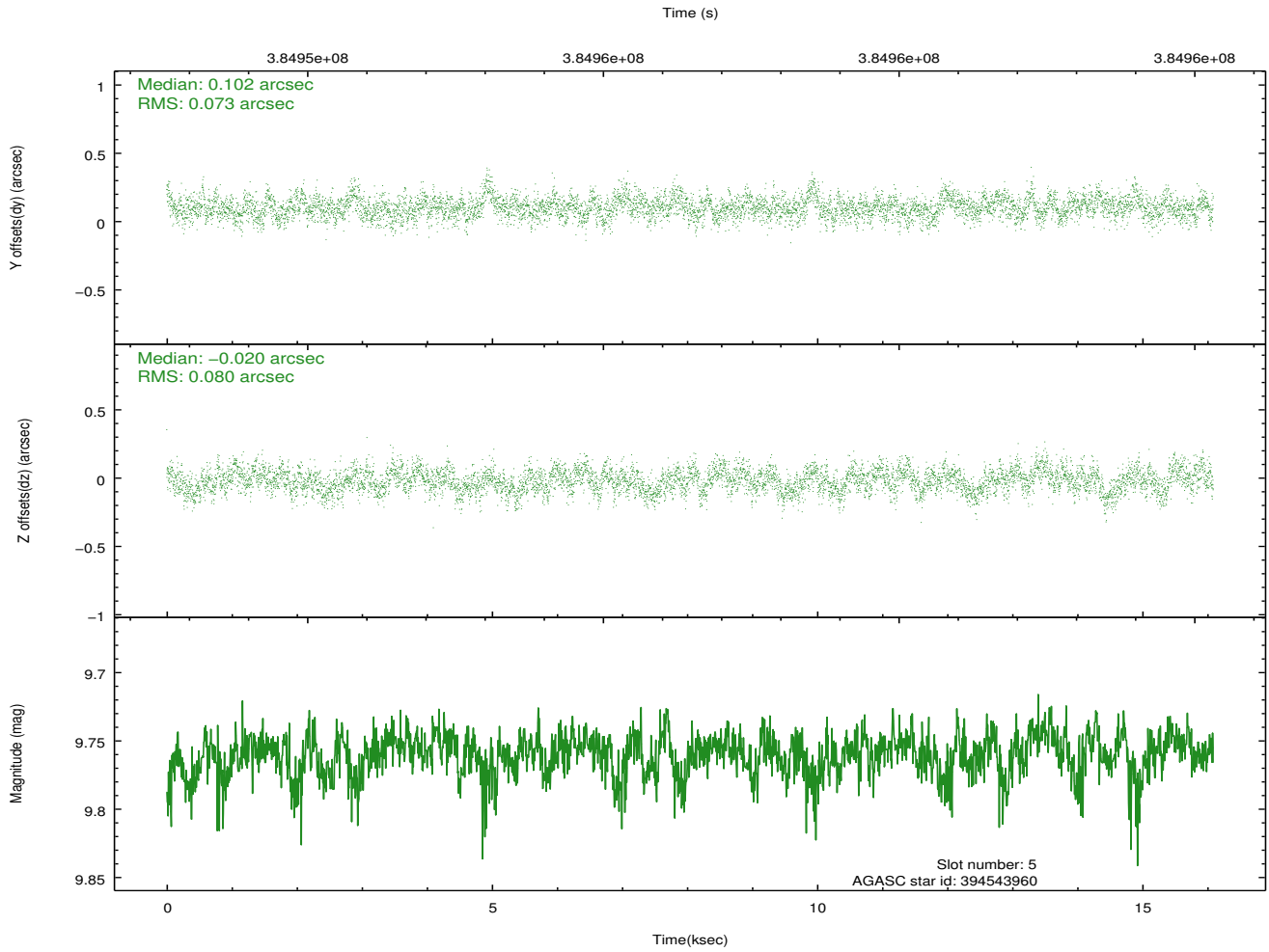
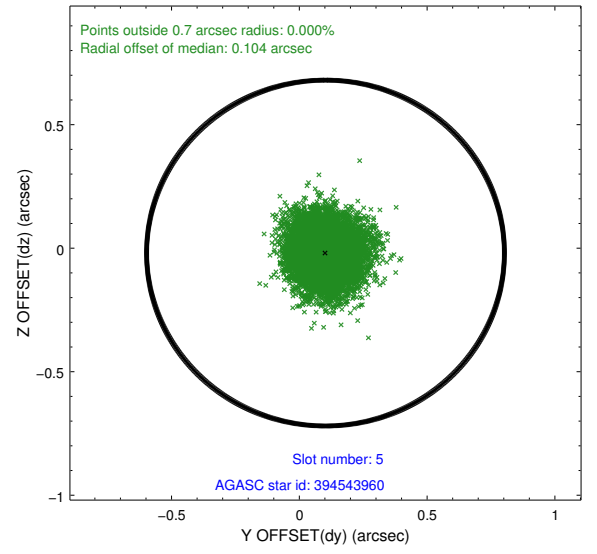
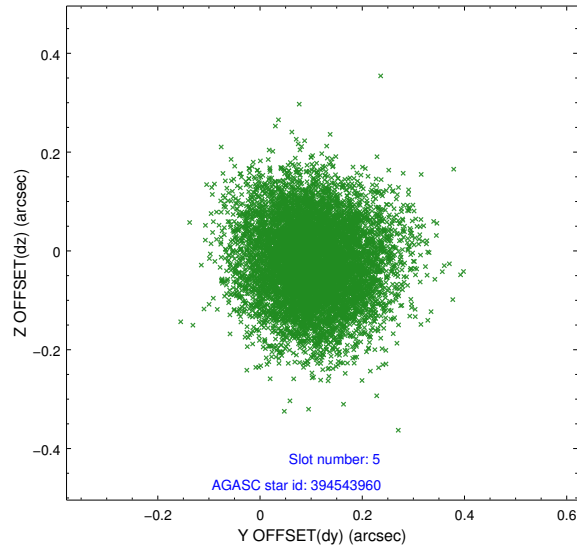
2.4.1 Slot 3



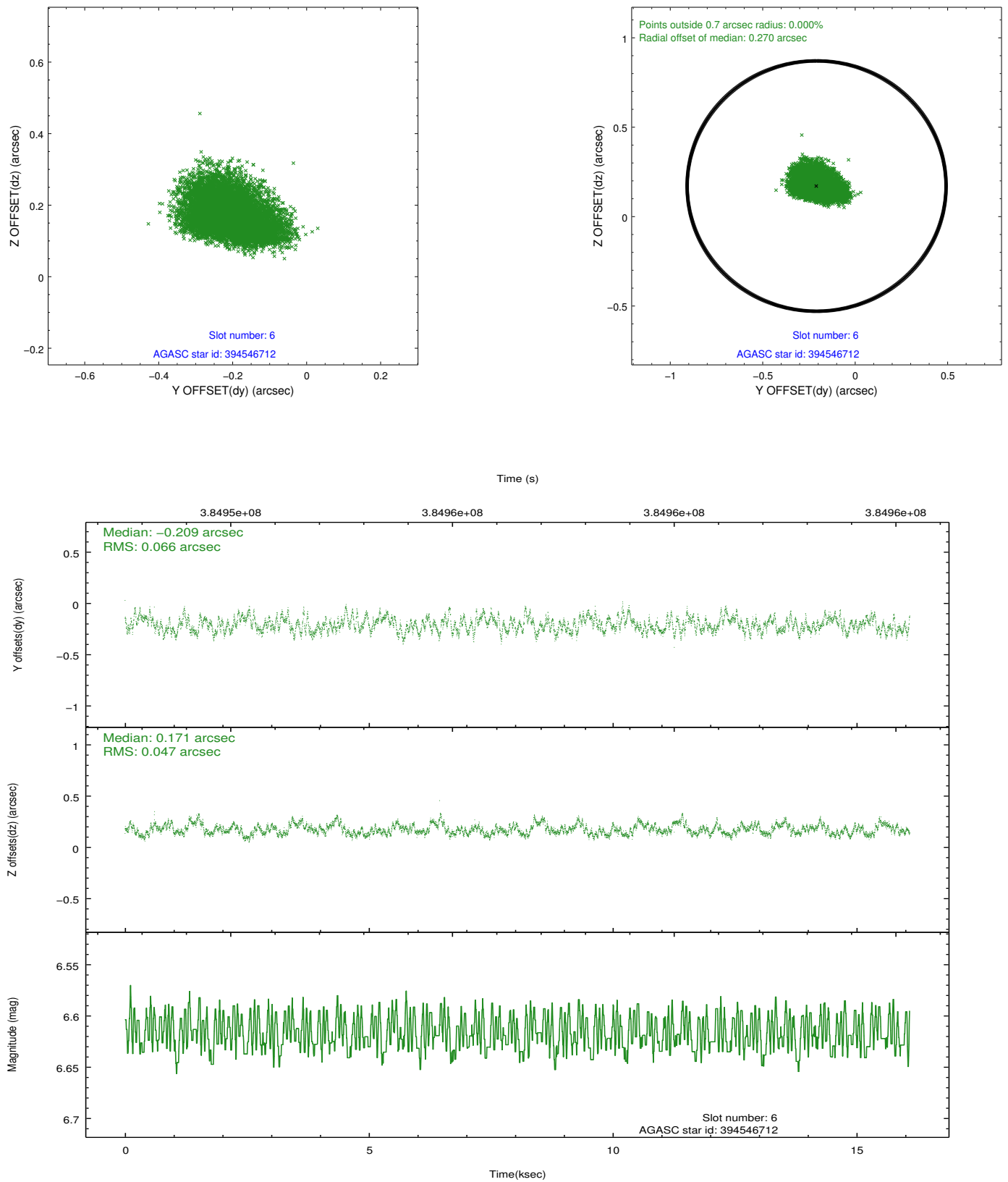
2.4.2 Slot 4



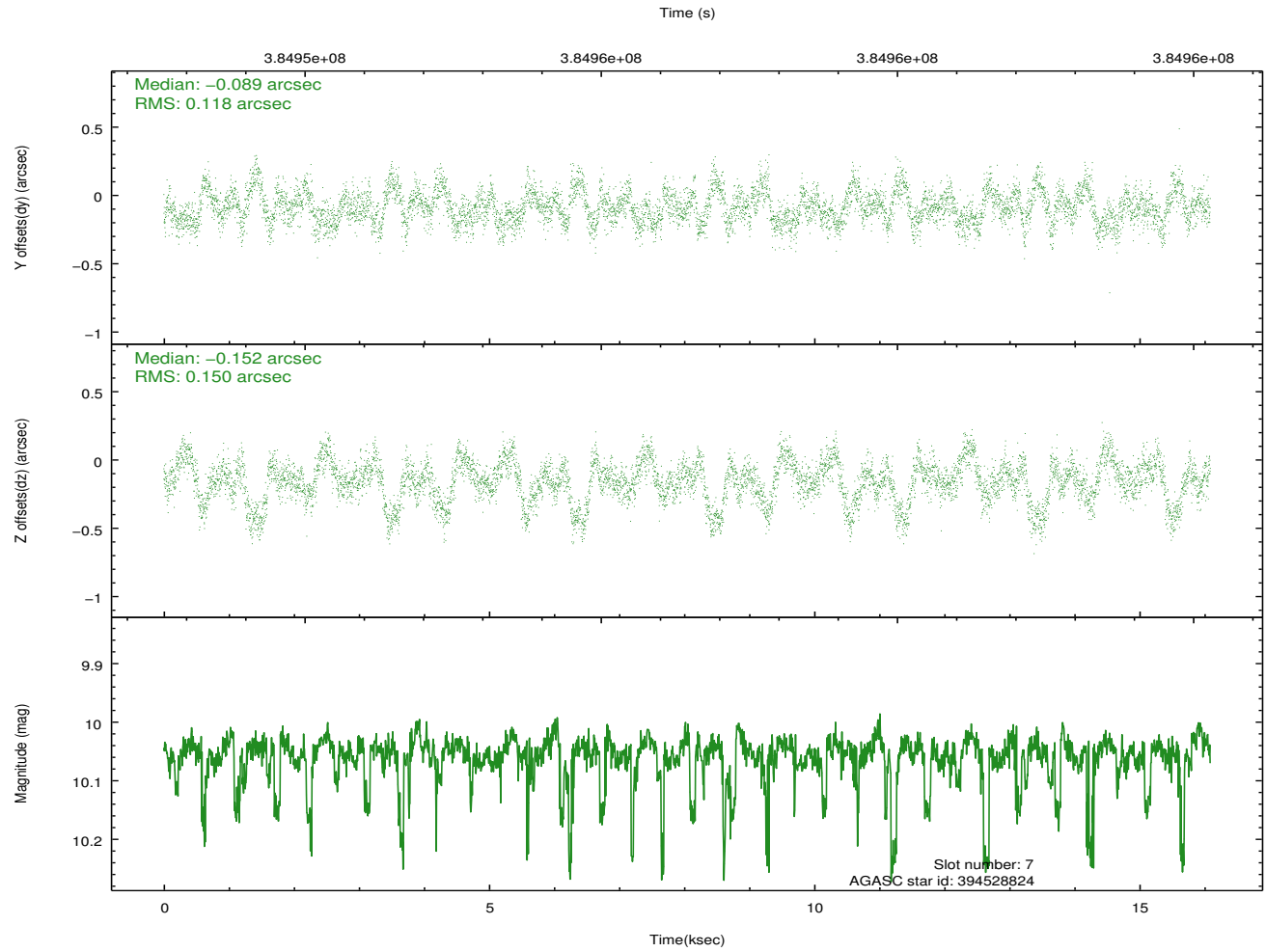
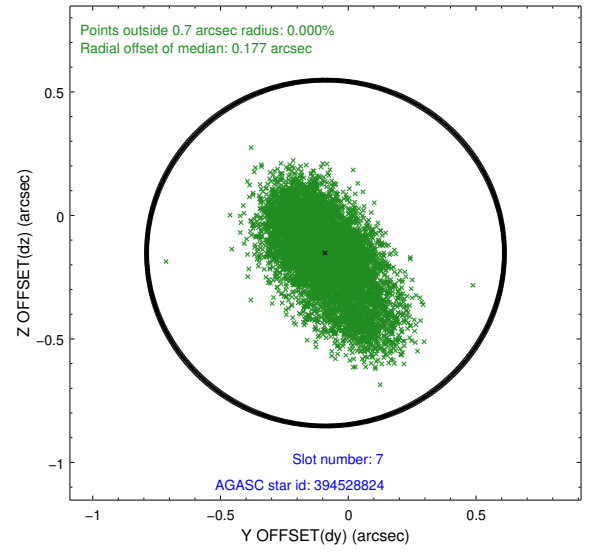
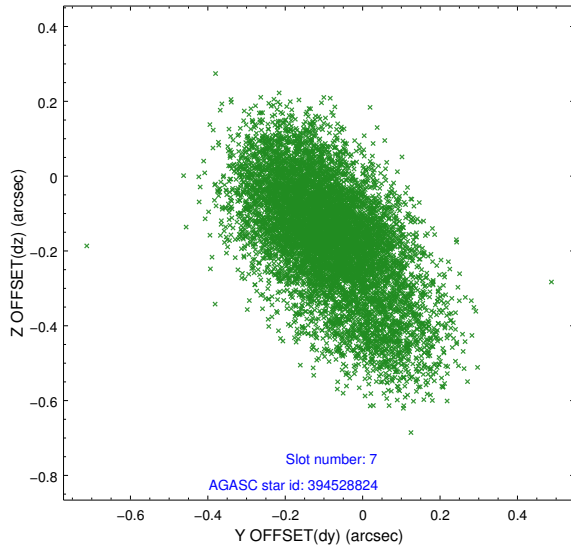
2.4.3 Slot 5



2.4.4 Slot 6

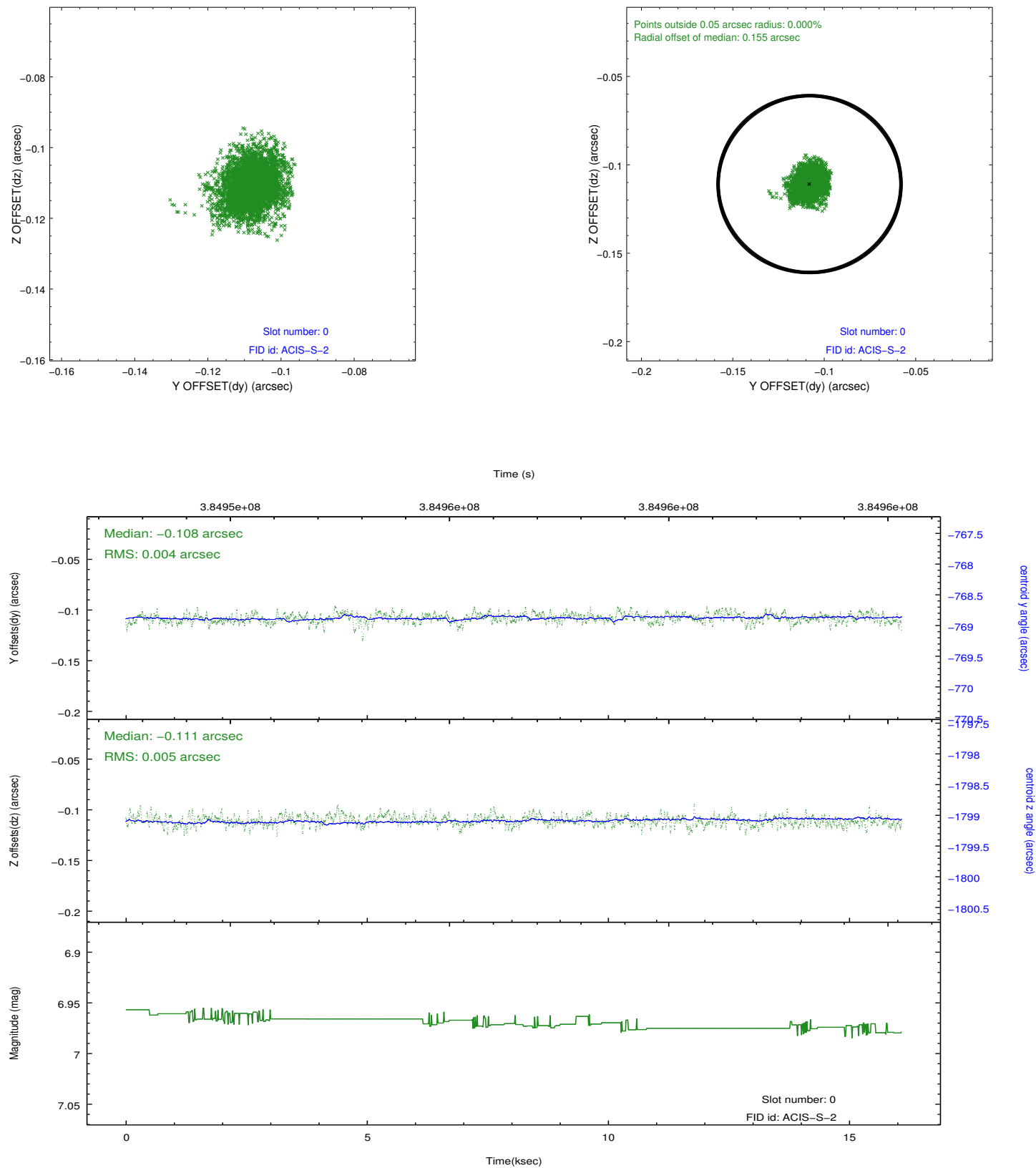


2.4.5 Slot 7

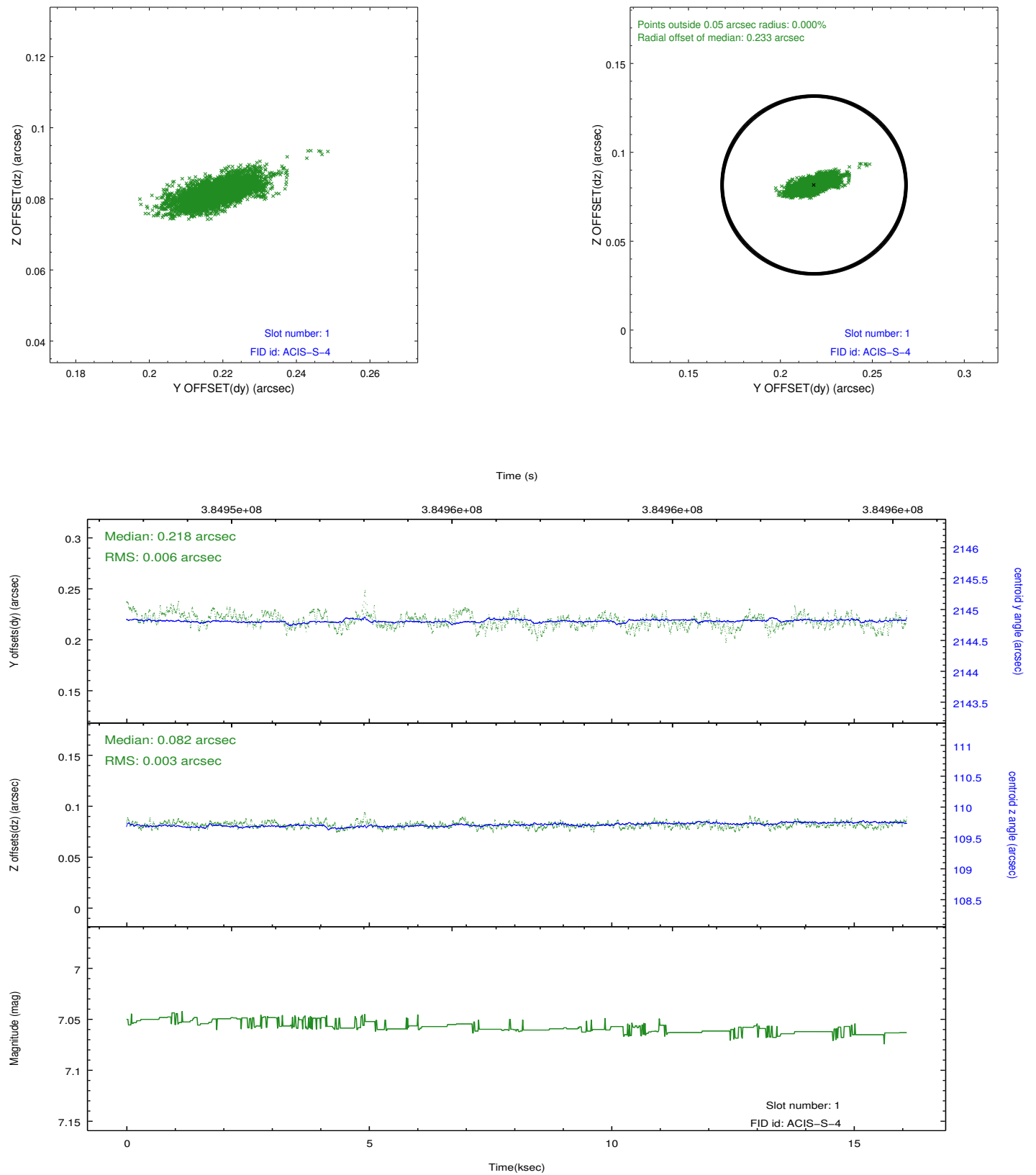


2.5 FID Slots

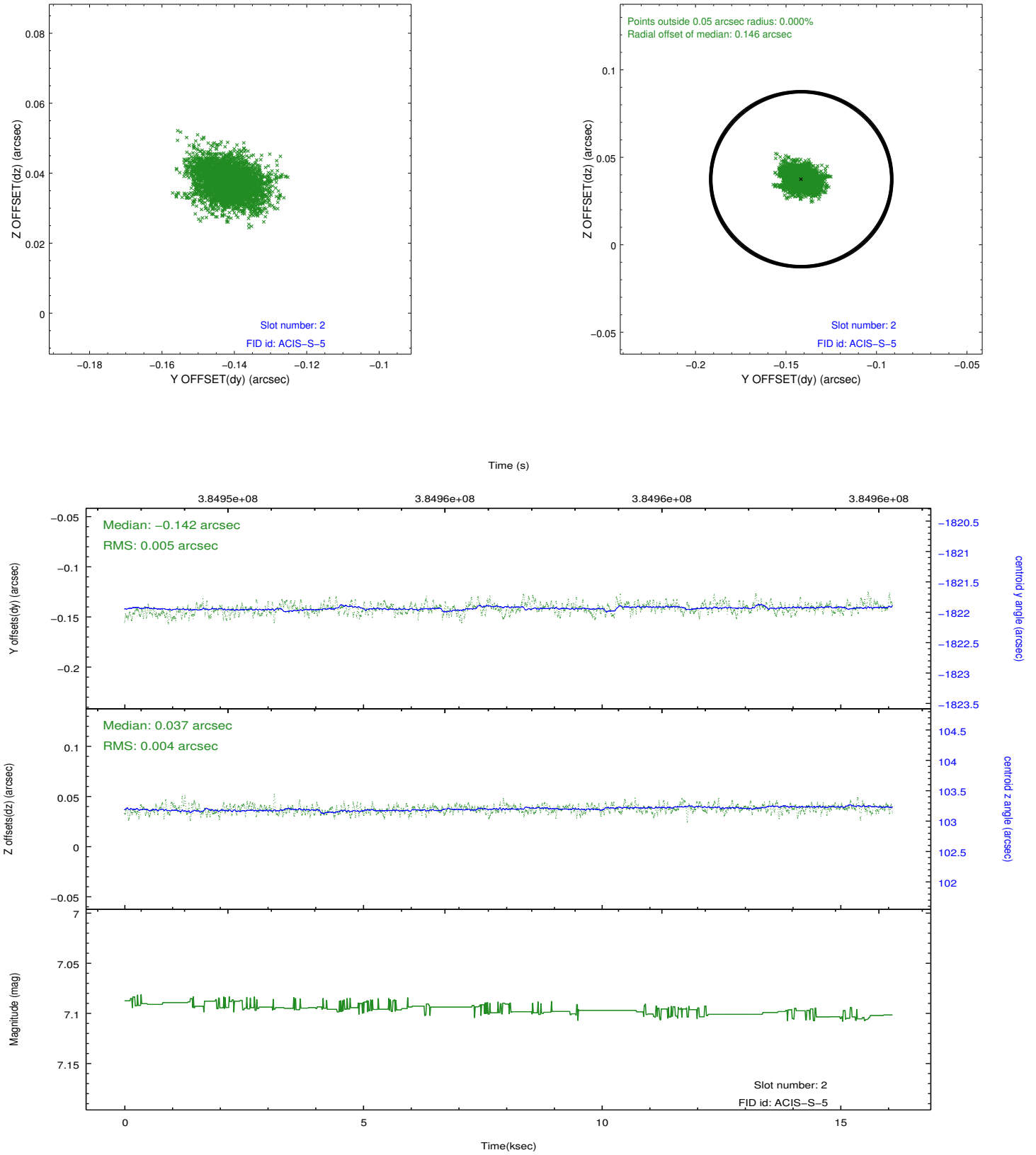
2.5.1 Slot 0



2.5.2 Slot 1

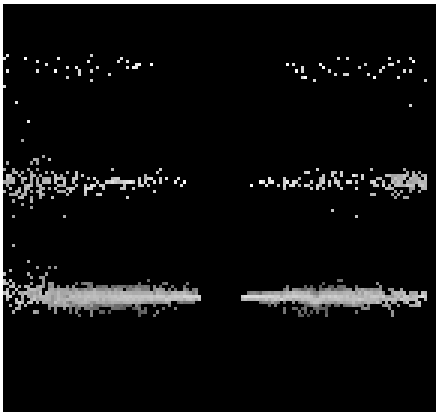


2.5.3 Slot 2

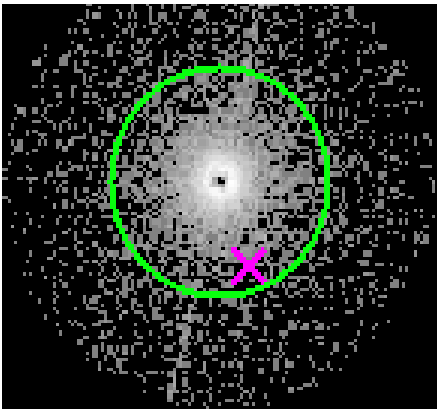


3 Gratings

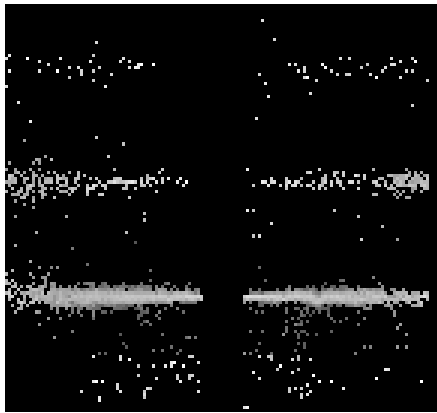
3.1 HEG Arm



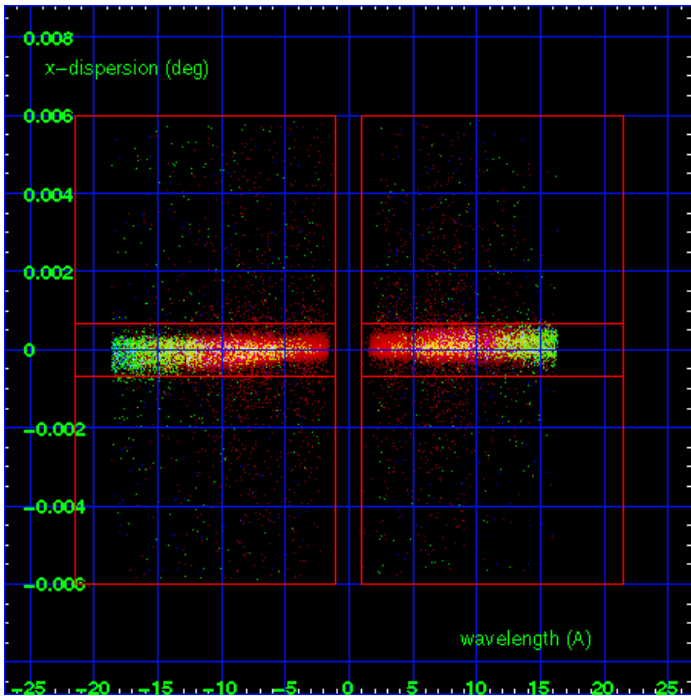
HEG Order Sort 123



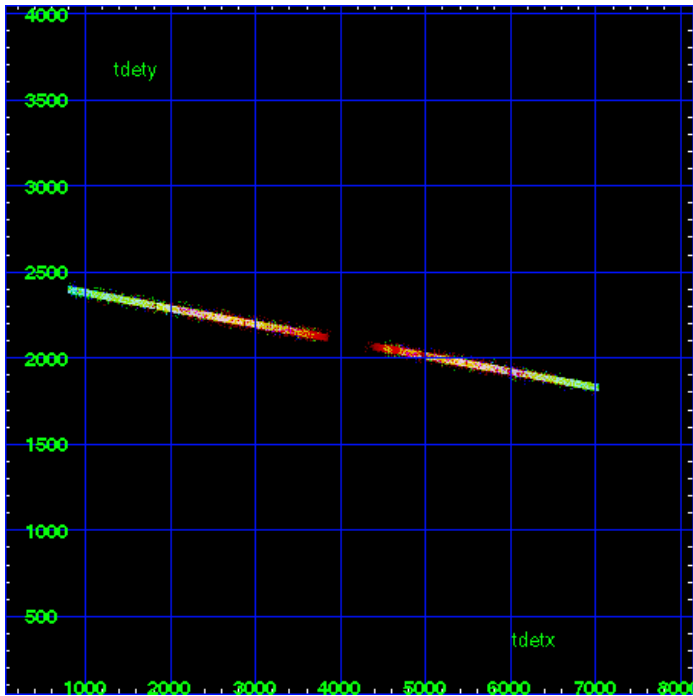
HEG Zero Order



HEG Order Sort ALL

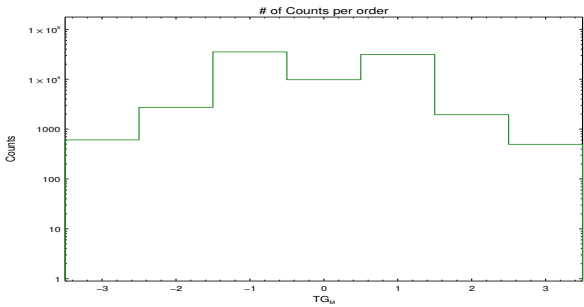


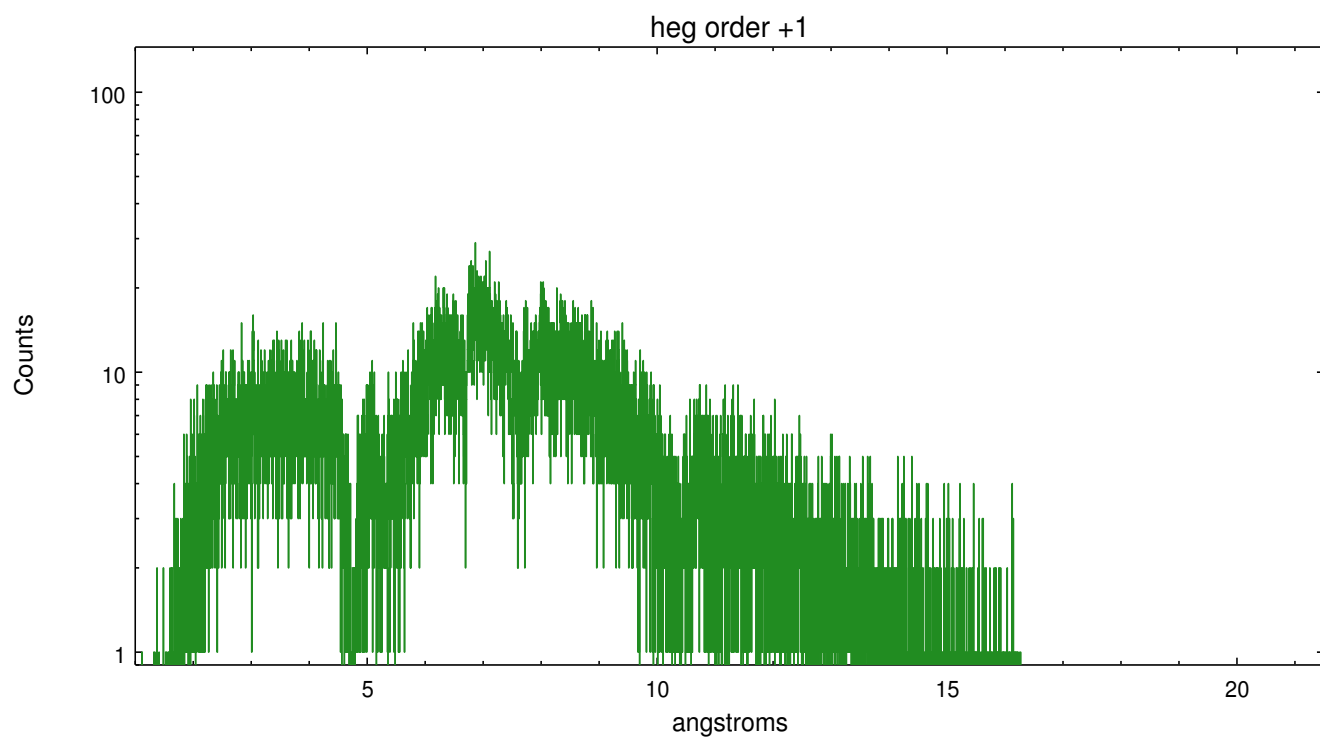
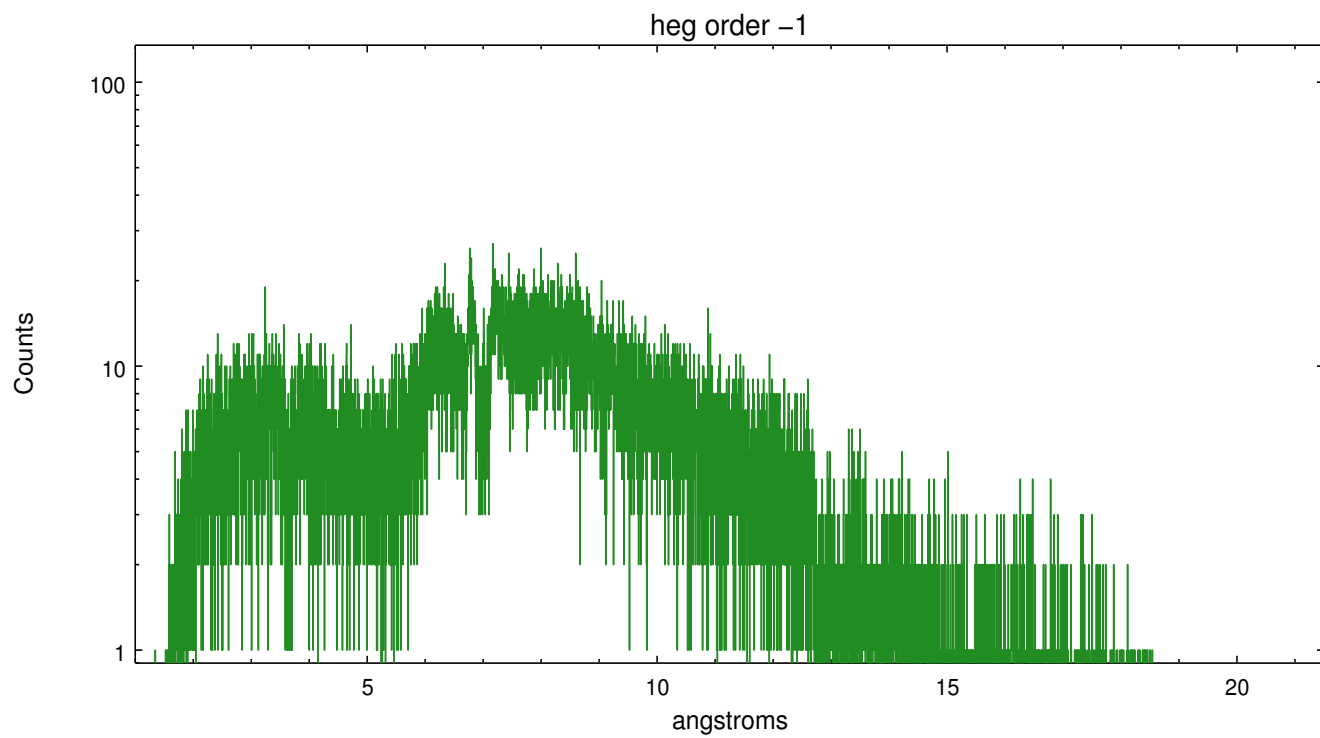
Spot Image HEG



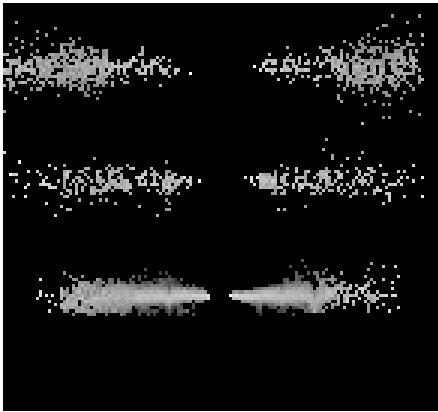
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	607	2729	35231	9764	31278	1942	495

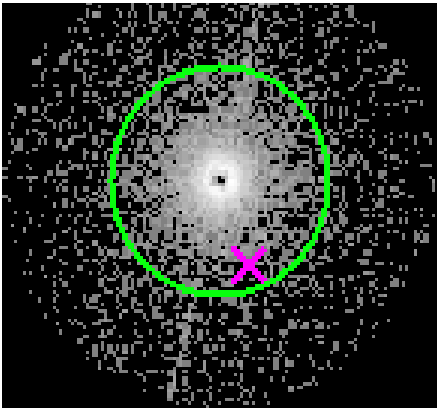




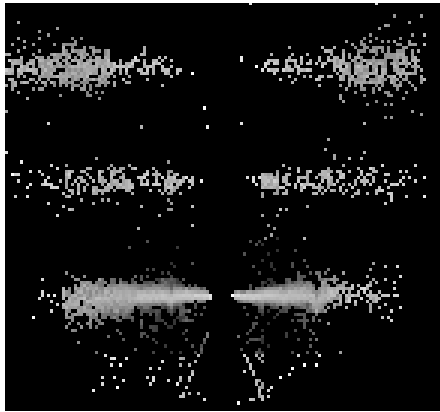
3.2 MEG Arm



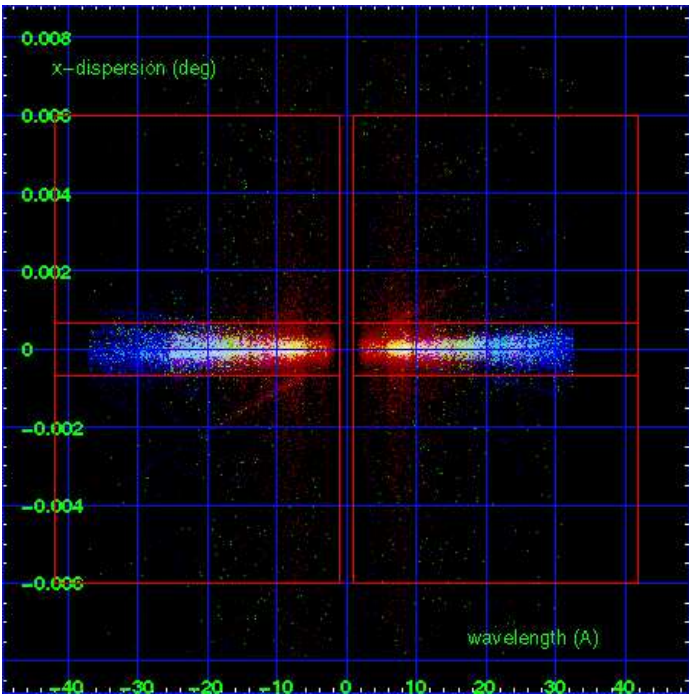
MEG Order Sort 123



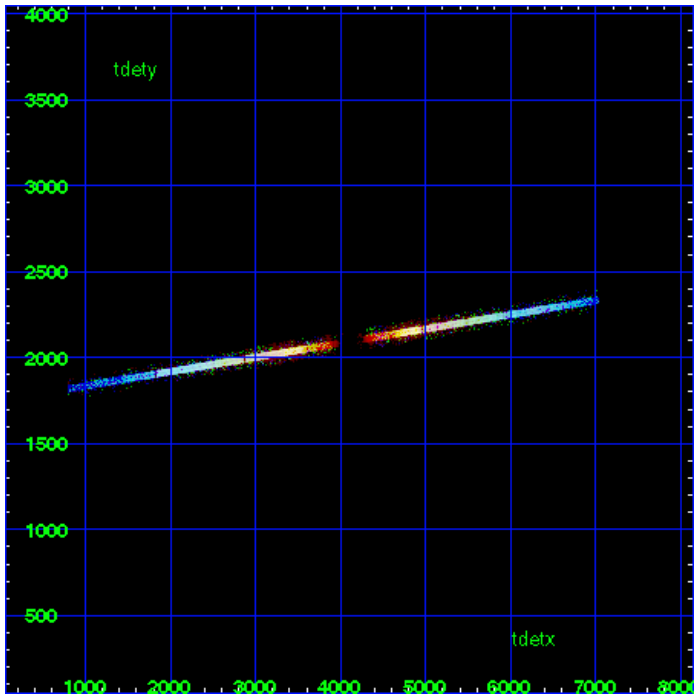
MEG Zero Order



MEG Order Sort ALL

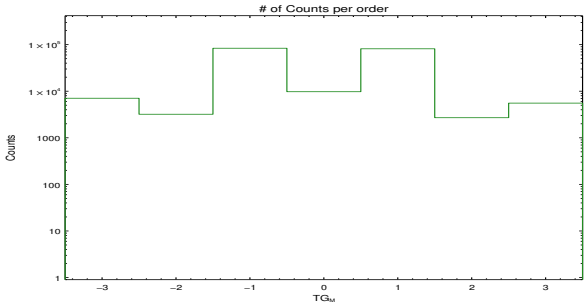


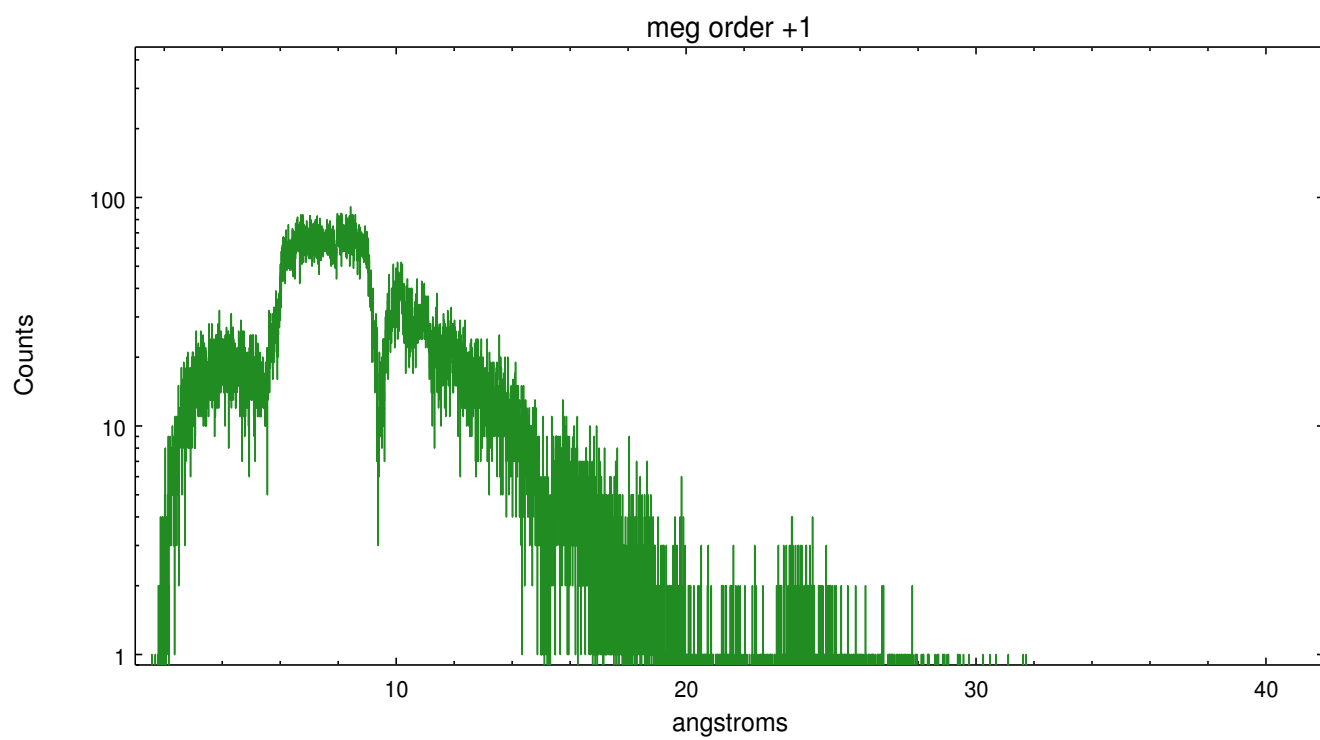
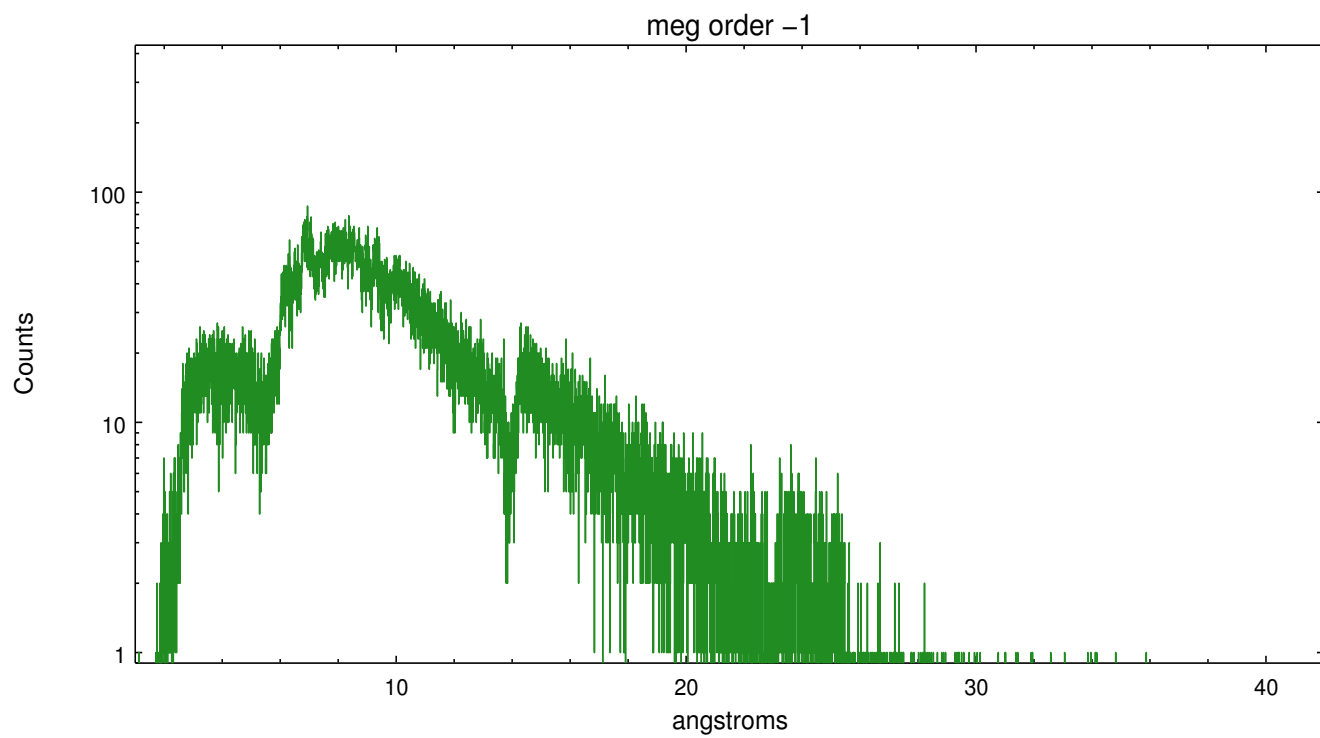
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	7061	3201	83634	9764	81466	2701	5551





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	14.799873036742

A.2 Comments

Note: the MEG spectrum shows in the bad-events image, meaning it is somewhat piled. 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=4088.25, y=4117.07) 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.