

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 2333 - L2 Version 4
Chandra X-Ray Center

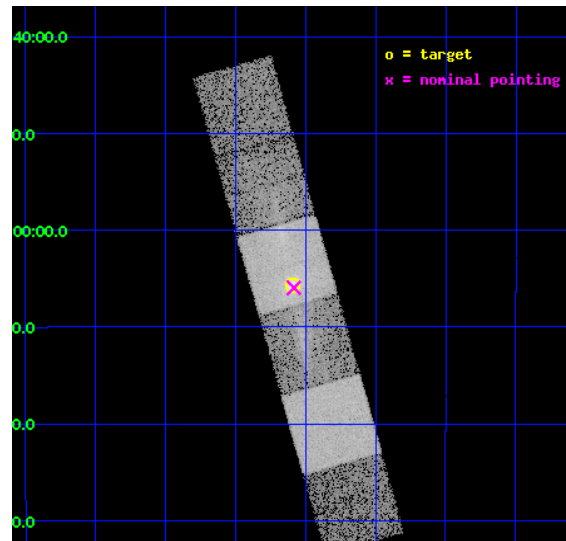
L2 Processing Date : Oct 11 2012

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1 Front

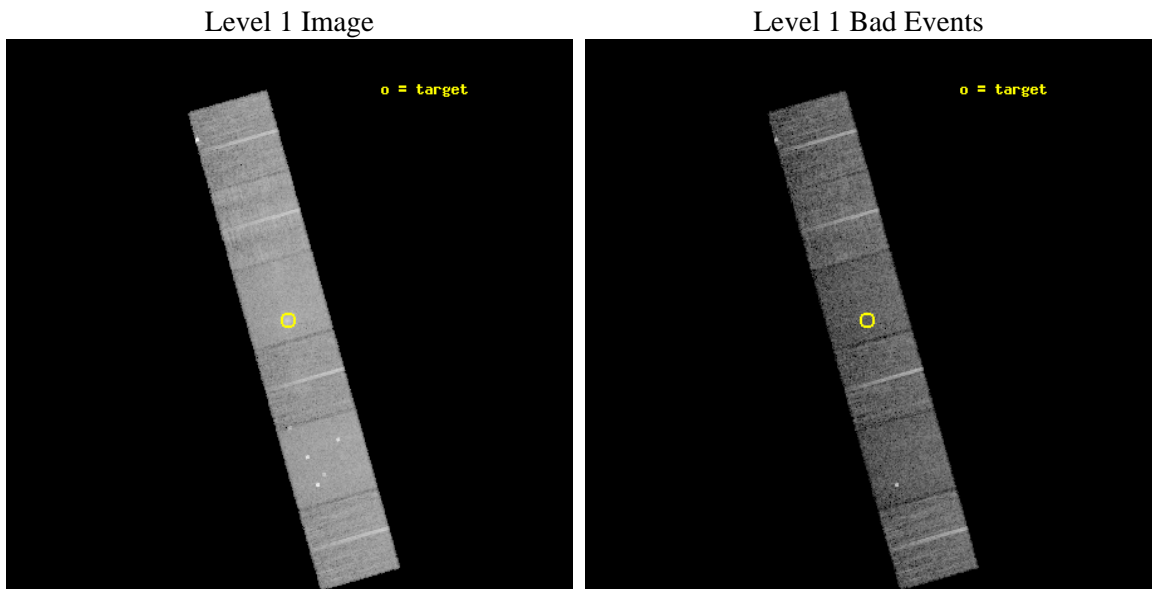
seq_num	800176	Sequence number
obs_id	2333	Observation id
title	ACIS-S/HETG OBSERVATIONS OF THE CENTRAL REGION OF THE HYDRA A CLUSTER OF GALAXIES	Proposal title
observer	Dr. J. Jernigan	Principal investigator
object	HYDRA A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	139.52375	Observer's specified target RA [deg]
dec_targ	-12.095833	Observer's specified target Dec [deg]
ra_nom	139.52095236128	Nominal RA [deg]
dec_nom	-12.099327926346	Nominal Dec [deg]
roll_nom	254.23119220444	Nominal Roll [deg]
revision	4	Processing version of data
ontime	10049.765781537	Sum of GTIs [s]
livetime	9922.5095959684	Livetime [s]
ontime4	10049.80682154	Sum of GTIs [s]
ontime5	10049.724741533	Sum of GTIs [s]
ontime6	10049.683701545	Sum of GTIs [s]
ontime7	10049.765781537	Sum of GTIs [s]
ontime8	10049.642661542	Sum of GTIs [s]
ontime9	10049.601621538	Sum of GTIs [s]
l2events	120425	Number of level 2 events



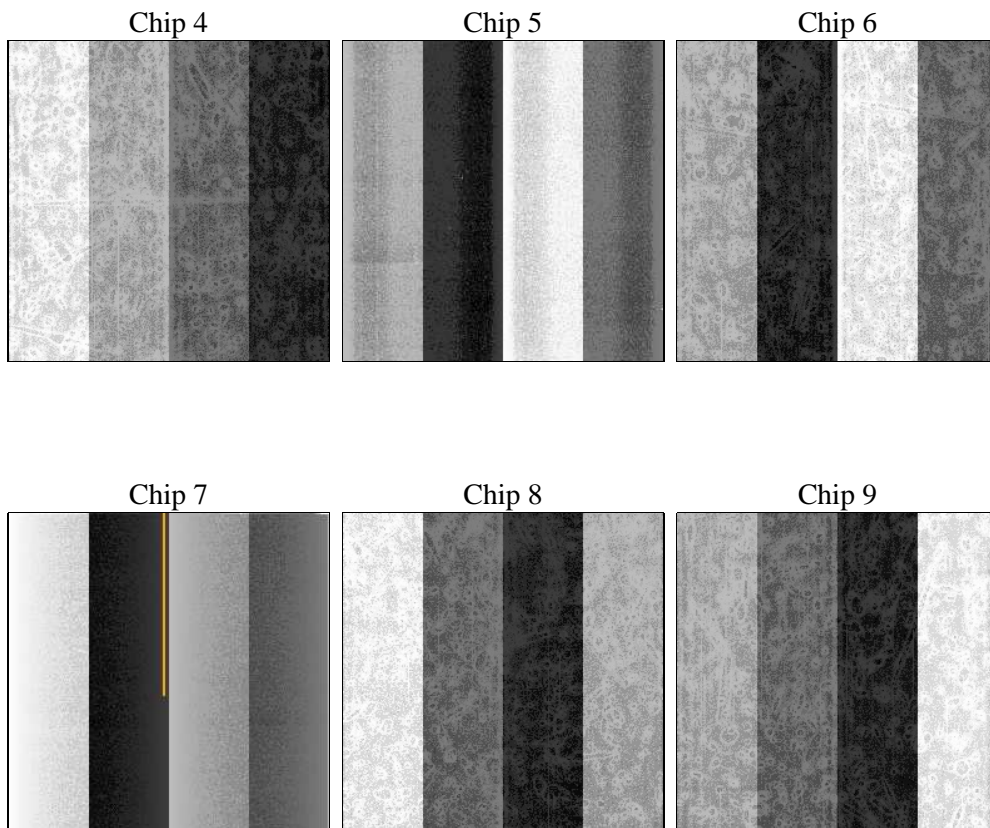
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	10049.765781537	Sum of GTIs [s]
caldsver	4.5.1.1	 	ontime4	10049.80682154	Sum of GTIs [s]
date	2012-09-18T22:30:46	Date and time of file creation	ontime5	10049.724741533	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	10049.683701545	Sum of GTIs [s]
			ontime7	10049.765781537	Sum of GTIs [s]
			ontime8	10049.642661542	Sum of GTIs [s]
			ontime9	10049.601621538	Sum of GTIs [s]
			l1events	506074	Number of level 1 events

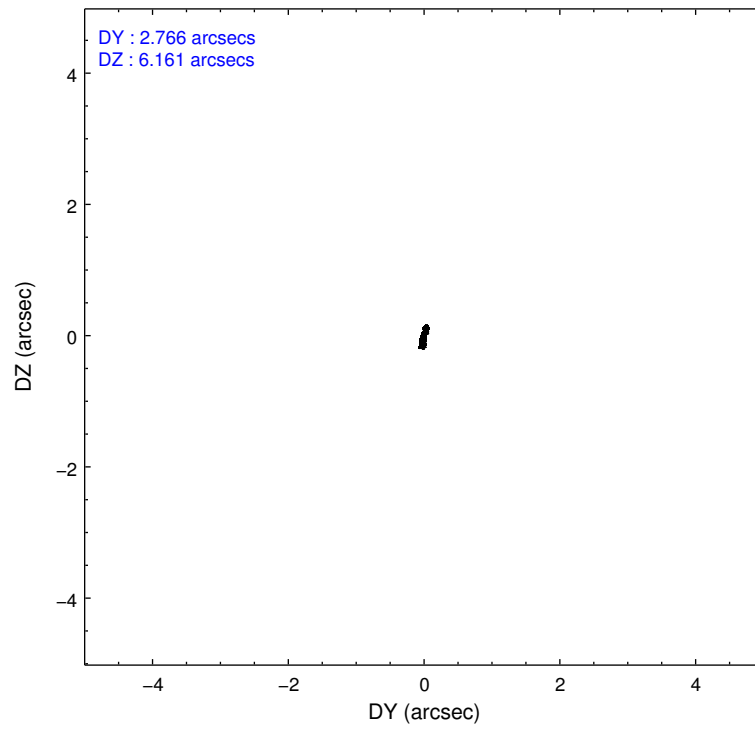
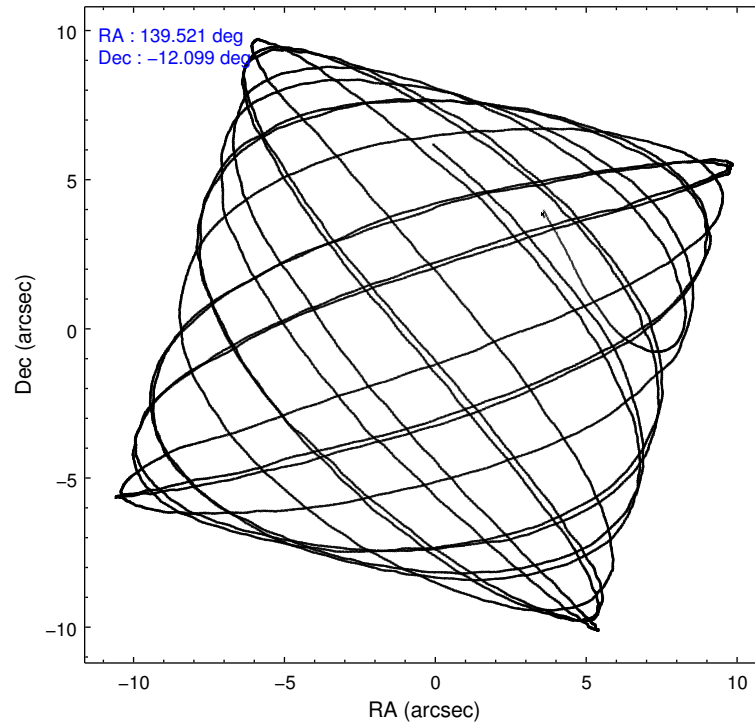
2.1.4 Events

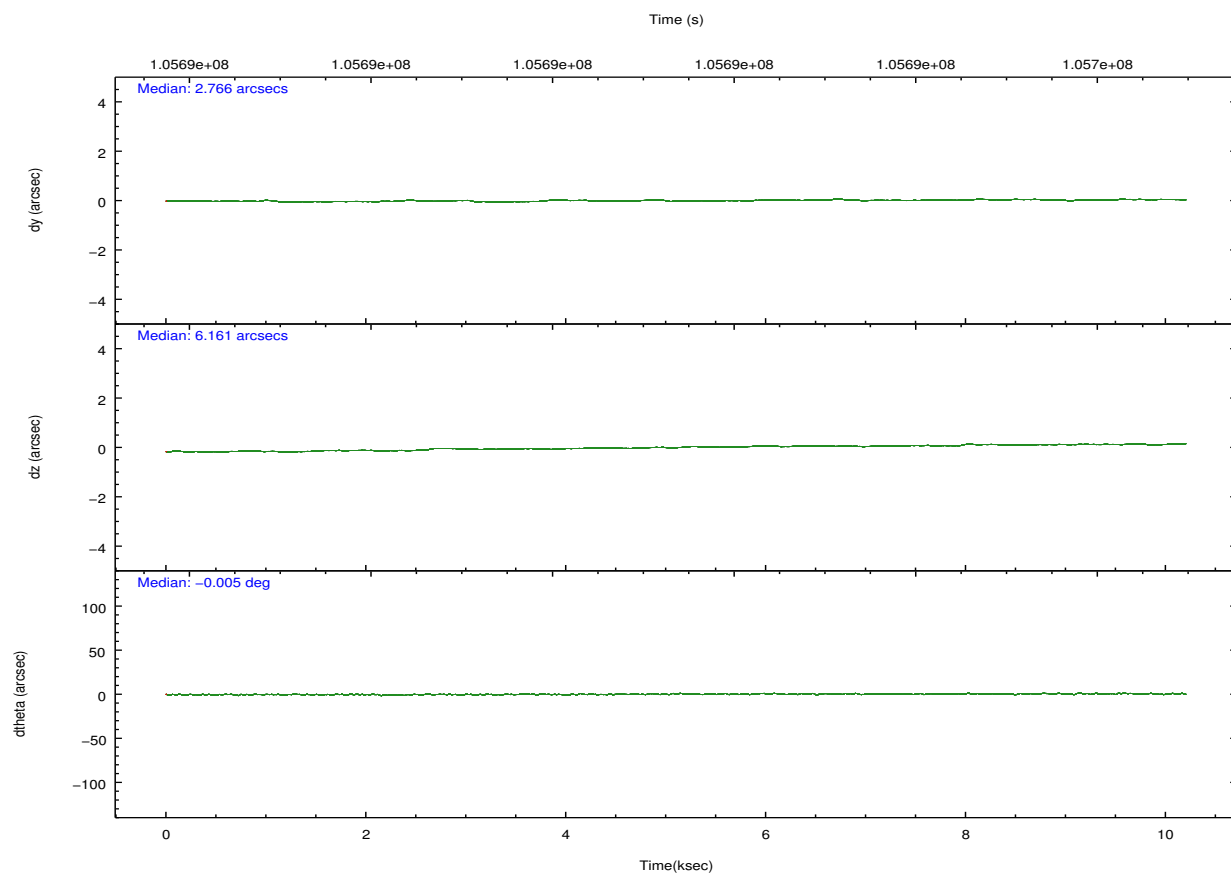
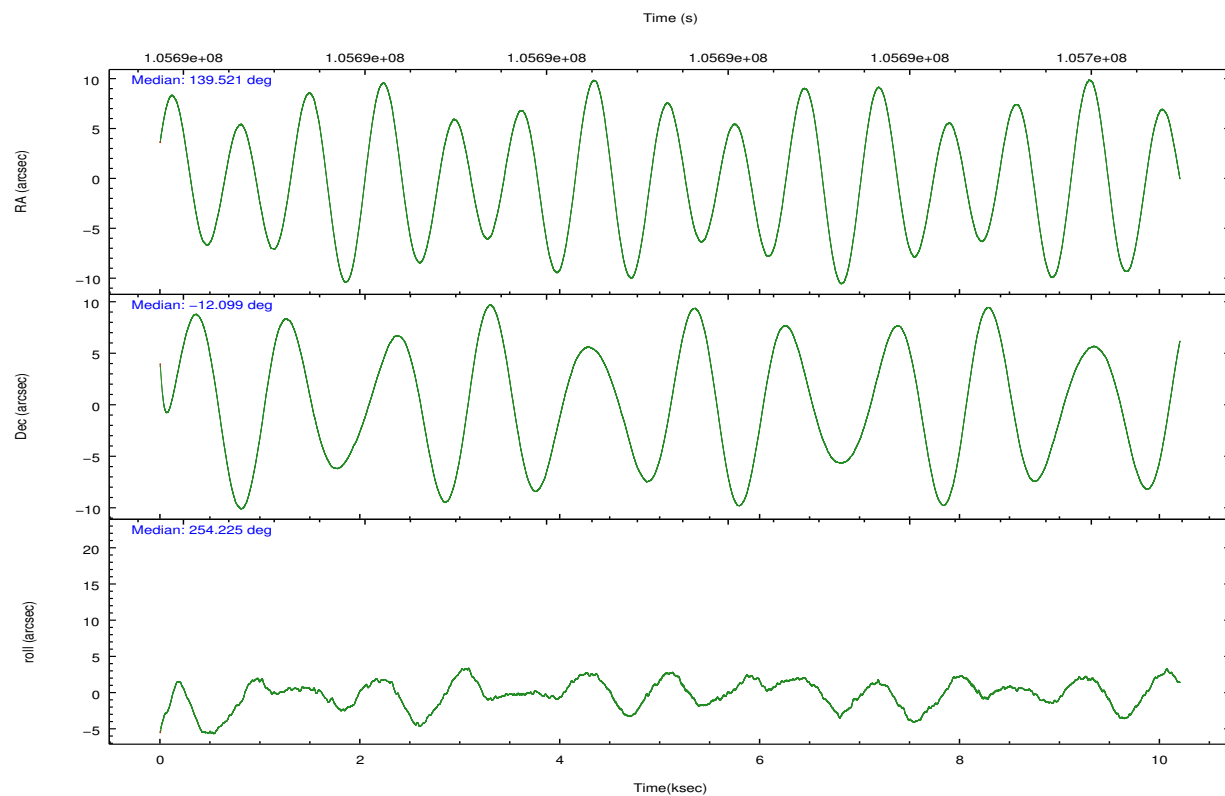
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	77395	95955	72704	95009	93468	71543	grade 0 events	3421	7595	7411	6204	9043	6068
rejected events	69101	50401	59601	48640	67265	60706		4%	7%	10%	6%	9%	8%
rejected %	89%	52%	81%	51%	71%	84%	grade 1 events	35	1126	43	76	74	537
								0%	1%	0%	0%	0%	0%
							grade 2 events	2080	12392	2128	9913	5032	1662
								2%	12%	2%	10%	5%	2%
							grade 3 events	748	2026	958	4536	2851	828
								0%	2%	1%	4%	3%	1%
							grade 4 events	659	2094	901	4486	2669	743
								0%	2%	1%	4%	2%	1%
							grade 5 events	2424	7060	2809	8201	3706	2796
								3%	7%	3%	8%	3%	3%
							grade 6 events	1387	21460	1709	21246	6613	1540
								1%	22%	2%	22%	7%	2%
							grade 7 events	66641	42202	56745	40347	63480	57369
								86%	43%	78%	42%	67%	80%

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	139.513769	139.5209523612785	Subarray requested	NONE	NONE
[deg] Pointing Dec	-12.072937	-12.09932792634646	Alternating exposures requested	N	N
[deg] Pointing Roll	254.073060	254.2311922044395	[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)	105686461.184000	105685450.52568			
Observation start date	2001-05-08T05:19:57	2001-05-08T05:04:10			
[s] Observation end time (MET)	105696461.184000	105697348.21364			
Observation end date	2001-05-08T08:06:37	2001-05-08T08:22:28			
Read mode	TIMED	TIMED			

2.3 Aspect



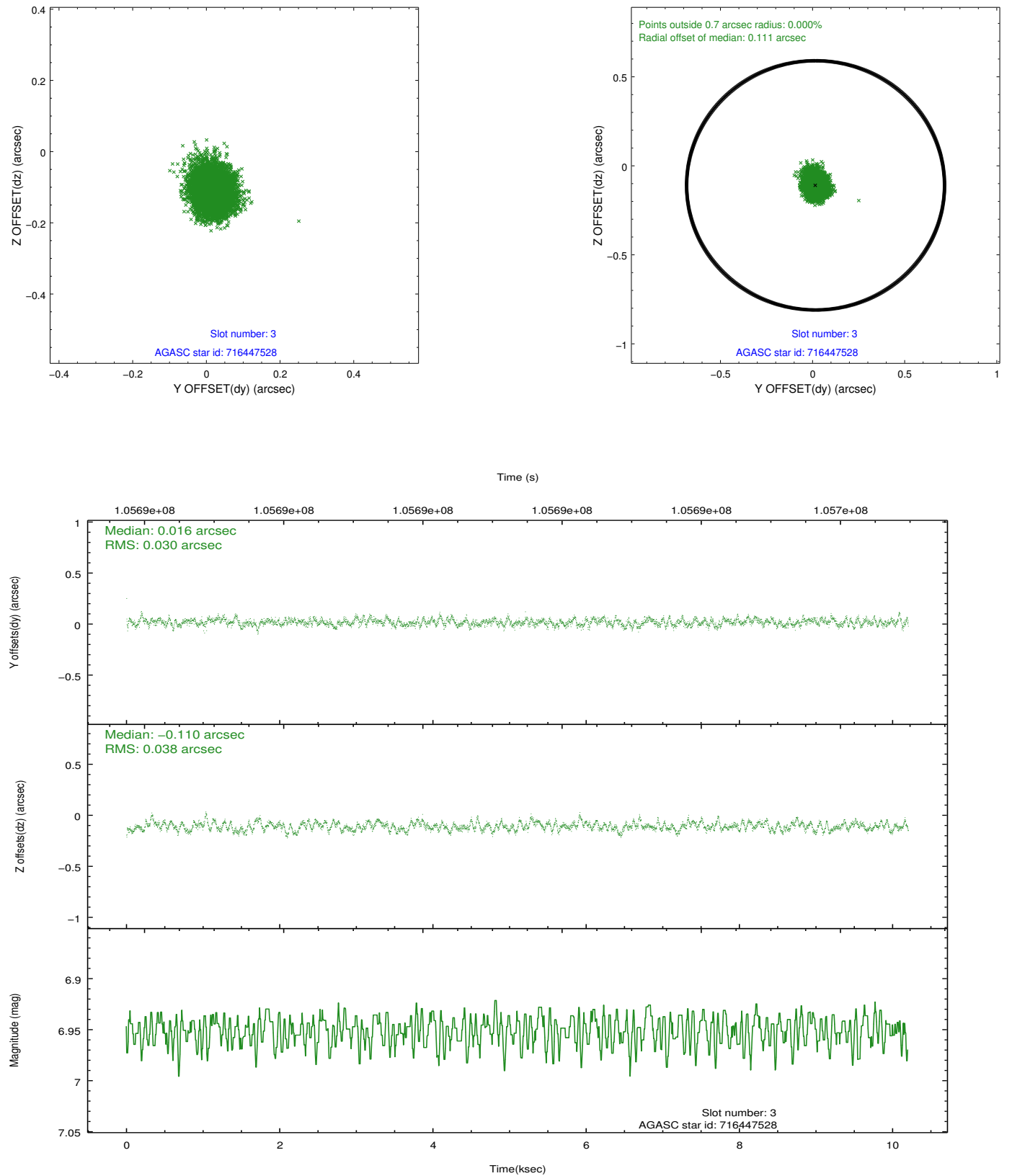


Slot Statistics

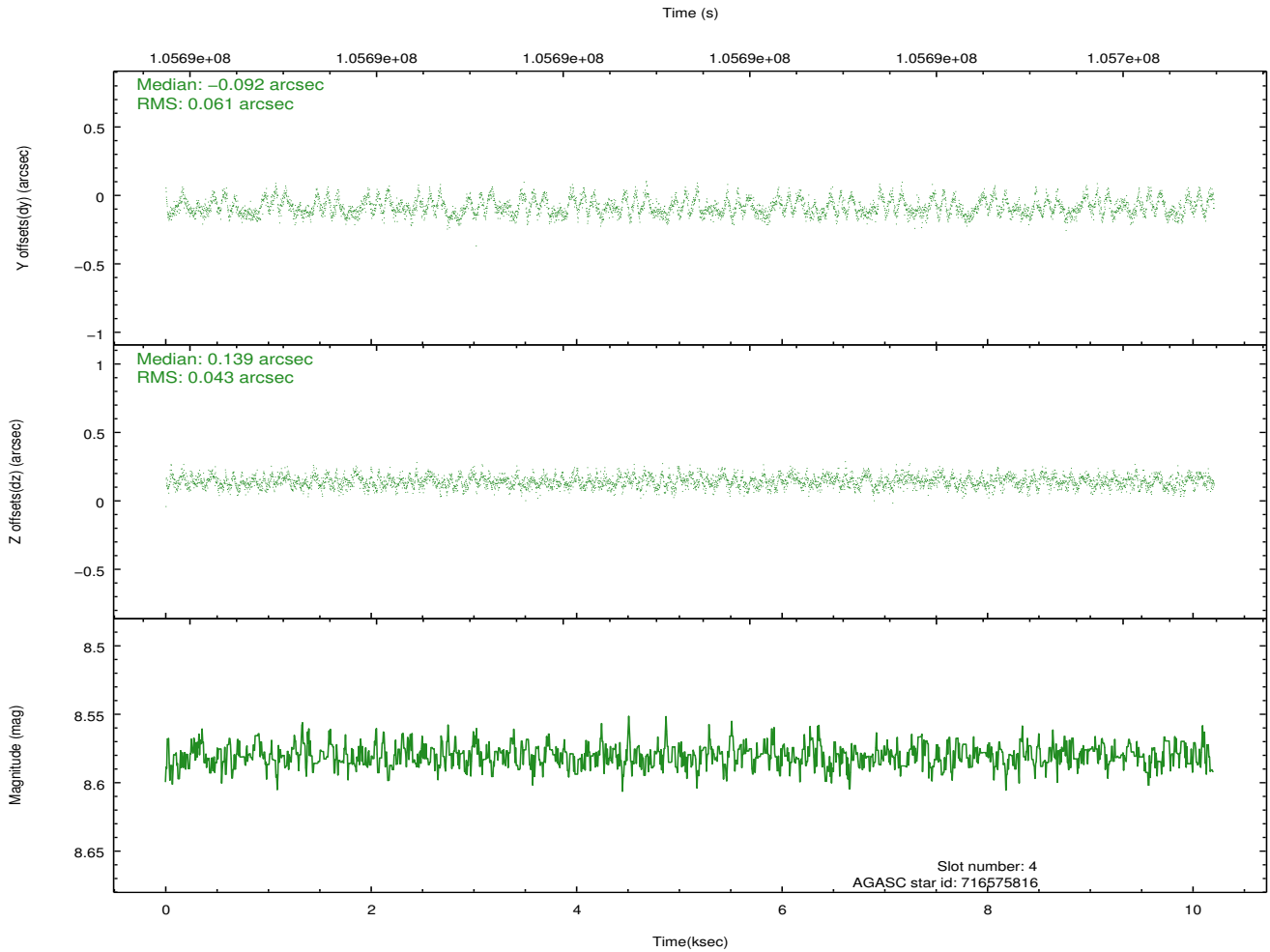
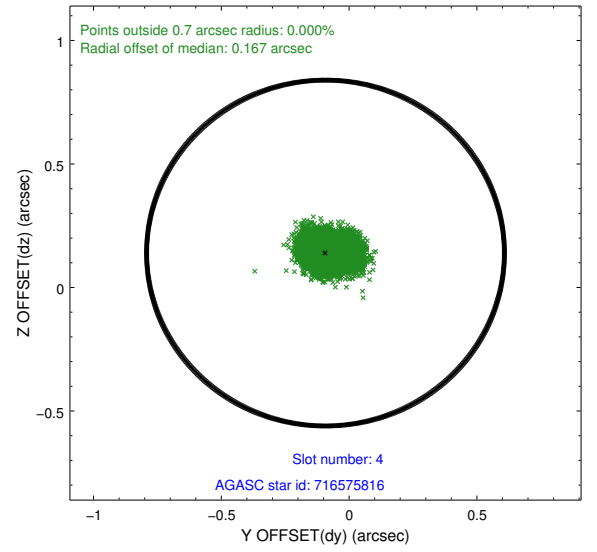
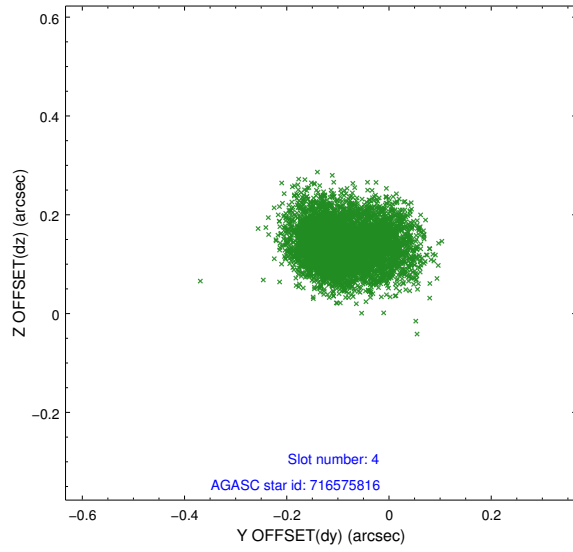
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	2489	-0.021	0.017	0.007	0.011	0.000000	0.000000	-755.39	-1727.29
1	FID	ACIS-S-4	7.20	2489	-0.050	0.006	0.005	0.009	0.000000	0.000000	2157.59	180.70
2	FID	ACIS-S-5	7.24	2489	0.040	-0.014	0.006	0.010	0.000000	0.000000	-1807.54	174.87
3	GUIDE	716447528	6.95	4977	0.016	-0.110	0.052	0.082	139.371683	-11.961966	-246.05	-590.84
4	GUIDE	716575816	8.58	4976	-0.092	0.139	0.080	0.128	140.229272	-11.600909	-2323.10	1961.00
5	GUIDE	716578888	9.25	4972	-0.002	-0.048	0.075	0.121	139.858876	-11.605741	-1950.61	709.21
6	GUIDE	716454552	9.01	4977	0.022	0.244	0.062	0.101	139.524204	-12.319370	843.18	279.33
7	GUIDE	716452328	8.78	4977	0.047	-0.228	0.076	0.122	138.982178	-12.235590	1079.12	-1637.33

2.4 Star Slots

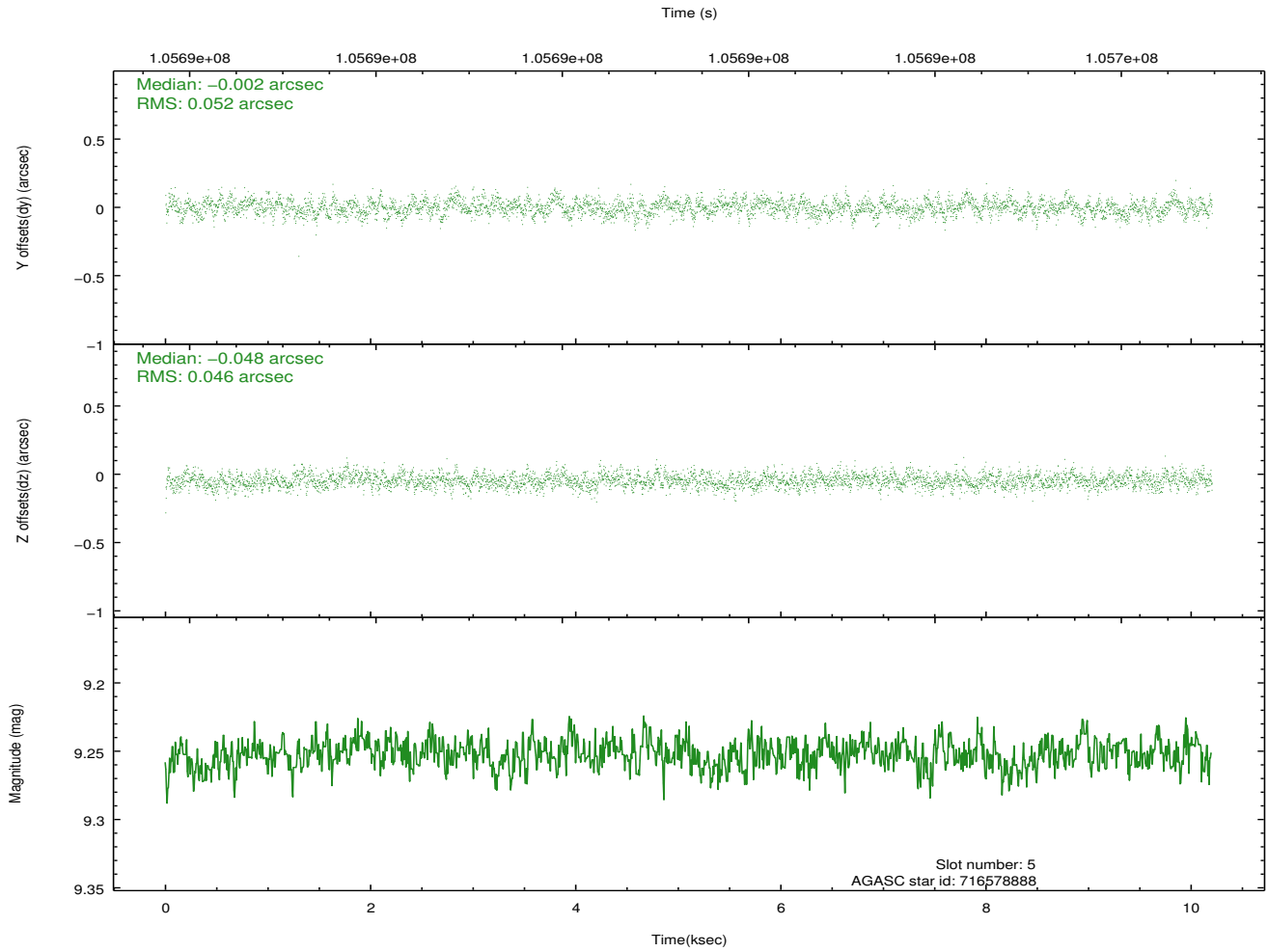
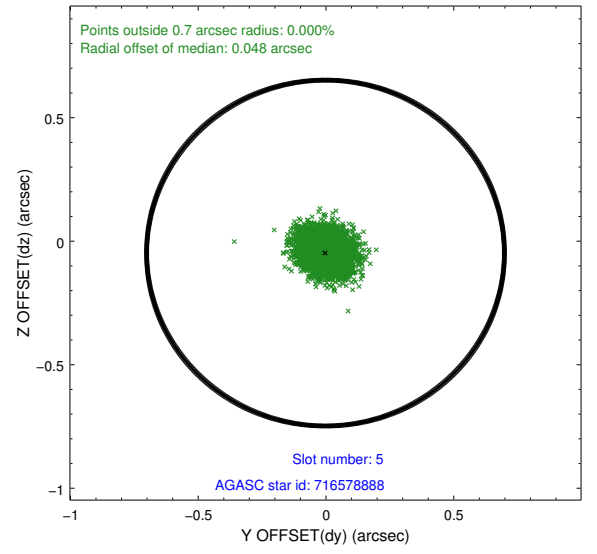
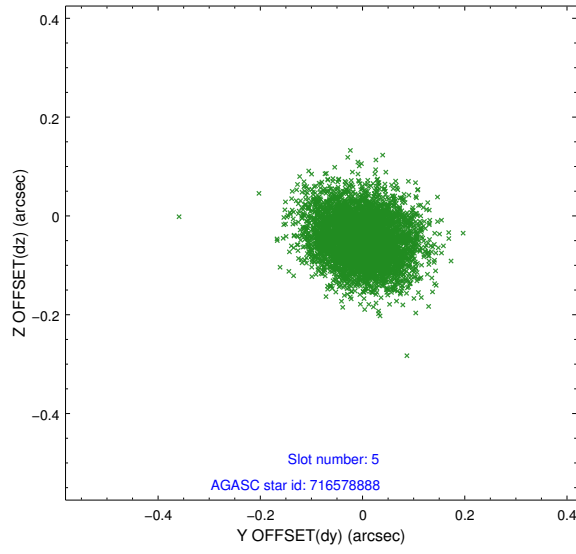
2.4.1 Slot 3



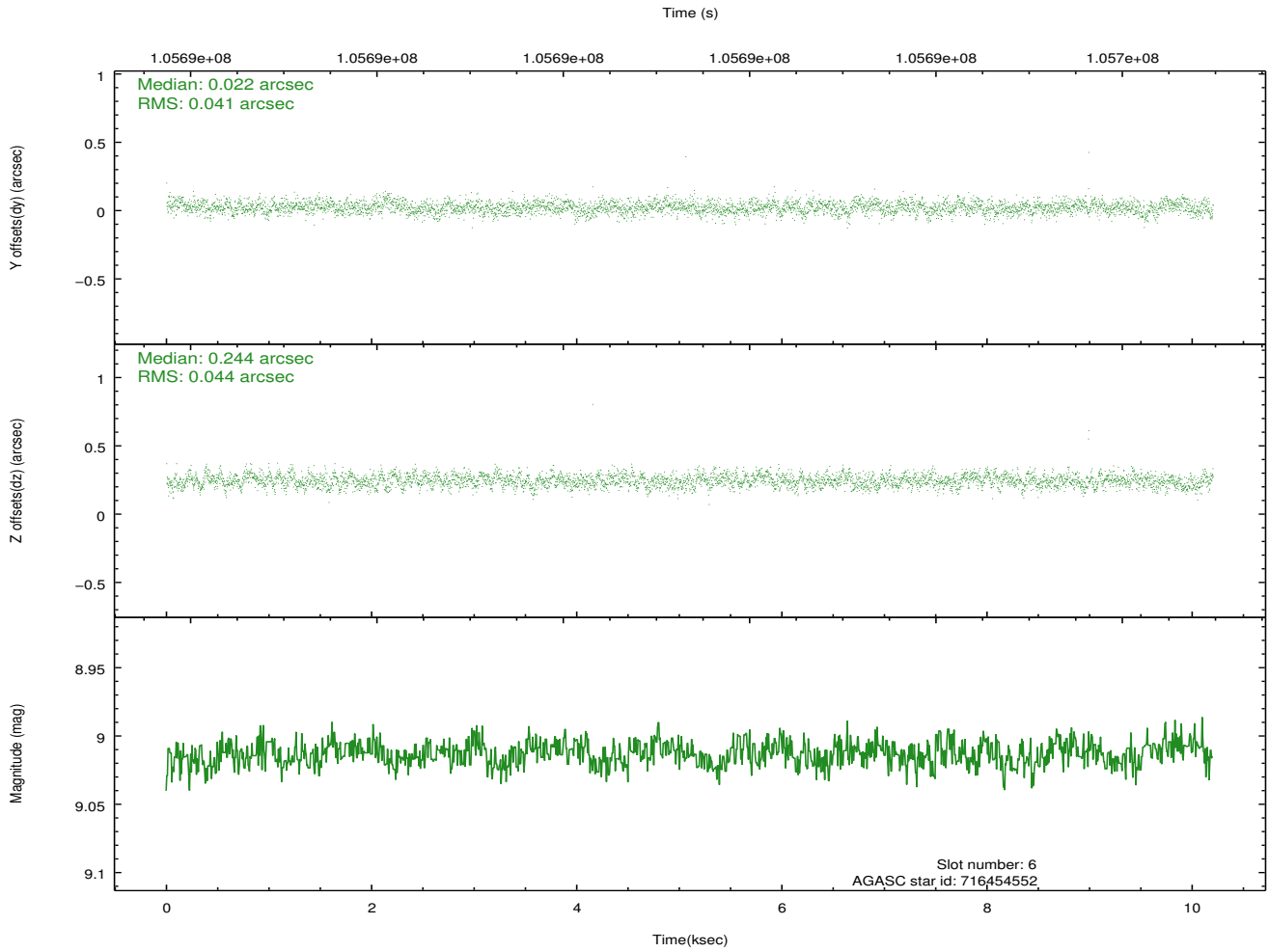
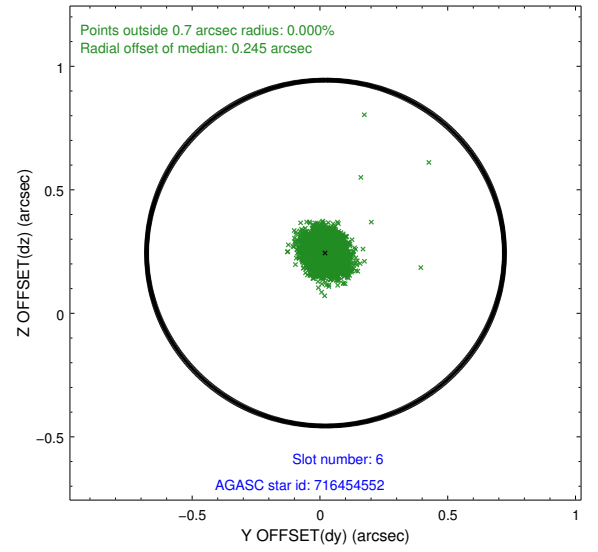
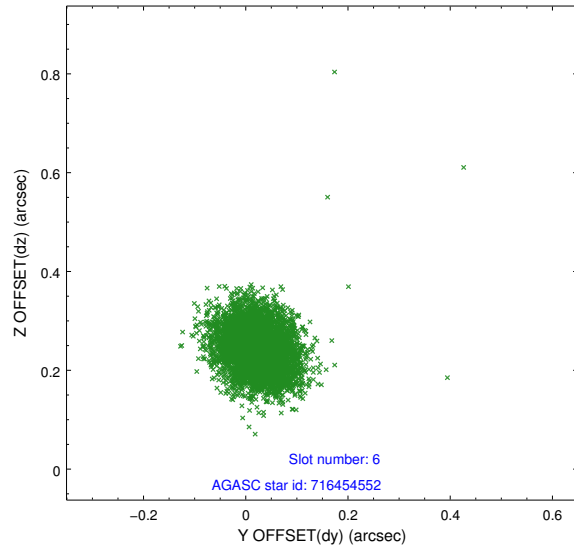
2.4.2 Slot 4



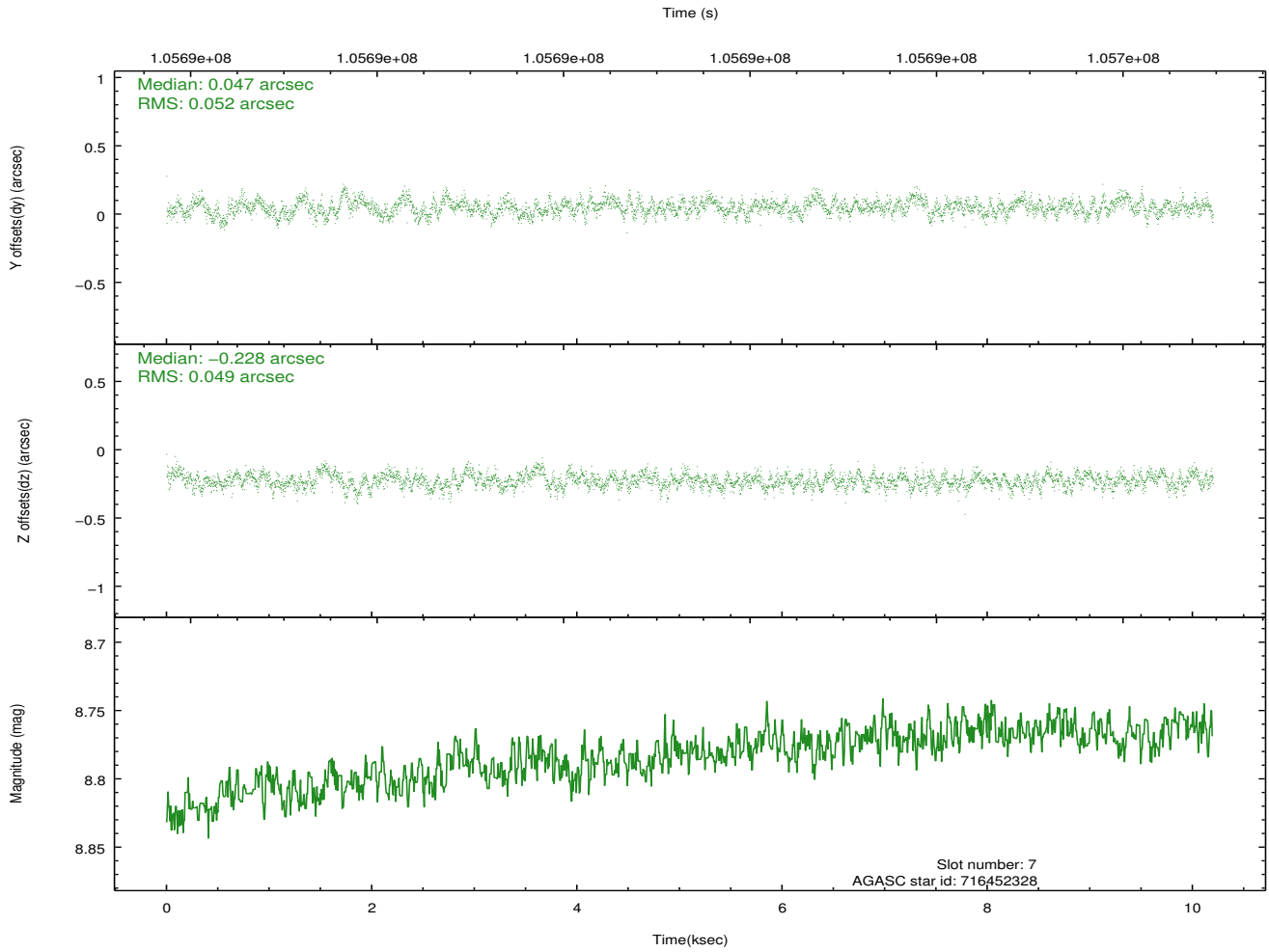
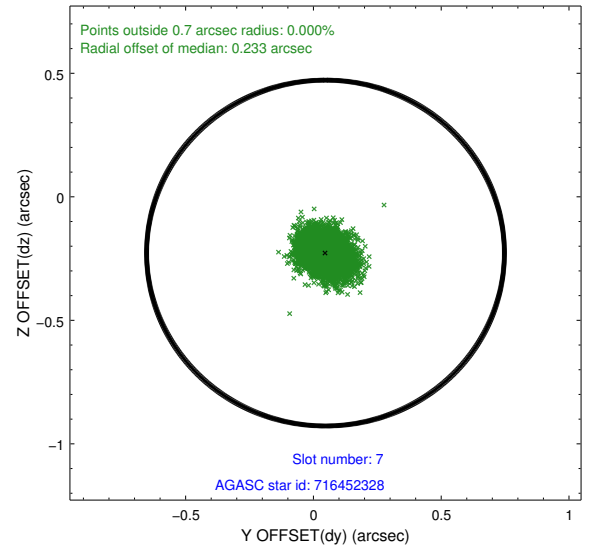
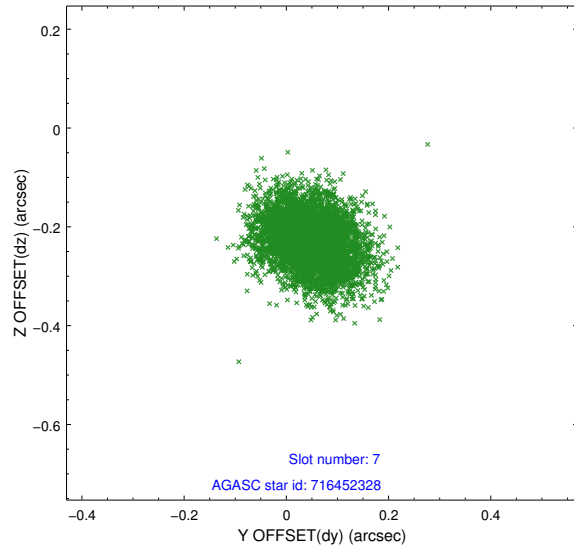
2.4.3 Slot 5



2.4.4 Slot 6

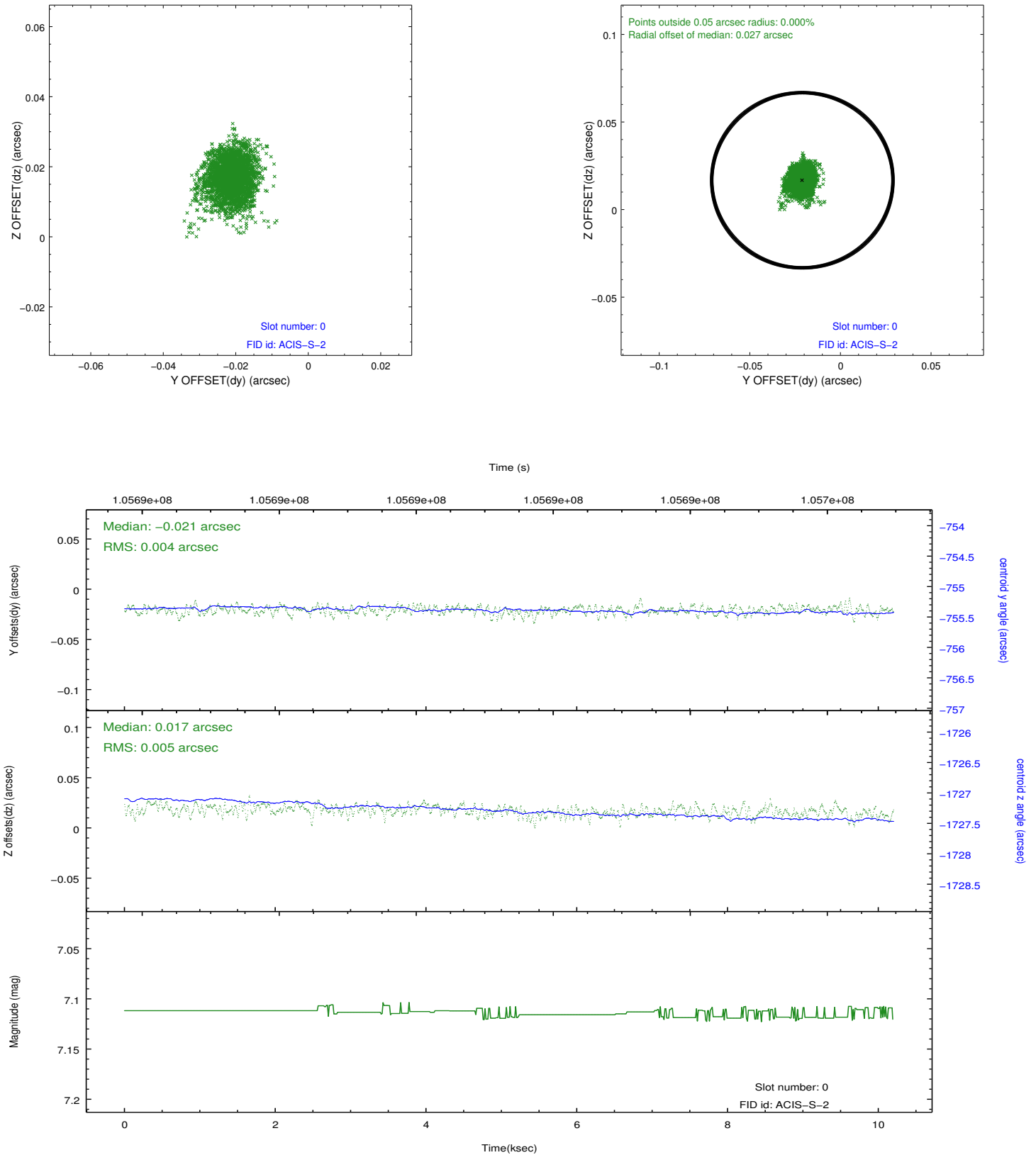


2.4.5 Slot 7

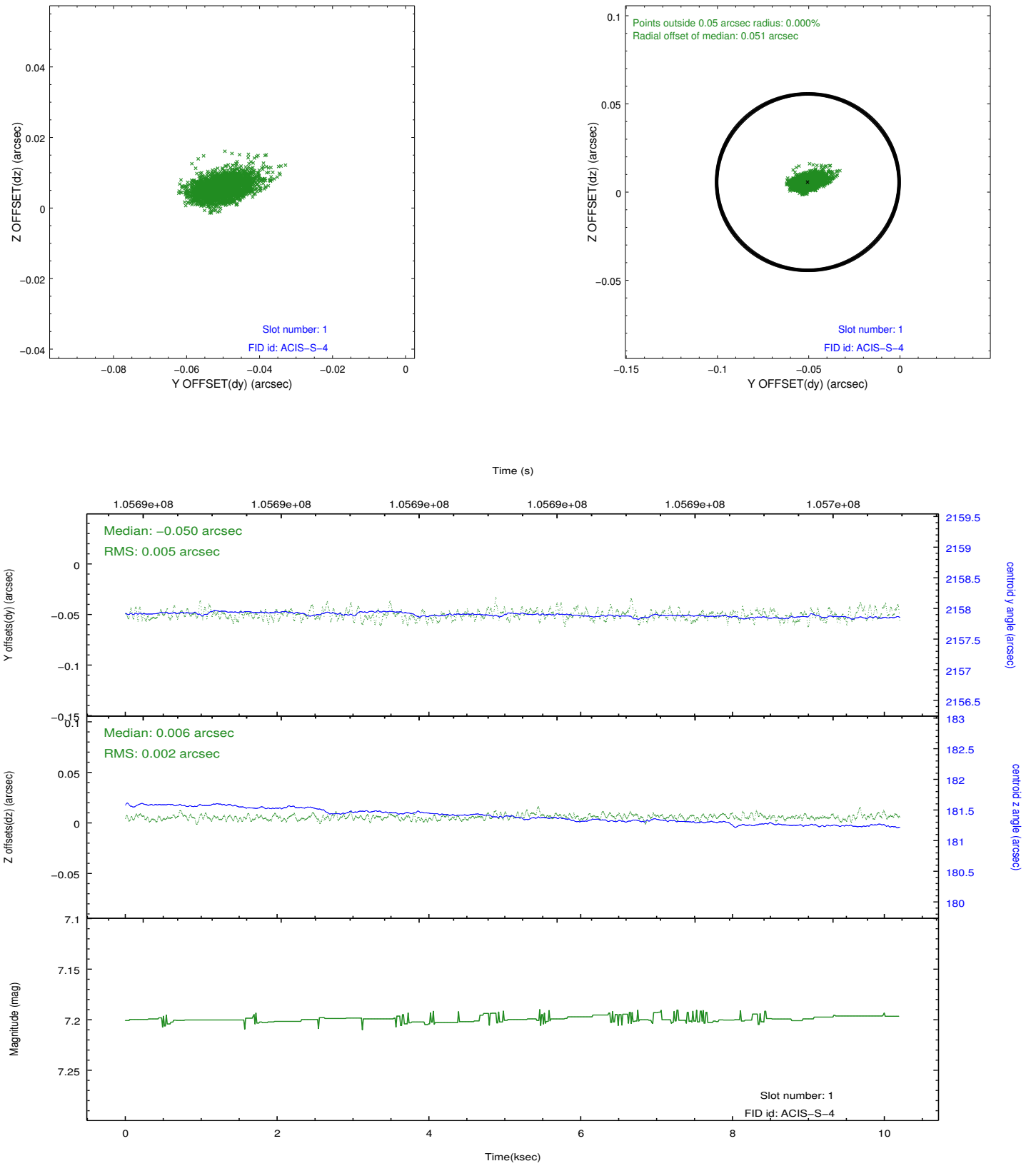


2.5 FID Slots

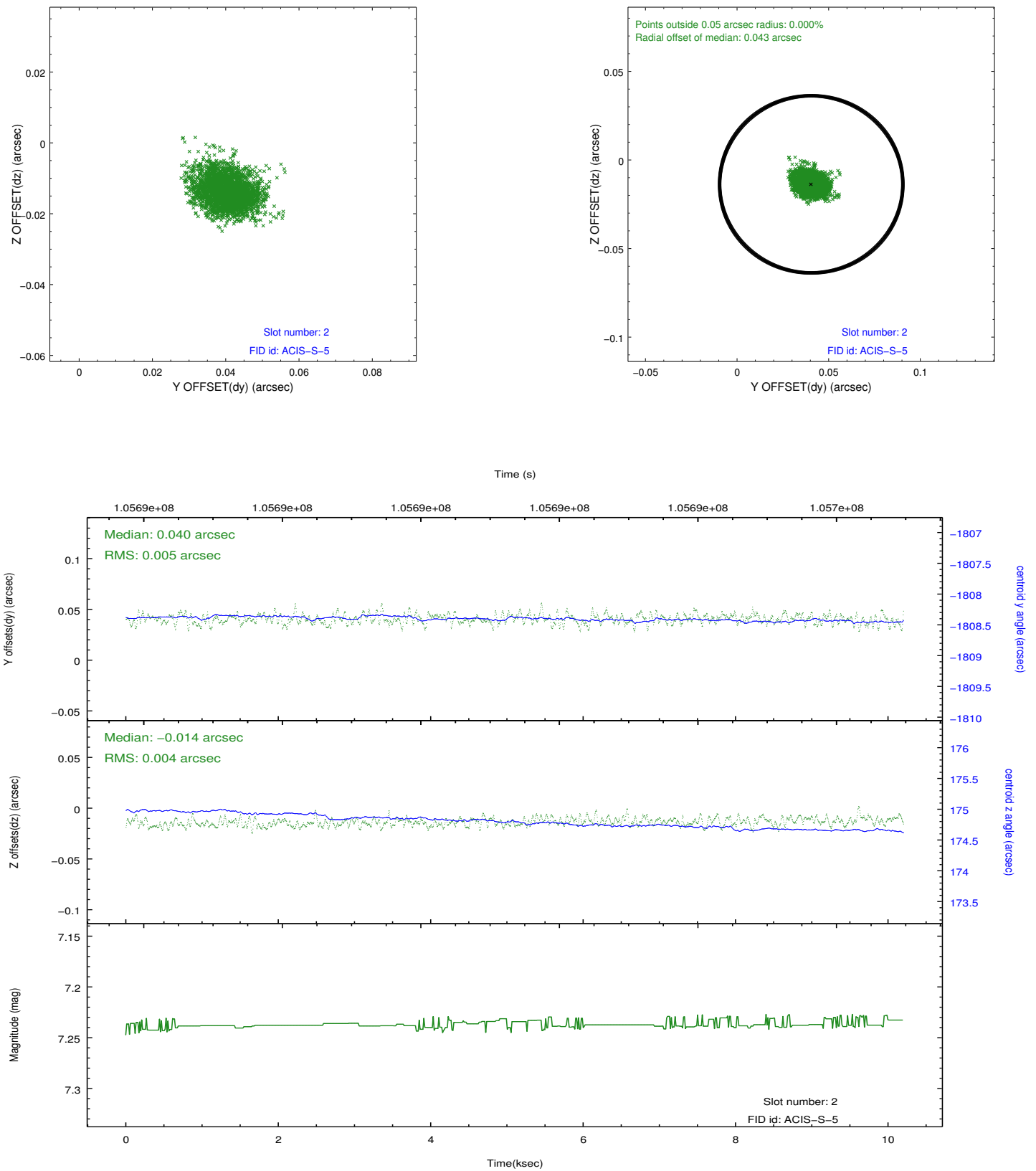
2.5.1 Slot 0



2.5.2 Slot 1

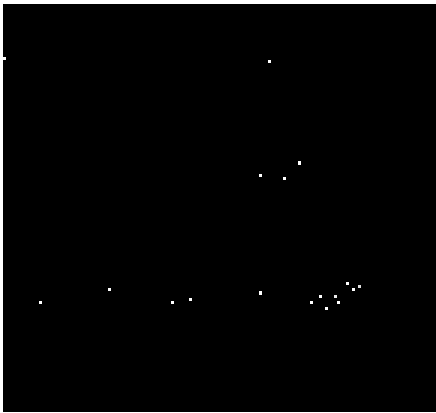


2.5.3 Slot 2

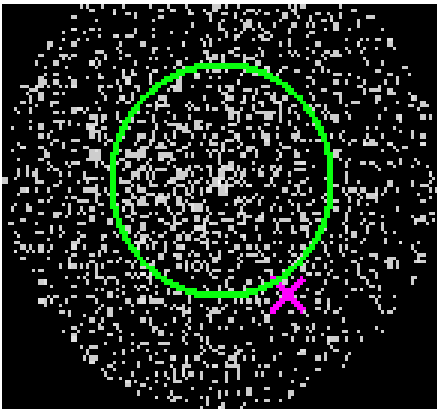


3 Gratings

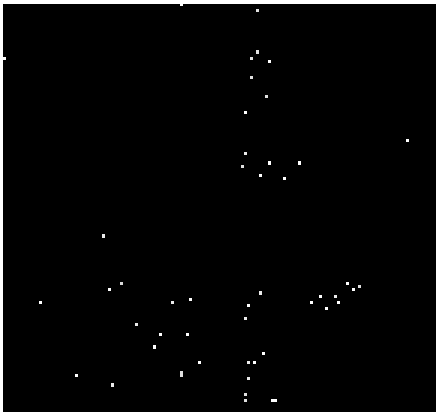
3.1 HEG Arm



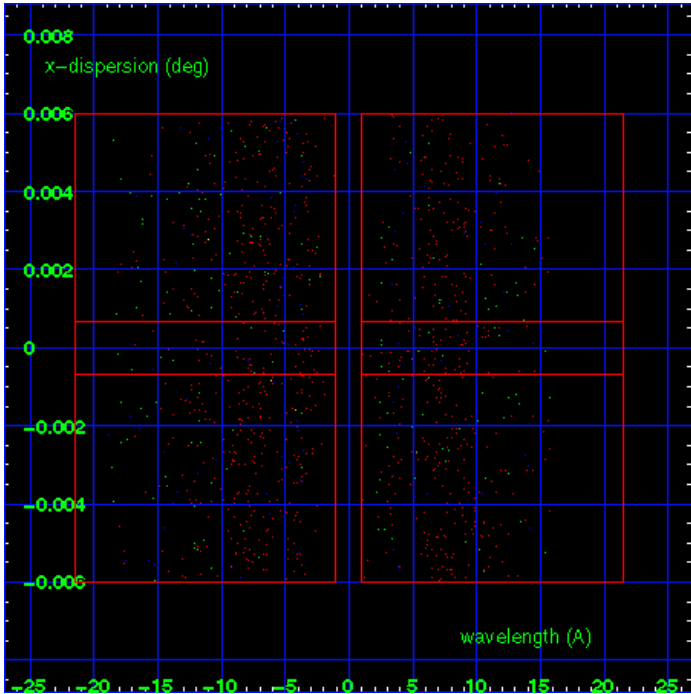
HEG Order Sort 123



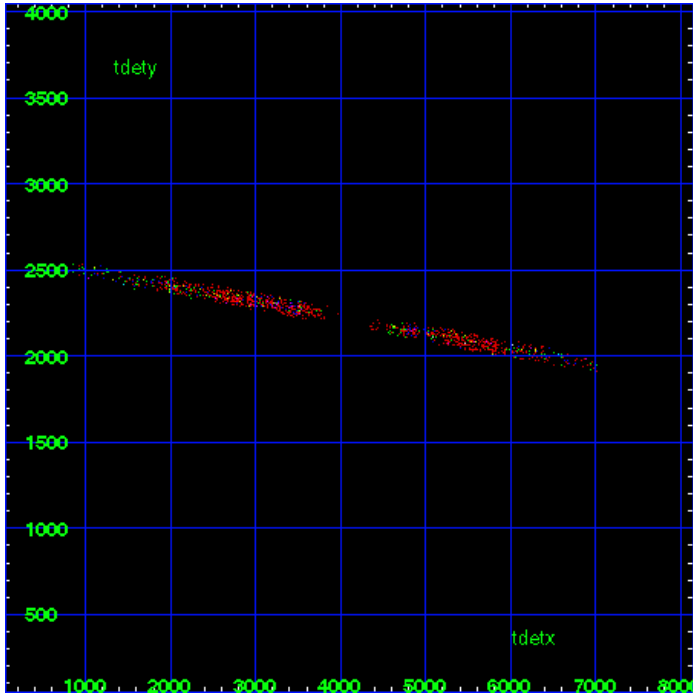
HEG Zero Order



HEG Order Sort ALL

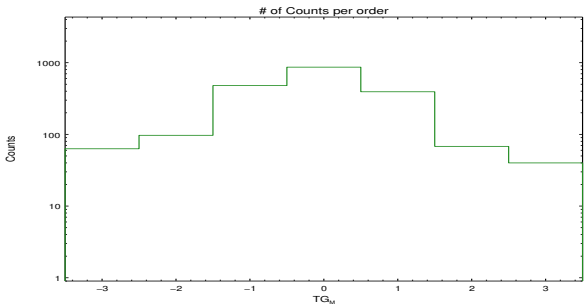


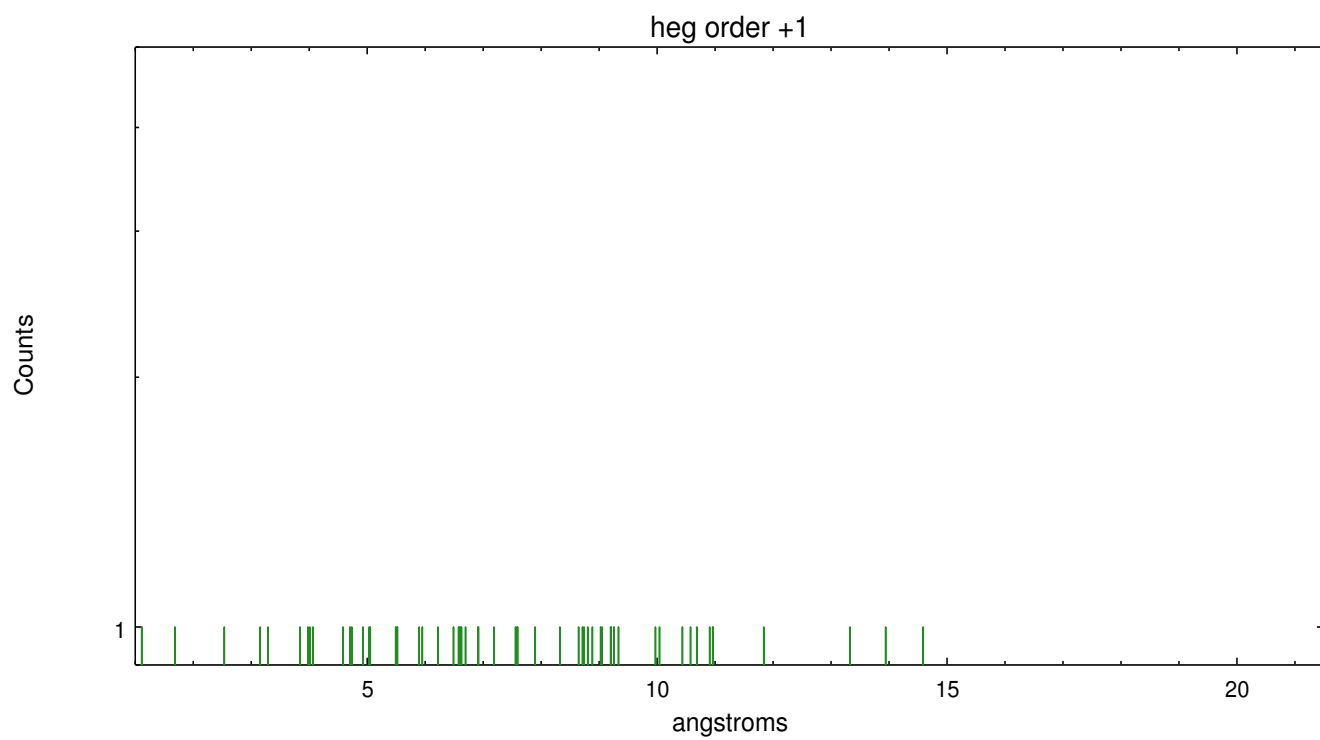
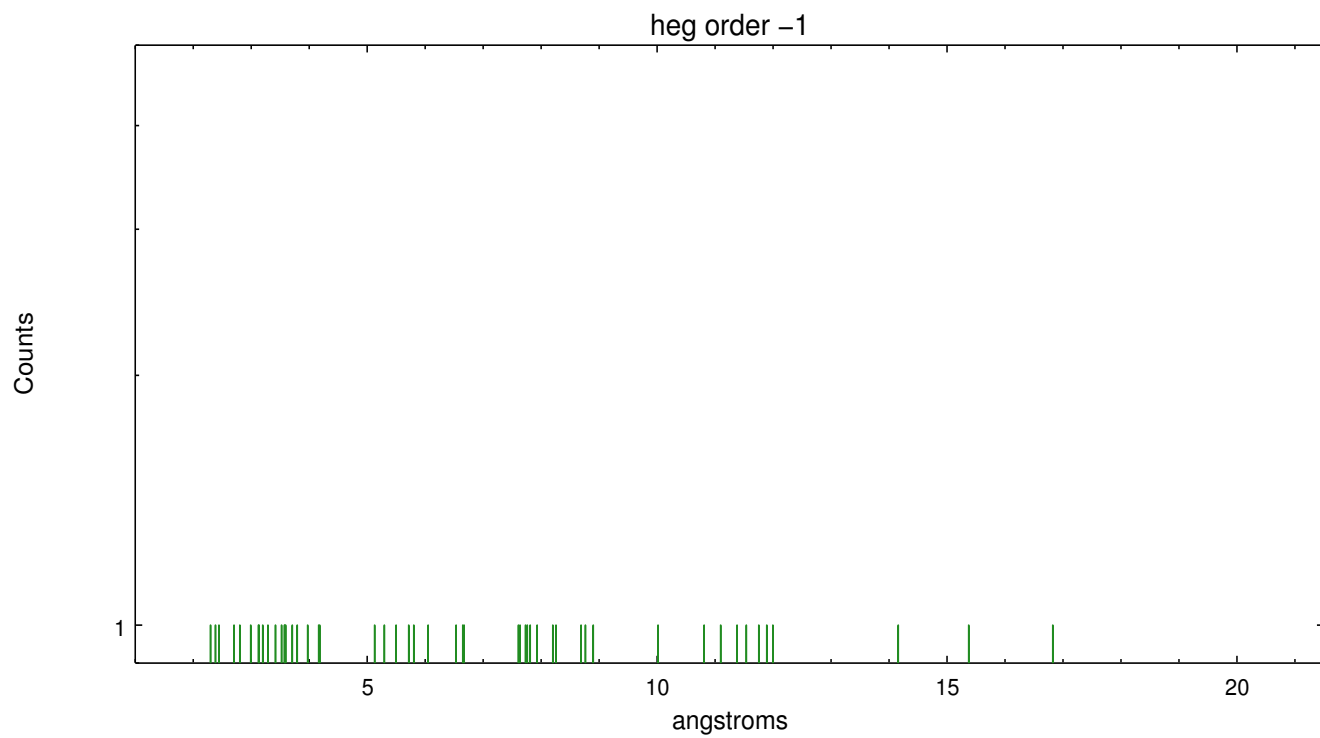
Spot Image HEG



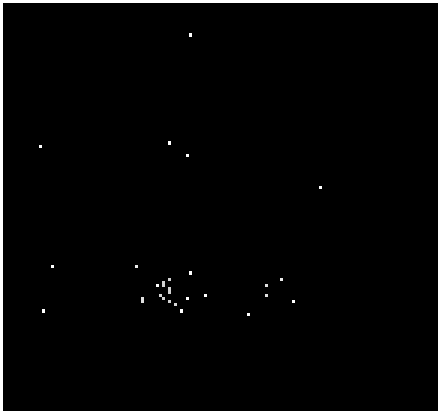
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	63	97	479	866	393	68	40

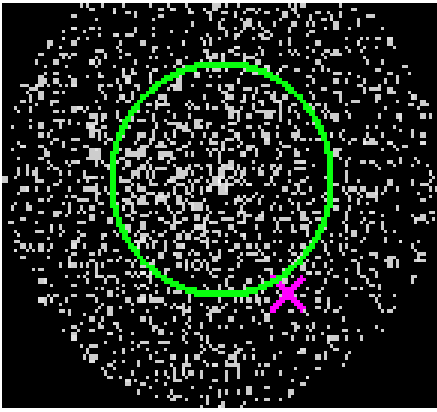




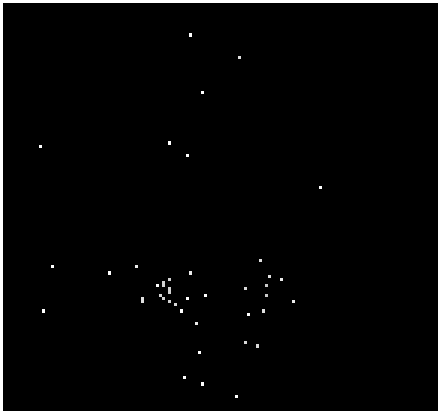
3.2 MEG Arm



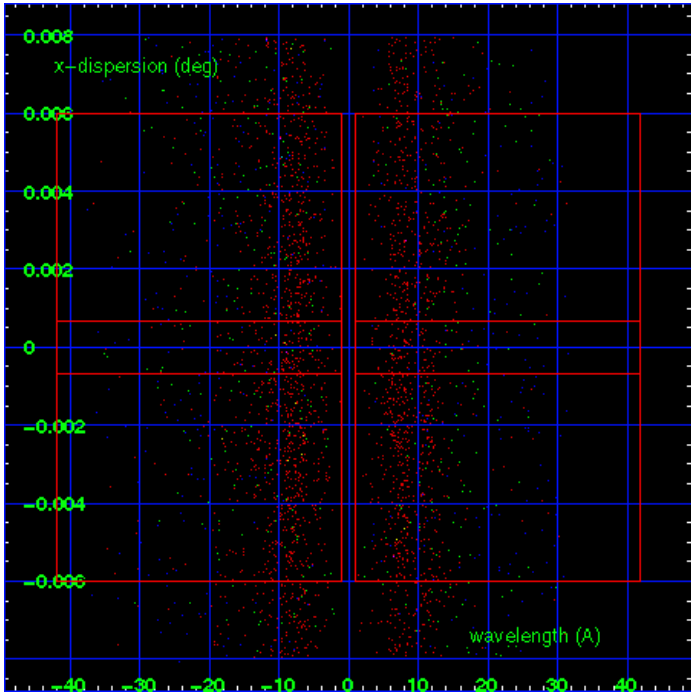
MEG Order Sort 123



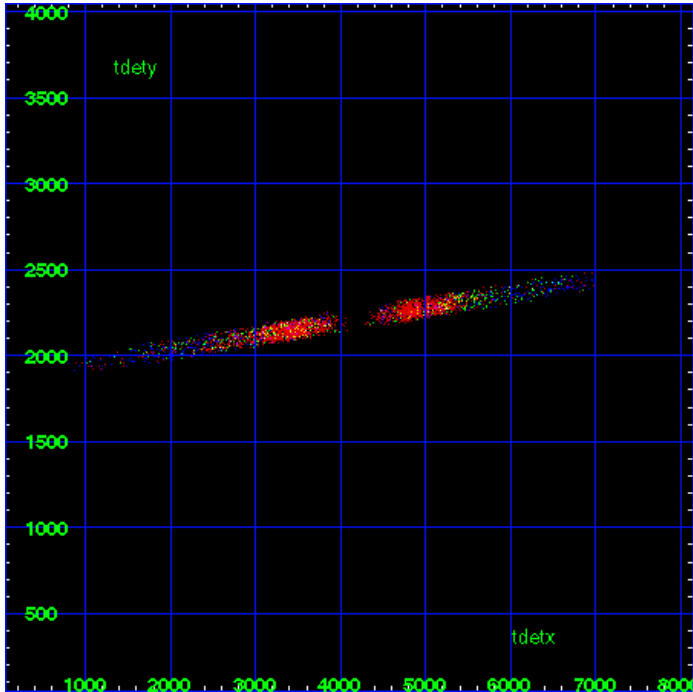
MEG Zero Order



MEG Order Sort ALL

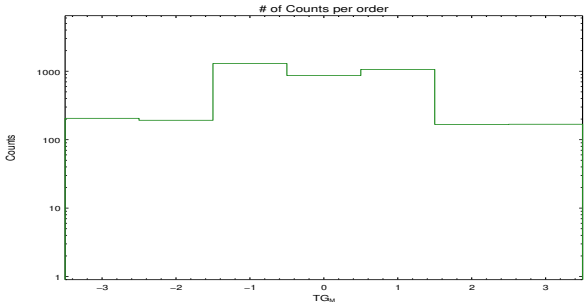


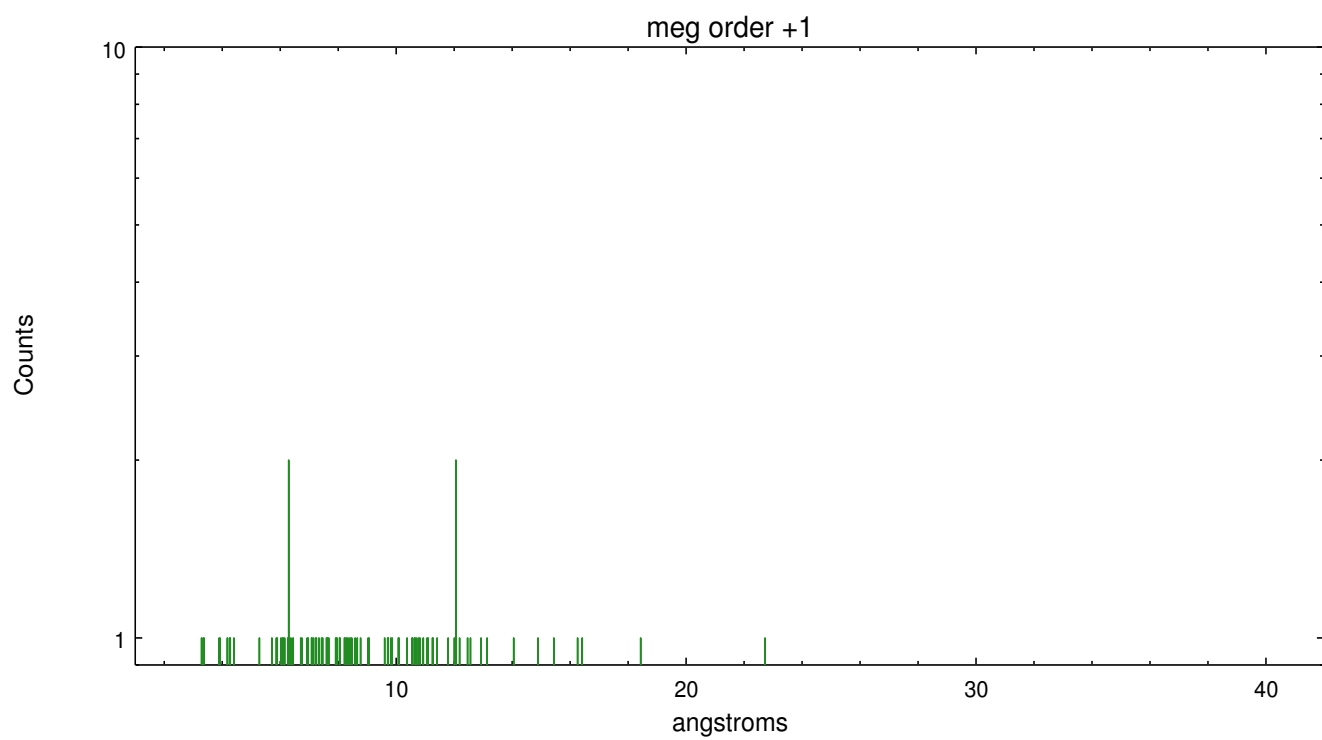
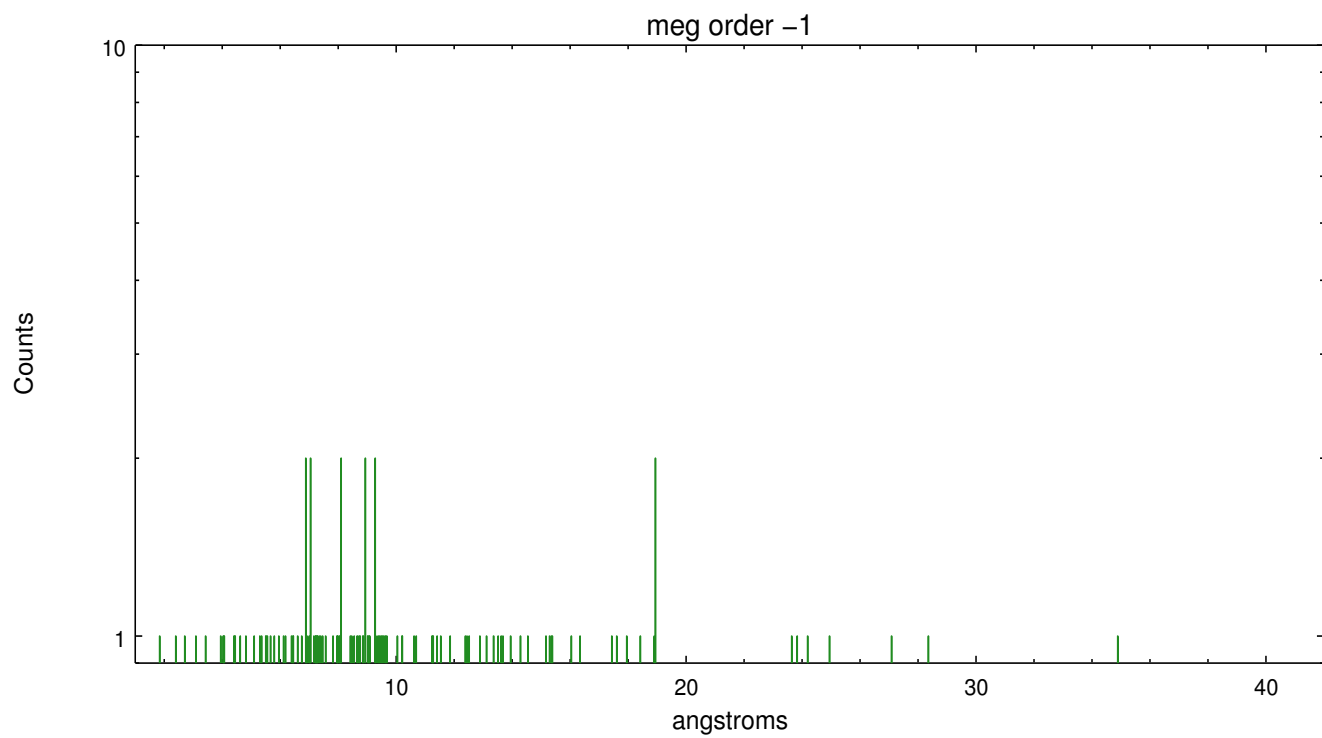
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	205	192	1297	866	1064	167	168





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.10.12
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.051

A.2 Comments

Standard software processing technique using the tool `tgdetect` failed to determine an accurate position for the zeroth order for this observation. The source is extended. The position of the zeroth order was chosen to be the same as in `TGCat` and is at or near the position of the brightest emission (sky coordinates $x=4077.96$, $y=4125.53$). For grating analysis of localized X-ray emission within the extended emission, the investigator will need to extract one or more dispersed spectra using user-defined zeroth order positions for all positions of interest. === The spectral data supplied in this processing are only energy-calibrated for the particular zeroth order position selected. WARNING: there are no standard `ciao` tools for analysis of grating spectra from extended sources. The shape of an emission 'line' will be the shape of the zero order spatial structure convolved with the instrumental LSF. Grating extractions can be used, but need to be combined with custom spatial-spectral analysis, since wavelength is multi-valued at any particular diffraction angle. === The spectral lines are spatially-broadened and the `rmfs` are not valid.