

V&V Reference Report

L2 ASCDS Version : 10.6.3

Observation 20709 - L2 Version 1
Chandra X-Ray Center

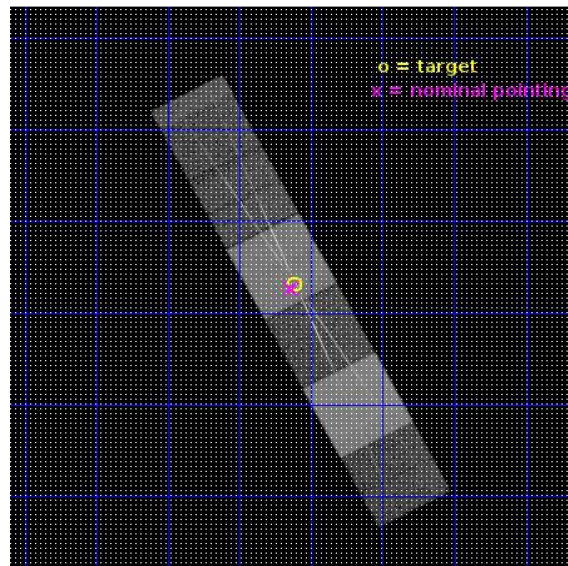
L2 Processing Date : Jul 5 2018

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1 Front

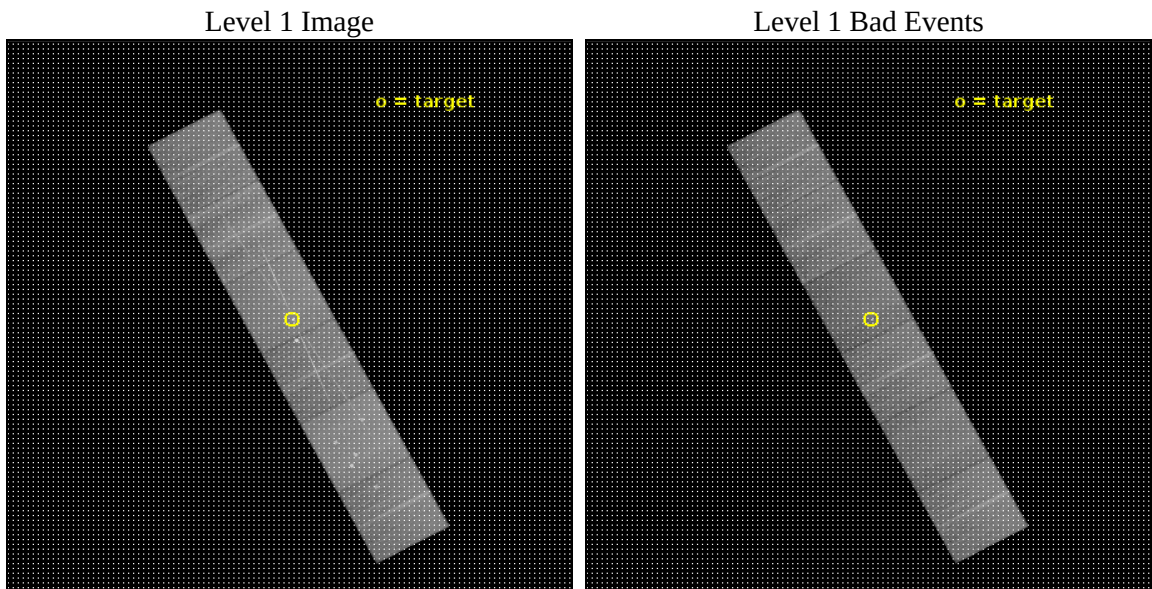
seq_num	790308	Sequence number
obs_id	20709	Observation id
title	AO-19 Cross-Calibration Observations of 3C273	Proposal title
observer	CXC Calibration	Principal investigator
object	3C273	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	187.277917	Observer's specified target RA [deg]
dec_targ	2.052389	Observer's specified target Dec [deg]
ra_nom	187.28441592331	Nominal RA [deg]
dec_nom	2.0441121953293	Nominal Dec [deg]
roll_nom	242.1563980122	Nominal Roll [deg]
revision	1	Processing version of data
ontime	29944.724526286	Sum of GTIs [s]
livetime	29565.546393786	Livetime [s]
ontime4	29944.76556623	Sum of GTIs [s]
ontime5	29944.683486223	Sum of GTIs [s]
ontime6	29944.64244628	Sum of GTIs [s]
ontime7	29944.724526286	Sum of GTIs [s]
ontime8	29944.601406217	Sum of GTIs [s]
ontime9	29944.560366273	Sum of GTIs [s]
l2events	429987	Number of level 2 events



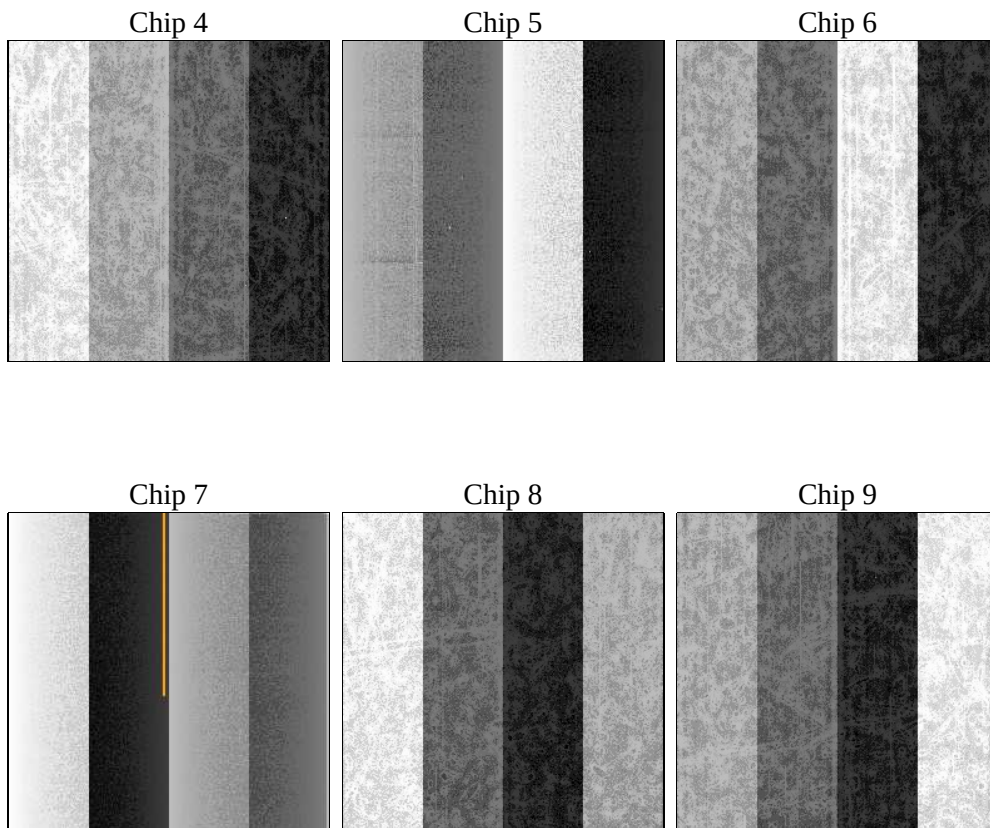
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.6.3	Processing system revision	ontime	29944.724526286	Sum of GTIs [s]
caldsver	4.7.8	 	ontime4	29944.76556623	Sum of GTIs [s]
date	2018-07-05T16:17:09	Date and time of file creation	ontime5	29944.683486223	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	29944.64244628	Sum of GTIs [s]
			ontime7	29944.724526286	Sum of GTIs [s]
			ontime8	29944.601406217	Sum of GTIs [s]
			ontime9	29944.560366273	Sum of GTIs [s]
			l1events	1758726	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			ra_pos	(4144.12, 4157.10)	src1a sky pixel position

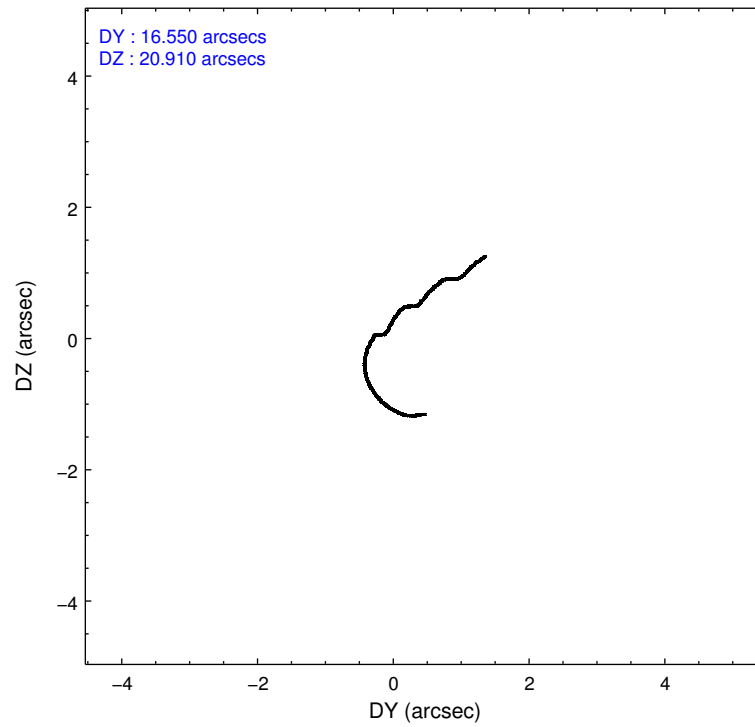
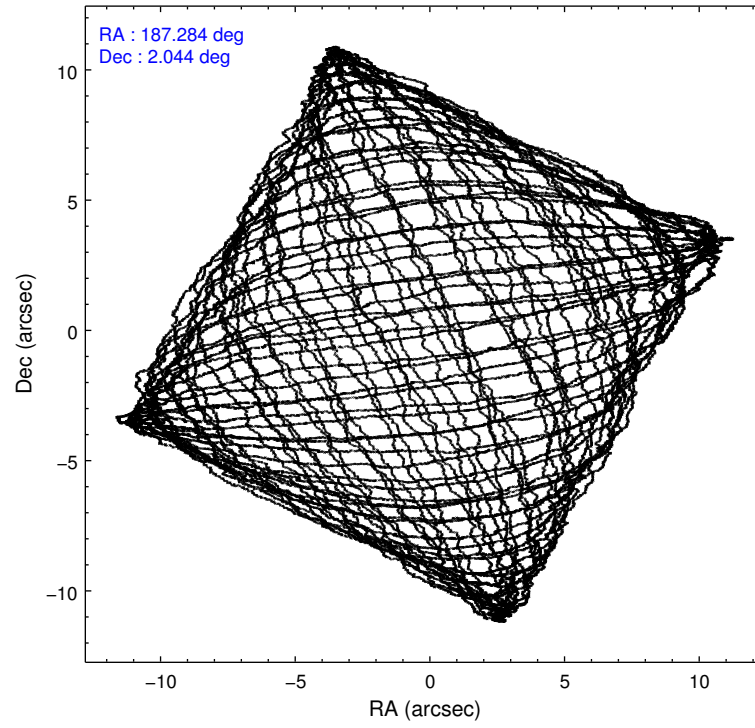
2.1.4 Events

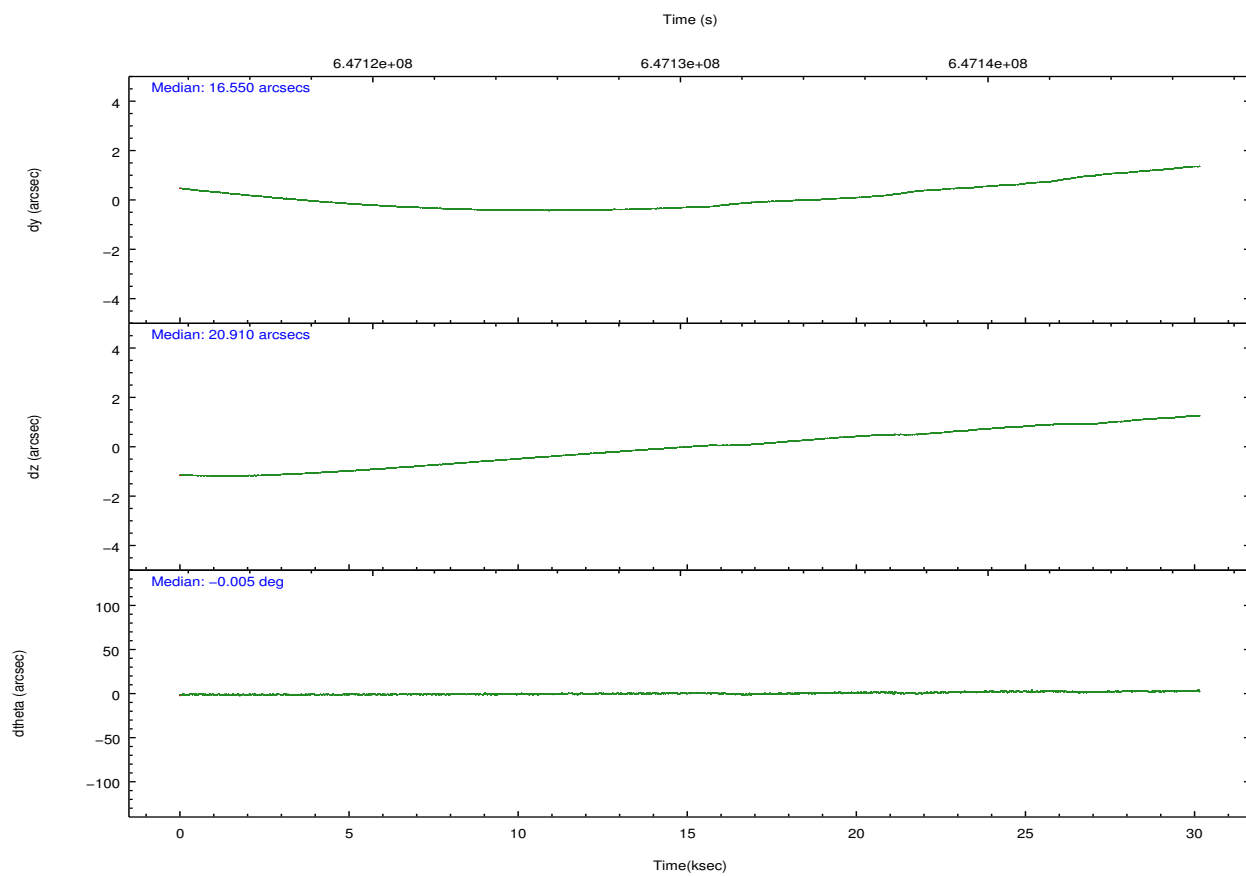
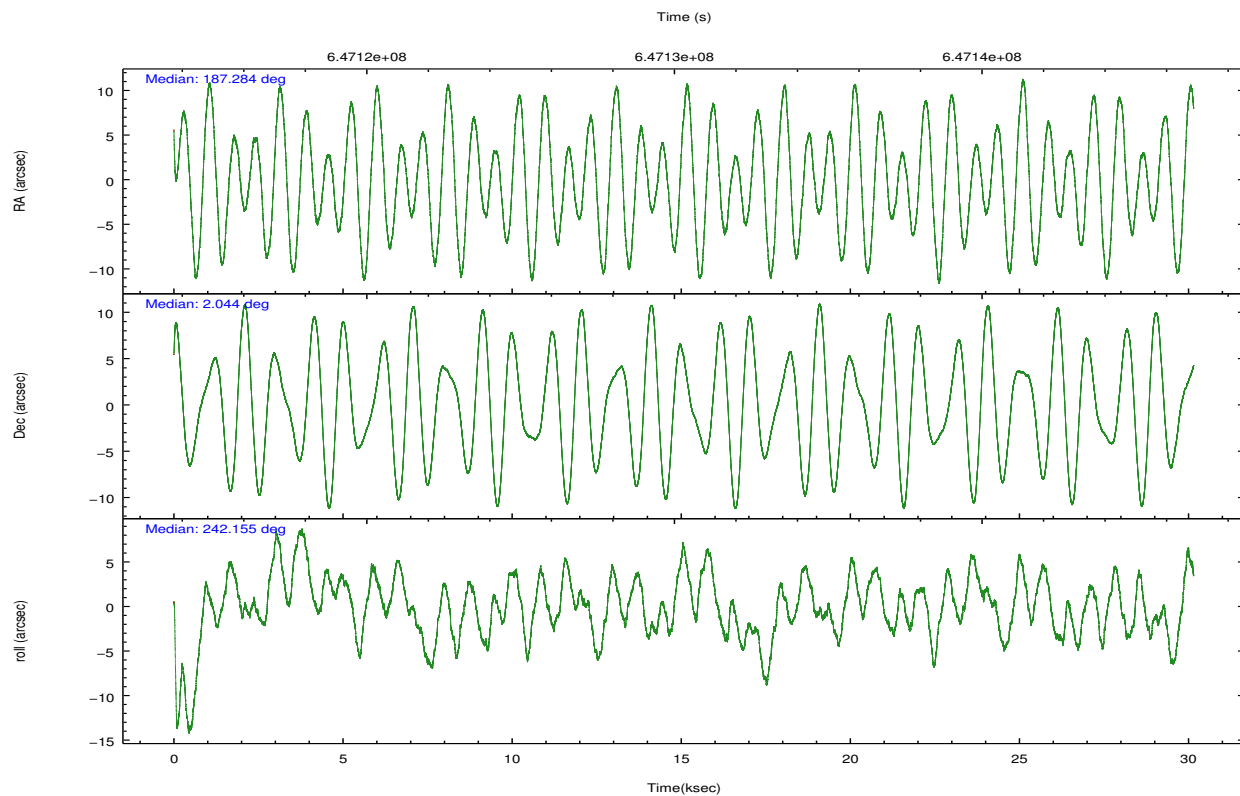
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	267385	374197	262896	317931	306374	229943	grade 0 events	12668	22191	29805	16010	28452	10650
rejected events	237608	185748	211808	167717	218137	201541		4%	5%	11%	5%	9%	4%
rejected %	88%	49%	80%	52%	71%	87%	grade 1 events	272	1061	197	644	300	137
								0%	0%	0%	0%	0%	0%
							grade 2 events	6795	58882	8420	32604	20498	6204
								2%	15%	3%	10%	6%	2%
							grade 3 events	2870	5784	3026	12651	8780	2696
								1%	1%	1%	3%	2%	1%
							grade 4 events	2726	5351	3045	12177	8154	2700
								1%	1%	1%	3%	2%	1%
							grade 5 events	10966	24373	10457	30141	16110	11765
								4%	6%	3%	9%	5%	5%
							grade 6 events	4727	96279	6800	76805	22365	6156
								1%	25%	2%	24%	7%	2%
							grade 7 events	226361	160276	201146	136899	201715	189635
								84%	42%	76%	43%	65%	82%

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	187.283006	187.2844159233087	CCD I2 on	N	N
[deg] Pointing Dec	2.071513	2.044112195329316	CCD I3 on	N	N
[deg] Pointing Roll	241.999821	242.1563980121988	CCD S0 on	O1	Y
[s] Window start time (MET)	644198469.184000	644198469.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	649382469.184000	649382469.184000	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	-190.132523	-190.1400660498719	CCD S5 on	O2	Y
[mm] SIM translation stage offset	0	0.00754346686406393	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	647115401.184000	647114270.41898	On-chip summing requested	N	N
Observation start date	2018-07-04T18:15:32	2018-07-04T17:57:50	Subarray requested	NONE	NONE
[s] Observation end time (MET)	647145401.184000	647146289.88337	Alternating exposures requested	N	N
Observation end date	2018-07-05T02:35:32	2018-07-05T02:51:29	[s] Primary exposure time	0.000000	3.2
Read mode	TIMED	TIMED			

2.3 Aspect



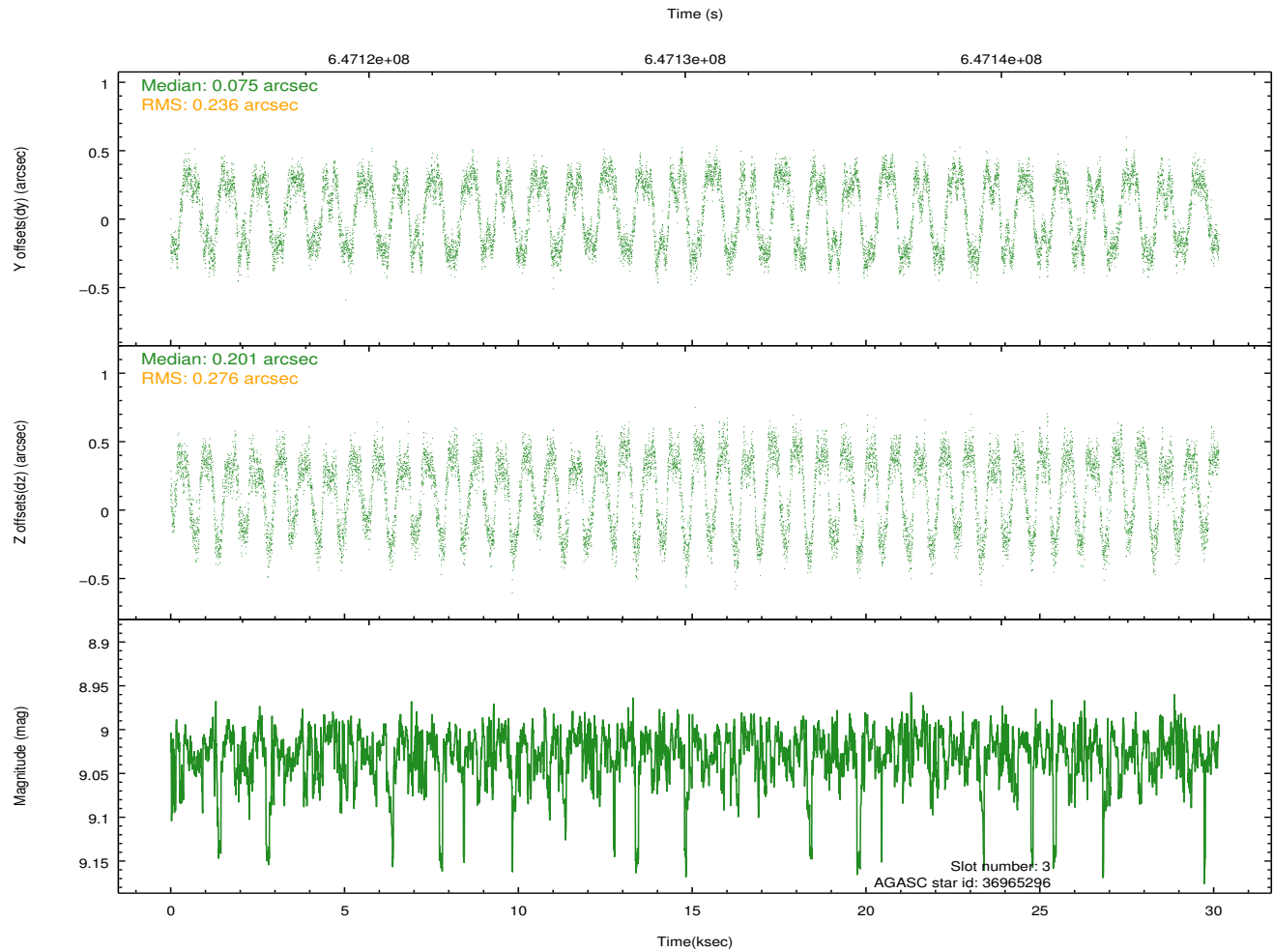
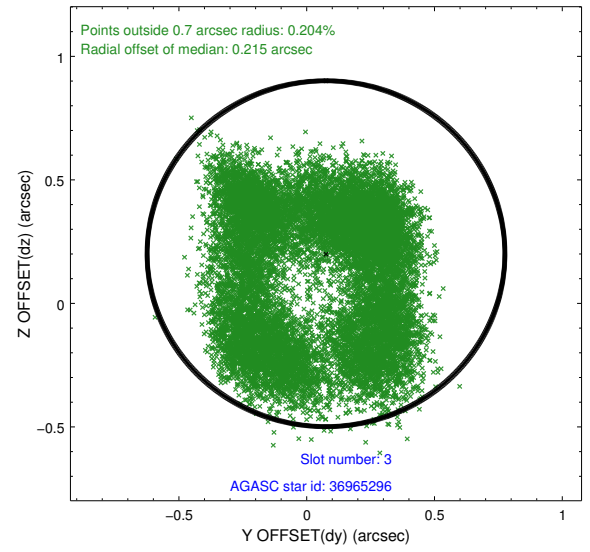
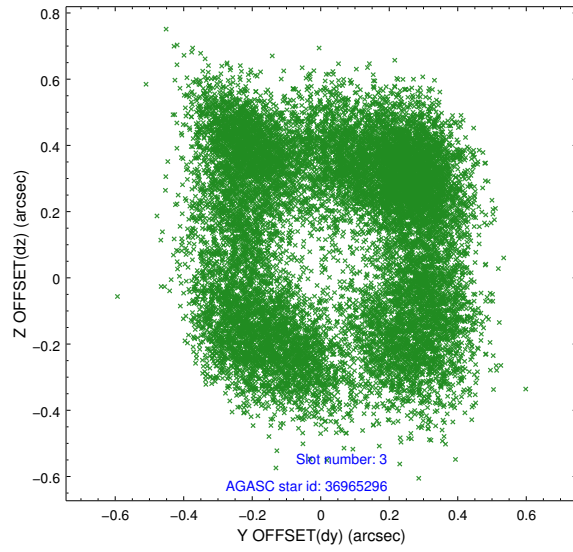


Slot Statistics

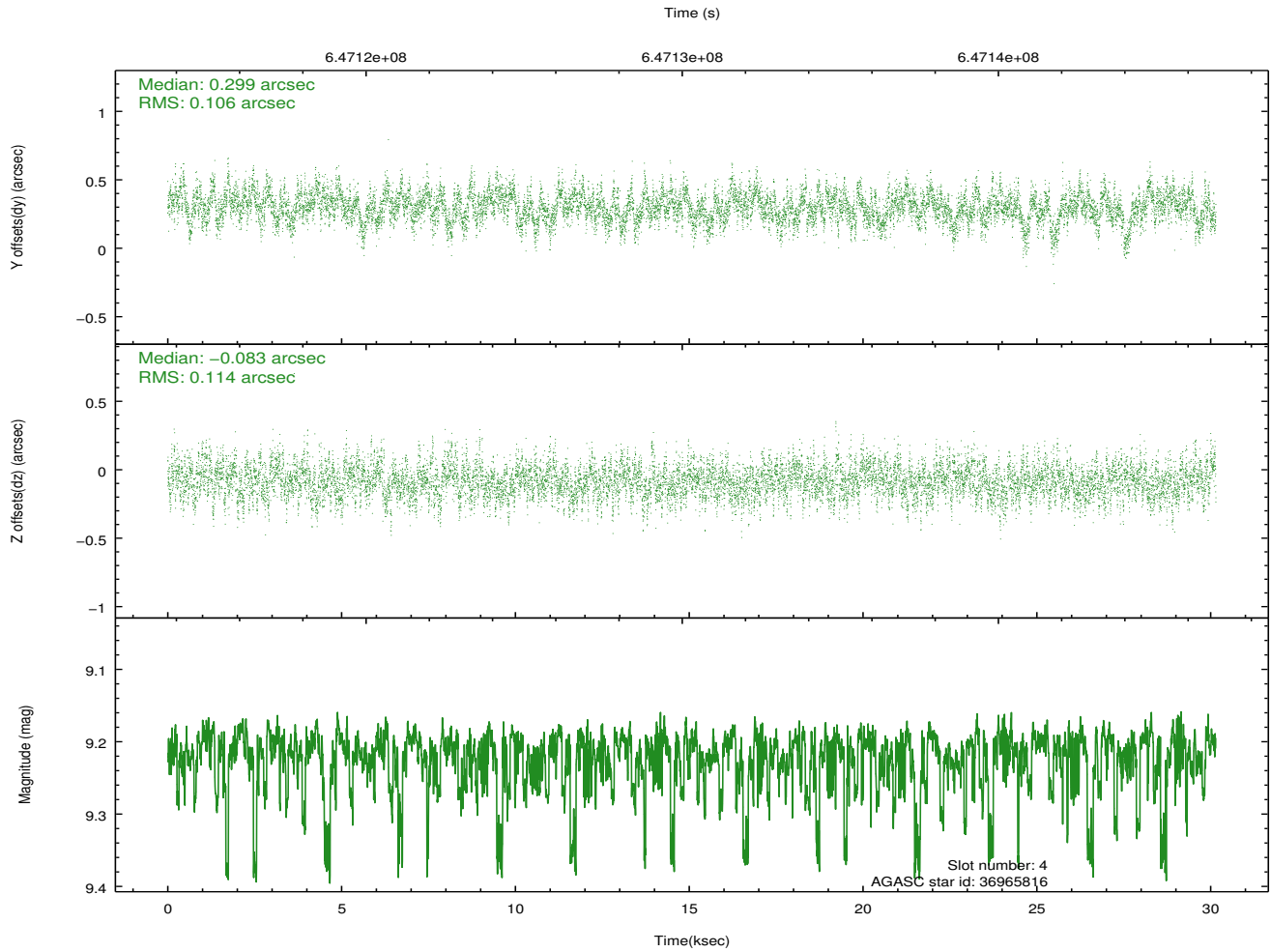
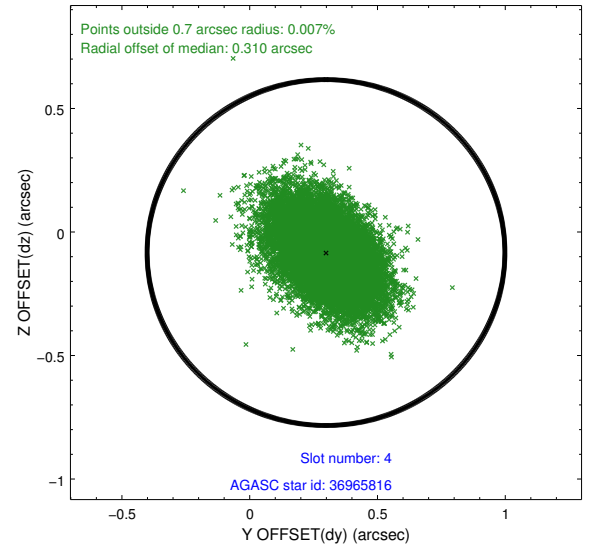
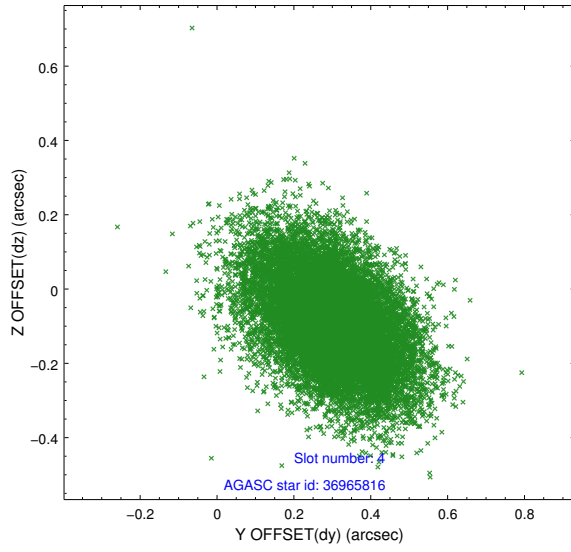
id	status	used	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		7.06	7354	1.000	-0.219	-0.087	0.021	0.049	0.000000	0.000000	-769.90	-1742
1	FID		7.16	7355	1.000	0.483	0.129	0.016	0.023	0.000000	0.000000	2144.03	166
2	FID		7.15	7353	1.000	-0.299	-0.033	0.022	0.048	0.000000	0.000000	-1822.75	159
3	GUIDE	used	9.03	14697	1.000	0.075	0.201	0.405	0.560	186.926292	1.837429	1347.06	-737
4	GUIDE	used	9.22	14688	1.000	0.299	-0.083	0.163	0.278	186.823353	1.771455	1730.92	-953
5	GUIDE	used	9.62	14678	1.000	-0.022	-0.260	0.332	0.479	187.153754	1.617178	1663.03	357
6	GUIDE	used	7.62	14705	1.000	0.025	0.074	0.142	0.238	187.433784	2.618460	-1992.54	-445
7	GUIDE	used	9.95	14660	1.000	-0.319	0.140	0.379	0.568	187.758191	2.290324	-1498.03	1138

2.4 Star Slots

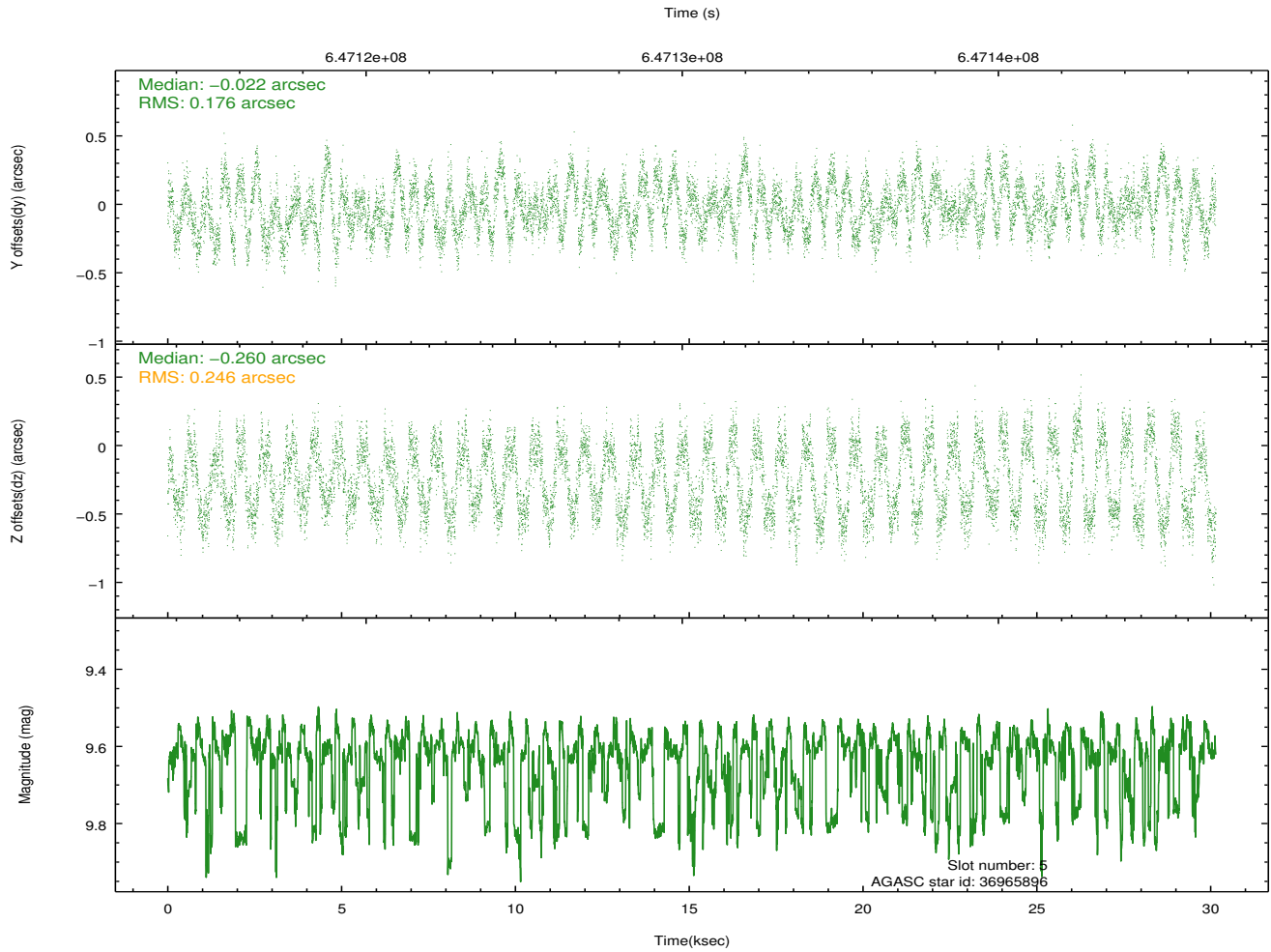
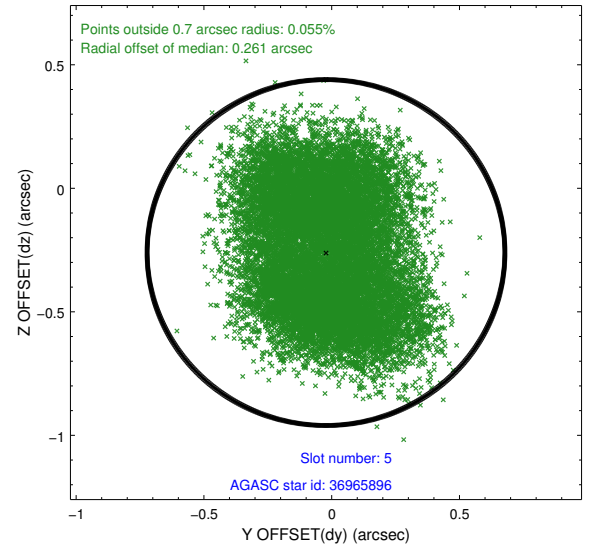
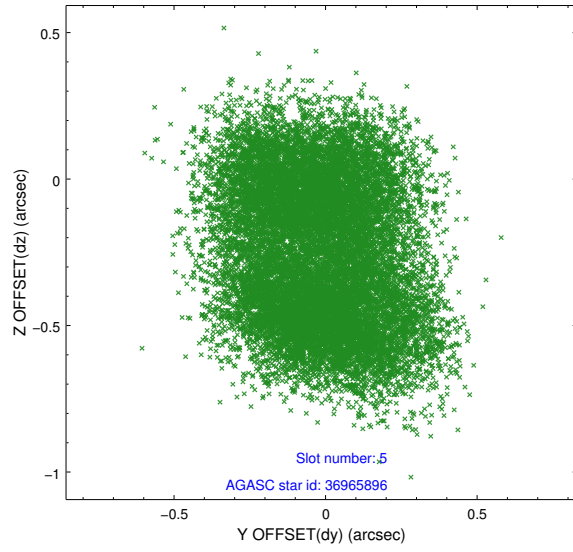
2.4.1 Slot 3



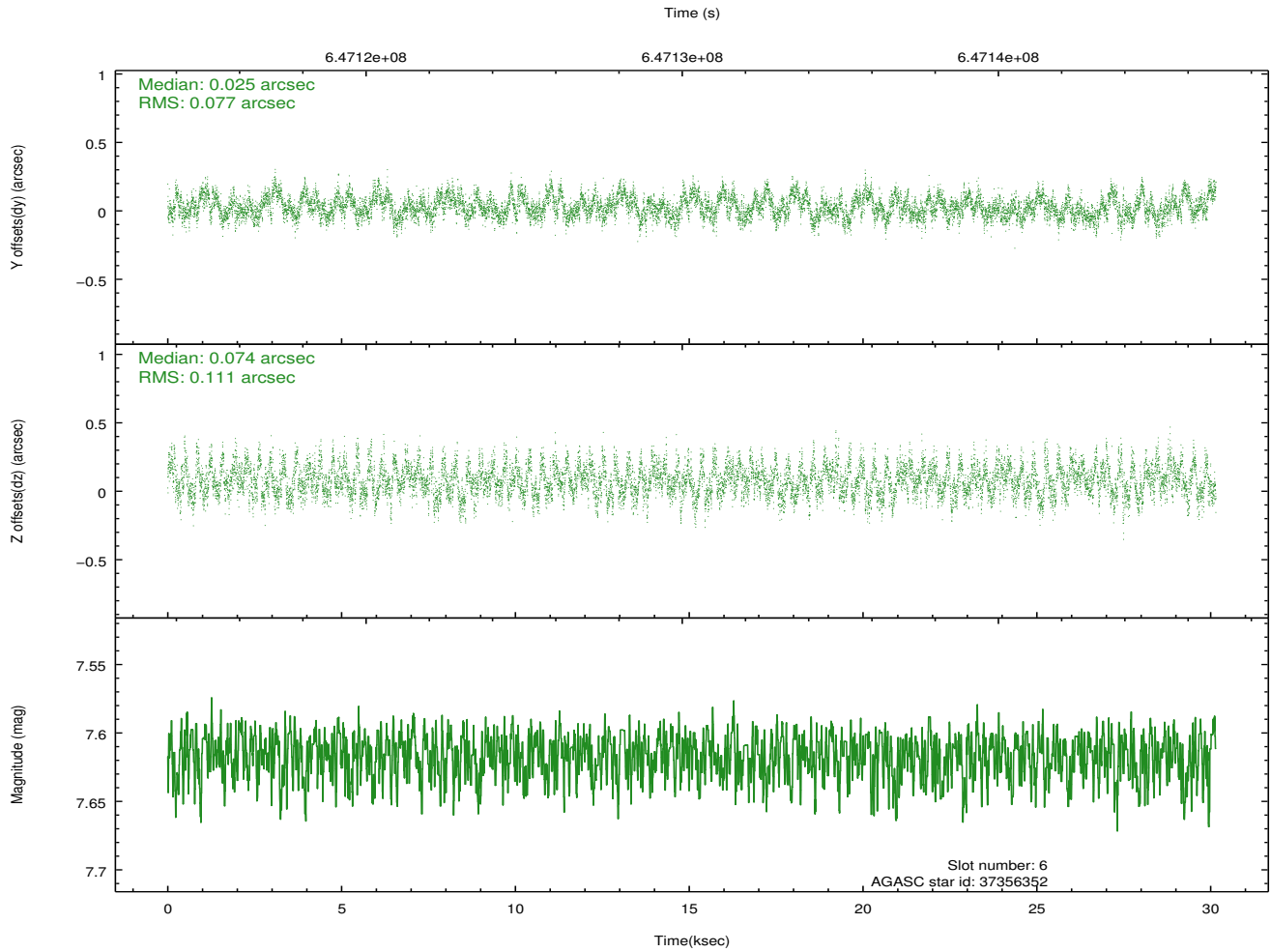
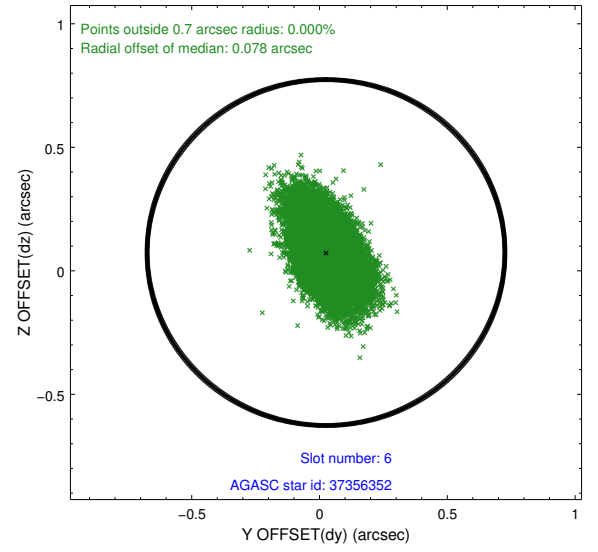
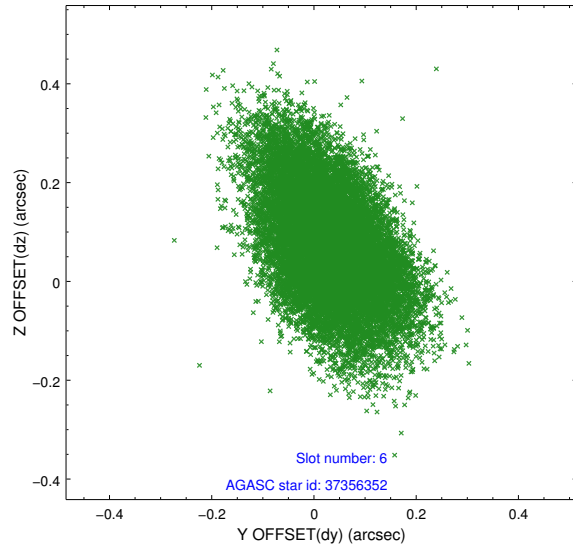
2.4.2 Slot 4



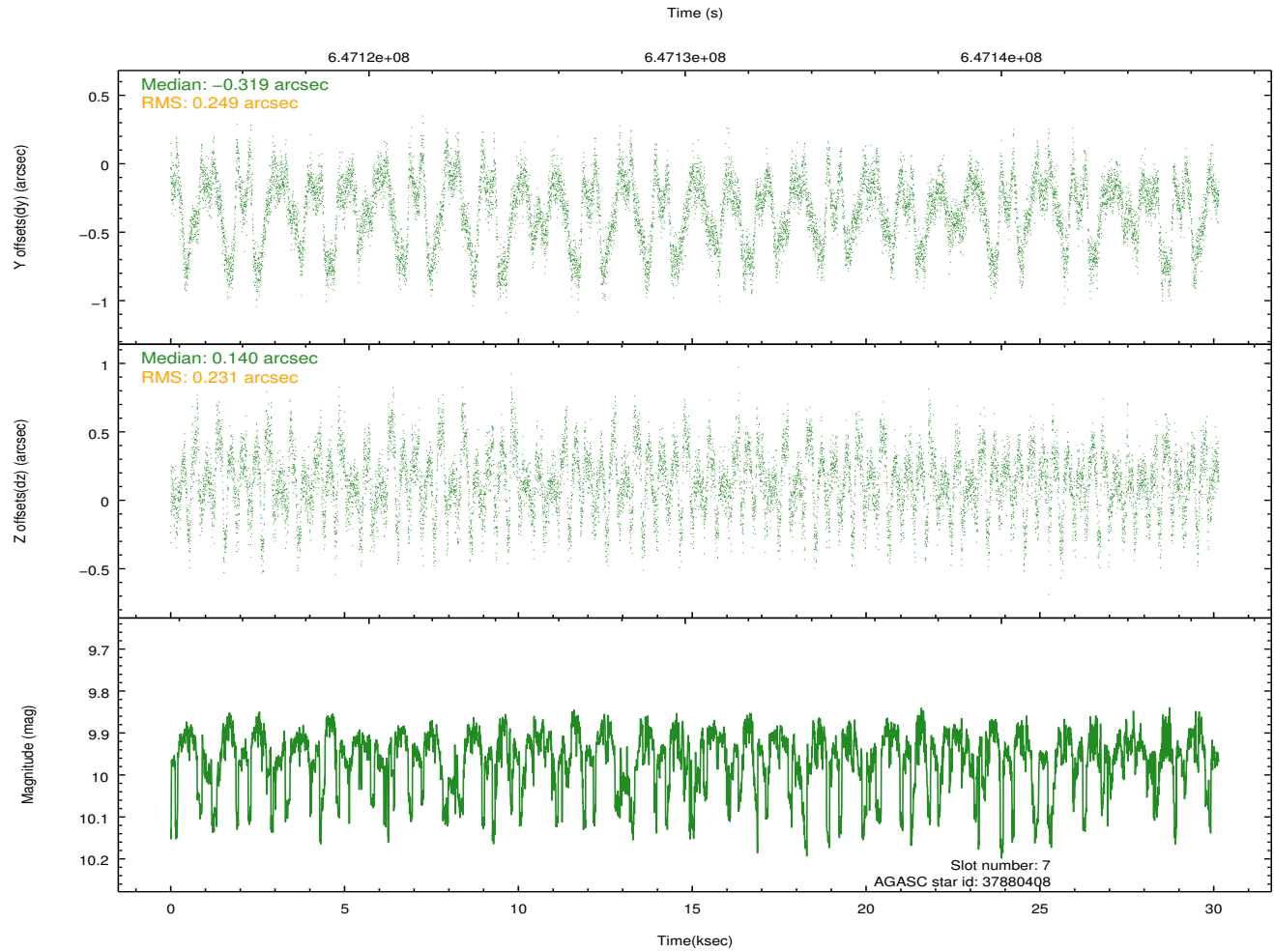
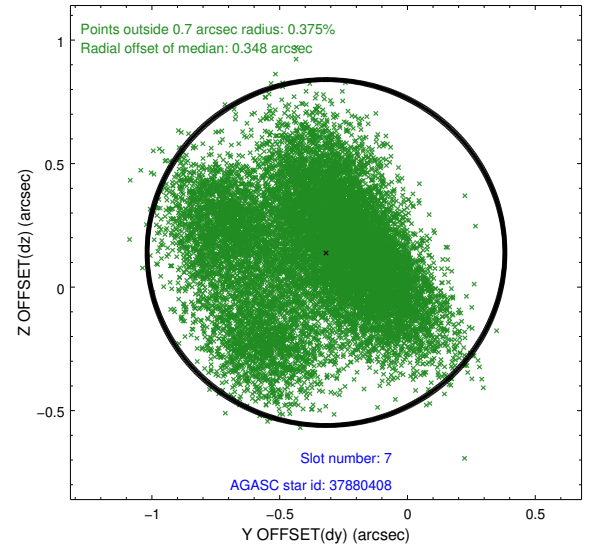
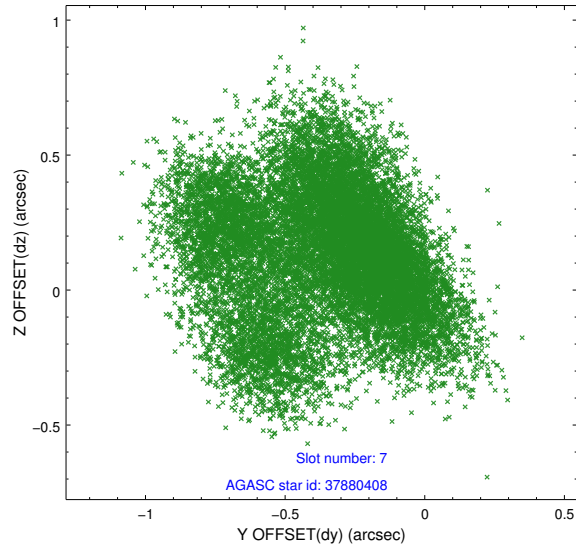
2.4.3 Slot 5



2.4.4 Slot 6

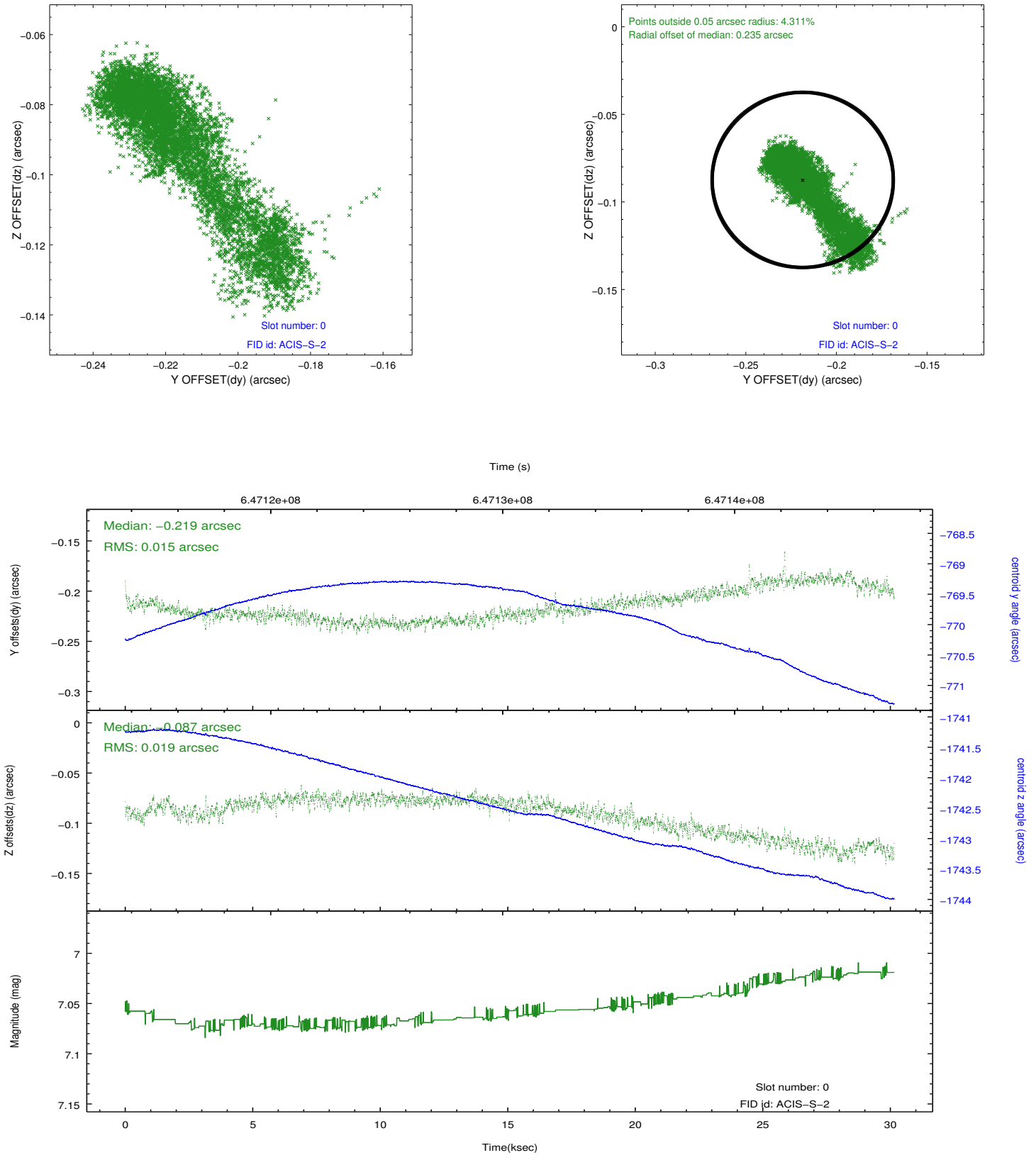


2.4.5 Slot 7

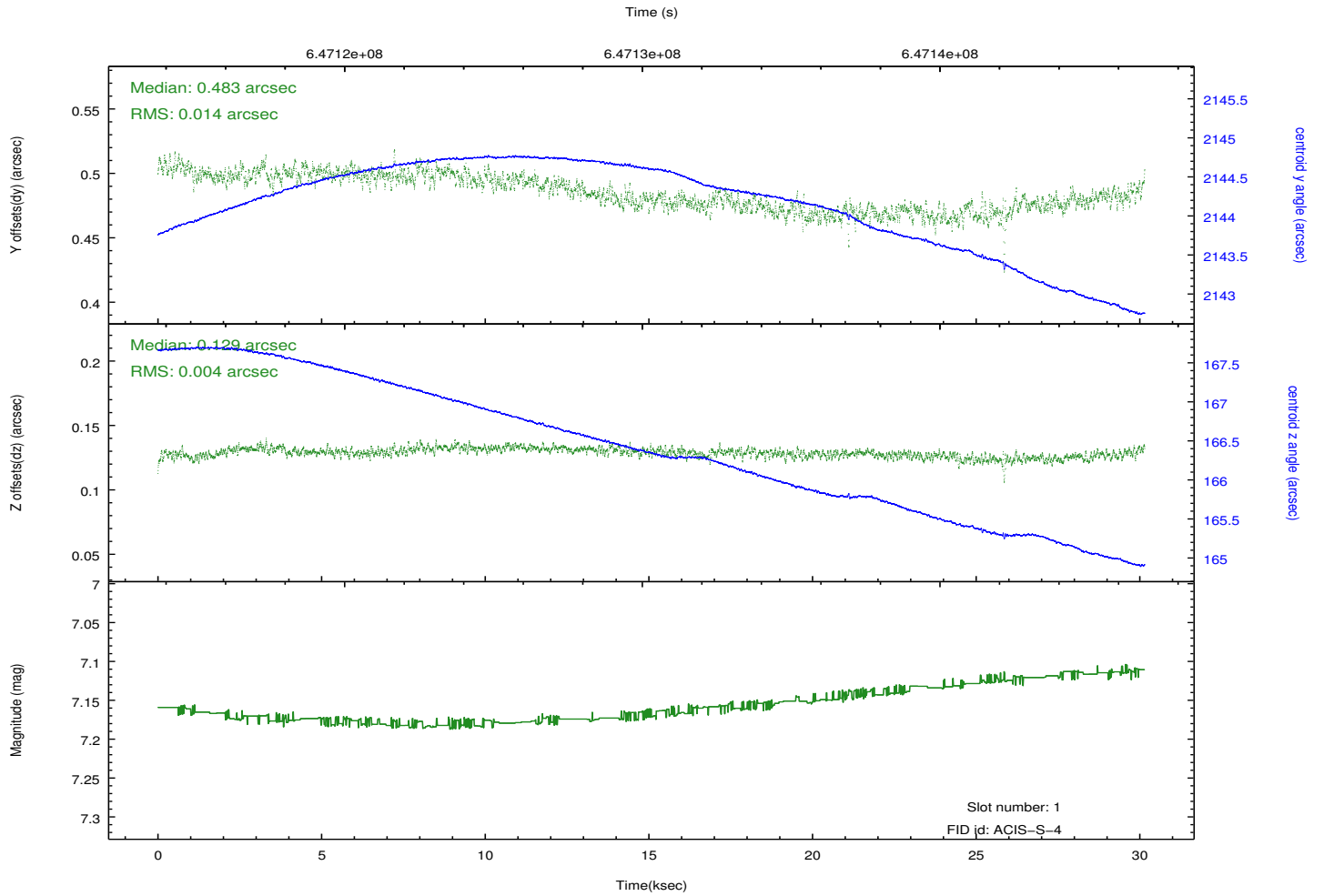
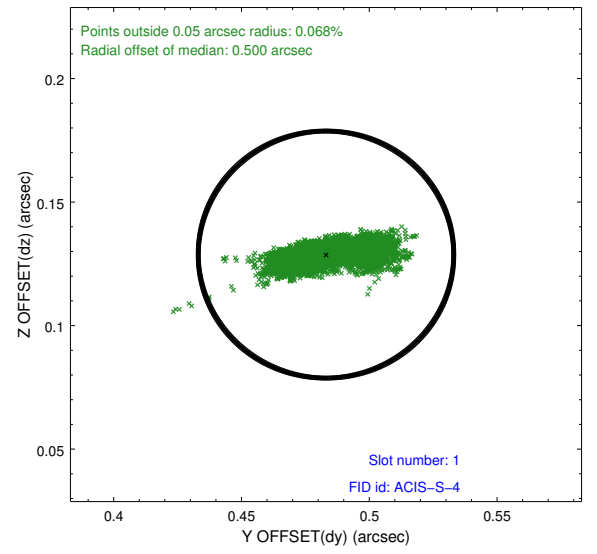
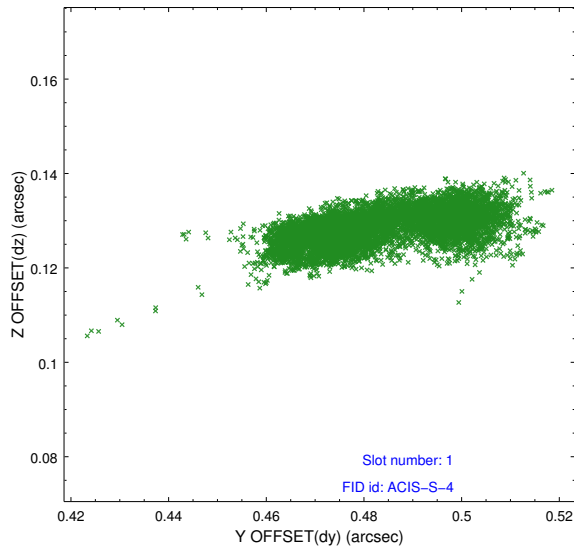


2.5 FID Slots

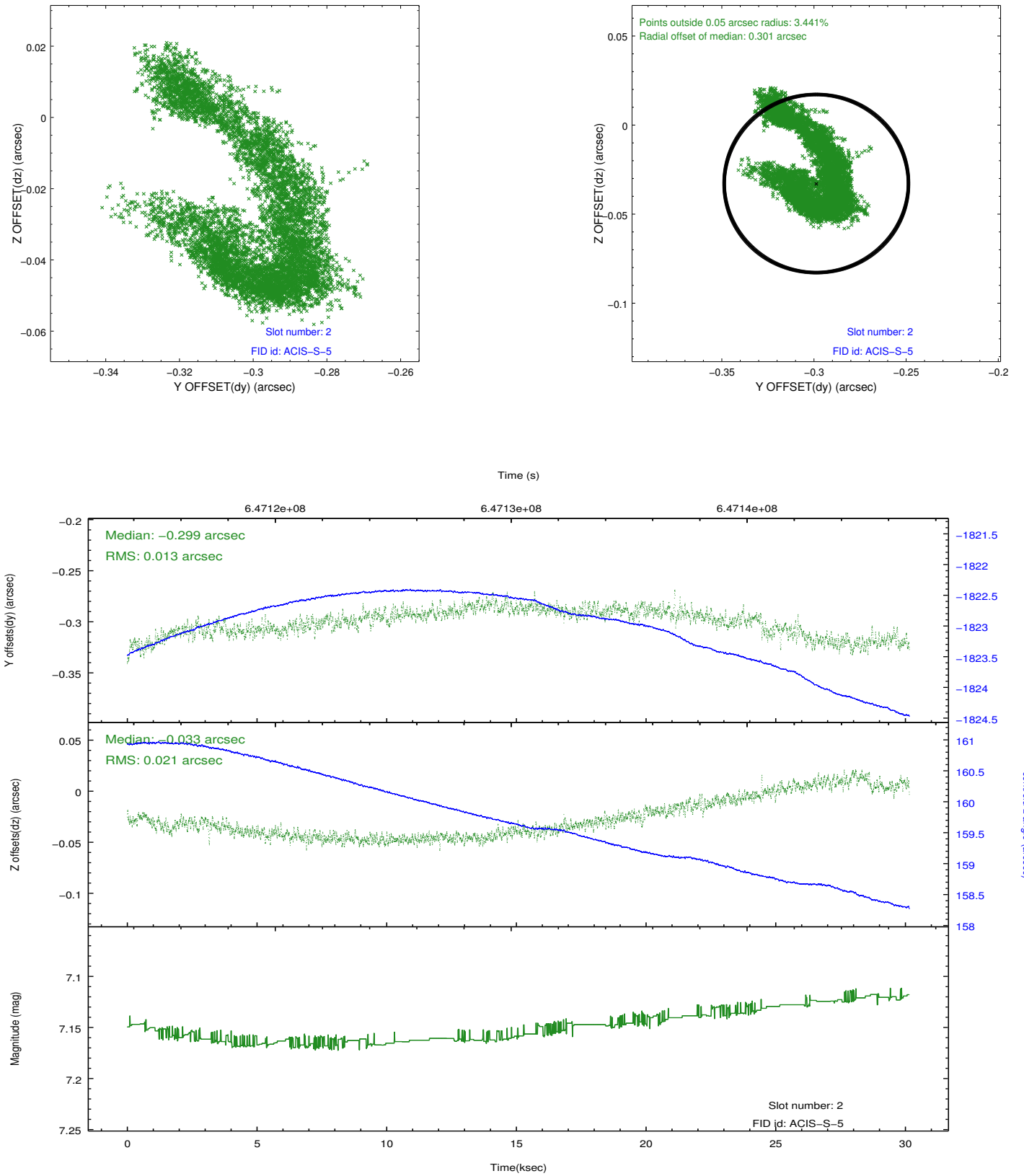
2.5.1 Slot 0



2.5.2 Slot 1

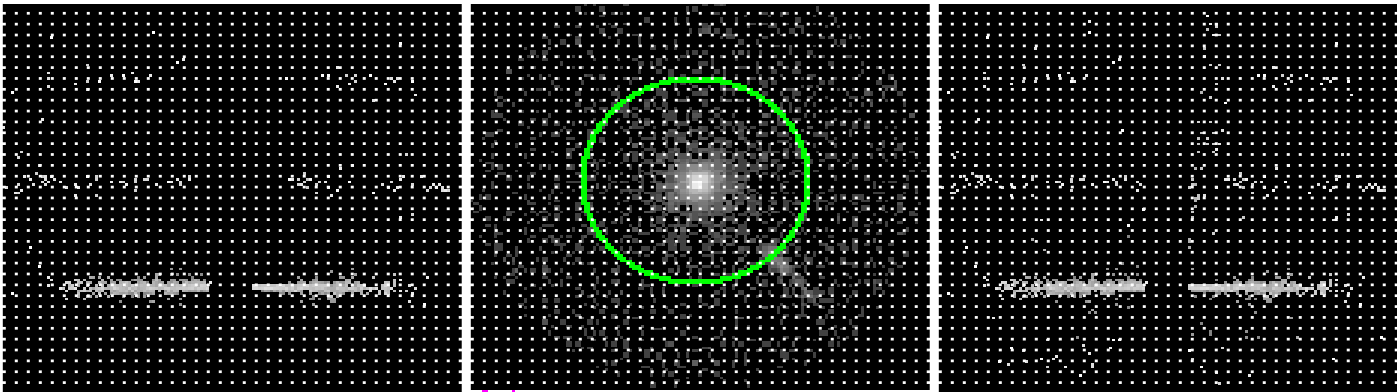


2.5.3 Slot 2



3 Gratings

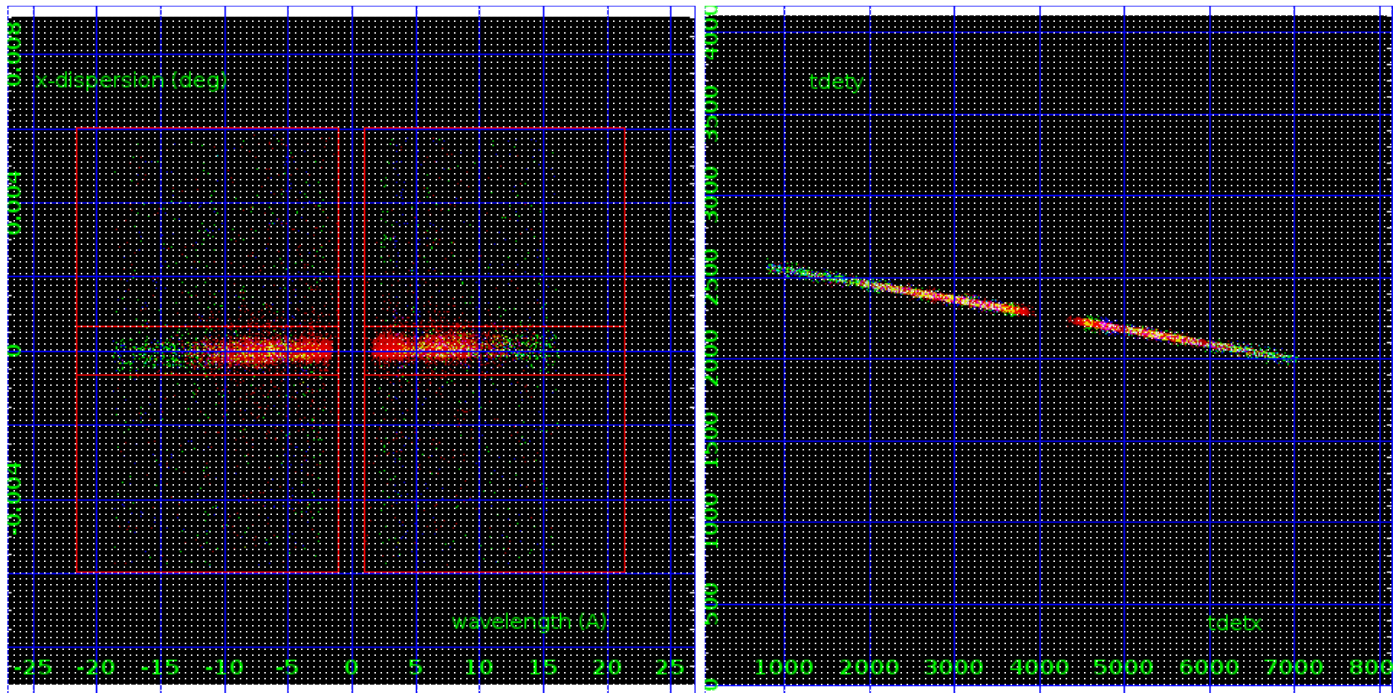
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

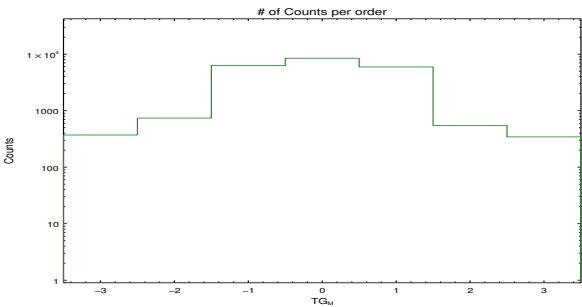
HEG Order Sort ALL

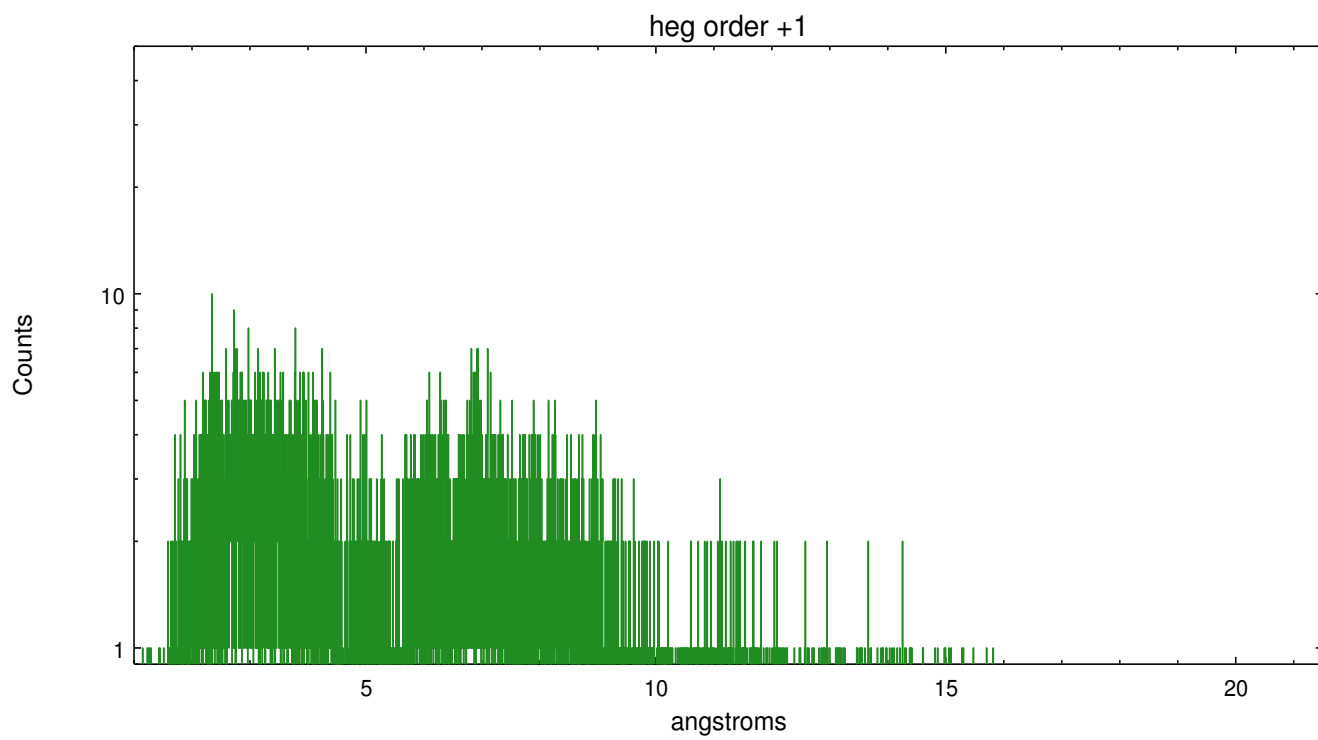
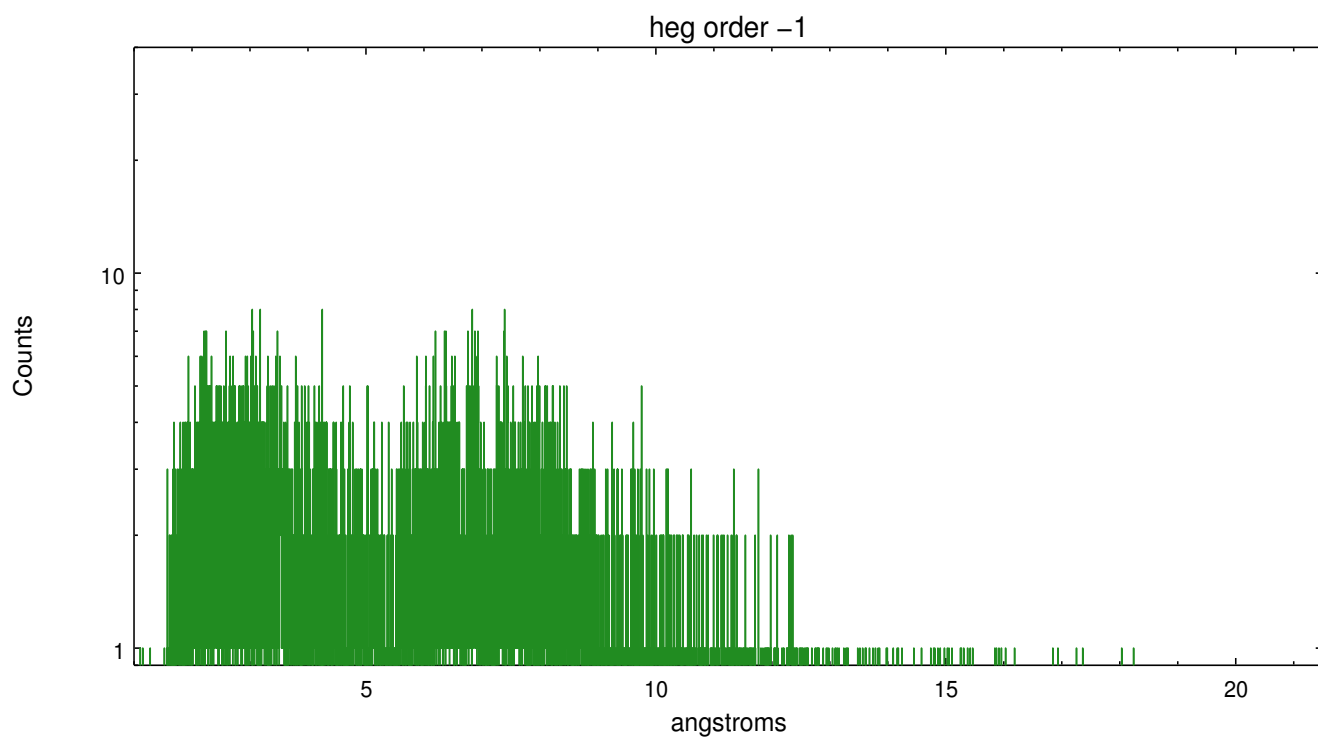


Spot Image HEG

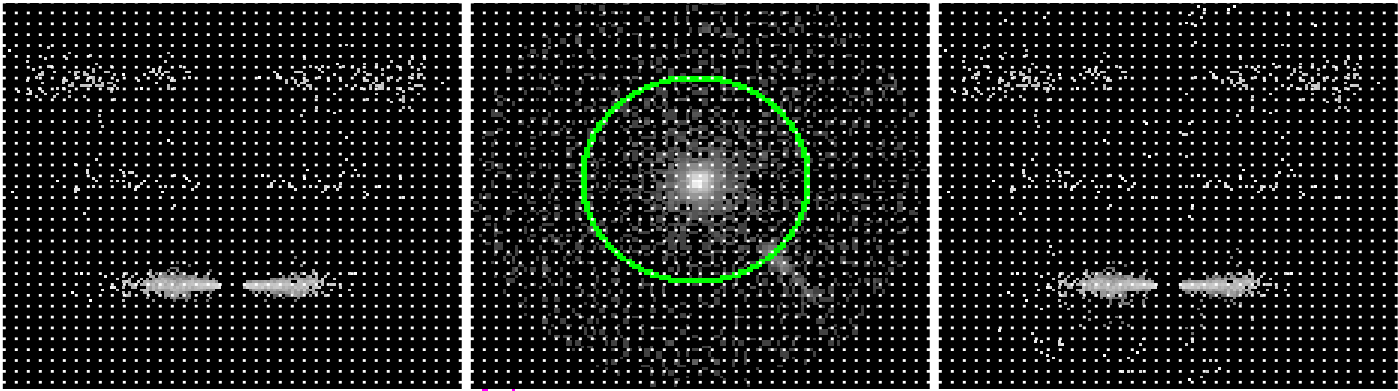
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	371	740	6290	8459	5933	549	344





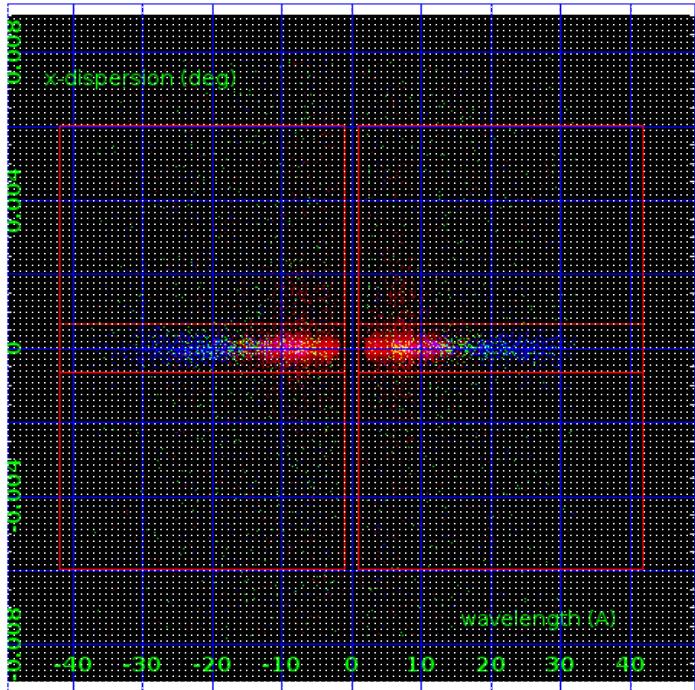
3.2 MEG Arm



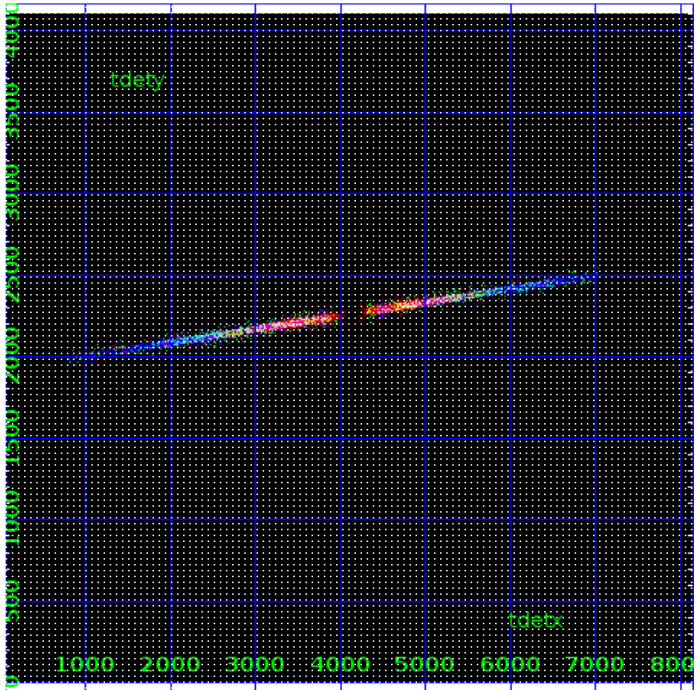
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

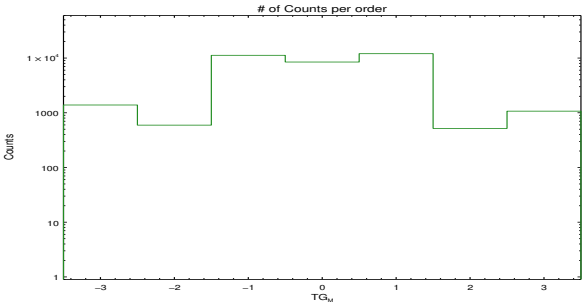


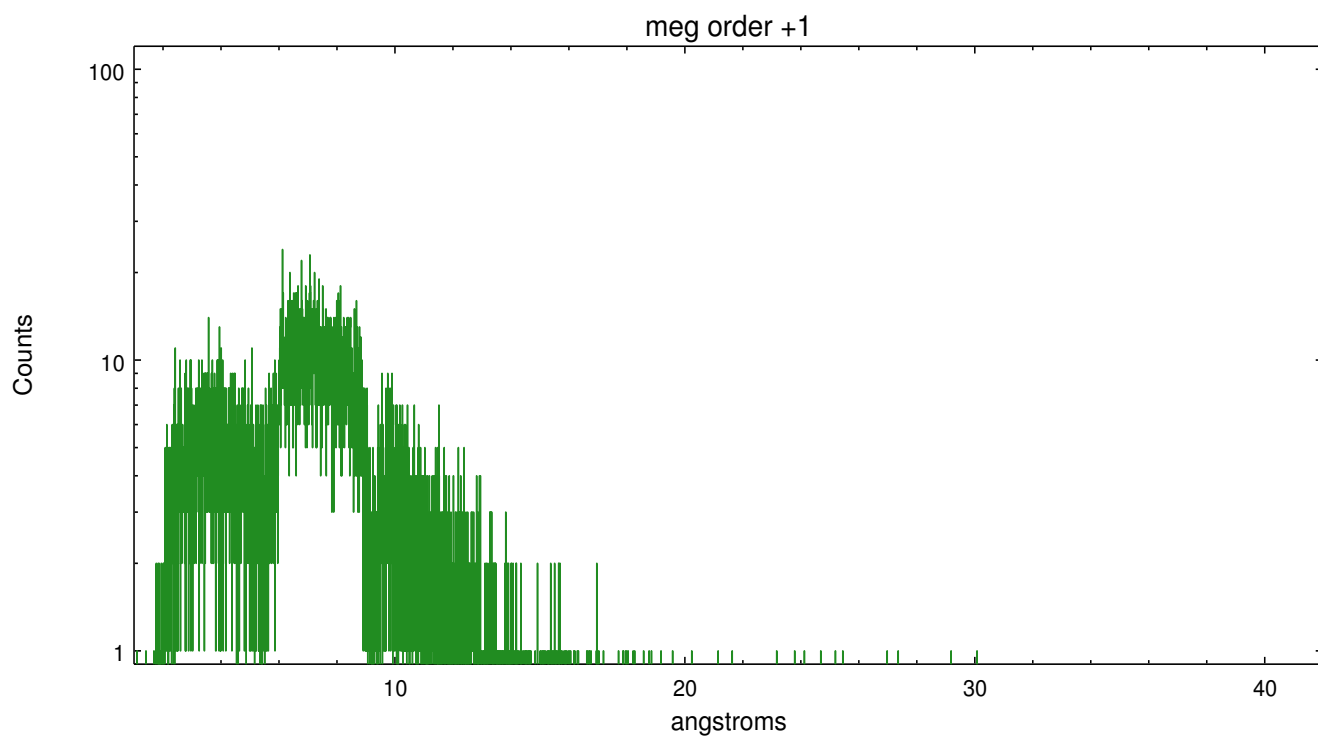
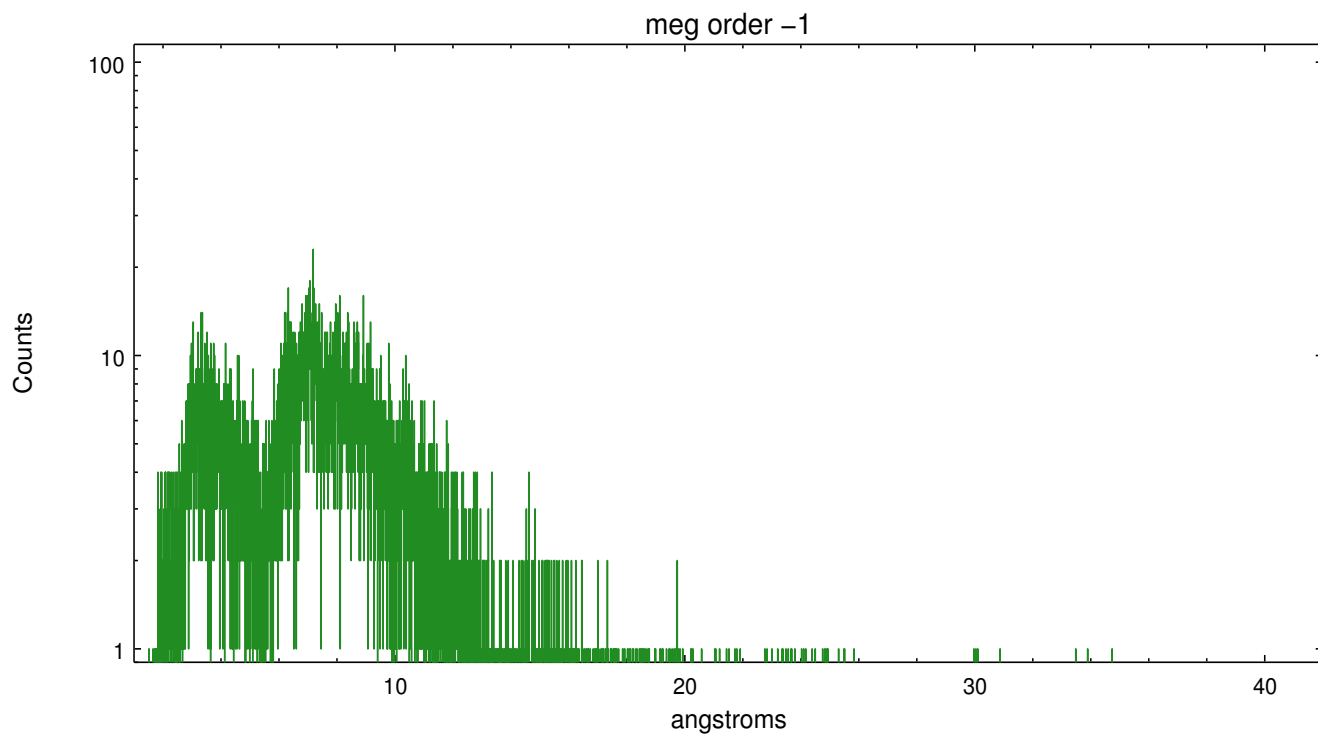
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1387	594	11219	8459	12026	518	1070





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.07.06
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.944724526286

A.2 Comments

Zeroth order piled up. The zeroth order sky position was determined using a software tool developed by CXC called findzero, which is available in CIAO as part of the tgdetect2 tool. The tool calculates the point of intersection of the readout streak on the ACIS CCD and the meg or leg dispersed spectral arm, rather than using a centroid position of the source. The findzero results are more accurate than source centroid in this case.