

V&V Reference Report

L2 ASCDS Version : 8.4.4

Observation 10782 - L2 Version 3
Chandra X-Ray Center

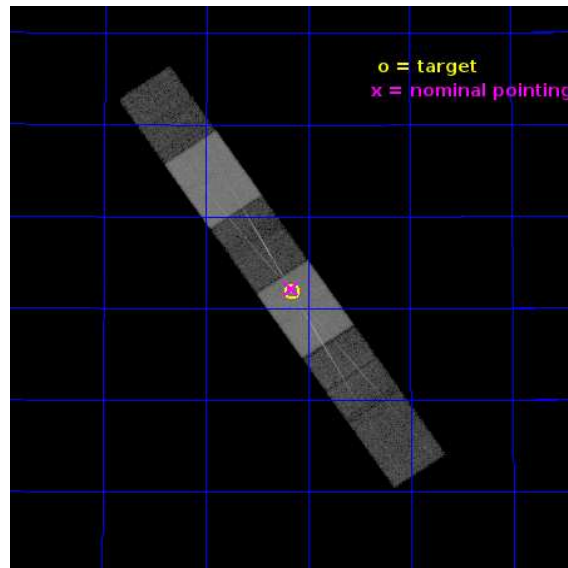
L2 Processing Date : Jul 22 2015

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1 Front

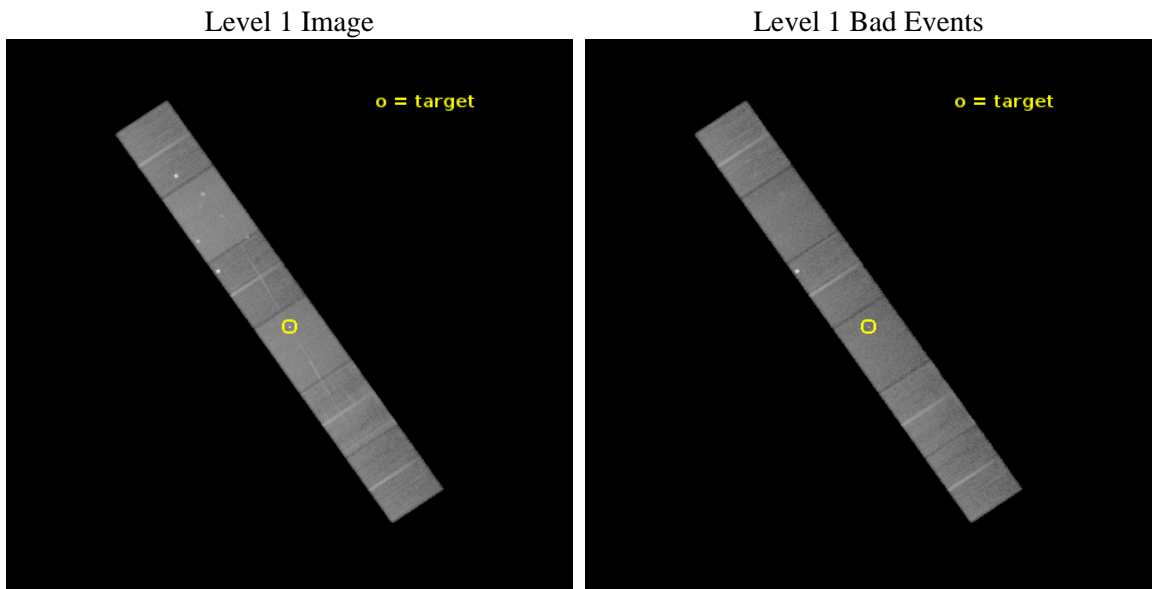
seq_num	701946	Sequence number
obs_id	10782	Observation id
title	Deconstructing AGN X-ray Spectra - Time for a Paradigm Shift?	Prop
observer	Dr Tracey Turner	Principal investigator
object	NGC 4051	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	180.79	Observer's specified target RA [deg]
dec_targ	44.531333	Observer's specified target Dec [deg]
ra_nom	180.79032085305	Nominal RA [deg]
dec_nom	44.53615664776	Nominal Dec [deg]
roll_nom	55.656432138415	Nominal Roll [deg]
revision	3	Processing version of data
ontime	23652.056203246	Sum of GTIs [s]
livetime	23270.054980683	Livetime [s]
ontime4	23652.056203246	Sum of GTIs [s]
ontime5	23652.056203246	Sum of GTIs [s]
ontime6	23652.056203246	Sum of GTIs [s]
ontime7	23652.056203246	Sum of GTIs [s]
ontime8	23649.515202999	Sum of GTIs [s]
ontime9	23646.974282503	Sum of GTIs [s]
l2events	325956	Number of level 2 events



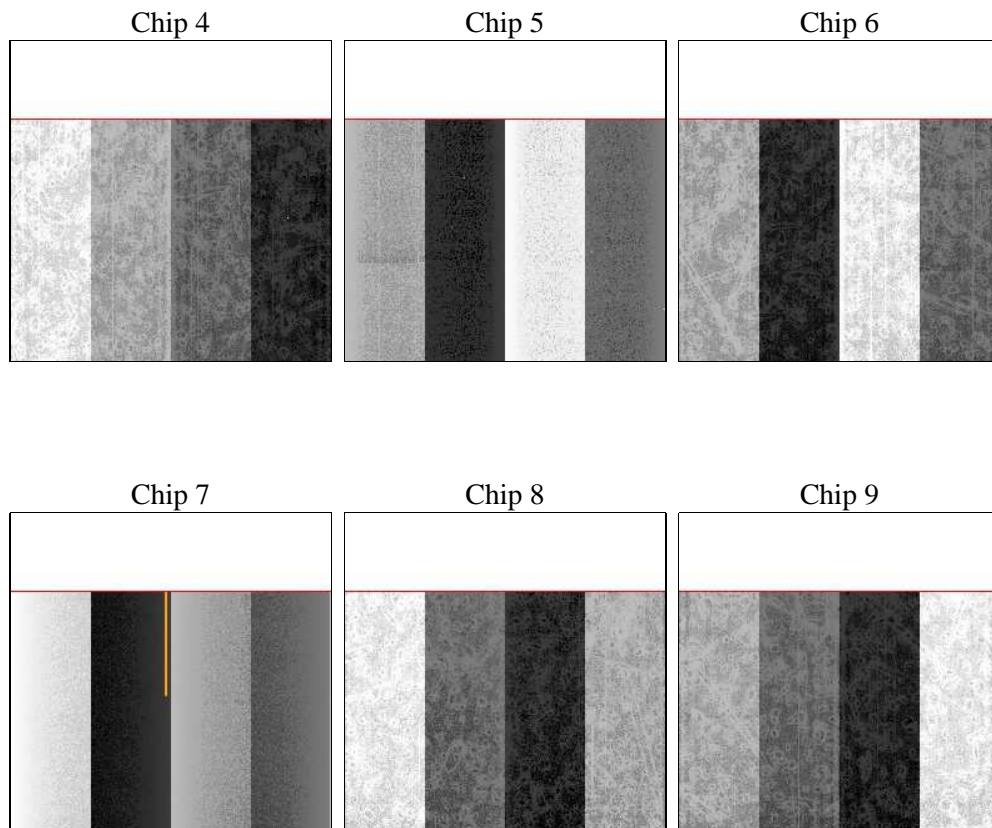
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	23500.000000	[s] Scheduled observation exposure time
ascdsver	10.4.1	Processing system revision	ontime	23652.056203246	Sum of GTIs [s]
caldsver	4.6.8	 	ontime4	23652.056203246	Sum of GTIs [s]
date	2015-07-22T17:03:13	Date and time of file creation	ontime5	23652.056203246	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	23652.056203246	Sum of GTIs [s]
			ontime7	23652.056203246	Sum of GTIs [s]
			ontime8	23649.515202999	Sum of GTIs [s]
			ontime9	23646.974282503	Sum of GTIs [s]
			l1events	1365486	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			ra_pos	(4007.81, 4061.50)	src1a sky pixel position

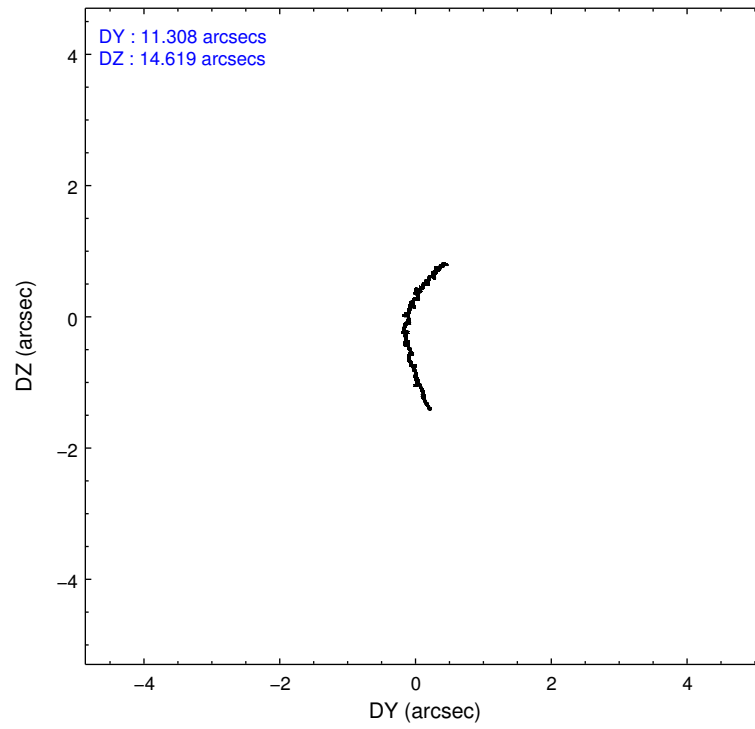
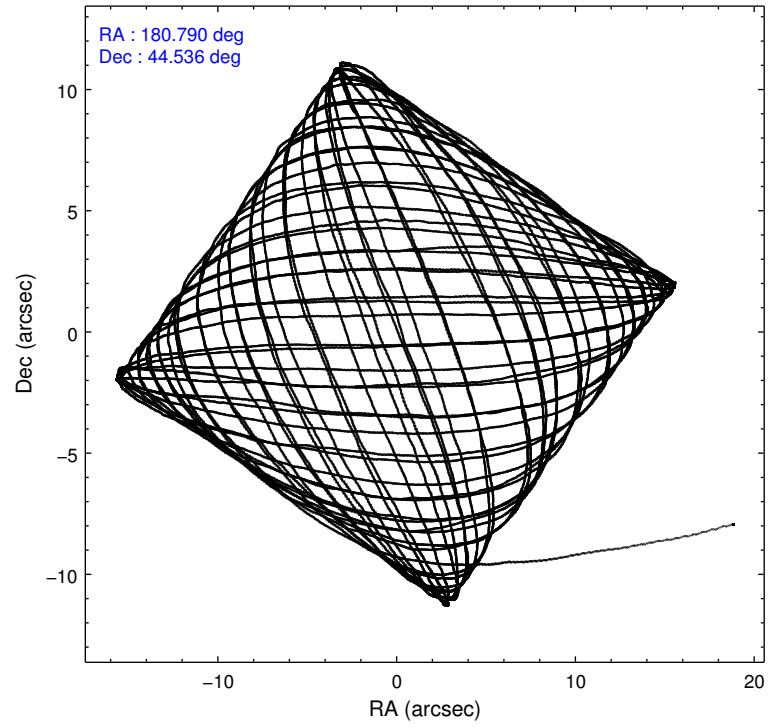
2.1.4 Events

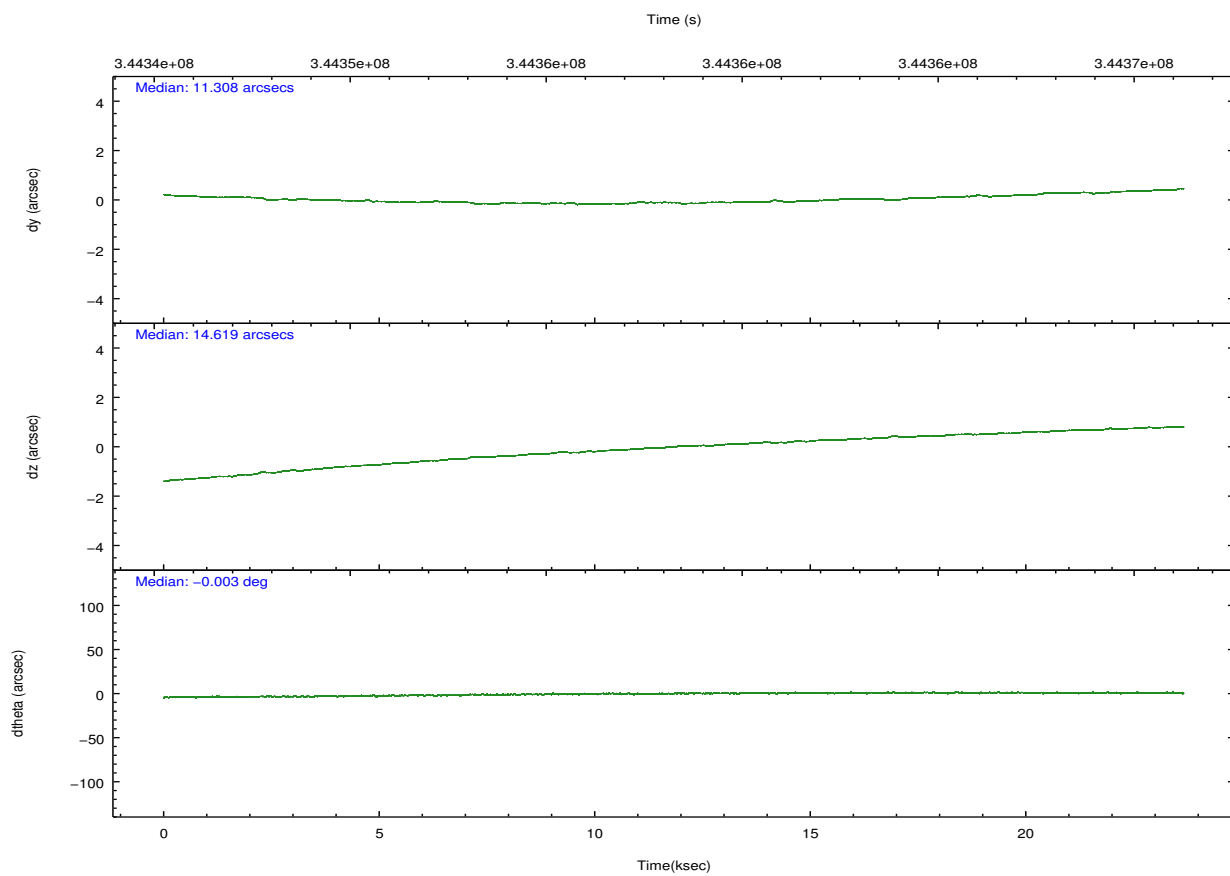
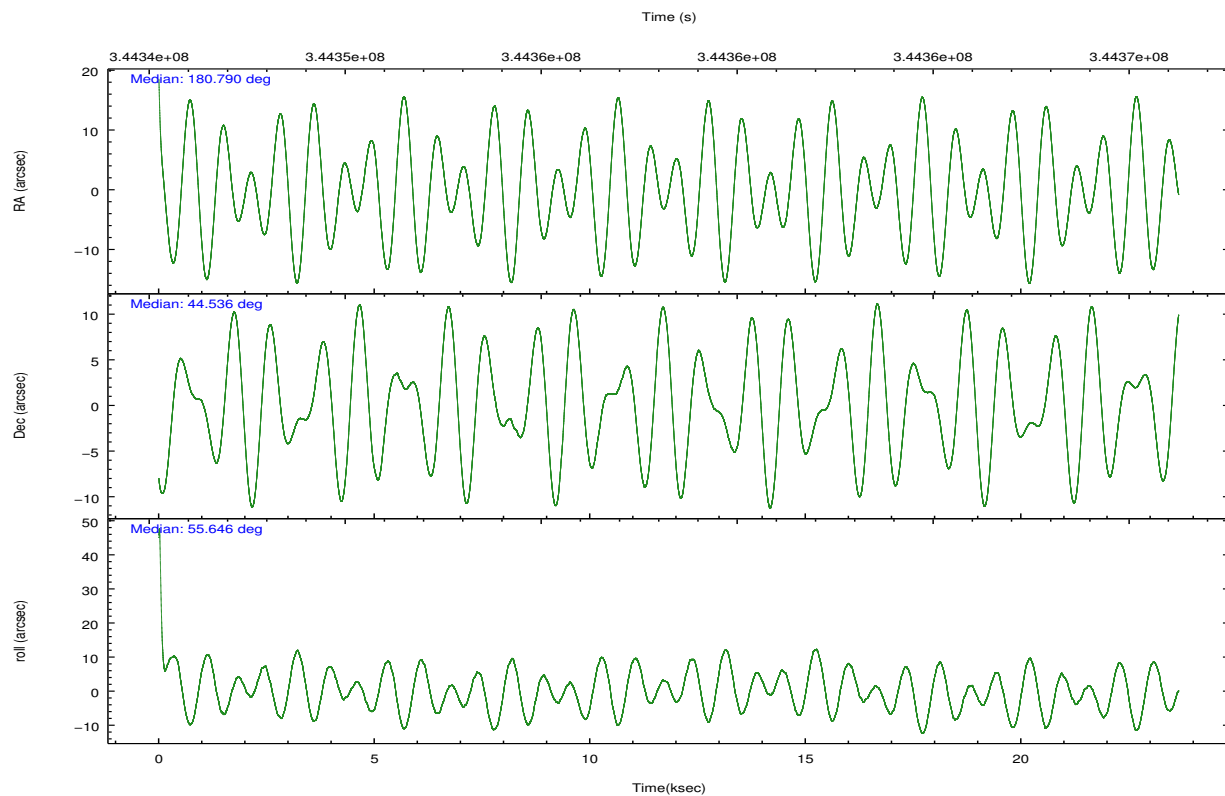
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	207645	284854	196684	261189	235553	179561	grade 0 events	18791	14536	12356	11267	18508	9683
rejected events	175292	151625	169639	146111	178884	156152		9%	5%	6%	4%	7%	5%
rejected %	84%	53%	86%	55%	75%	86%	grade 1 events	206	648	10193	377	174	91
								0%	0%	5%	0%	0%	0%
							grade 2 events	5163	39213	5340	23813	12427	4778
								2%	13%	2%	9%	5%	2%
							grade 3 events	2368	5430	2369	10073	6130	2279
								1%	1%	1%	3%	2%	1%
							grade 4 events	2307	5259	2392	10119	5554	2293
								1%	1%	1%	3%	2%	1%
							grade 5 events	8192	20770	8699	23677	11431	8949
								3%	7%	4%	9%	4%	4%
							grade 6 events	3794	69039	4639	60020	14154	4426
								1%	24%	2%	22%	6%	2%
							grade 7 events	166824	129959	150696	121843	167175	147062
								80%	45%	76%	46%	70%	81%

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	180.787928	180.7903208530506	CCD I2 on	N	N
[deg] Pointing Dec	44.508892	44.53615664776014	CCD I3 on	N	N
[deg] Pointing Roll	55.501456	55.65643213841462	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)	344346594.184000	344345558.47127	CCD S5 on	Y	Y
Observation start date	2008-11-29T11:48:49	2008-11-29T11:32:38	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	344370094.184000	344370668.41001	On-chip summing requested	N	N
Observation end date	2008-11-29T18:20:29	2008-11-29T18:31:08	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



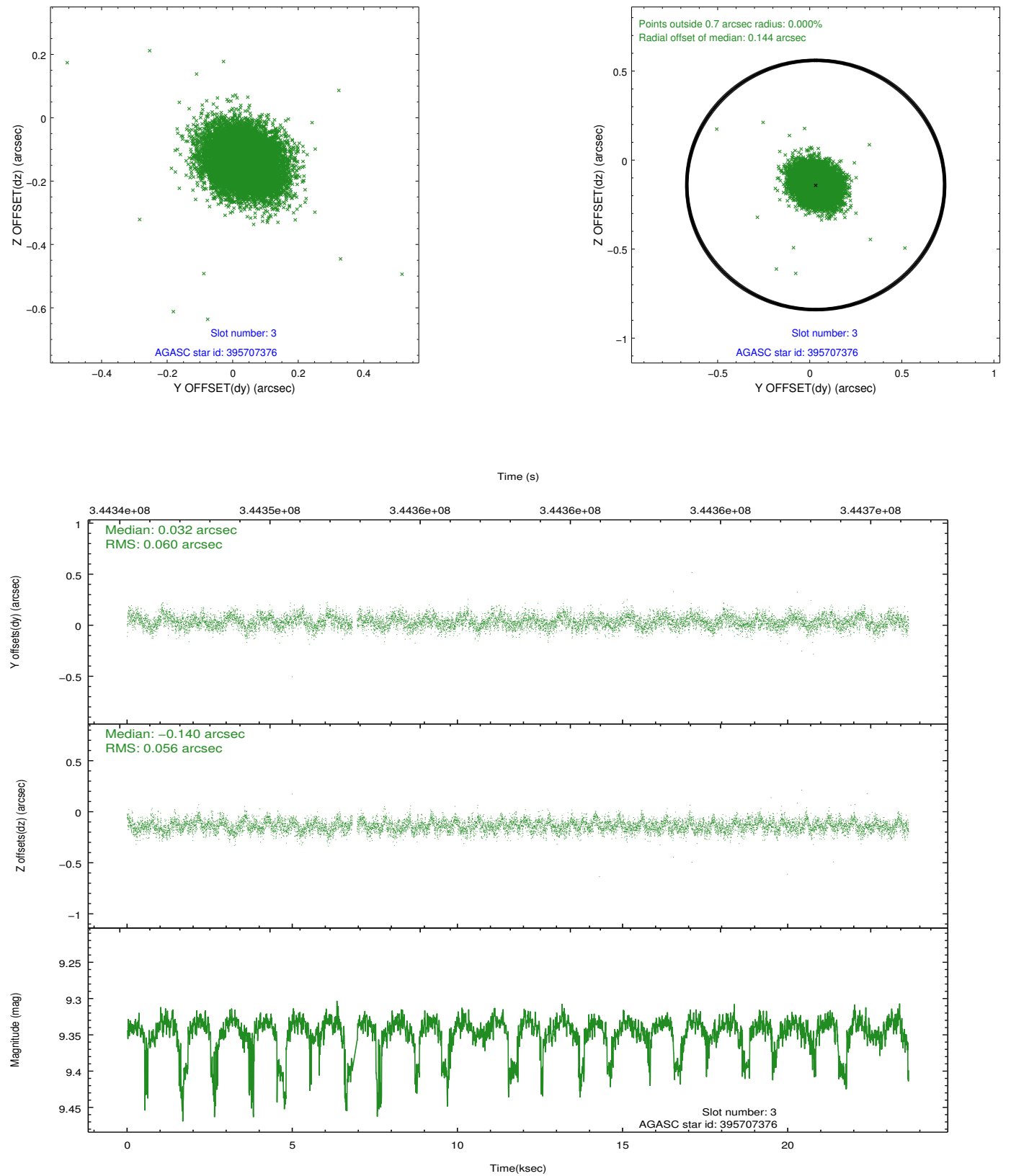


Slot Statistics

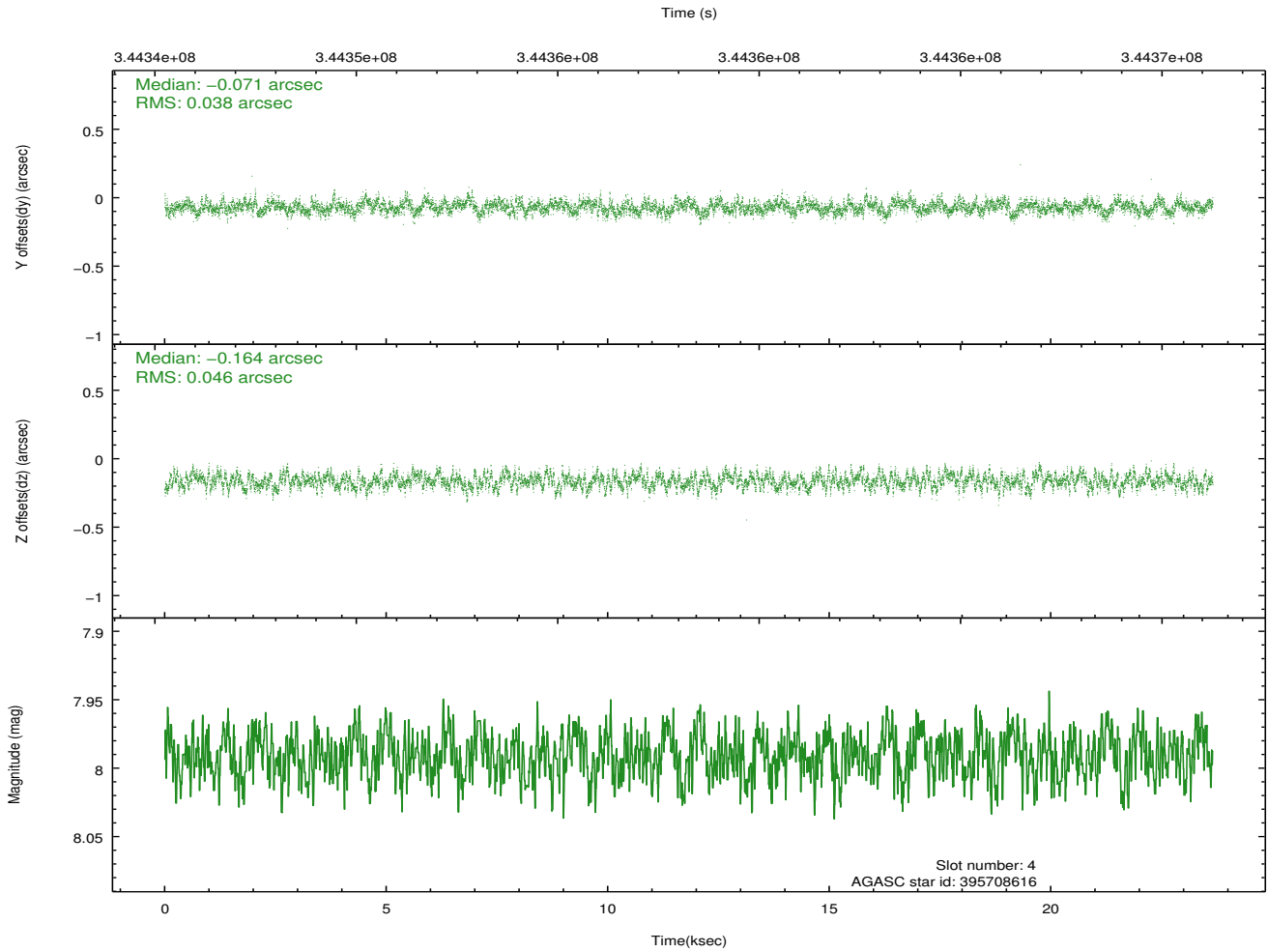
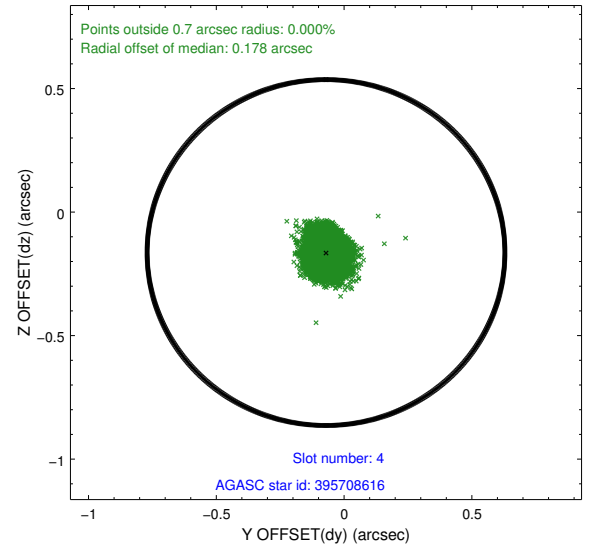
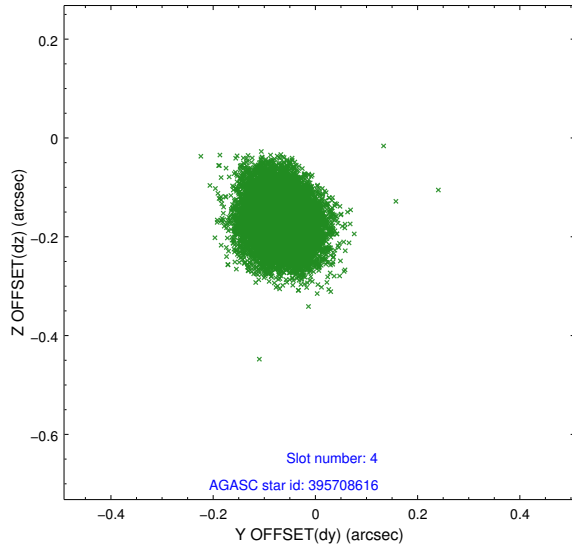
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.86	5770	-0.087	-0.059	0.021	0.032	0.000000	0.000000	-764.11	-1798.06
1	FID		ACIS-S-4	6.93	5770	0.151	0.058	0.011	0.024	0.000000	0.000000	2149.37	110.34
2	FID		ACIS-S-5	6.98	5770	-0.094	0.010	0.019	0.029	0.000000	0.000000	-1816.76	104.17
3	GUIDE	used	395707376	9.34	11440	0.032	-0.140	0.086	0.141	180.967983	44.858789	1298.70	335.27
4	GUIDE	used	395708616	7.99	11538	-0.071	-0.164	0.064	0.103	180.101872	44.630343	-628.98	1700.27
5	GUIDE	used	395708696	8.88	11529	0.043	0.084	0.068	0.109	180.383726	44.624291	-242.00	1090.67
6	GUIDE	used	395709608	8.36	11537	0.058	0.076	0.065	0.105	181.055130	44.450389	216.75	-684.16
7	GUIDE	used	395710032	8.80	11529	-0.065	0.144	0.074	0.121	181.512910	44.376001	669.73	-1803.28

2.4 Star Slots

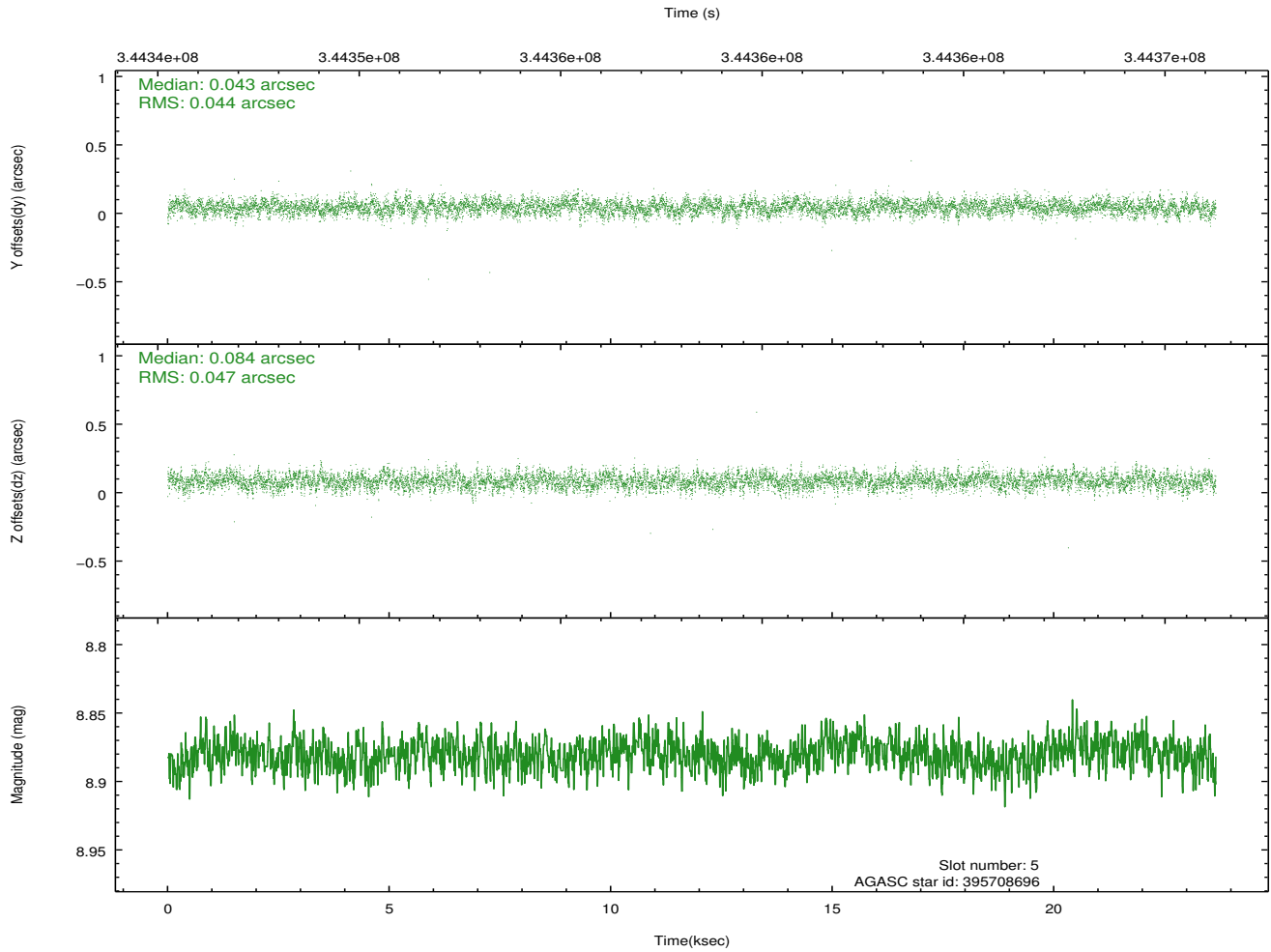
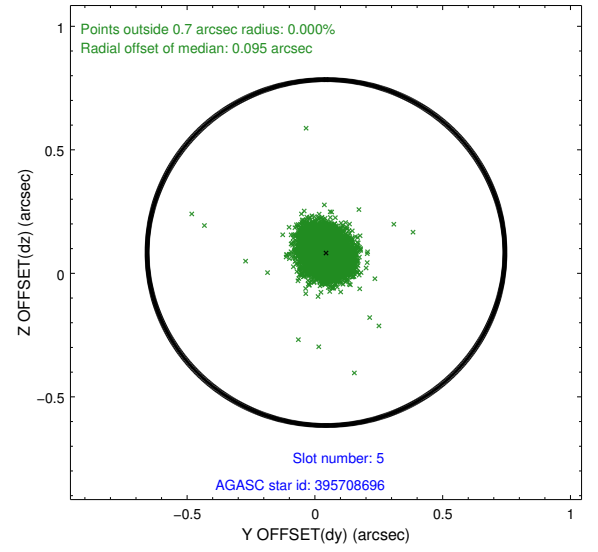
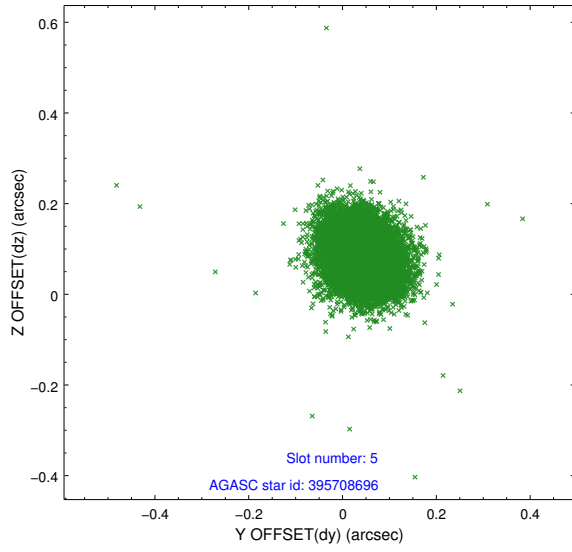
2.4.1 Slot 3



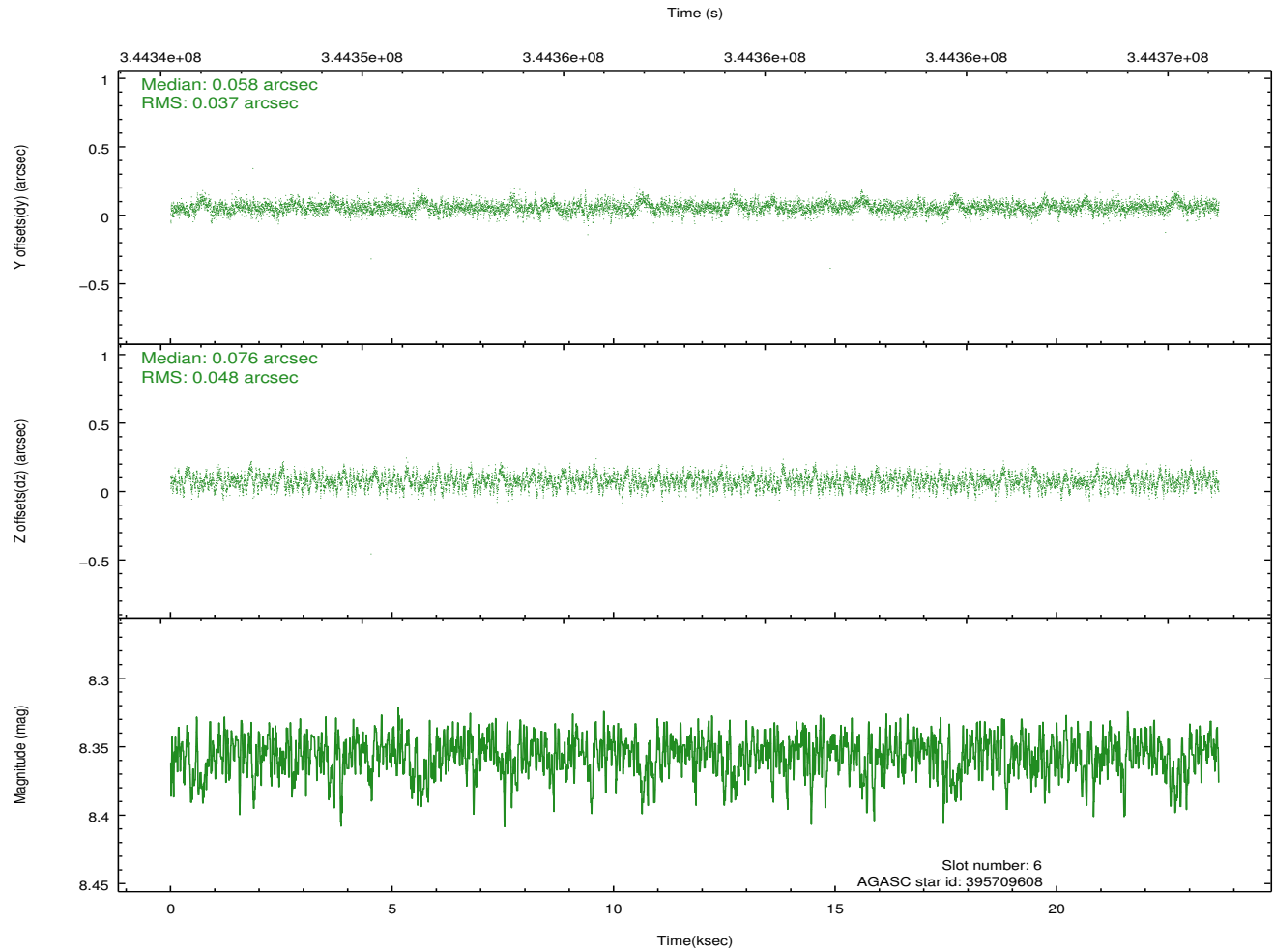
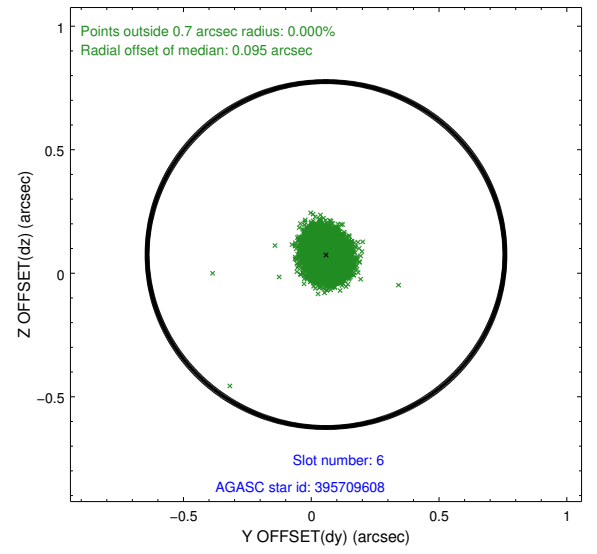
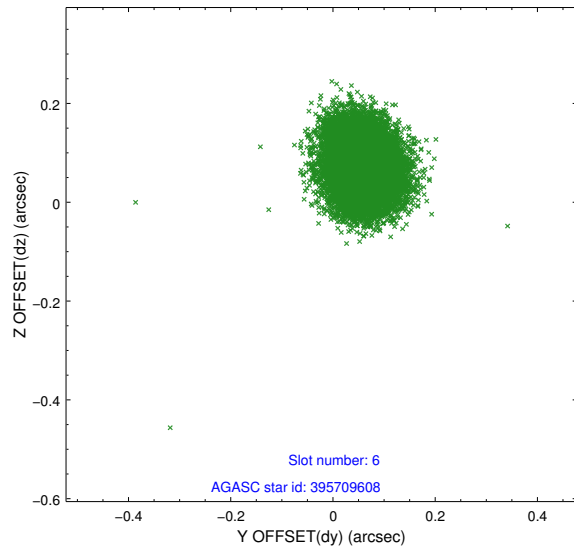
2.4.2 Slot 4



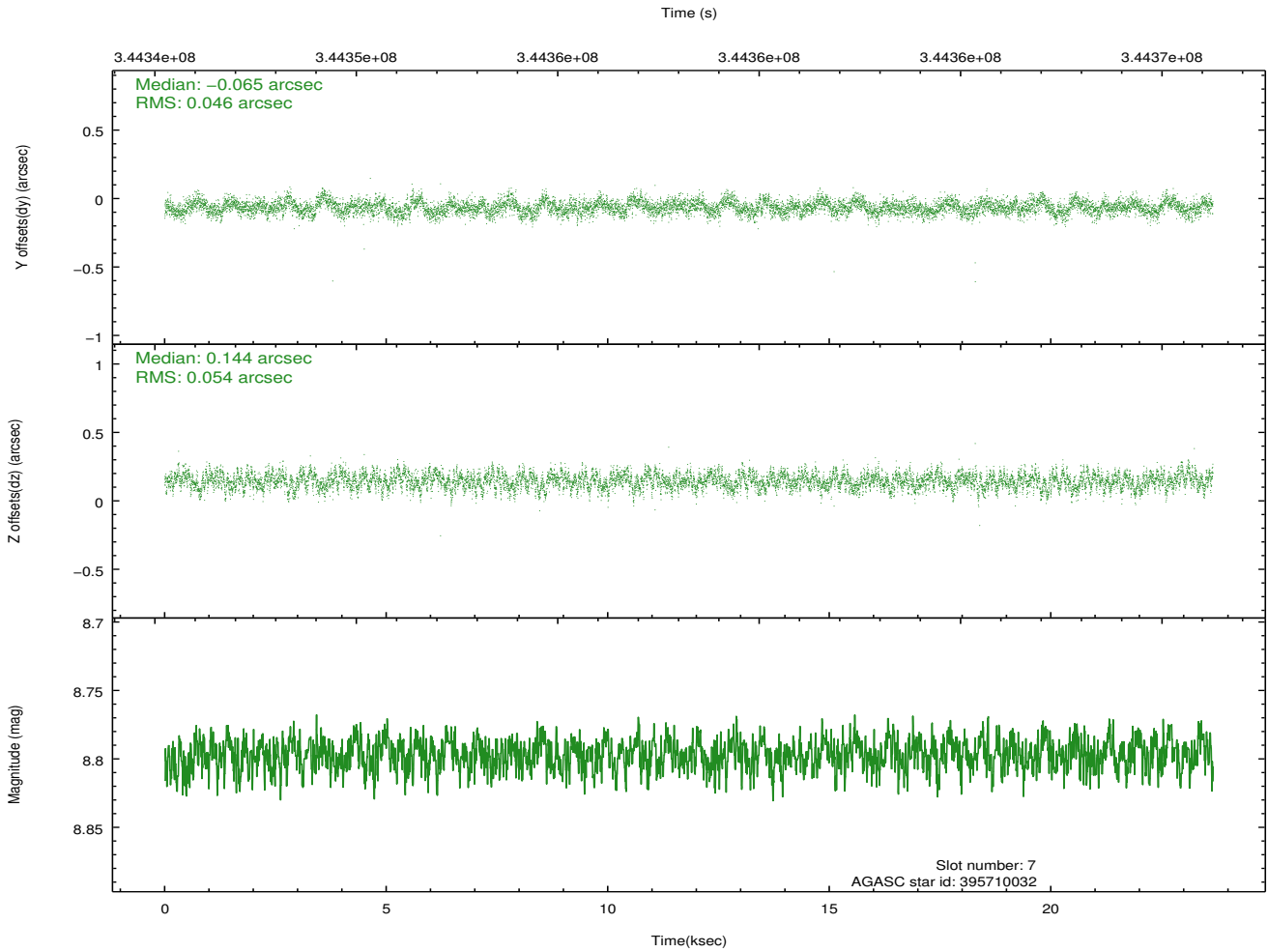
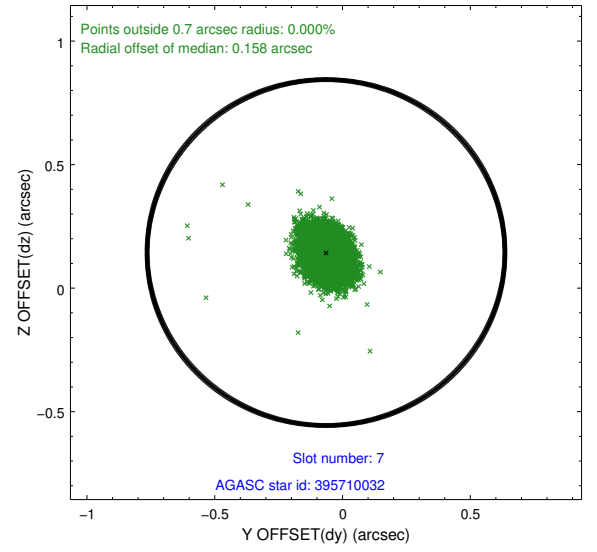
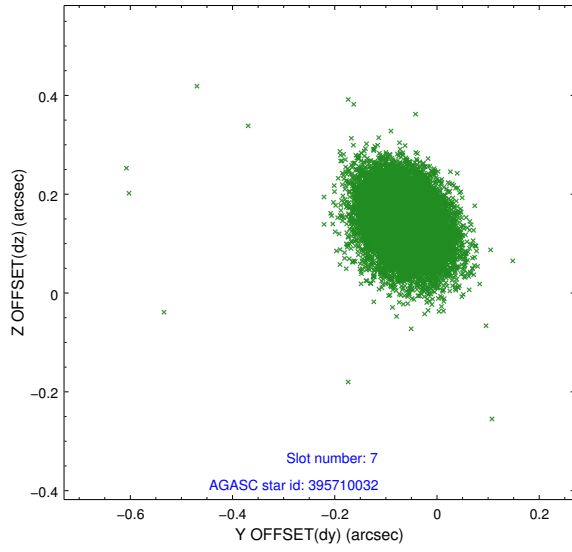
2.4.3 Slot 5



2.4.4 Slot 6

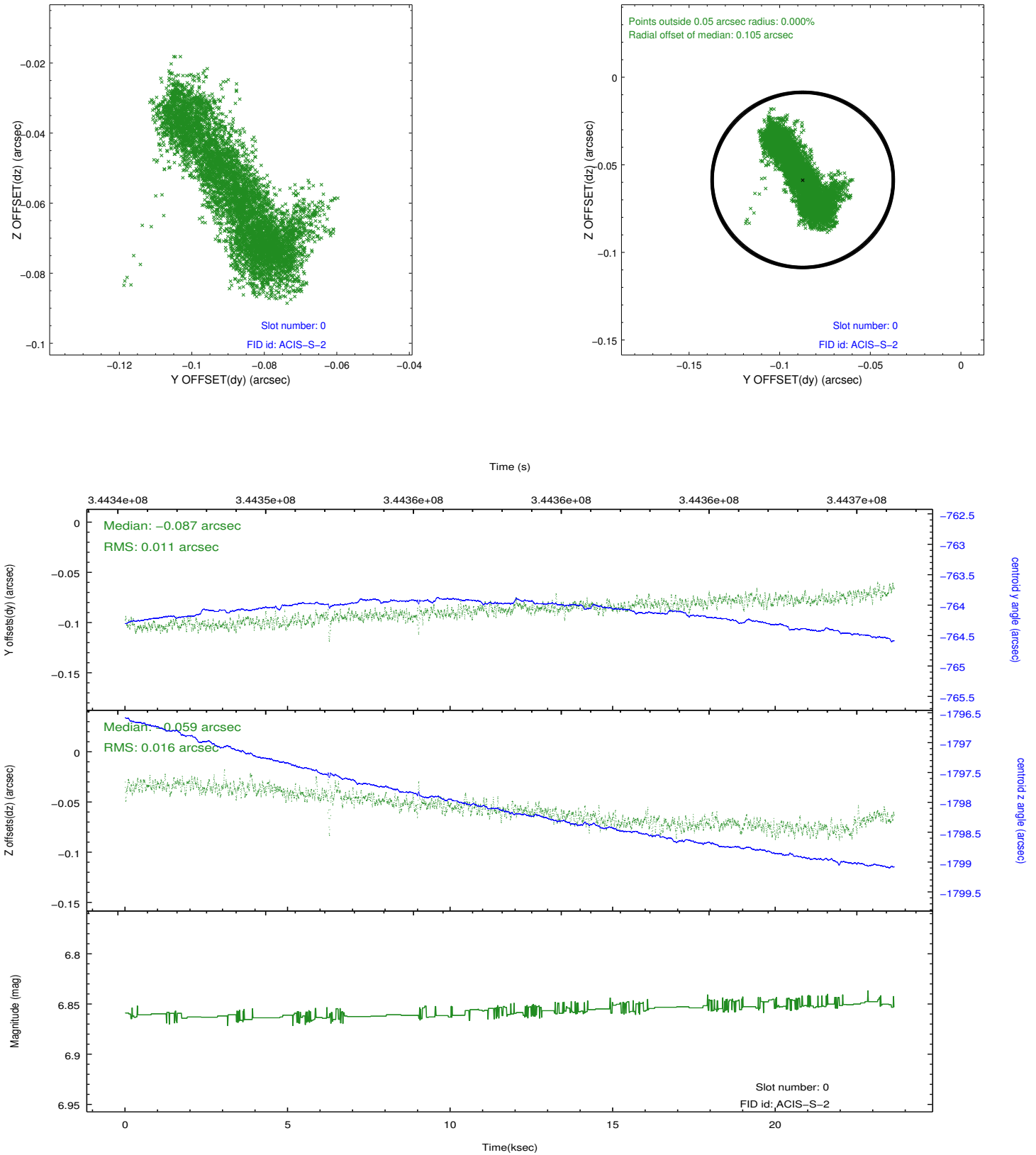


2.4.5 Slot 7

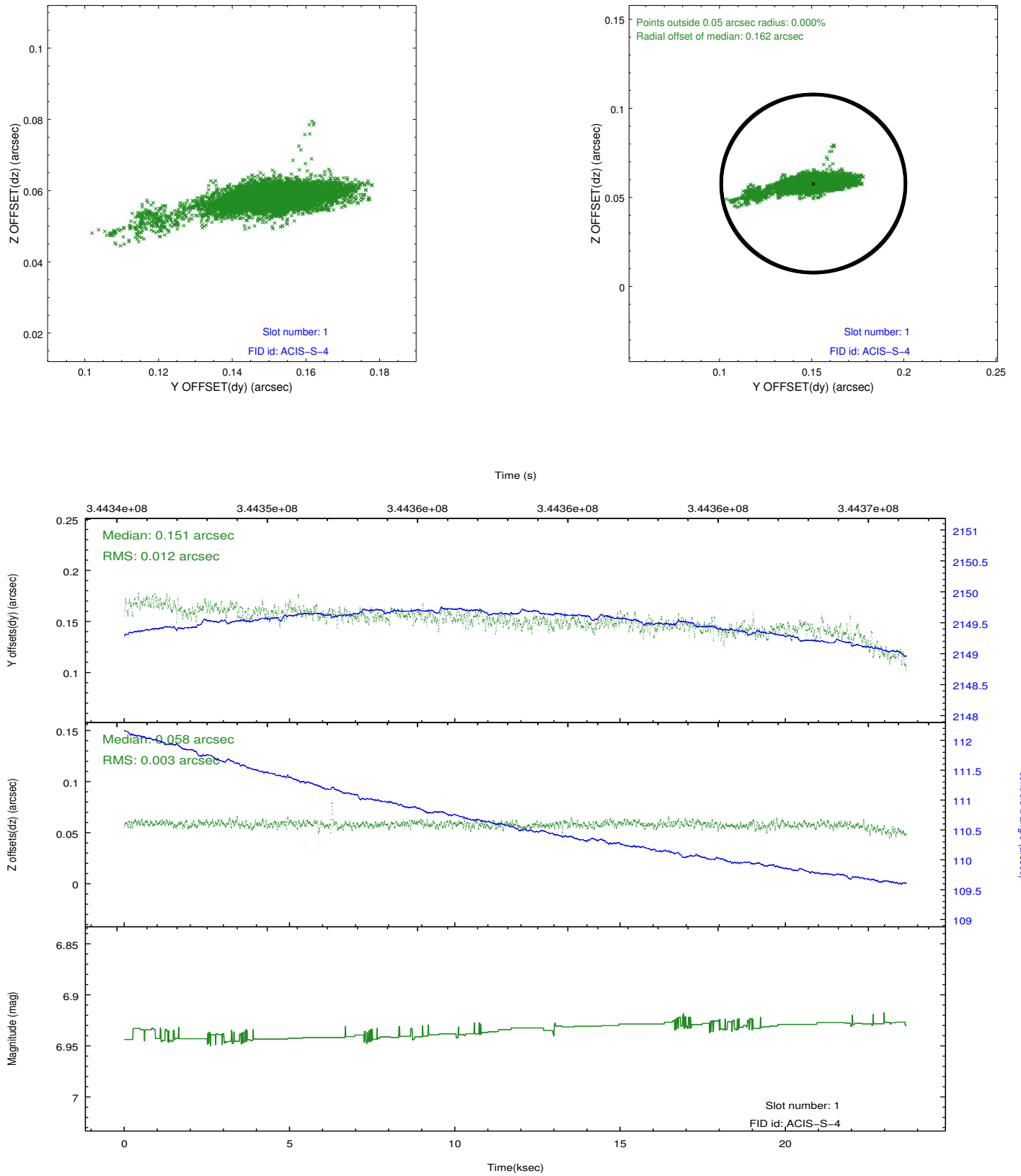


2.5 FID Slots

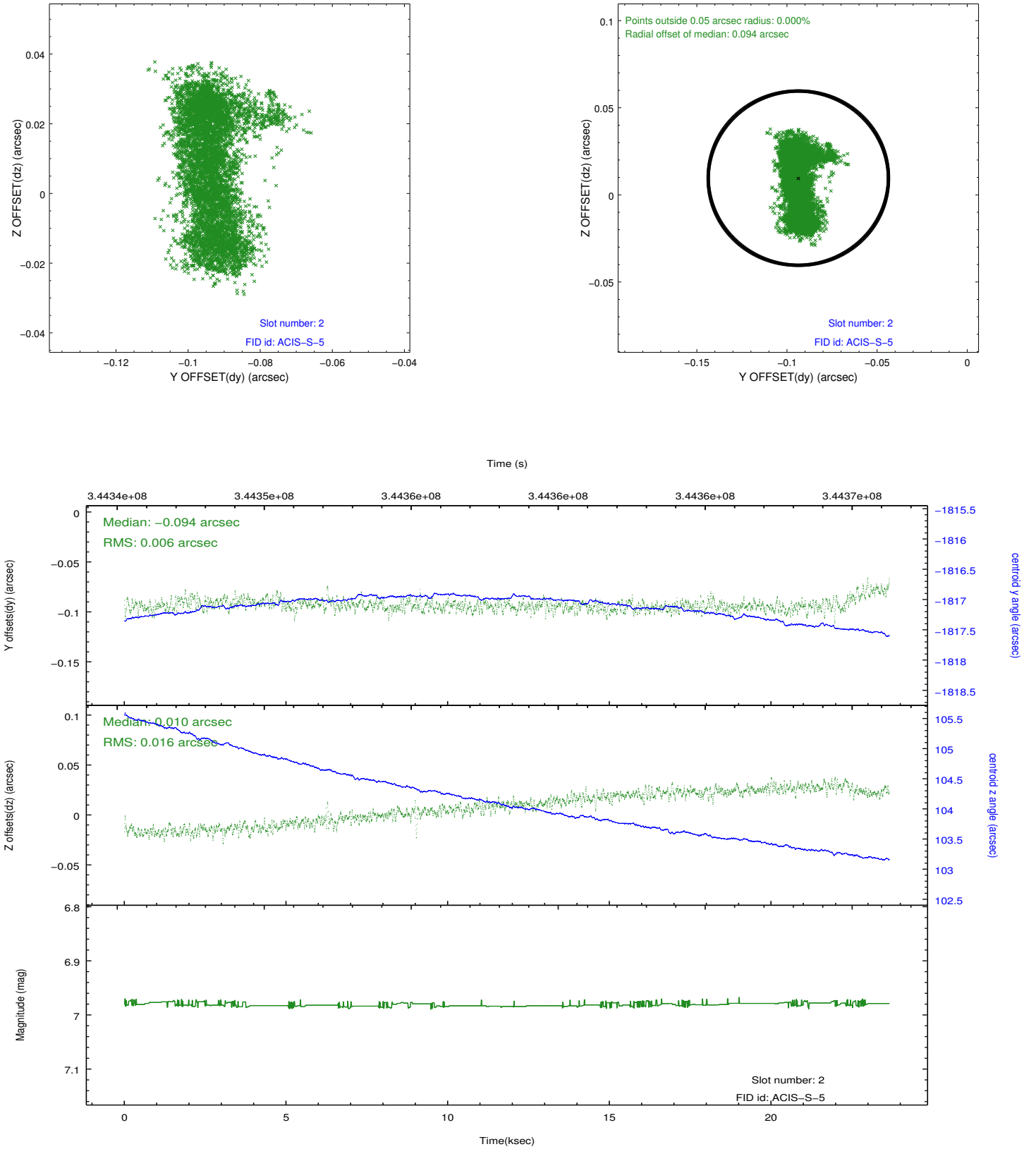
2.5.1 Slot 0



2.5.2 Slot 1

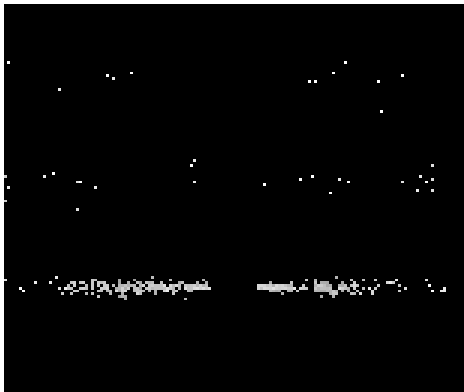


2.5.3 Slot 2

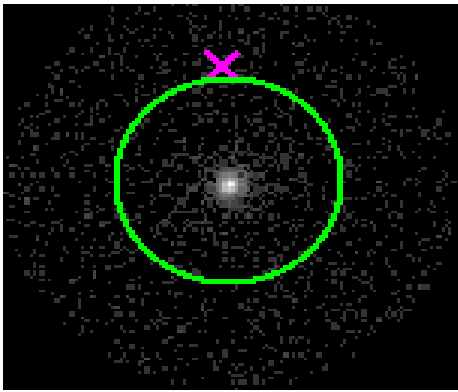


3 Gratings

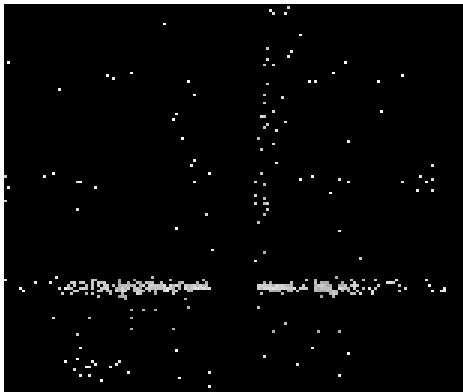
3.1 HEG Arm



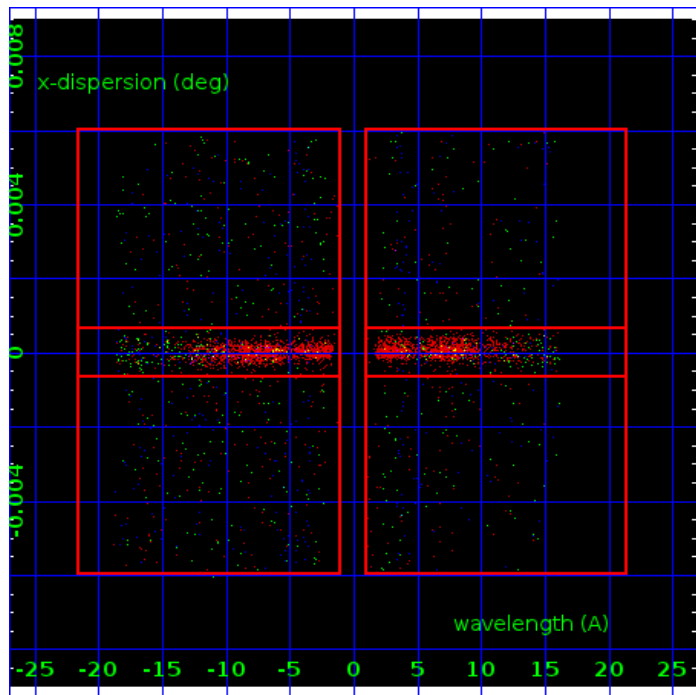
HEG Order Sort 123



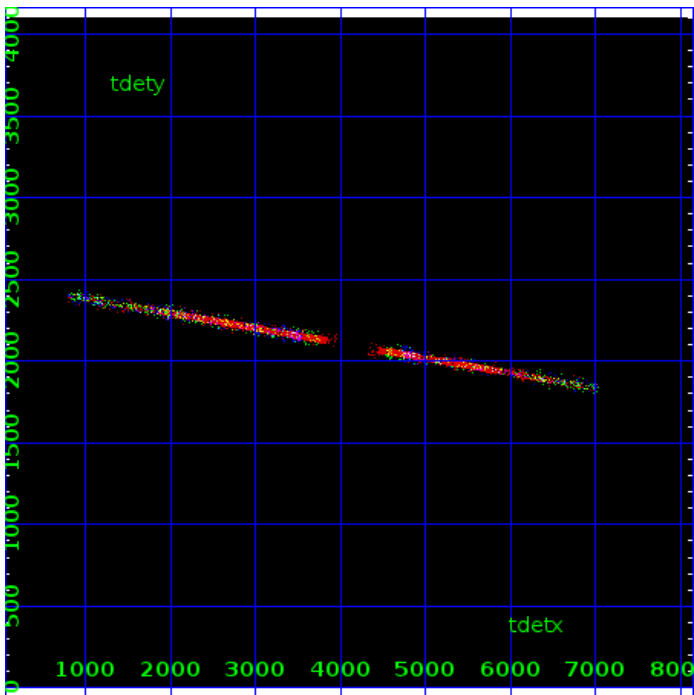
HEG Zero Order



HEG Order Sort ALL

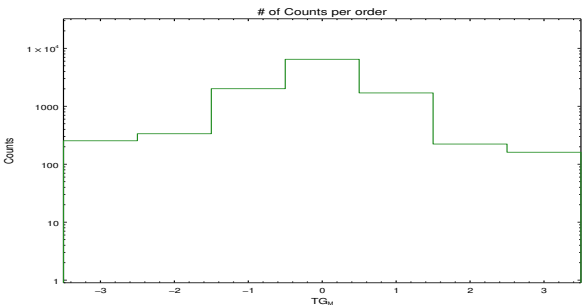


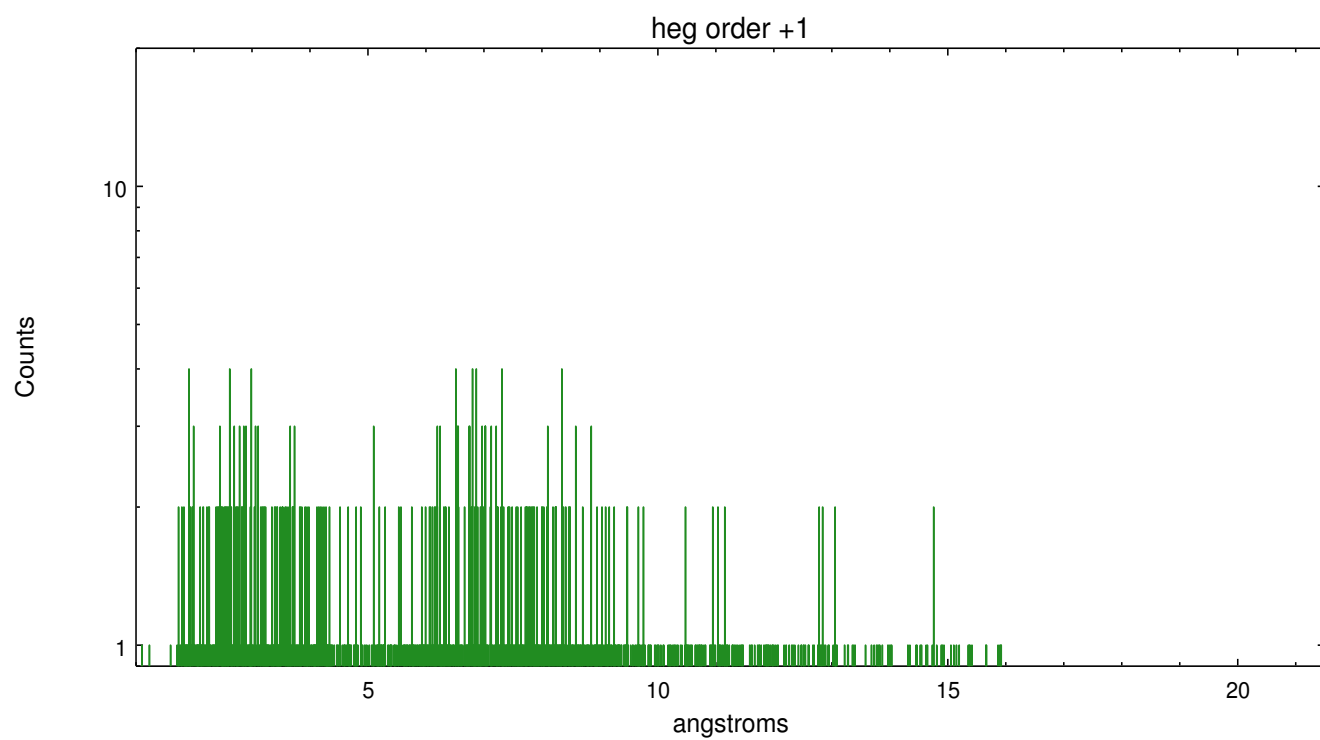
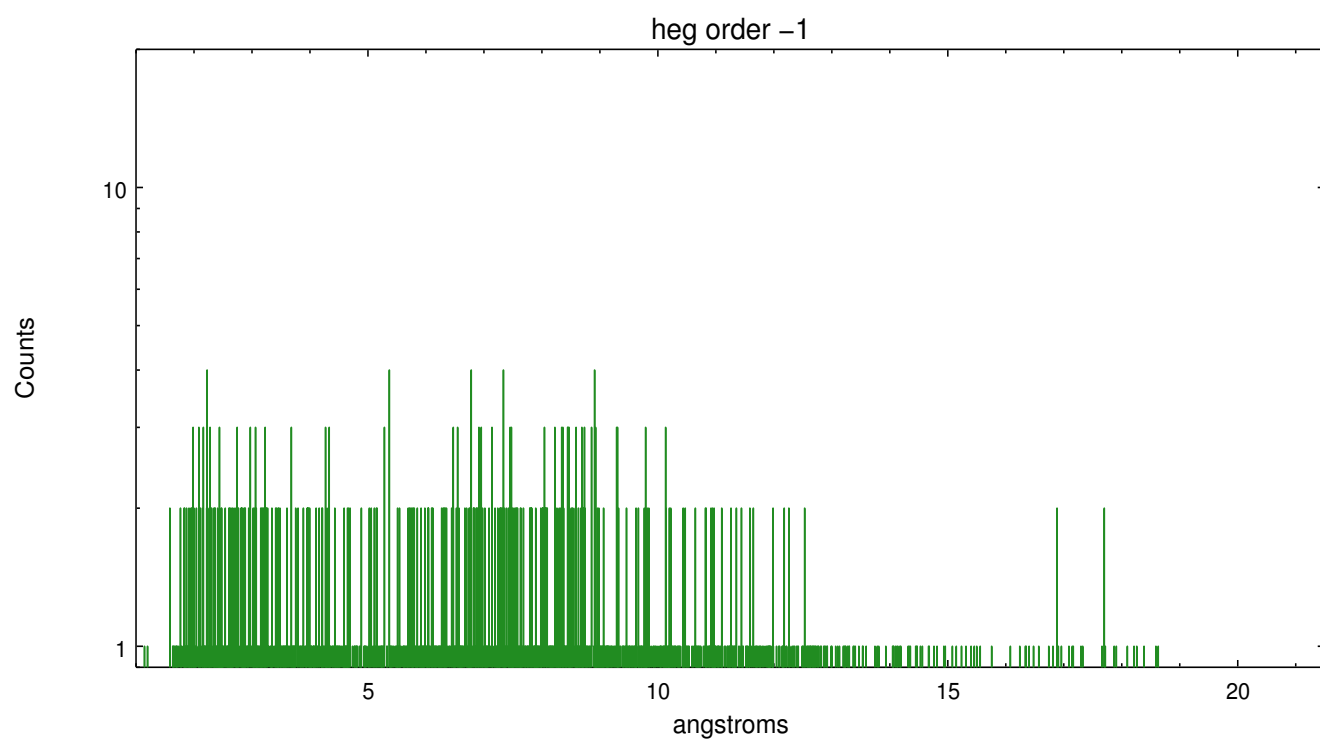
Spot Image HEG



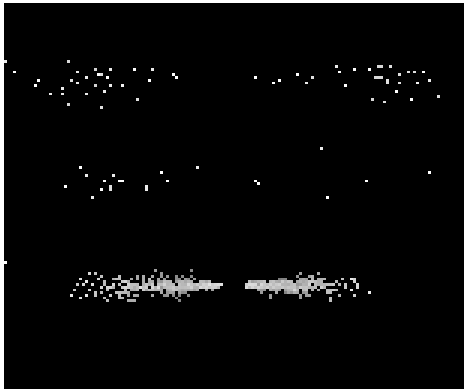
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	254	336	2011	6470	1700	223	161

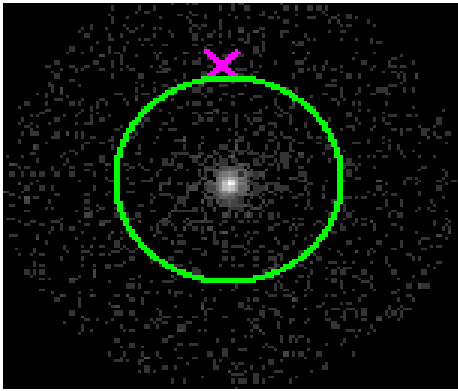




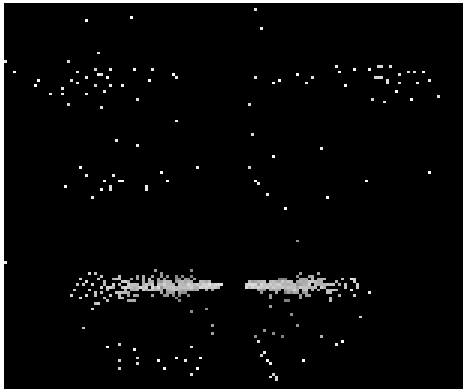
3.2 MEG Arm



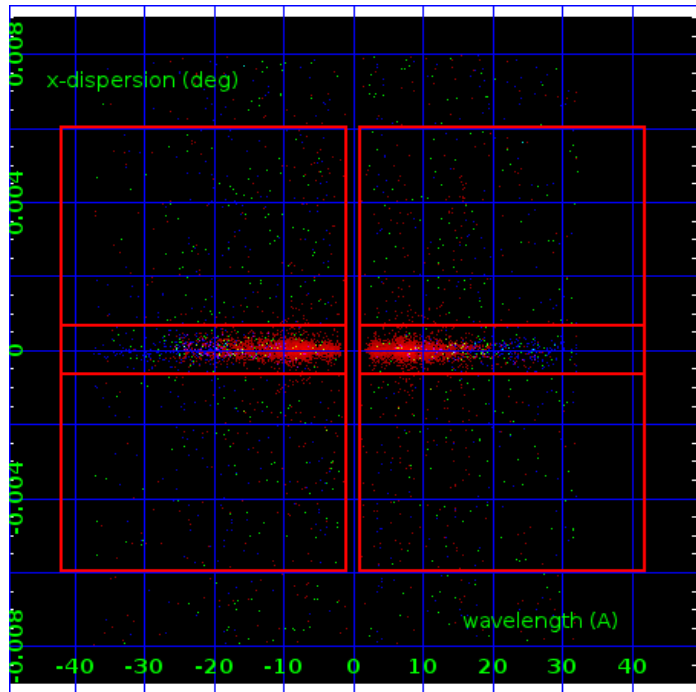
MEG Order Sort 123



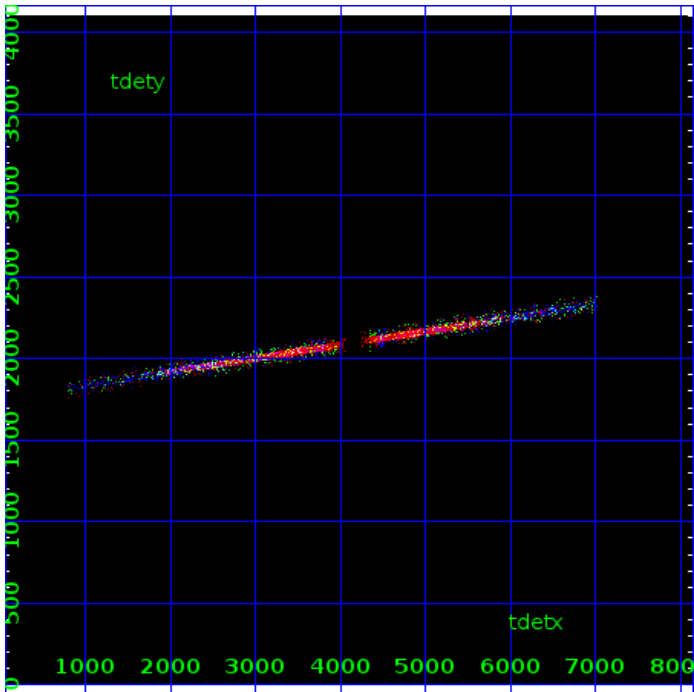
MEG Zero Order



MEG Order Sort ALL

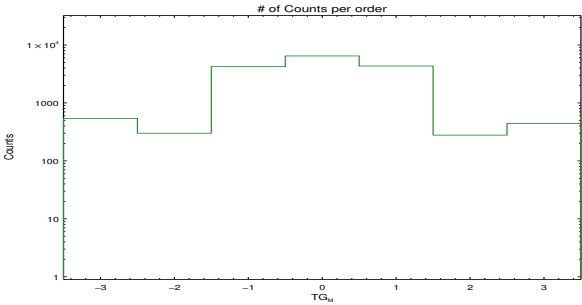


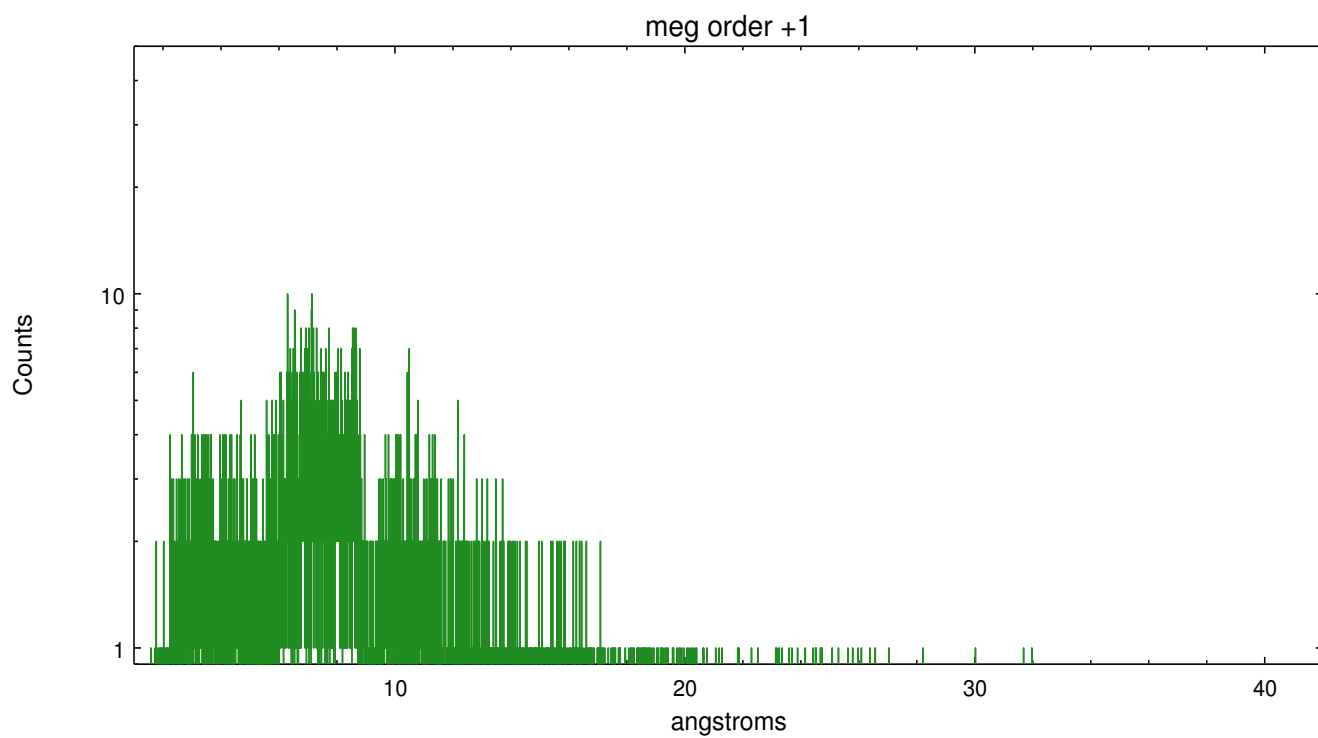
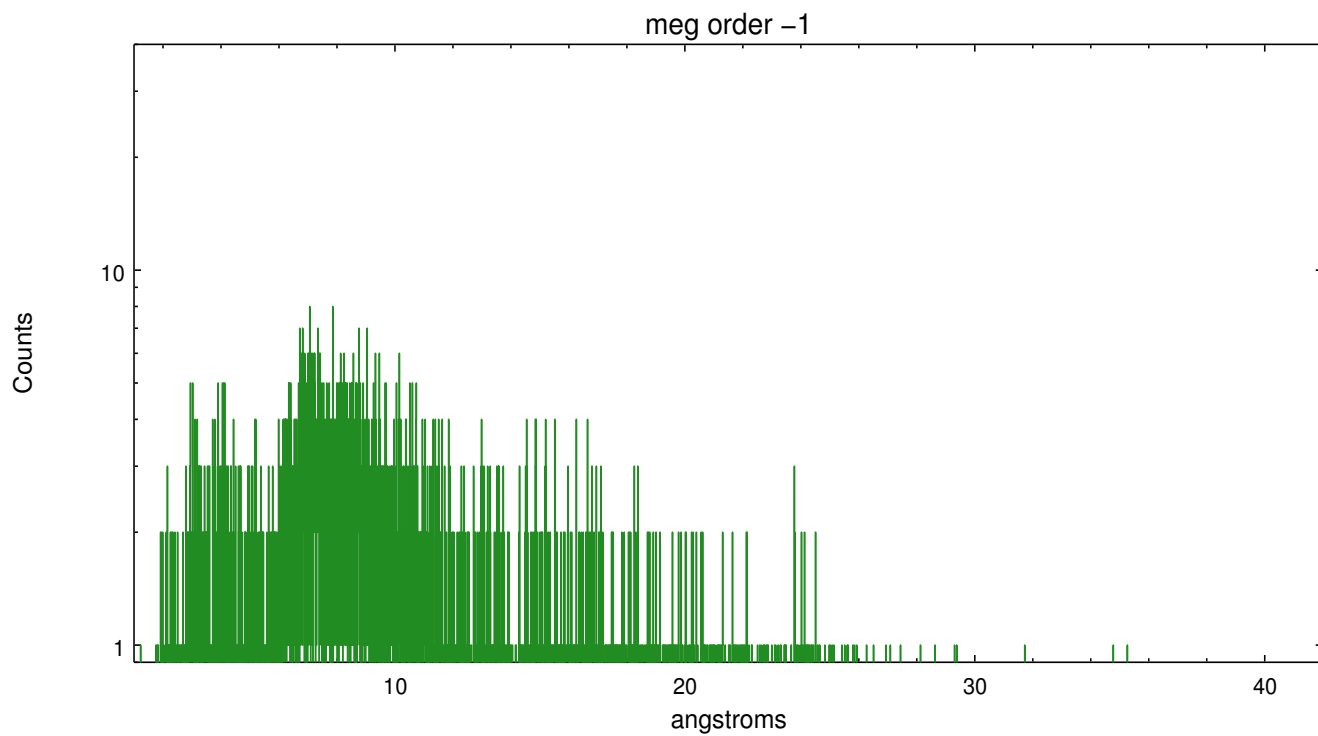
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	541	300	4230	6470	4336	278	443





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.08.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	23.6525

A.2 Comments

Because an aspect solution is determined in a finite time interval, a small number of events registered within the delta time before the first aspect solution do not have proper sky coordinates. We apply a manual workaround to exclude those events with incorrect sky positions until the complete s/w resolution is obtained.

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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 dispersed spectral arm, rather than using a centroid position of the source. The findzero results are more accurate than source centroid in this case.