

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 49896 - L2 Version 4
Chandra X-Ray Center

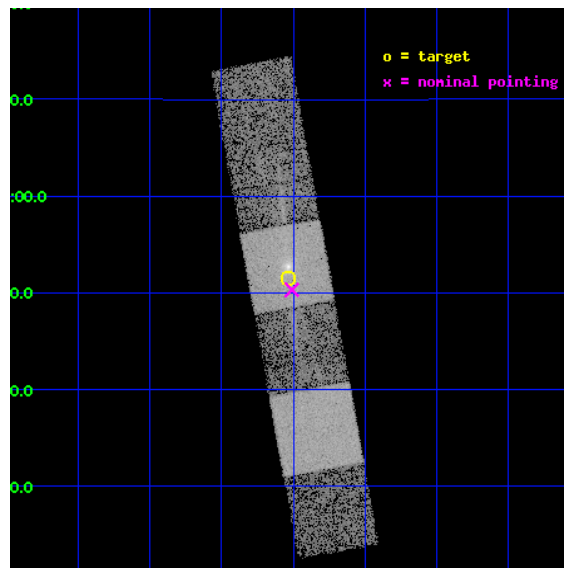
L2 Processing Date : Oct 11 2012

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1 Front

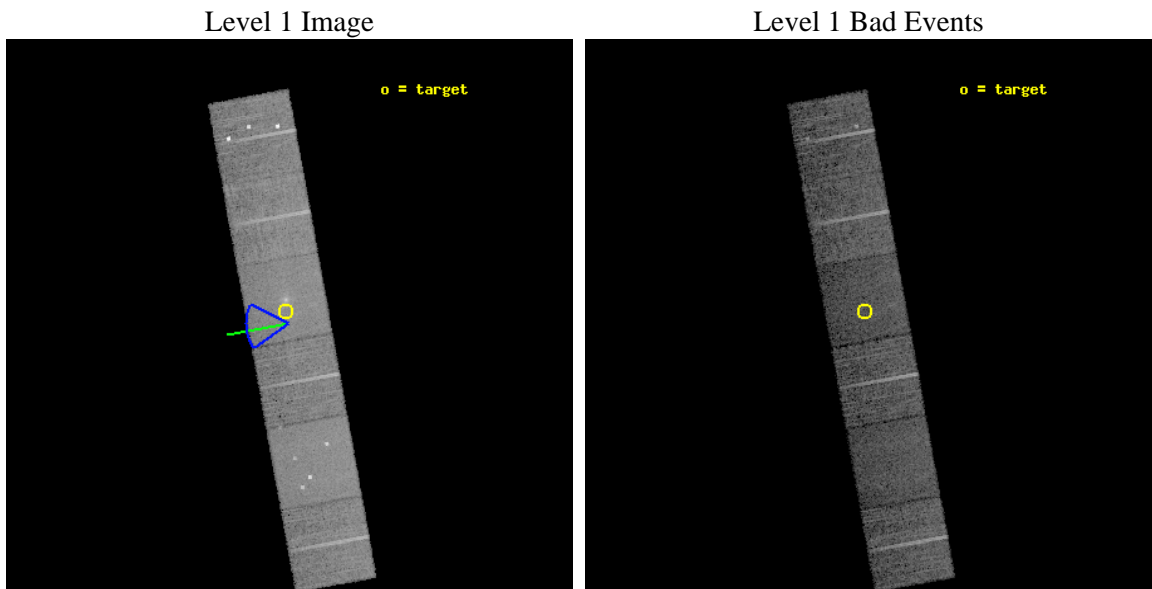
seq_num	800019	Sequence number
obs_id	49896	Observation id
title	HIGH RESOLUTION X-RAY SPECTRA OF CLUSTER COOLING FLOWS	Proposal ti
observer	Prof Claude Canizares	Principal investigator
object	ABELL 1835	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	210.257917	Observer's specified target RA [deg]
dec_targ	2.858889	Observer's specified target Dec [deg]
ra_nom	210.25236237067	Nominal RA [deg]
dec_nom	2.8386223379599	Nominal Dec [deg]
roll_nom	259.6358531986	Nominal Roll [deg]
revision	4	Processing version of data
ontime	9785.5590488613	Sum of GTIs [s]
livetime	9661.6484080283	Livetime [s]
ontime4	9788.8000091016	Sum of GTIs [s]
ontime5	9785.5590488613	Sum of GTIs [s]
ontime6	9785.5591884851	Sum of GTIs [s]
ontime7	9785.5590488613	Sum of GTIs [s]
ontime8	9785.5590488613	Sum of GTIs [s]
ontime9	9788.8000091016	Sum of GTIs [s]
l2events	93853	Number of level 2 events



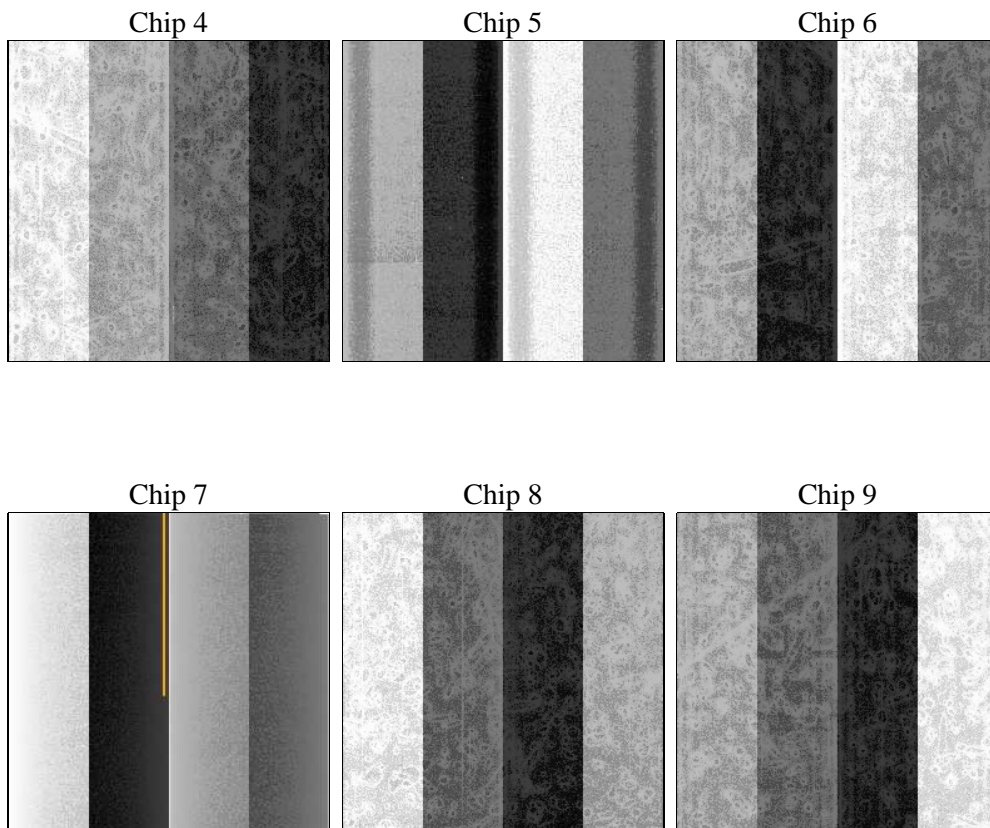
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	9661.193000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	9785.5590488613	Sum of GTIs [s]
caldsver	4.5.1.1	 	ontime4	9788.8000091016	Sum of GTIs [s]
date	2012-09-01T02:37:28	Date and time of file creation	ontime5	9785.5590488613	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	9785.5591884851	Sum of GTIs [s]
			ontime7	9785.5590488613	Sum of GTIs [s]
			ontime8	9785.5590488613	Sum of GTIs [s]
			ontime9	9788.8000091016	Sum of GTIs [s]
			l1events	456181	Number of level 1 events

2.1.4 Events

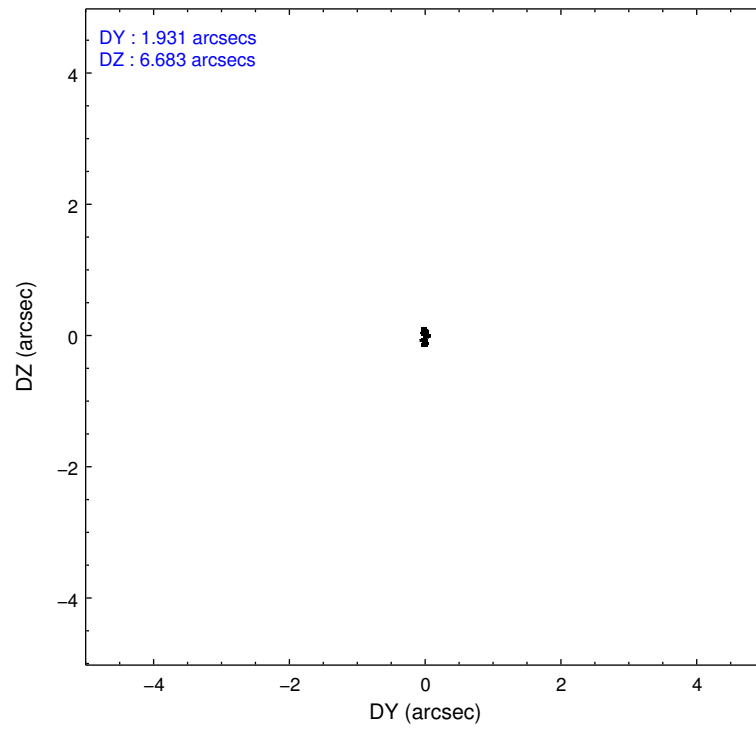
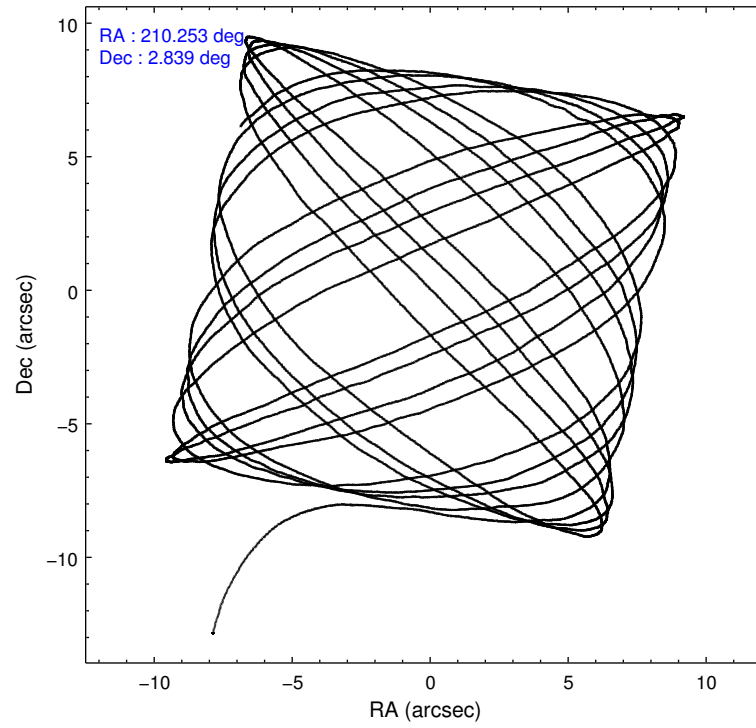
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	67515	87572	63592	79664	79401	78437	grade 0 events	2817	8606	3932	3987	5622	5636
rejected events	60711	46737	55823	45327	64183	57363		4%	9%	6%	5%	7%	7%
rejected %	89%	53%	87%	56%	80%	73%	grade 1 events	36	169	20	89	51	427
								0%	0%	0%	0%	0%	0%
							grade 2 events	1724	11246	1480	7287	3360	10845
								2%	12%	2%	9%	4%	13%
							grade 3 events	667	1730	753	3435	1644	804
								0%	1%	1%	4%	2%	1%
							grade 4 events	713	1617	694	3343	1488	761
								1%	1%	1%	4%	1%	0%
							grade 5 events	2076	6527	2528	7418	3141	2892
								3%	7%	3%	9%	3%	3%
							grade 6 events	1202	19638	1233	17780	3849	3942
								1%	22%	1%	22%	4%	5%
							grade 7 events	58280	38039	52952	36325	60246	53130
								86%	43%	83%	45%	75%	67%

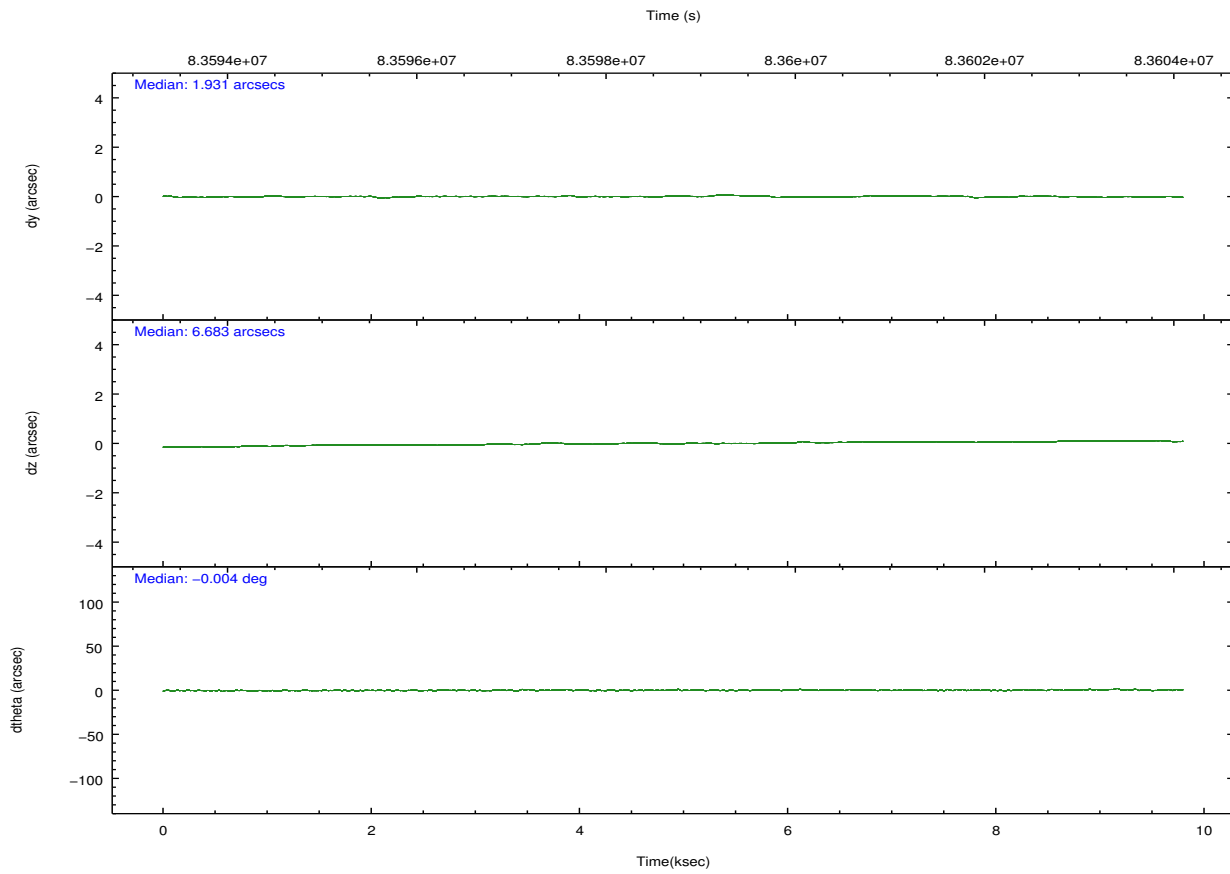
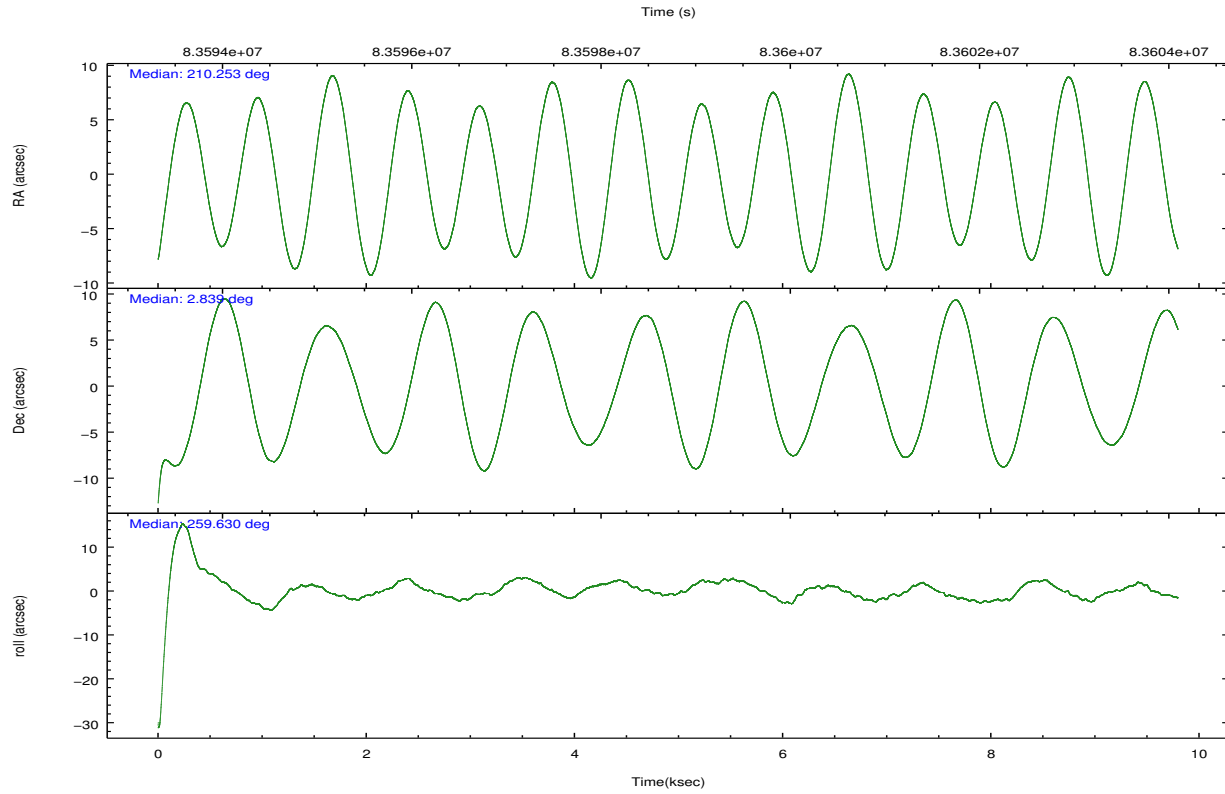
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	210.242979	210.2523623706709
[deg] Pointing Dec	2.864372	2.838622337959861
[deg] Pointing Roll	259.479740	259.6358531986005
[deg] Roll angle	265.000000	265.000000
[deg] Roll tolerance	30.000000	30.000000
Roll constraint allows 180D rotation	N	N
[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)	83593945.184000	83592676.555538
Observation start date	2000-08-25T12:31:21	2000-08-25T12:11:16
[s] Observation end time (MET)	83603606.184000	83603920.80596
Observation end date	2000-08-25T15:12:22	2000-08-25T15:18:40
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.2

2.3 Aspect



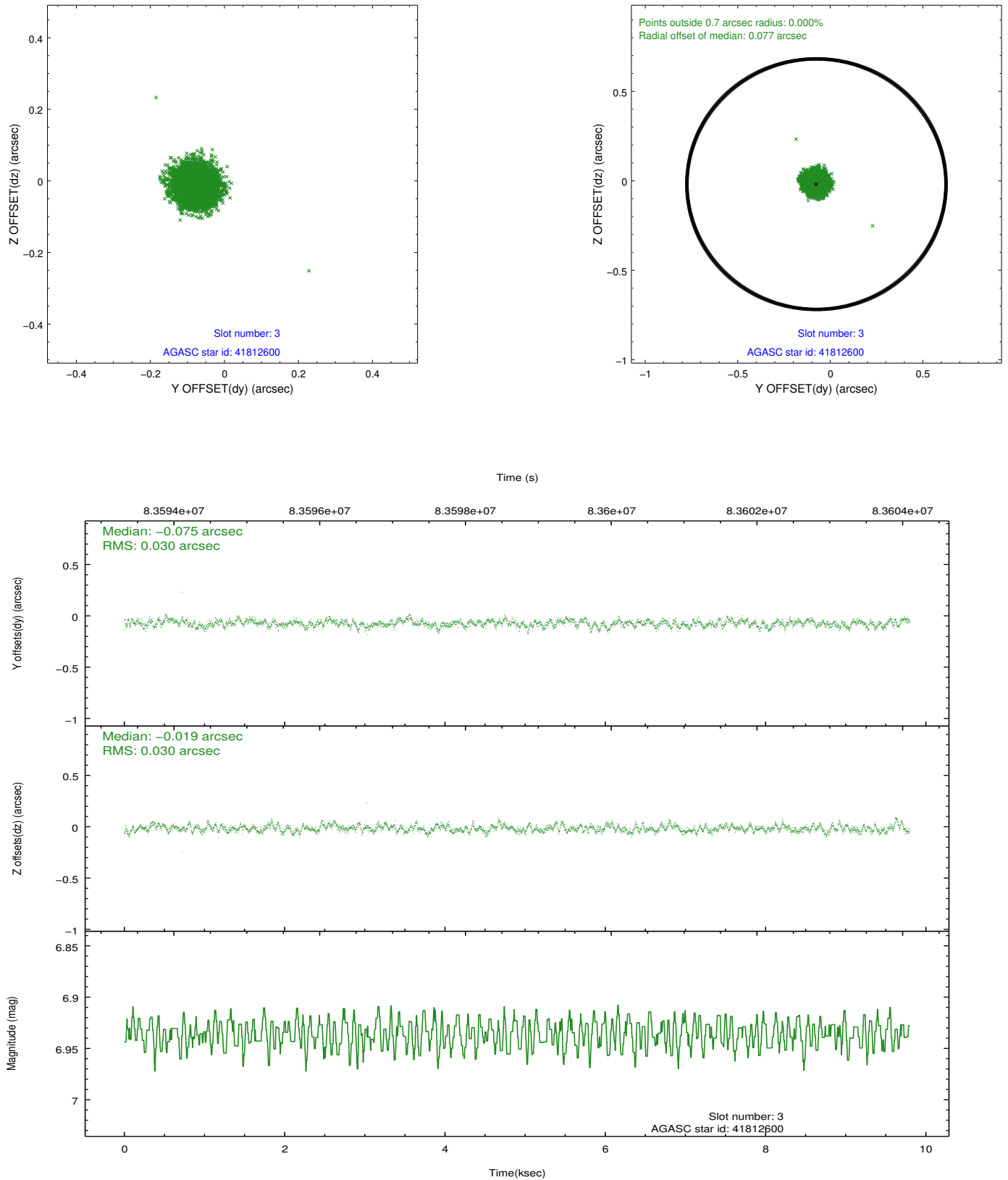


Slot Statistics

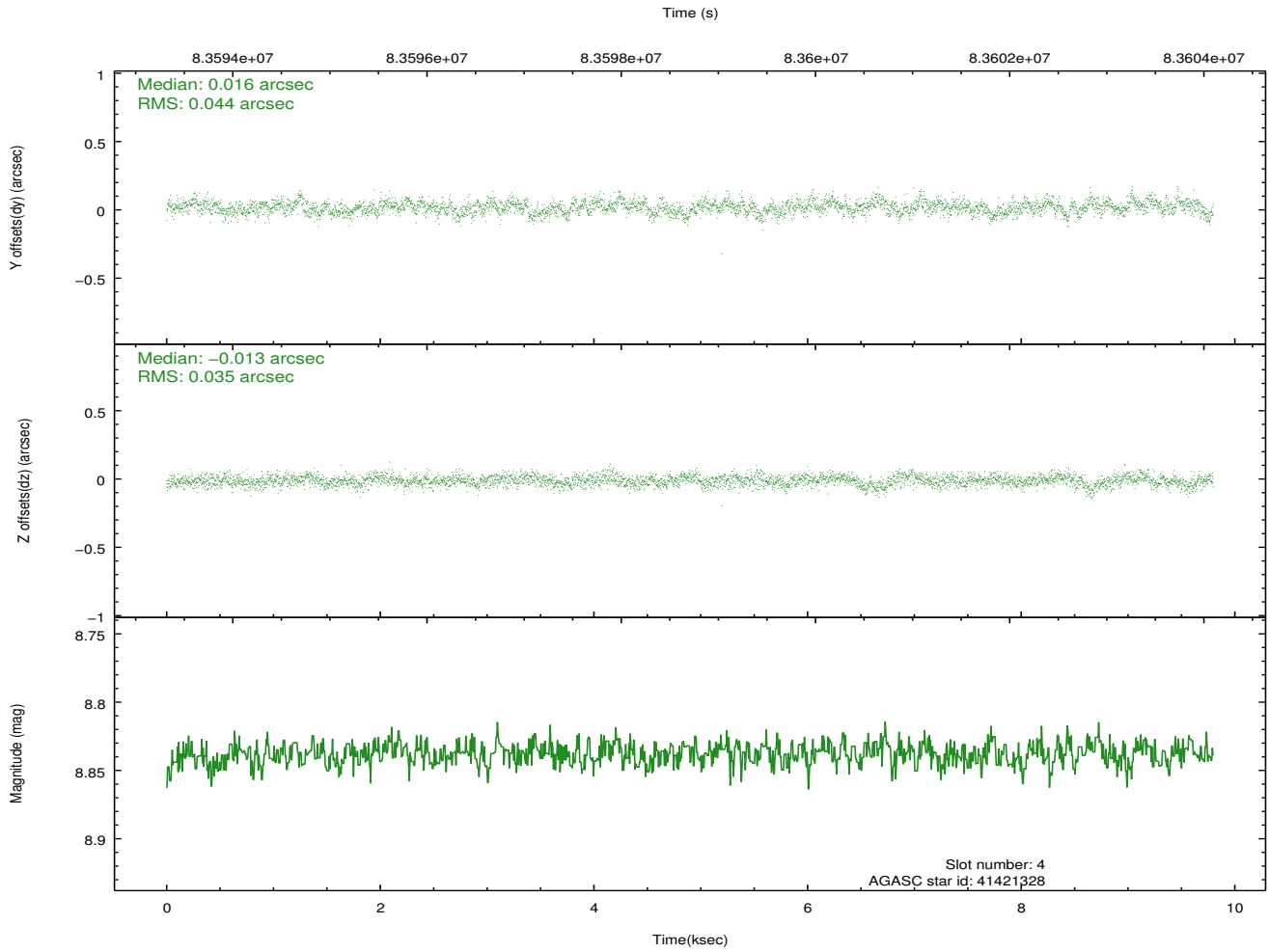
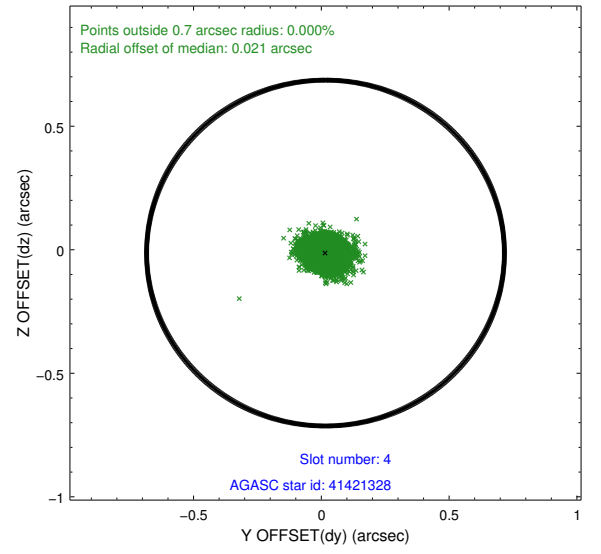
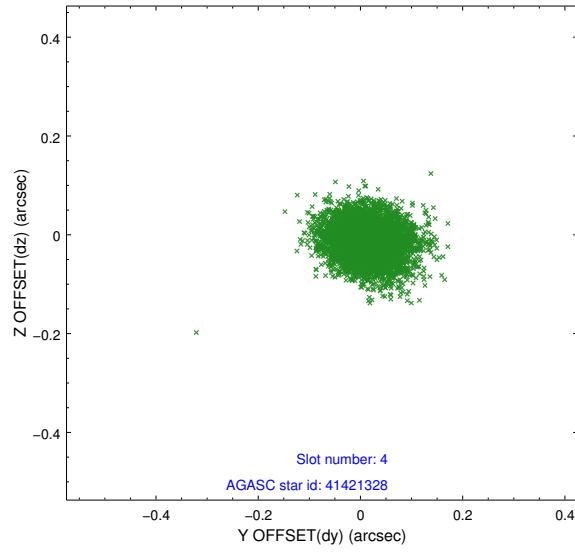
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	2389	-0.023	0.008	0.007	0.011	0.000000	0.000000	-754.57	-1727.82
1	FID	ACIS-S-4	7.21	2389	-0.033	0.009	0.005	0.010	0.000000	0.000000	2158.46	180.09
2	FID	ACIS-S-5	7.24	2389	0.025	-0.008	0.007	0.010	0.000000	0.000000	-1806.66	174.38
3	GUIDE	41812600	6.94	4779	-0.075	-0.019	0.045	0.072	210.084142	2.674576	777.10	-437.76
4	GUIDE	41421328	8.84	4779	0.016	-0.013	0.059	0.098	210.405722	2.285281	1943.90	955.34
5	GUIDE	41812672	9.18	4779	-0.014	0.024	0.073	0.117	210.433277	2.688495	499.00	787.72
6	GUIDE	41423376	9.45	4776	0.047	0.109	0.092	0.147	210.567769	2.137823	2359.21	1625.98
7	GUIDE	41812184	9.38	4776	0.029	-0.102	0.077	0.125	210.003940	2.531299	1337.45	-626.95

2.4 Star Slots

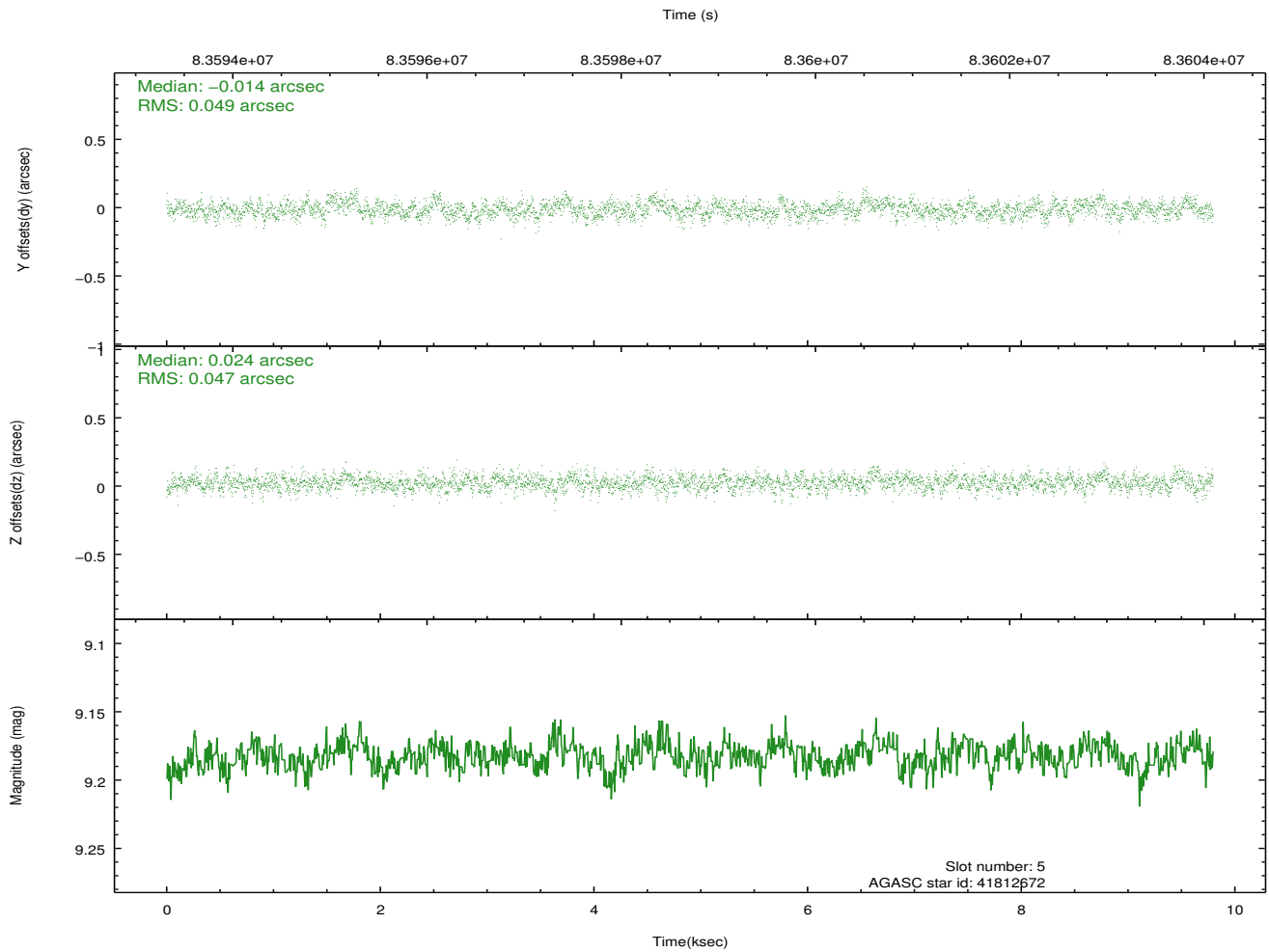
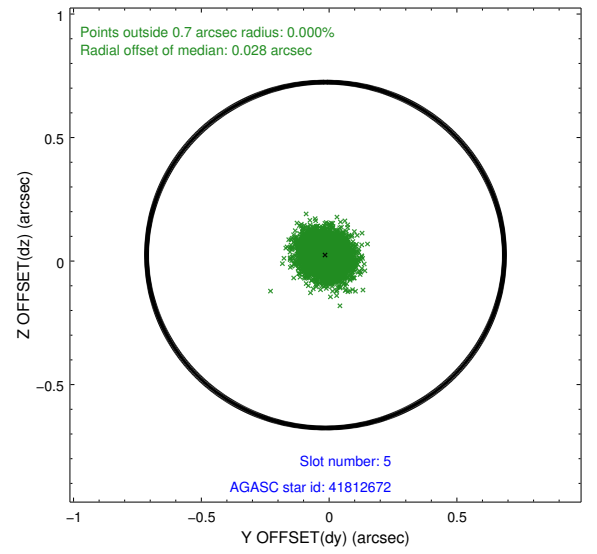
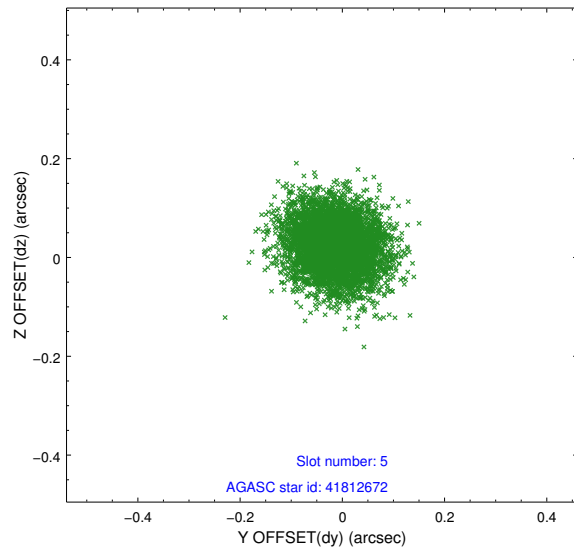
2.4.1 Slot 3



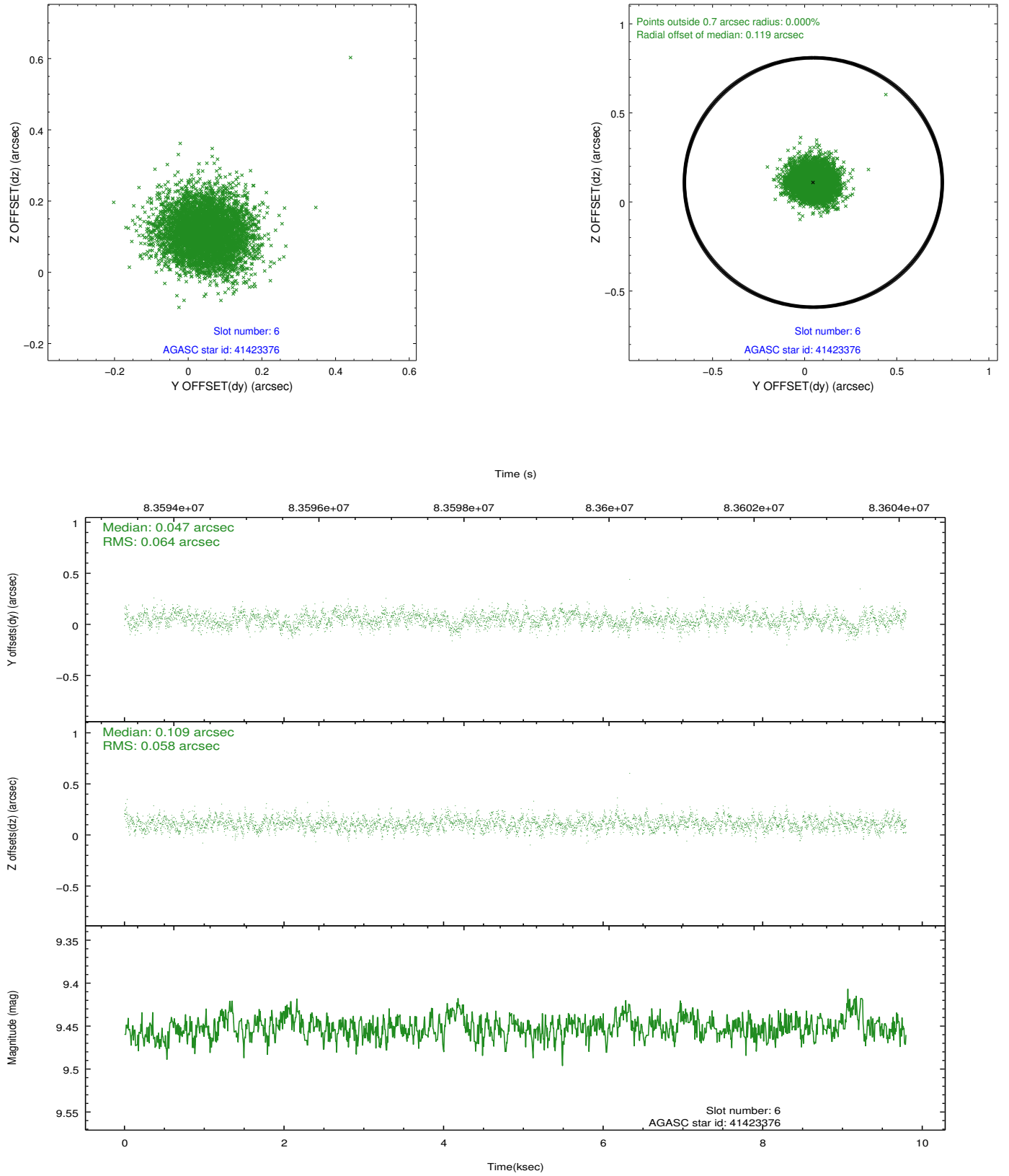
2.4.2 Slot 4



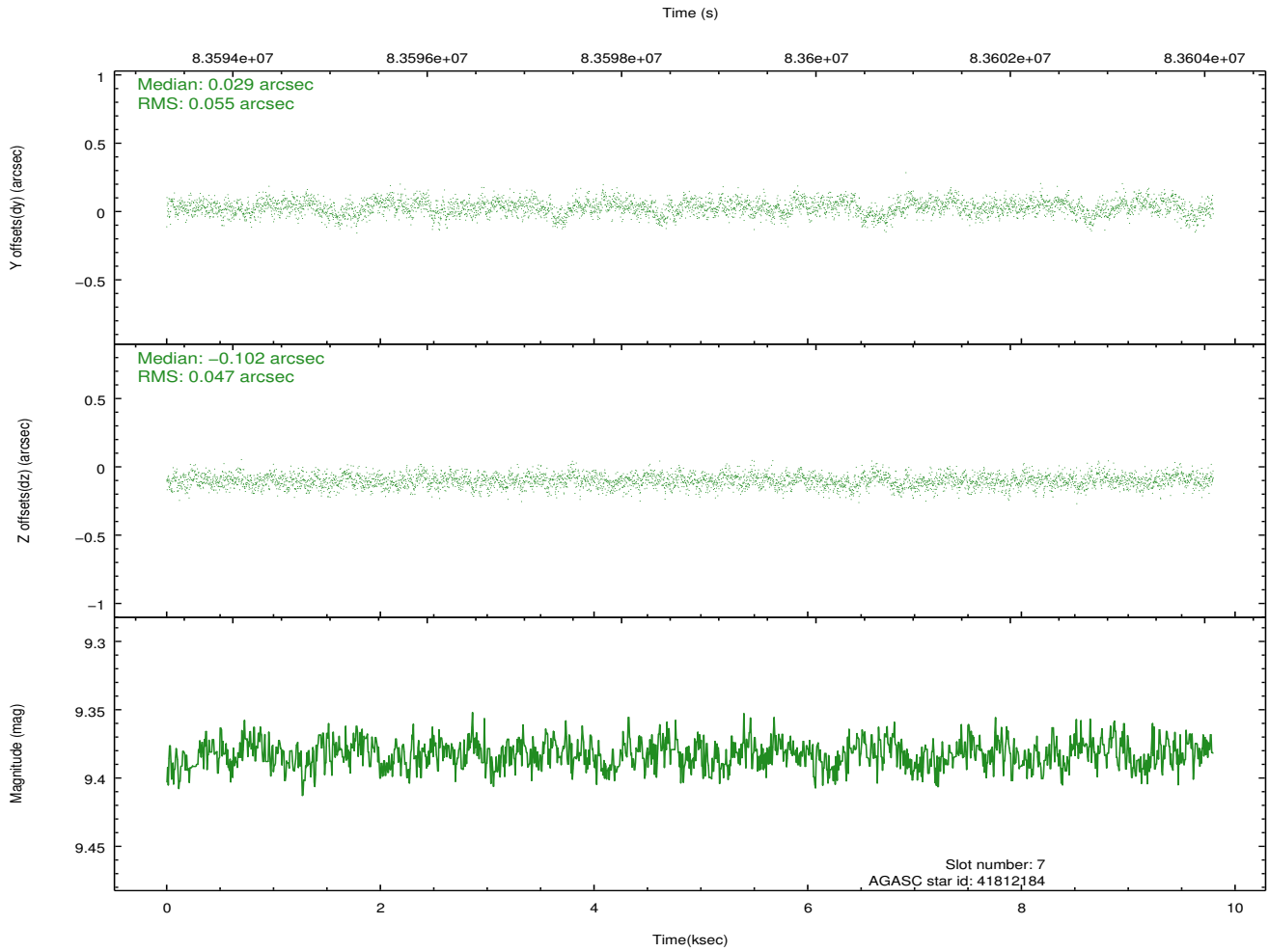
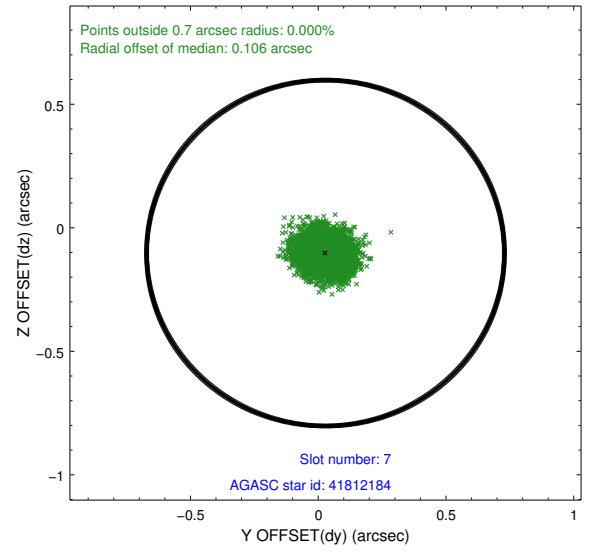
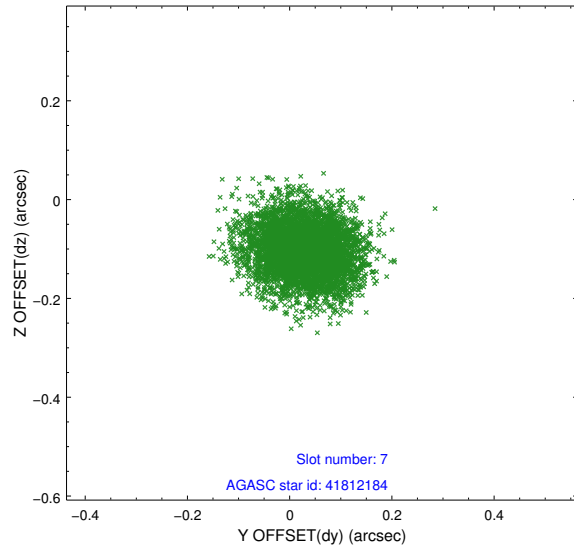
2.4.3 Slot 5



2.4.4 Slot 6

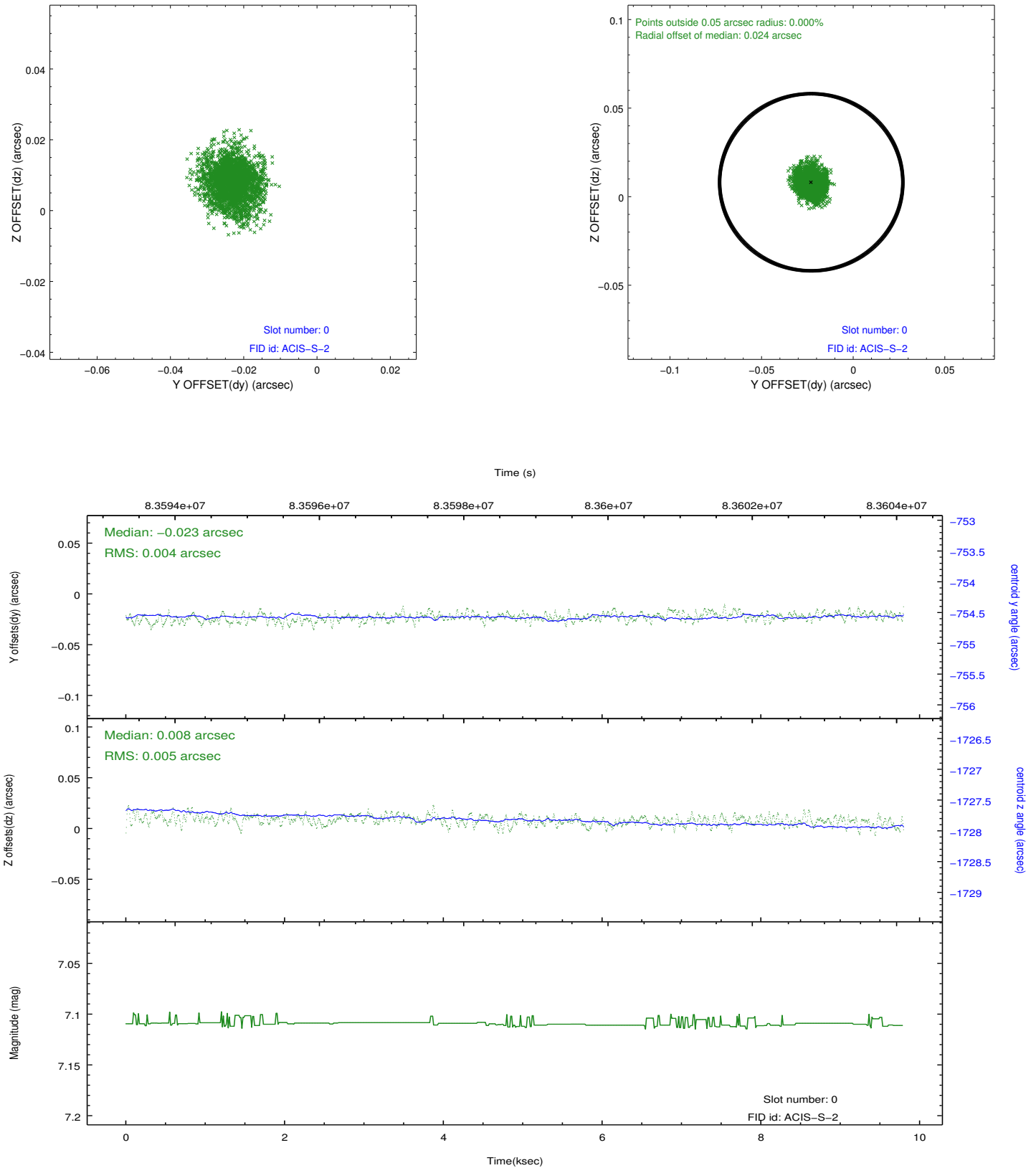


2.4.5 Slot 7

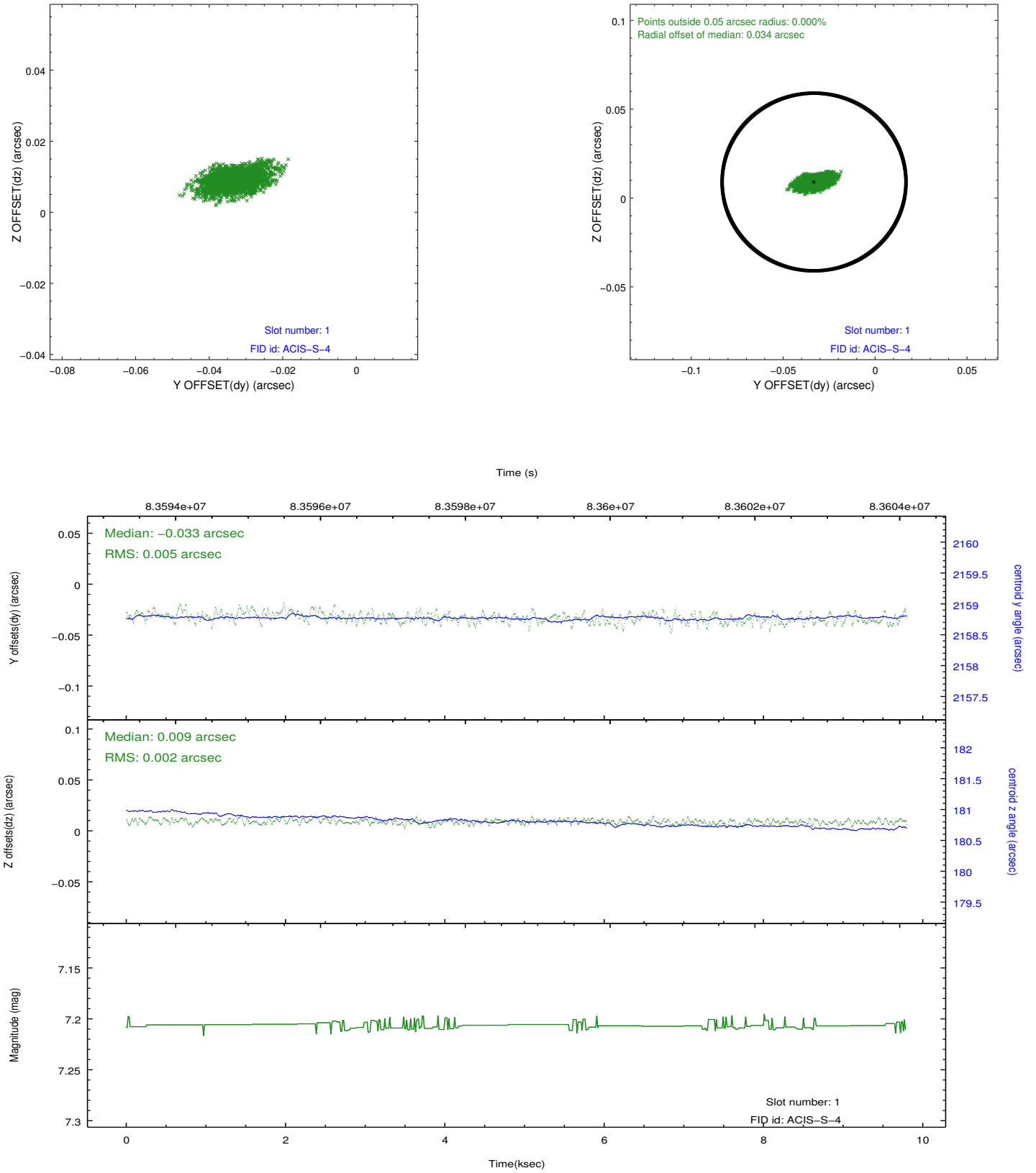


2.5 FID Slots

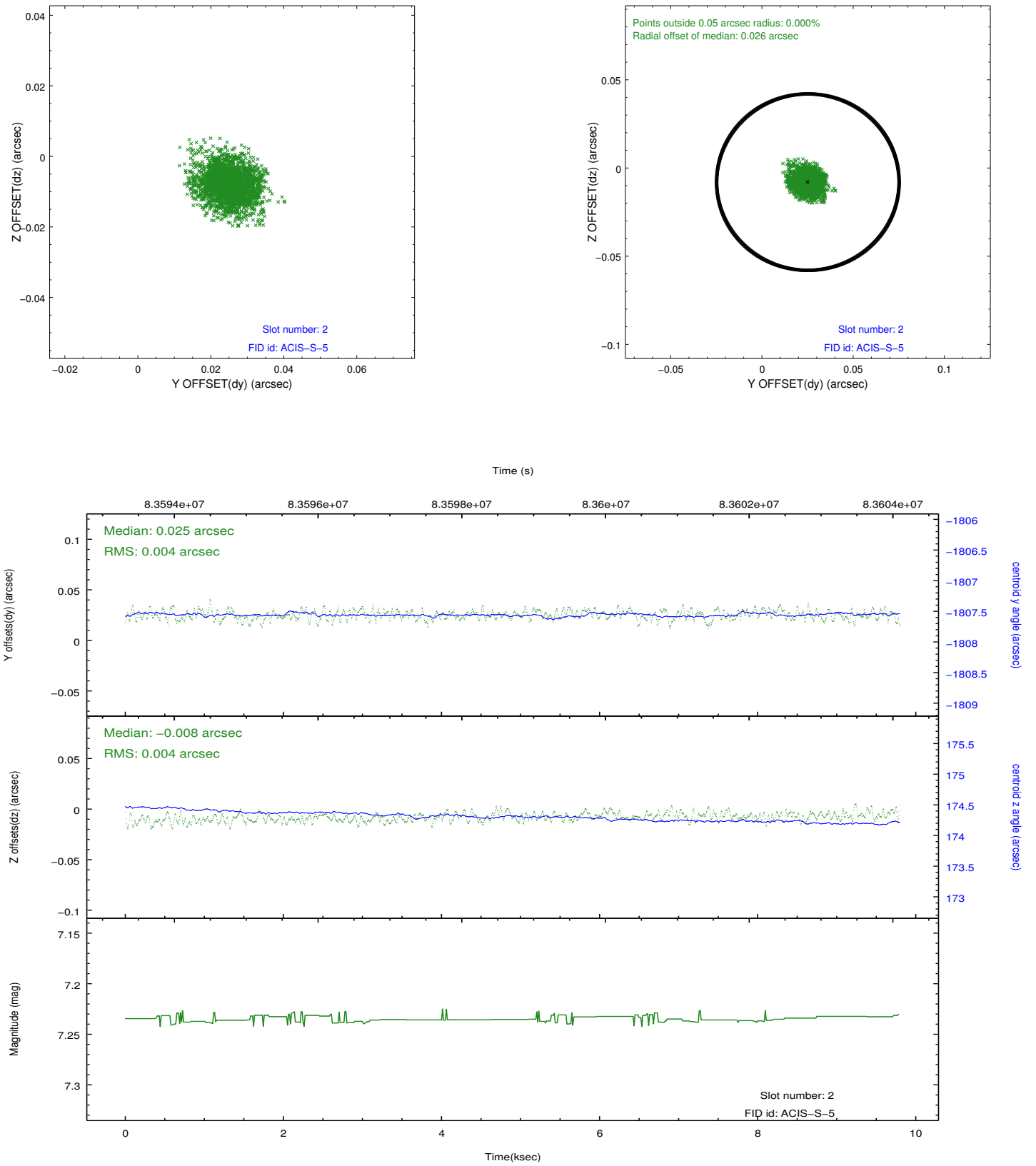
2.5.1 Slot 0



2.5.2 Slot 1

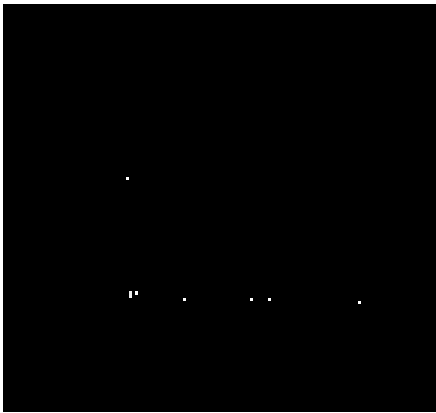


2.5.3 Slot 2

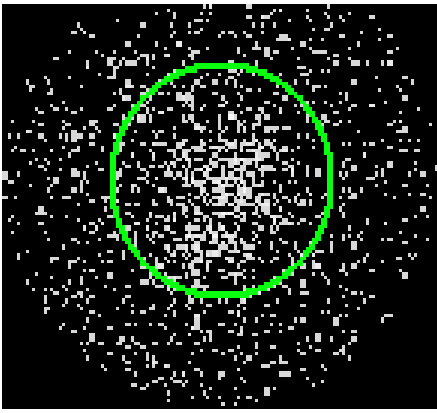


3 Gratings

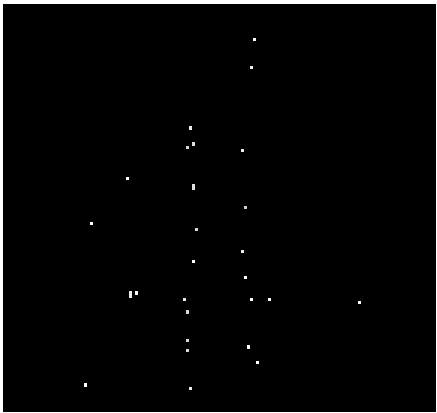
3.1 HEG Arm



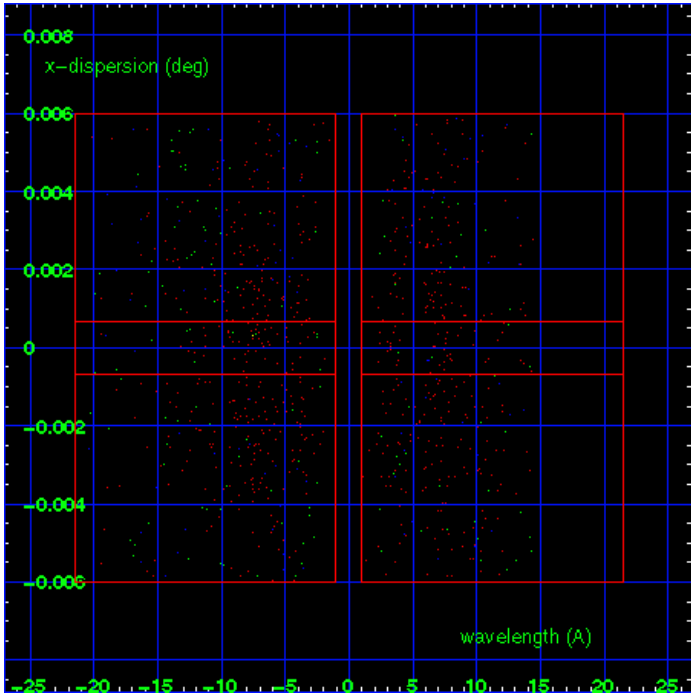
HEG Order Sort 123



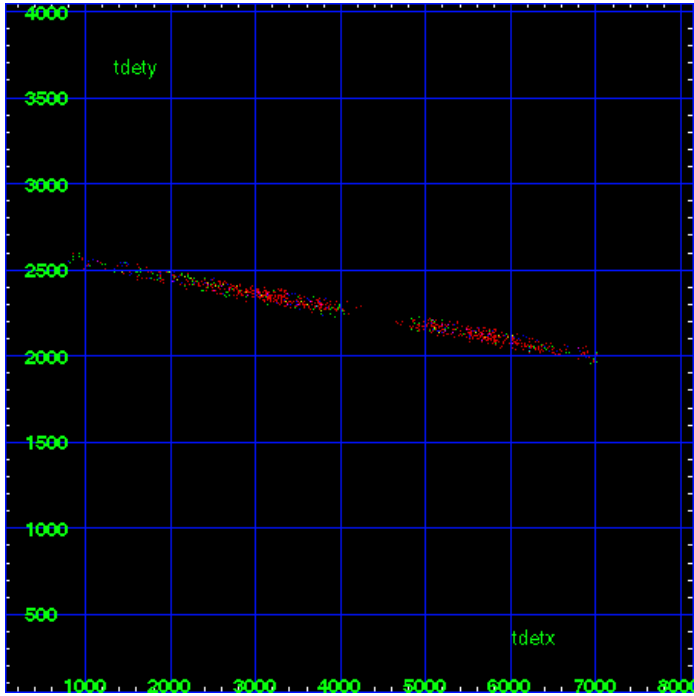
HEG Zero Order



HEG Order Sort ALL

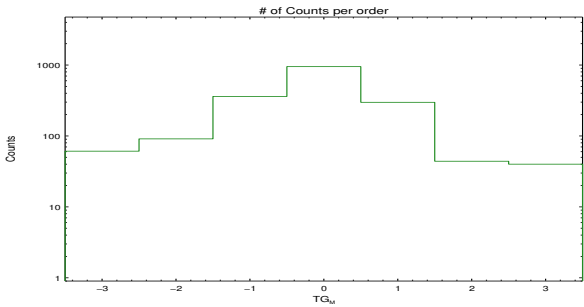


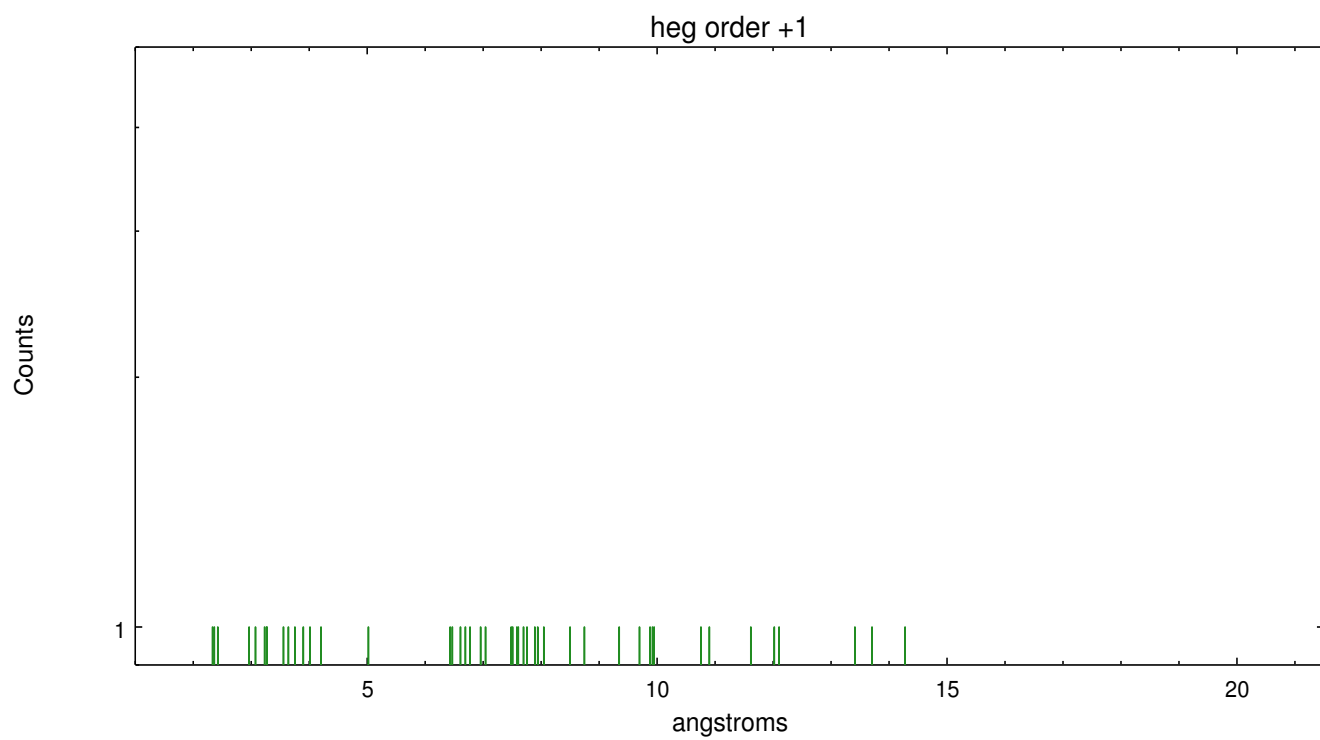
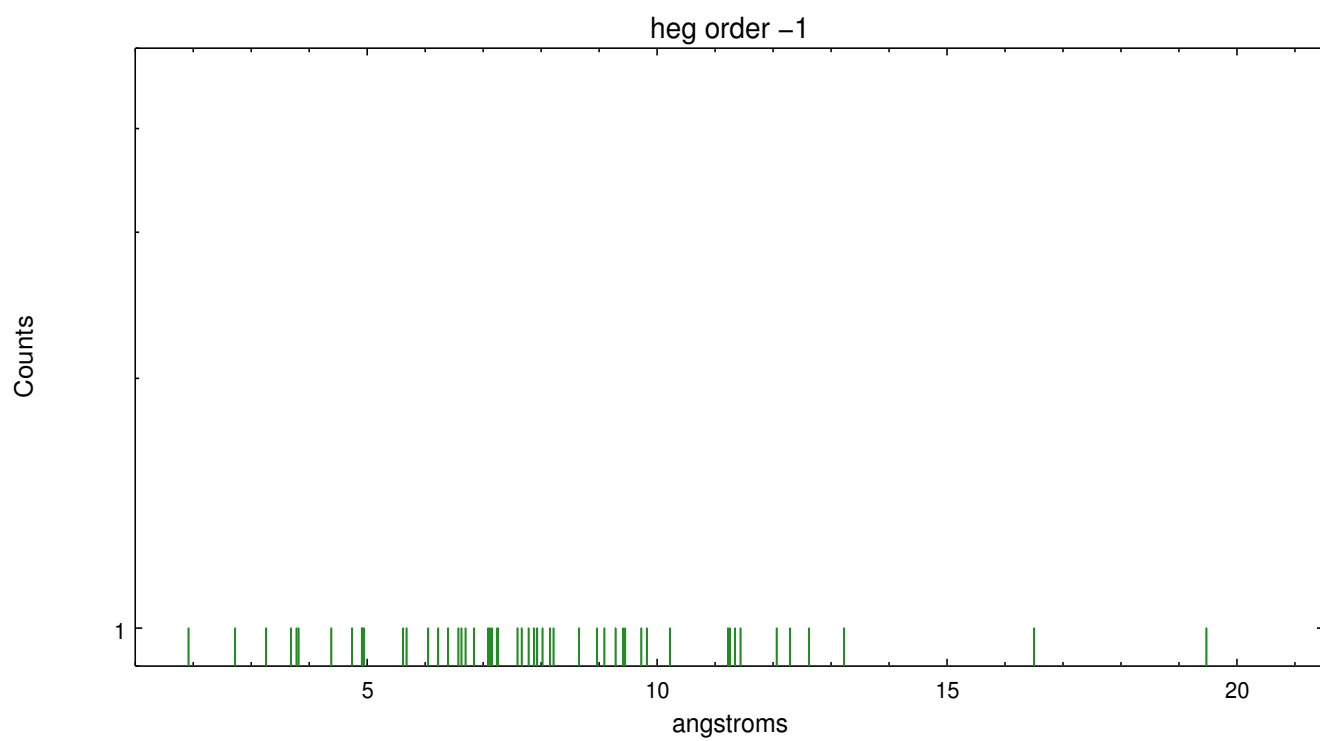
Spot Image HEG



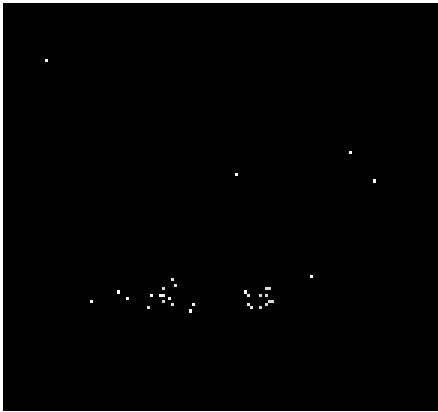
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	61	91	361	950	298	44	40

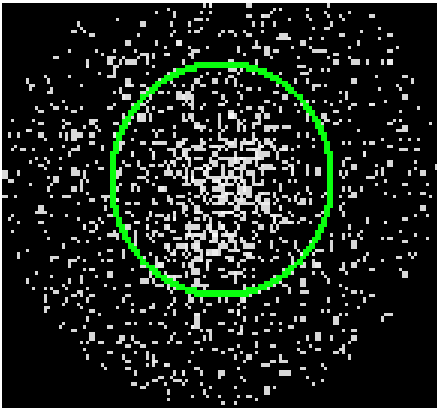




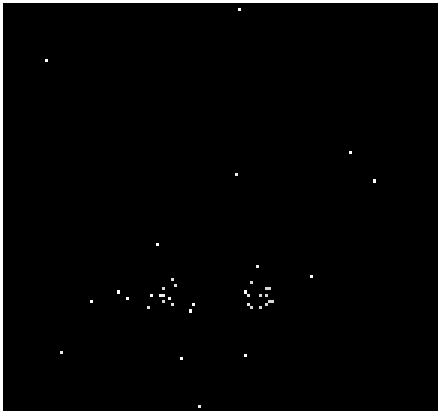
3.2 MEG Arm



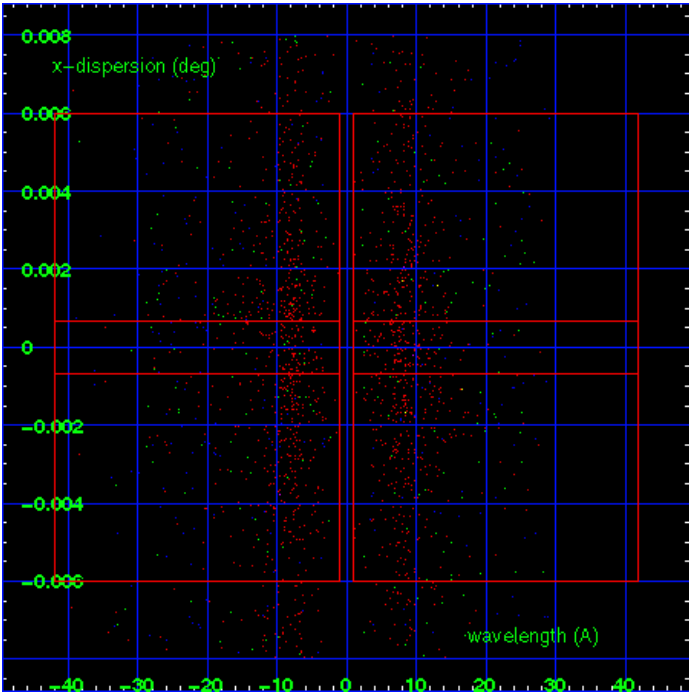
MEG Order Sort 123



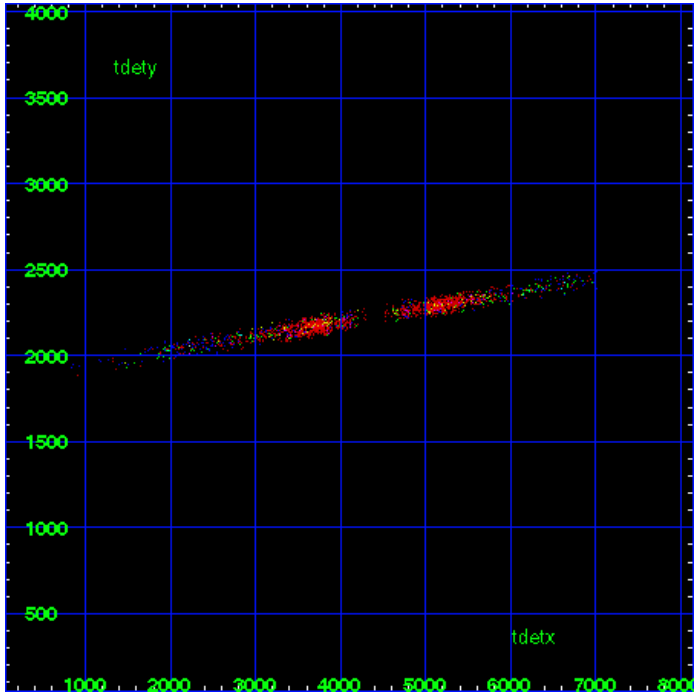
MEG Zero Order



MEG Order Sort ALL

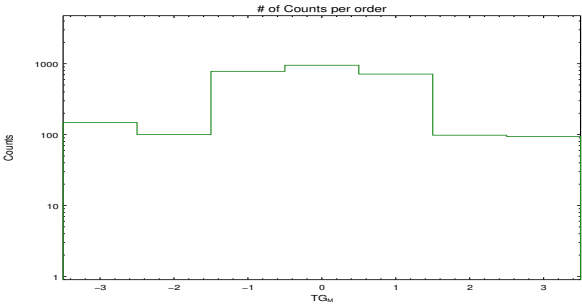


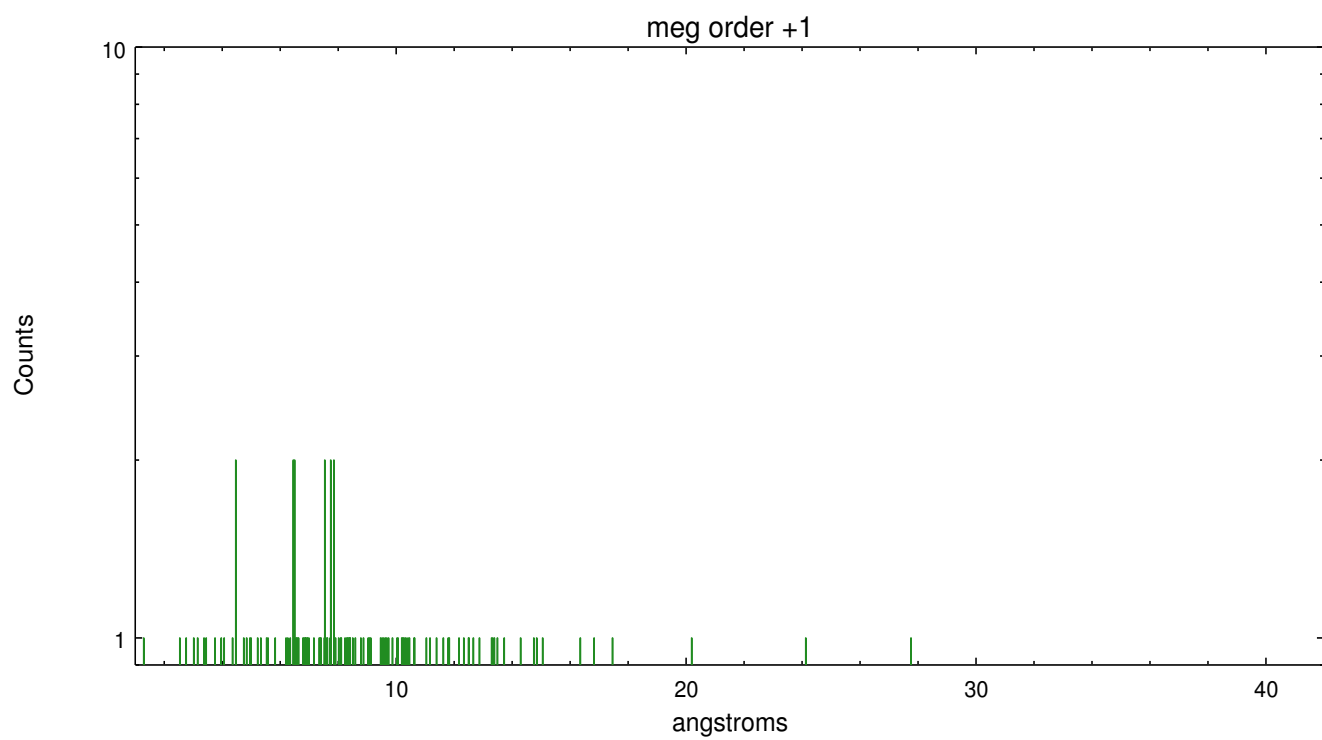
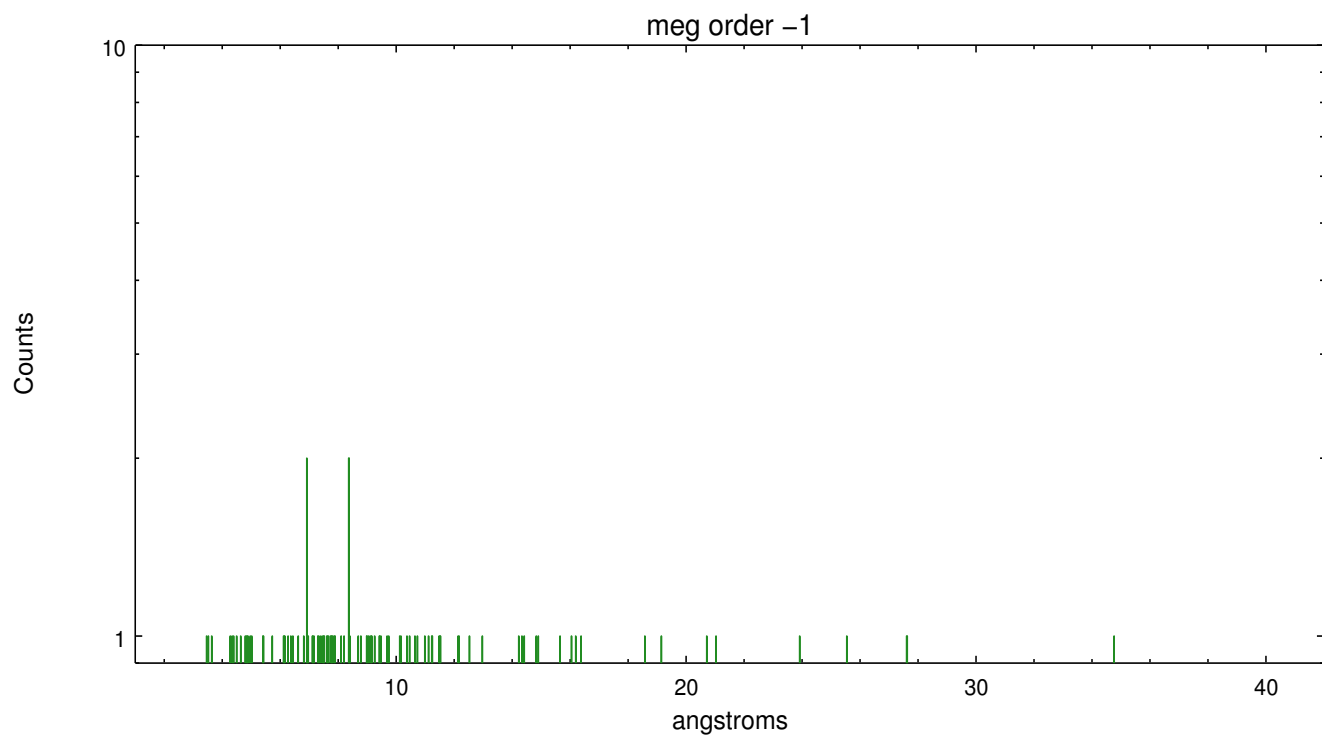
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	148	100	779	950	713	98	94





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.10.25
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.785

A.2 Comments

This is an extended source with no strong central peak of emission. Standard software processing technique using the tool `tgdetect` failed to determine a position for the zeroth order for this observation. The source is extended. The coordinates supplied by the user for the position of the zeroth order could not be used in the processing because they are the coordinates for the optical position of Abell 1835, not the coordinates of the X-ray source. For this processing, the zeroth order position coordinates were estimated by eye to be approximately centered on the diffuse emission (sky coordinates $x=4053.5$, $y=4391.5$). 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.

===

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 user will need to select a region or source of interest, then use software tools such as `CIAO` to specify the coordinates of the zeroth order source of interest before running the tools to resolve the dispersed events.