

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 2330 - L2 Version 4
Chandra X-Ray Center

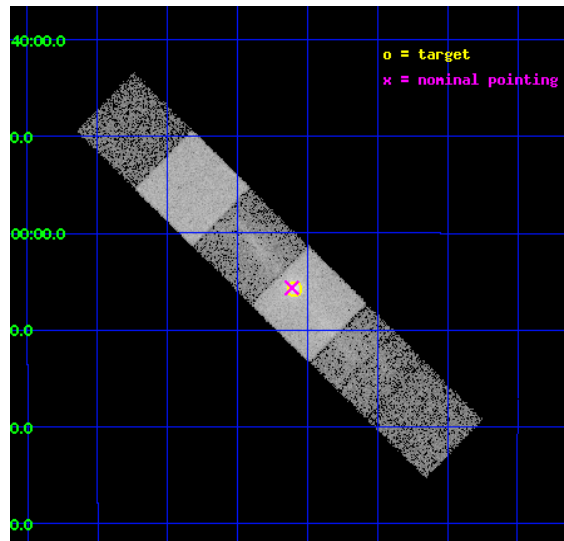
L2 Processing Date : Oct 11 2012

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1 Front

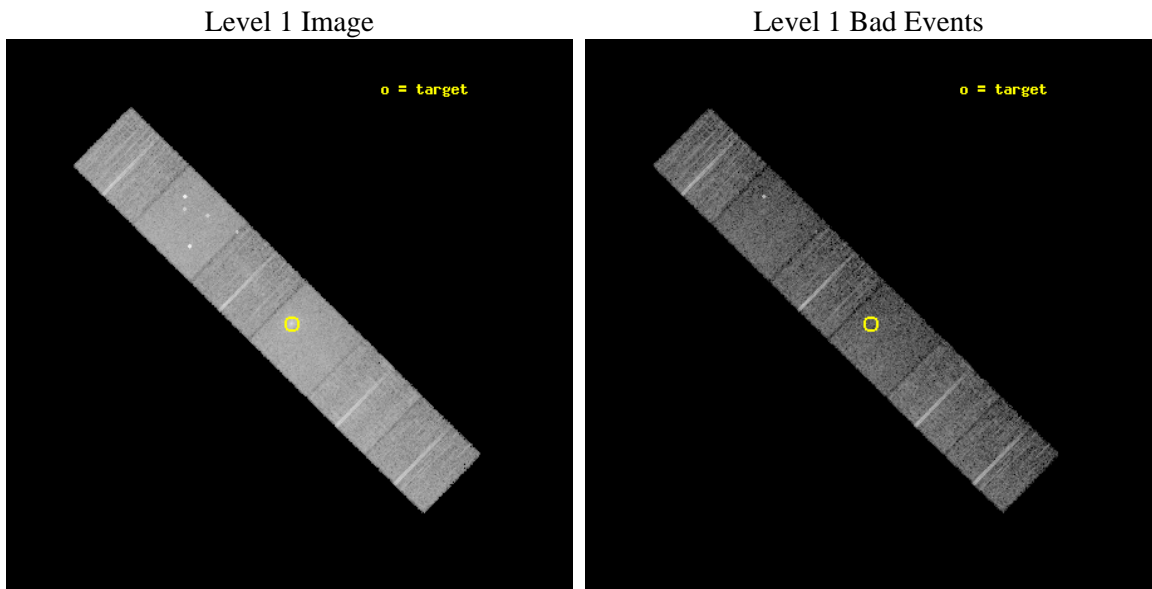
seq_num	800173	Sequence number
obs_id	2330	Observation id
title	ACIS-S/HETG OBSERVATIONS OF THE CENTRAL REGION OF THE HYDRA A CLUSTER OF GALAXIES	Proposal title
observer	Dr. J. Jernigan	Principal investigator
object	HYDRA A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	139.52375	Observer's specified target RA [deg]
dec_targ	-12.095833	Observer's specified target Dec [deg]
ra_nom	139.52801394094	Nominal RA [deg]
dec_nom	-12.094173405973	Nominal Dec [deg]
roll_nom	44.420969634823	Nominal Roll [deg]
revision	4	Processing version of data
ontime	9756.0749806762	Sum of GTIs [s]
livetime	9632.5376848678	Livetime [s]
ontime4	9756.1160206795	Sum of GTIs [s]
ontime5	9756.0339406729	Sum of GTIs [s]
ontime6	9755.9929006845	Sum of GTIs [s]
ontime7	9756.0749806762	Sum of GTIs [s]
ontime8	9755.9517509937	Sum of GTIs [s]
ontime9	9755.9108206779	Sum of GTIs [s]
l2events	107873	Number of level 2 events



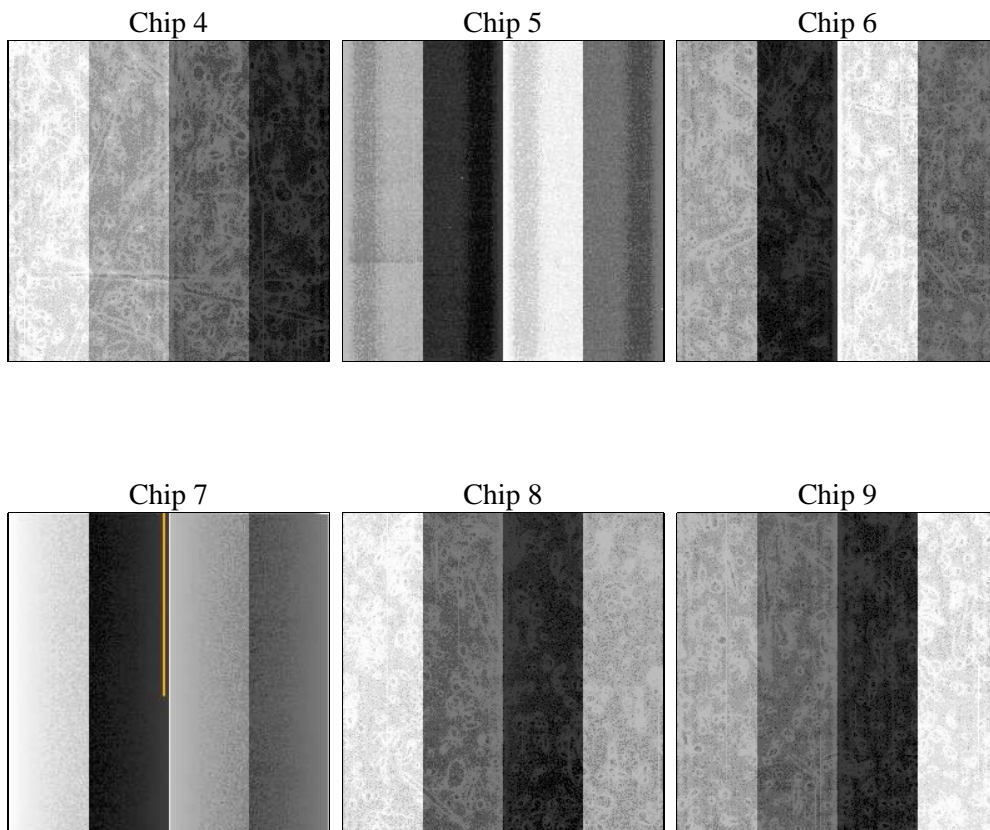
2 OBI

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	9756.0749806762	Sum of GTIs [s]
caldbver	4.5.1.1	 	ontime4	9756.1160206795	Sum of GTIs [s]
date	2012-09-06T08:41:57	Date and time of file creation	ontime5	9756.0339406729	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	9755.9929006845	Sum of GTIs [s]
			ontime7	9756.0749806762	Sum of GTIs [s]
			ontime8	9755.9517509937	Sum of GTIs [s]
			ontime9	9755.9108206779	Sum of GTIs [s]
			l1events	436365	Number of level 1 events

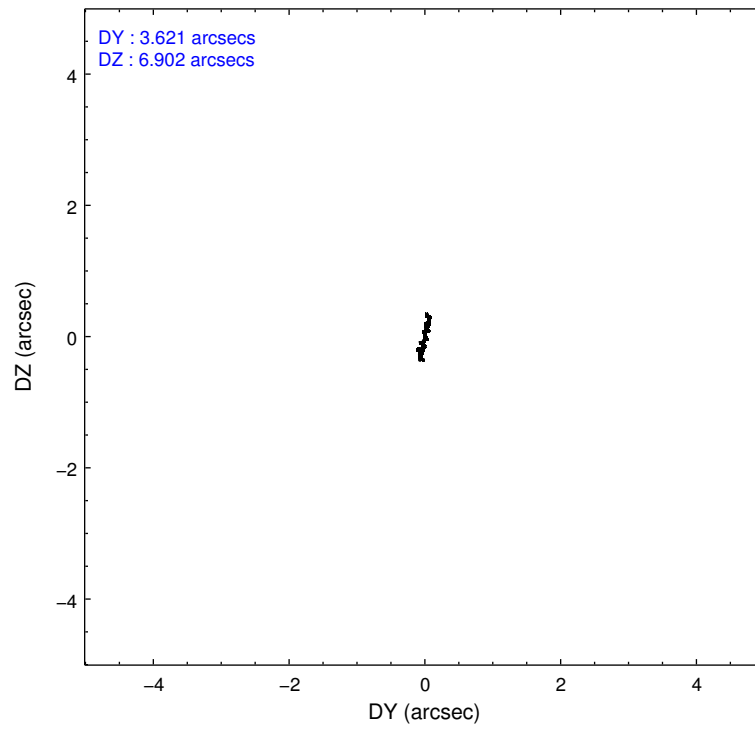
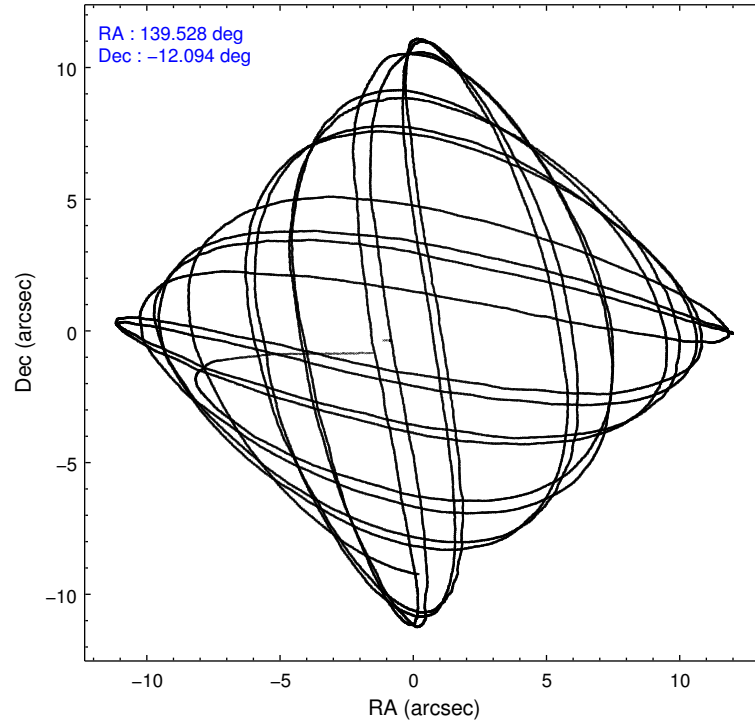
2.1.4 Events

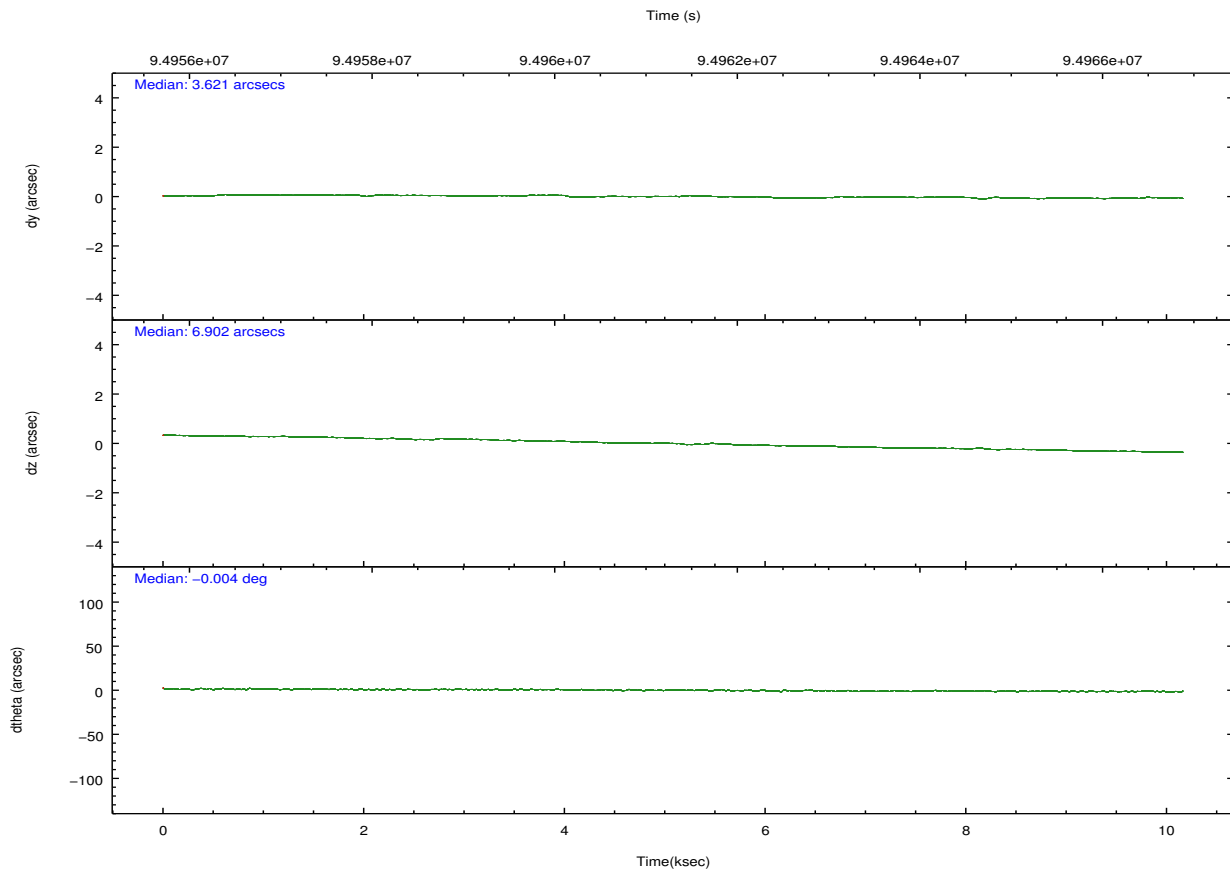
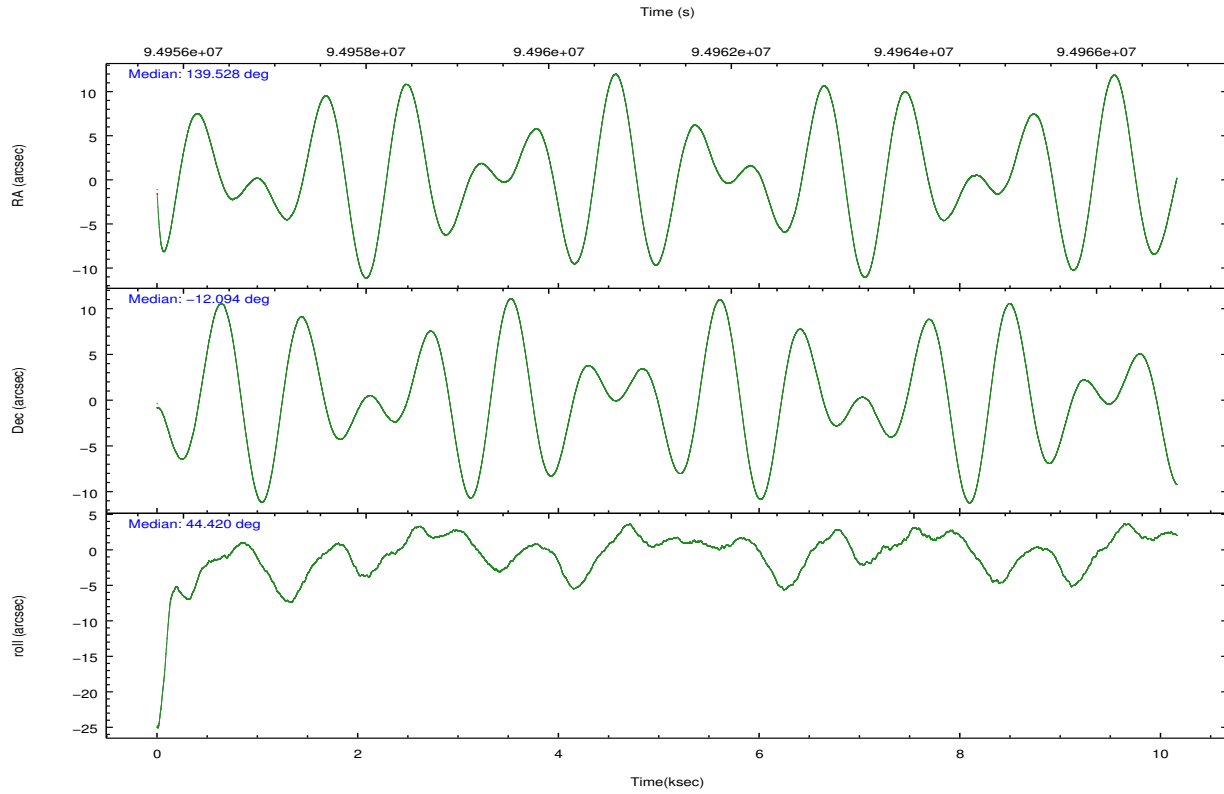
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	67821	85044	61992	85387	77998	58123	grade 0 events	3036	6247	6801	5608	6957	3138
rejected events	60719	44480	50273	43176	60920	50902		4%	7%	10%	6%	8%	5%
rejected %	89%	52%	81%	50%	78%	87%	grade 1 events	25	126	51	70	57	33
								0%	0%	0%	0%	0%	0%
							grade 2 events	1618	11928	1863	8961	3237	1392
								2%	14%	3%	10%	4%	2%
							grade 3 events	625	1722	808	4135	1688	711
								0%	2%	1%	4%	2%	1%
							grade 4 events	611	1616	829	4126	1621	636
								0%	1%	1%	4%	2%	1%
							grade 5 events	2004	6284	2409	7113	2980	2461
								2%	7%	3%	8%	3%	4%
							grade 6 events	1214	19083	1424	19418	3580	1352
								1%	22%	2%	22%	4%	2%
							grade 7 events	58688	38038	47807	35956	57878	48400
								86%	44%	77%	42%	74%	83%

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	139.520770	139.5280139409427	Subarray requested	NONE	NONE
[deg] Pointing Dec	-12.120550	-12.09417340597319	Alternating exposures requested	N	N
[deg] Pointing Roll	44.262829	44.42096963482349	[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)	94956380.184000	94955323.711272			
Observation start date	2001-01-04T00:45:16	2001-01-04T00:28:43			
[s] Observation end time (MET)	94966380.184000	94967860.99925201			
Observation end date	2001-01-04T03:31:56	2001-01-04T03:57:40			
Read mode	TIMED	TIMED			

2.3 Aspect



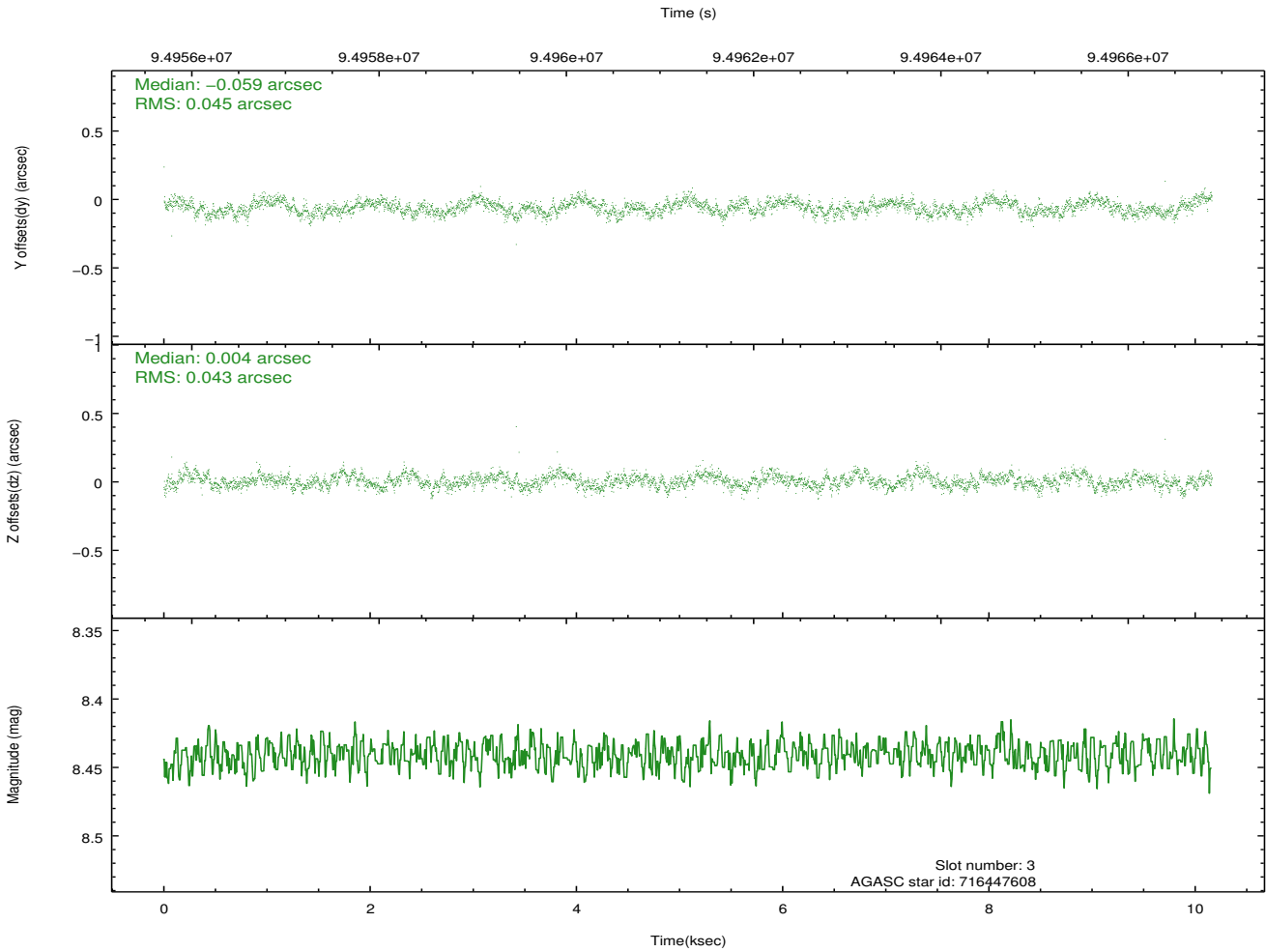
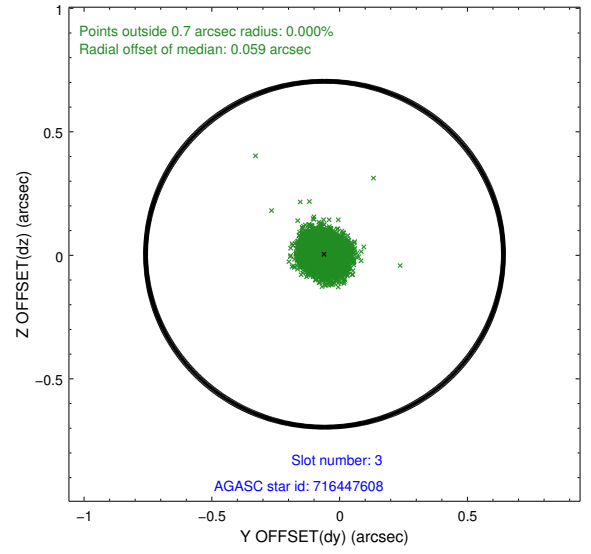
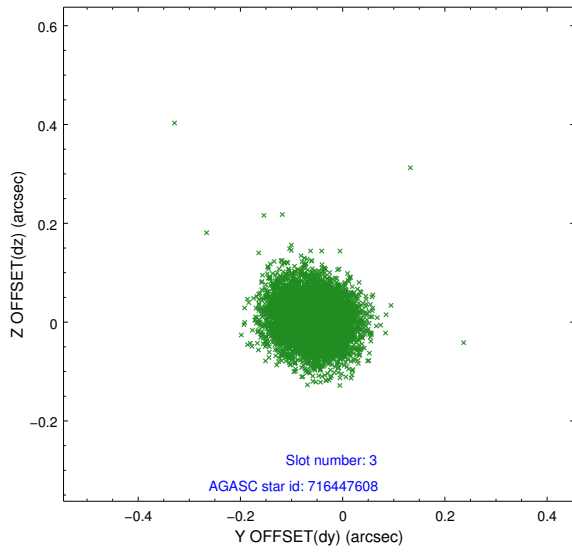


Slot Statistics

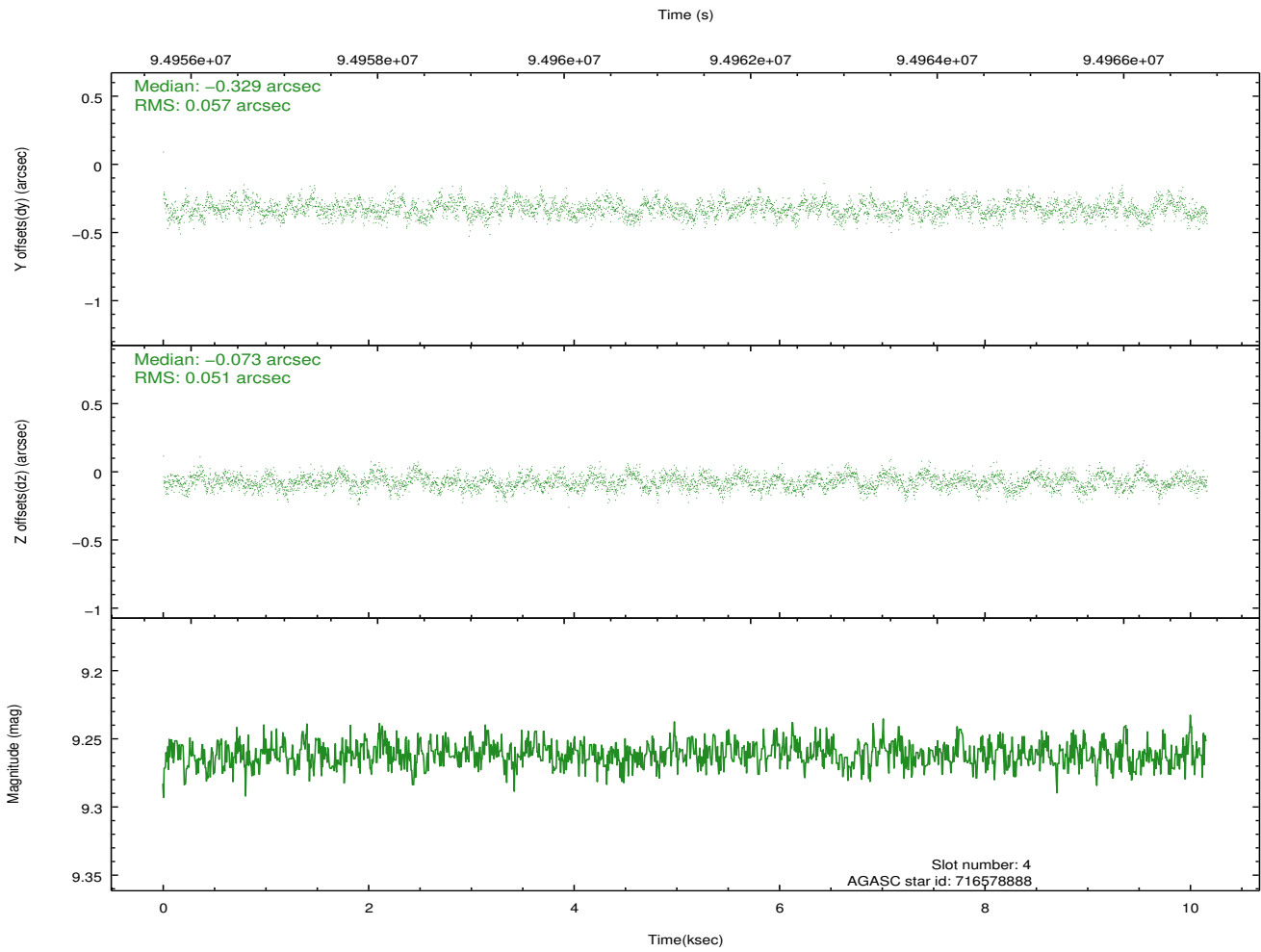
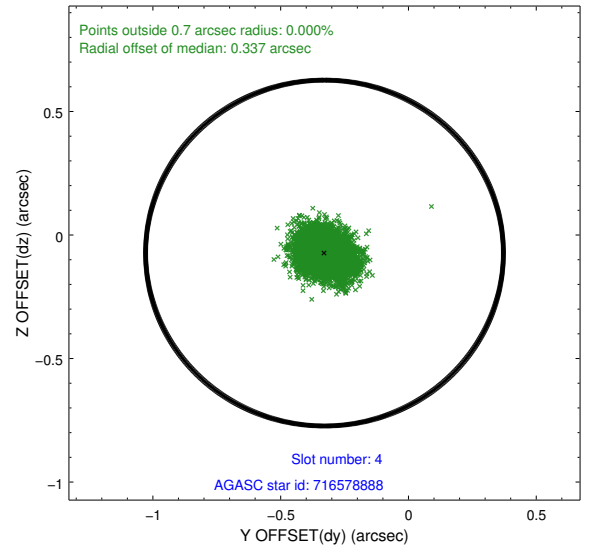
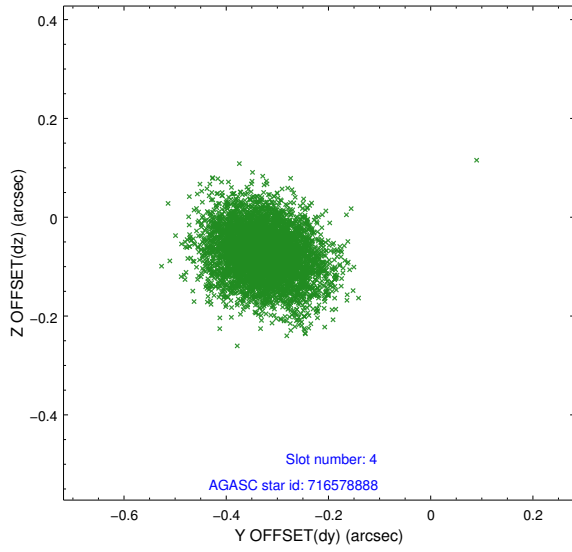
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	2478	-0.009	0.008	0.009	0.014	0.000000	0.000000	-756.29	-1728.05
1	FID	ACIS-S-4	7.20	2477	-0.009	0.002	0.007	0.011	0.000000	0.000000	2156.76	179.88
2	FID	ACIS-S-5	7.23	2477	-0.013	-0.001	0.008	0.016	0.000000	0.000000	-1808.46	174.16
3	GUIDE	716447608	8.44	4955	-0.059	0.004	0.067	0.104	139.107687	-11.923612	-548.19	1522.38
4	GUIDE	716578888	9.26	4954	-0.329	-0.073	0.081	0.132	139.858876	-11.605741	2146.29	494.73
5	GUIDE	716452568	9.32	4956	0.019	0.084	0.083	0.132	139.317316	-12.008019	-230.22	790.05
6	GUIDE	716454552	9.00	4954	0.277	-0.110	0.141	0.202	139.524204	-12.319370	-490.82	-521.11
7	GUIDE	716452328	8.85	4955	0.086	0.108	0.078	0.122	138.982178	-12.235590	-1647.69	1024.50

2.4 Star Slots

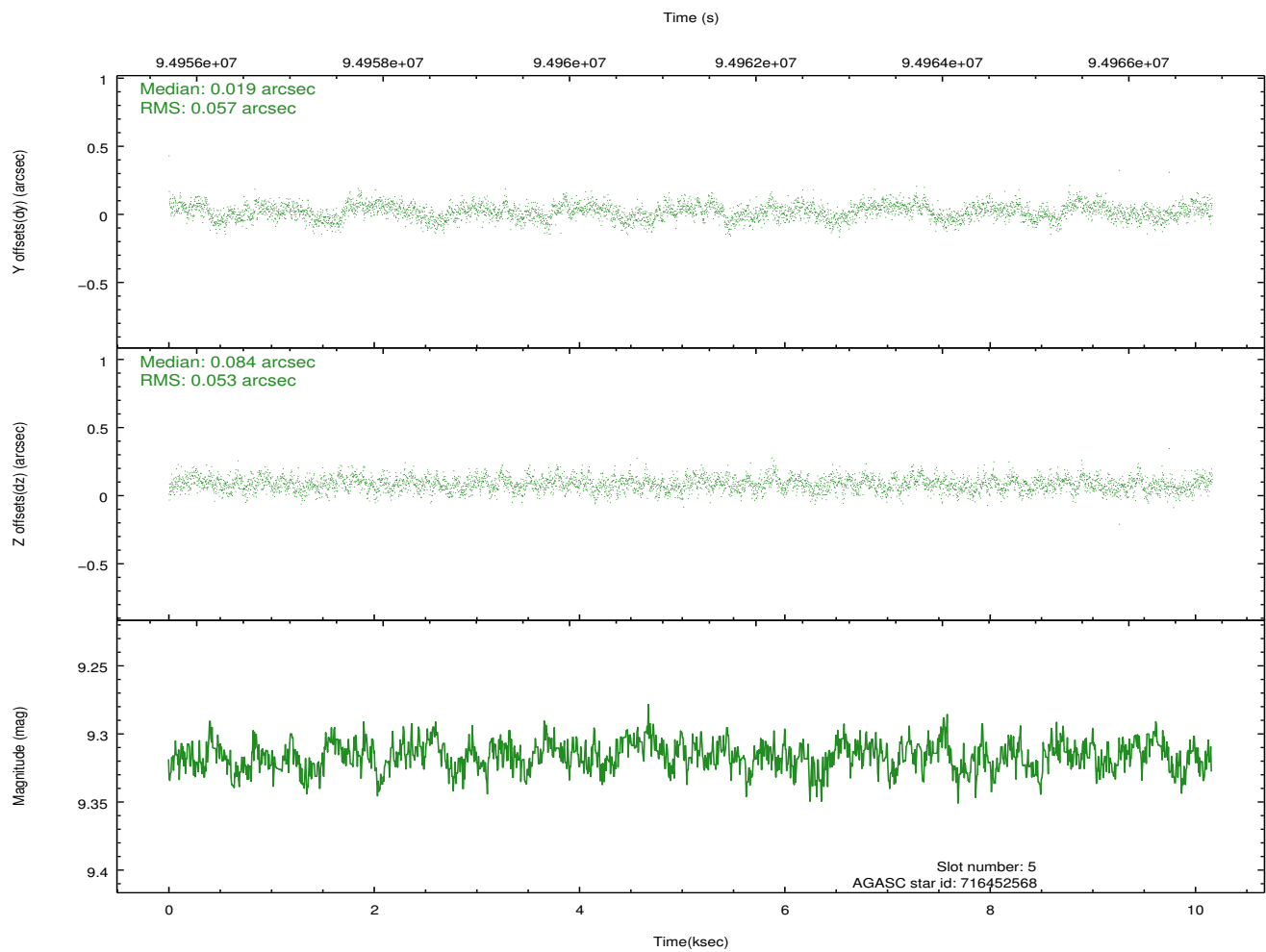
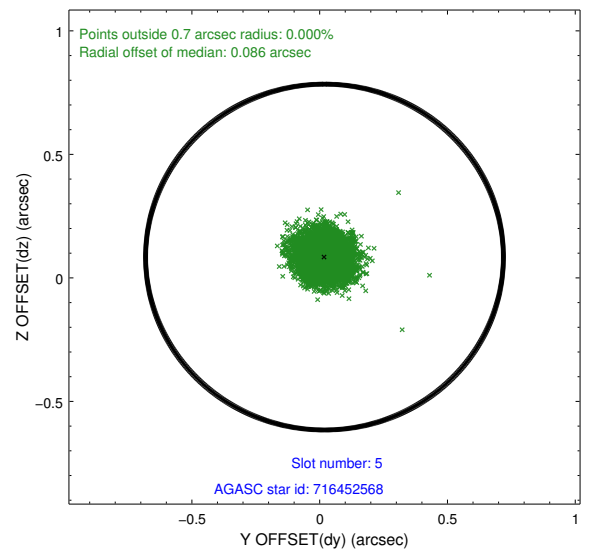
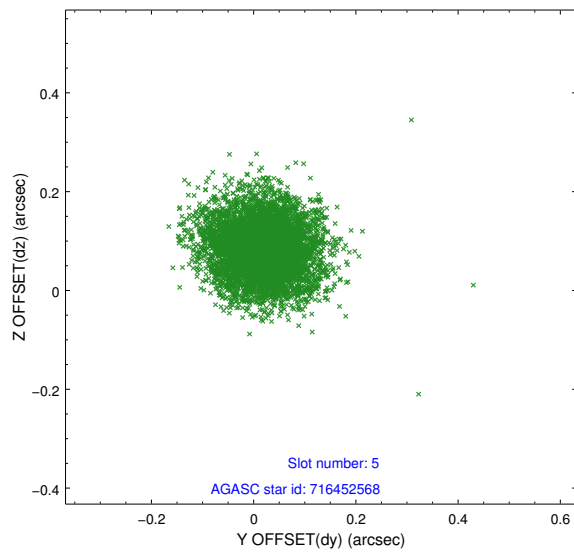
2.4.1 Slot 3



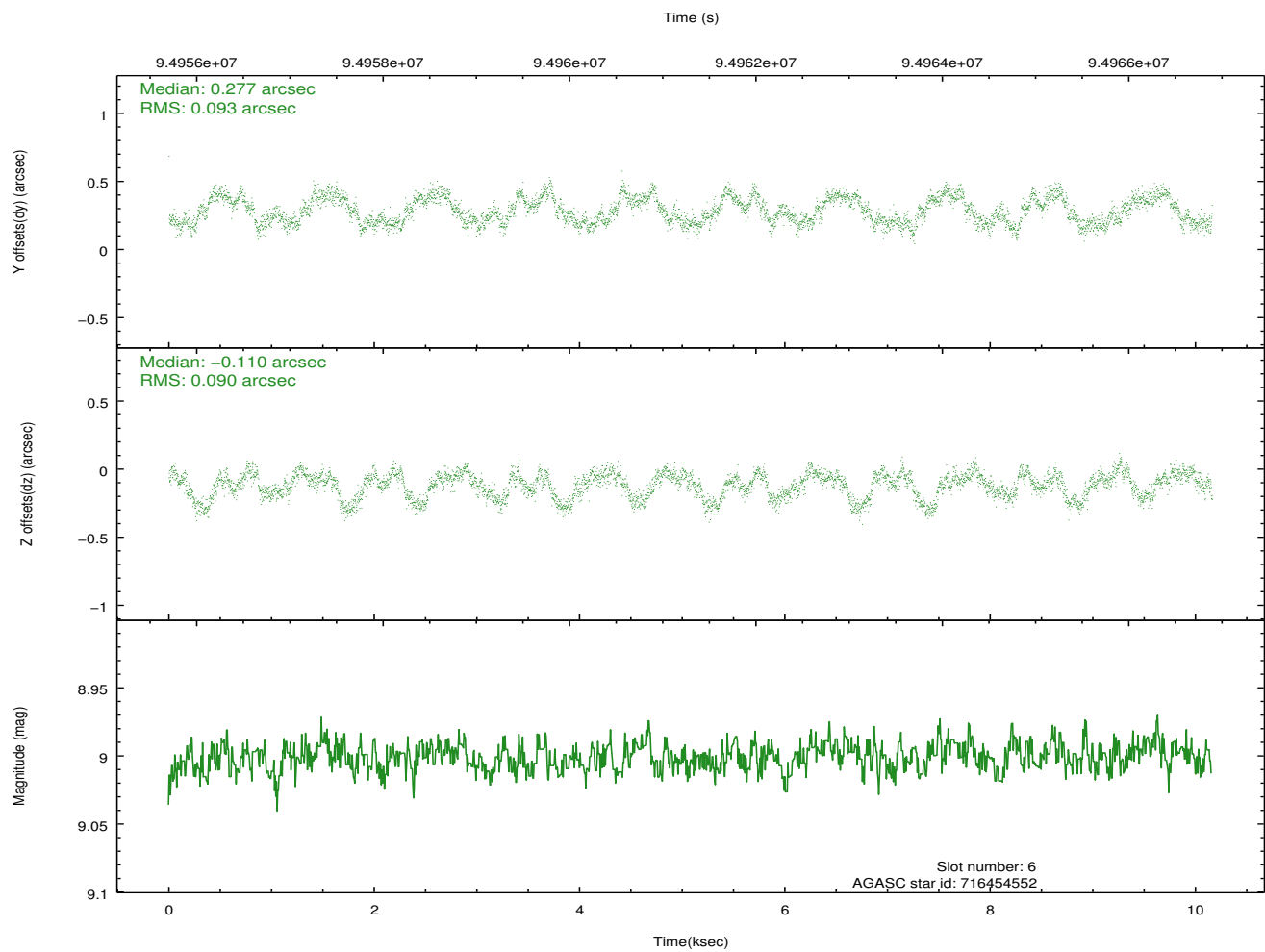
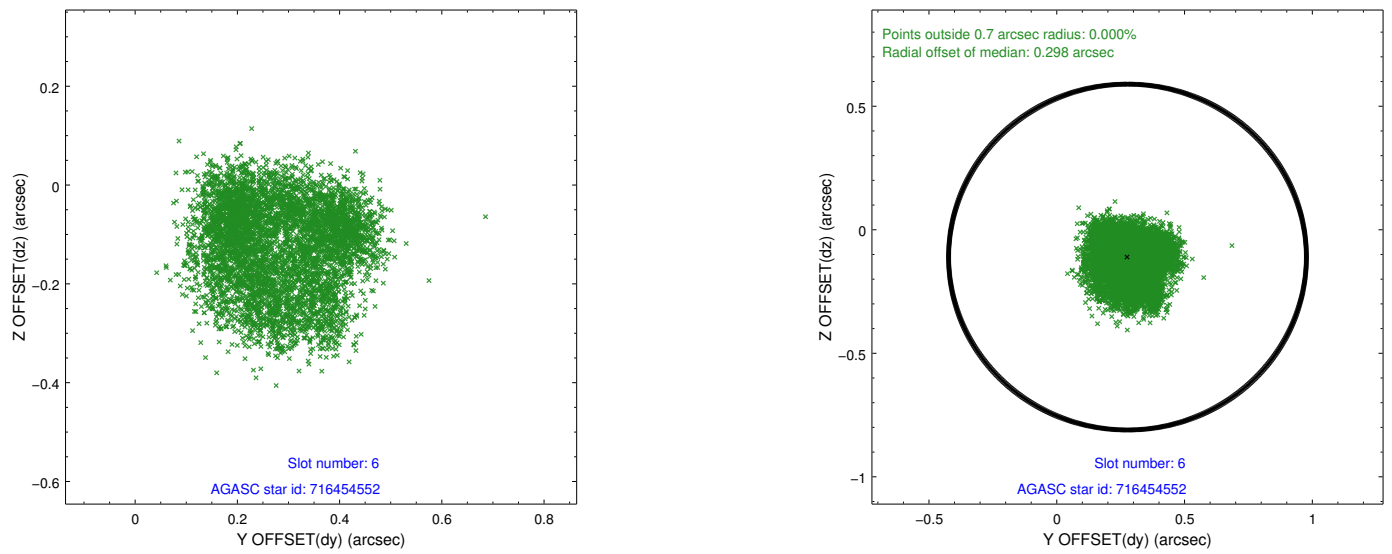
2.4.2 Slot 4



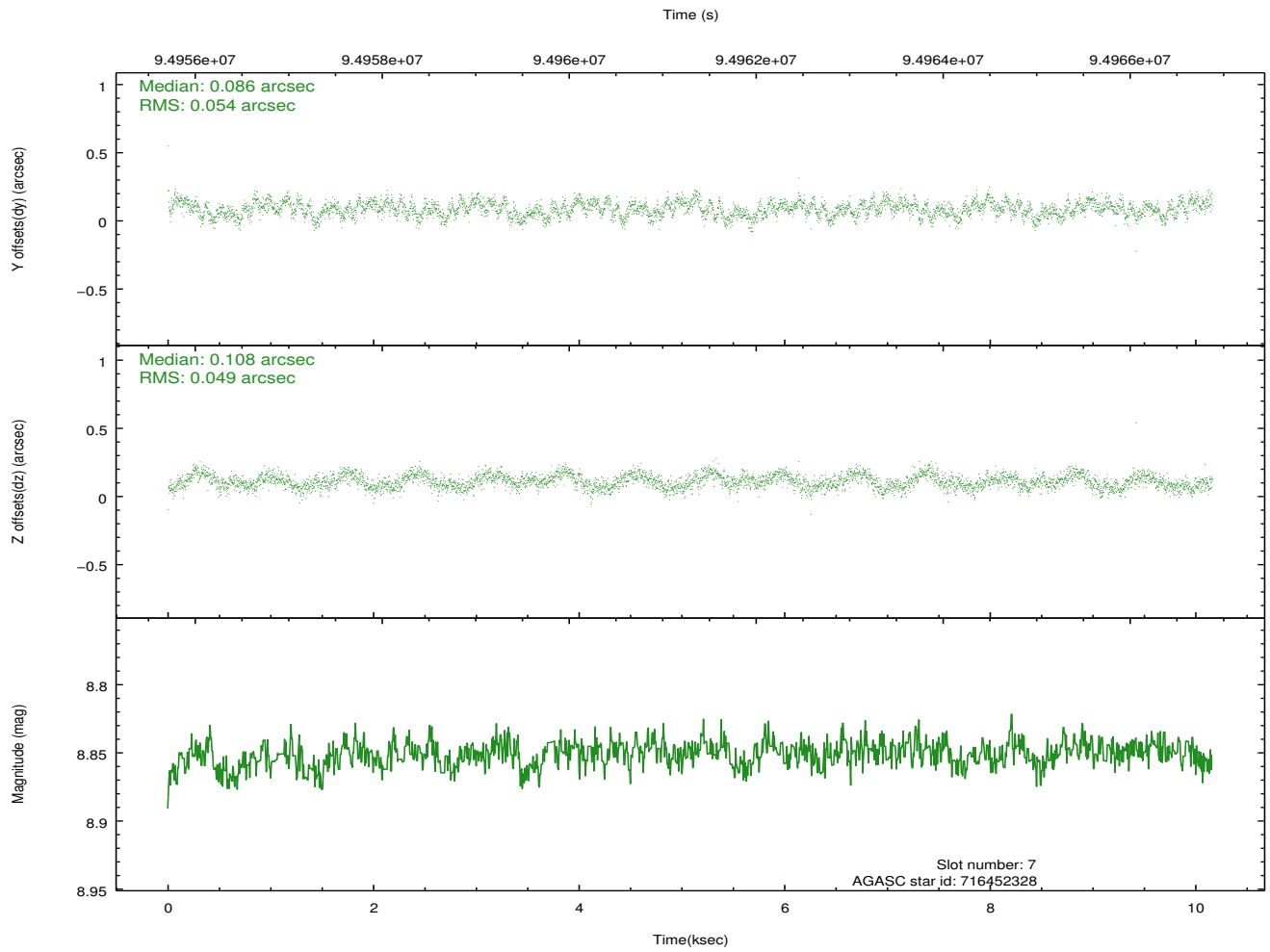
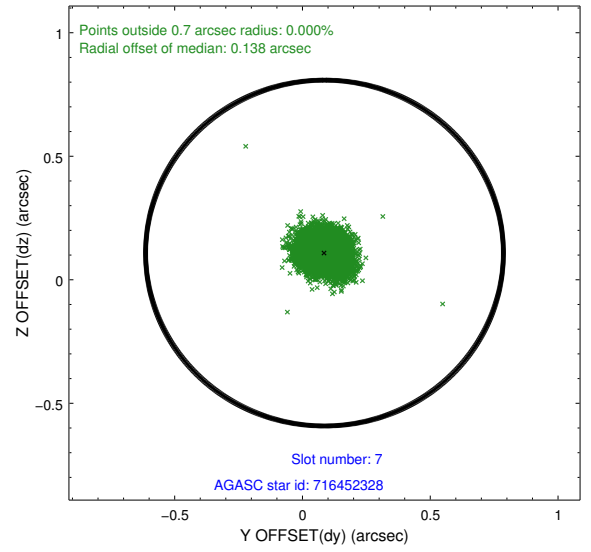
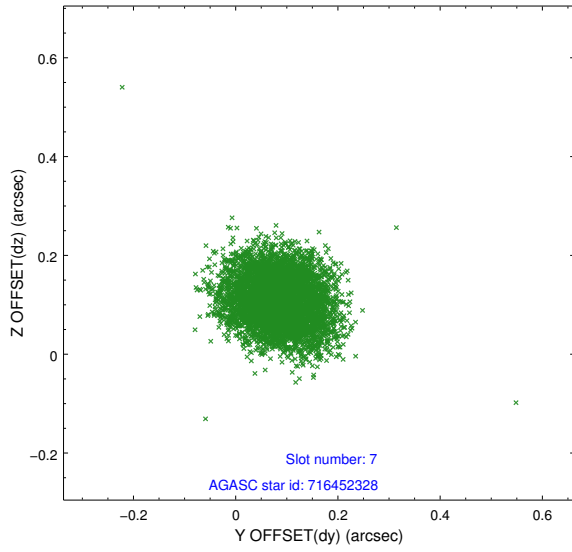
2.4.3 Slot 5



2.4.4 Slot 6

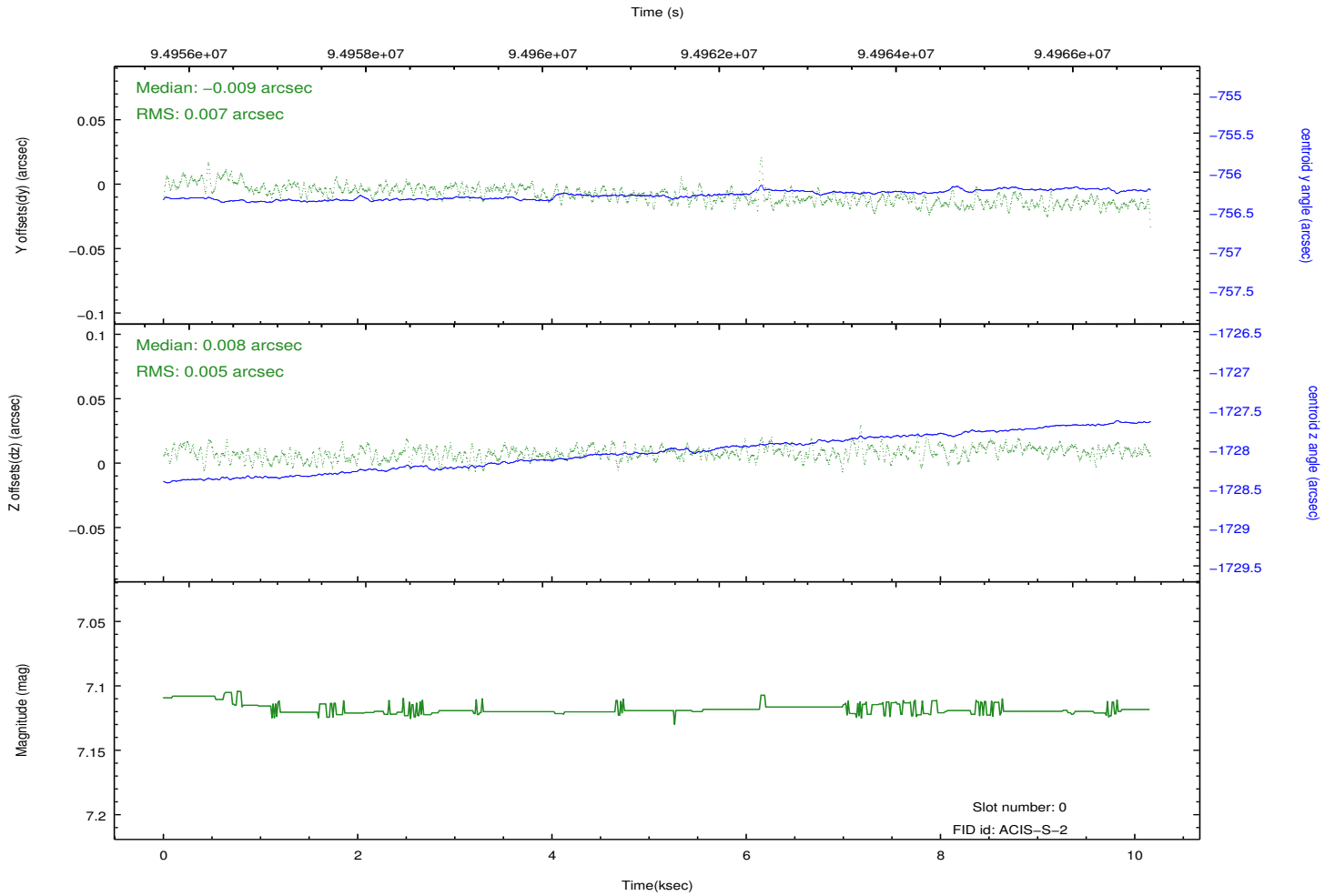
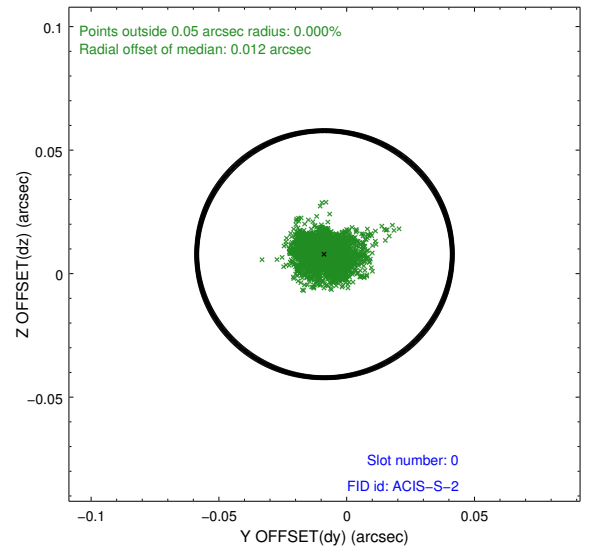
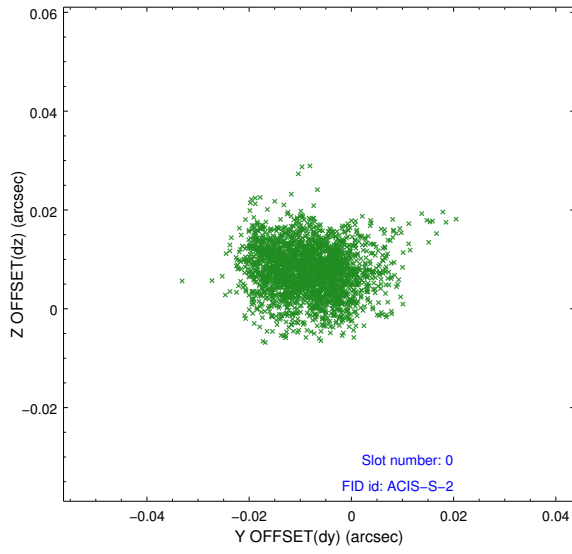


2.4.5 Slot 7

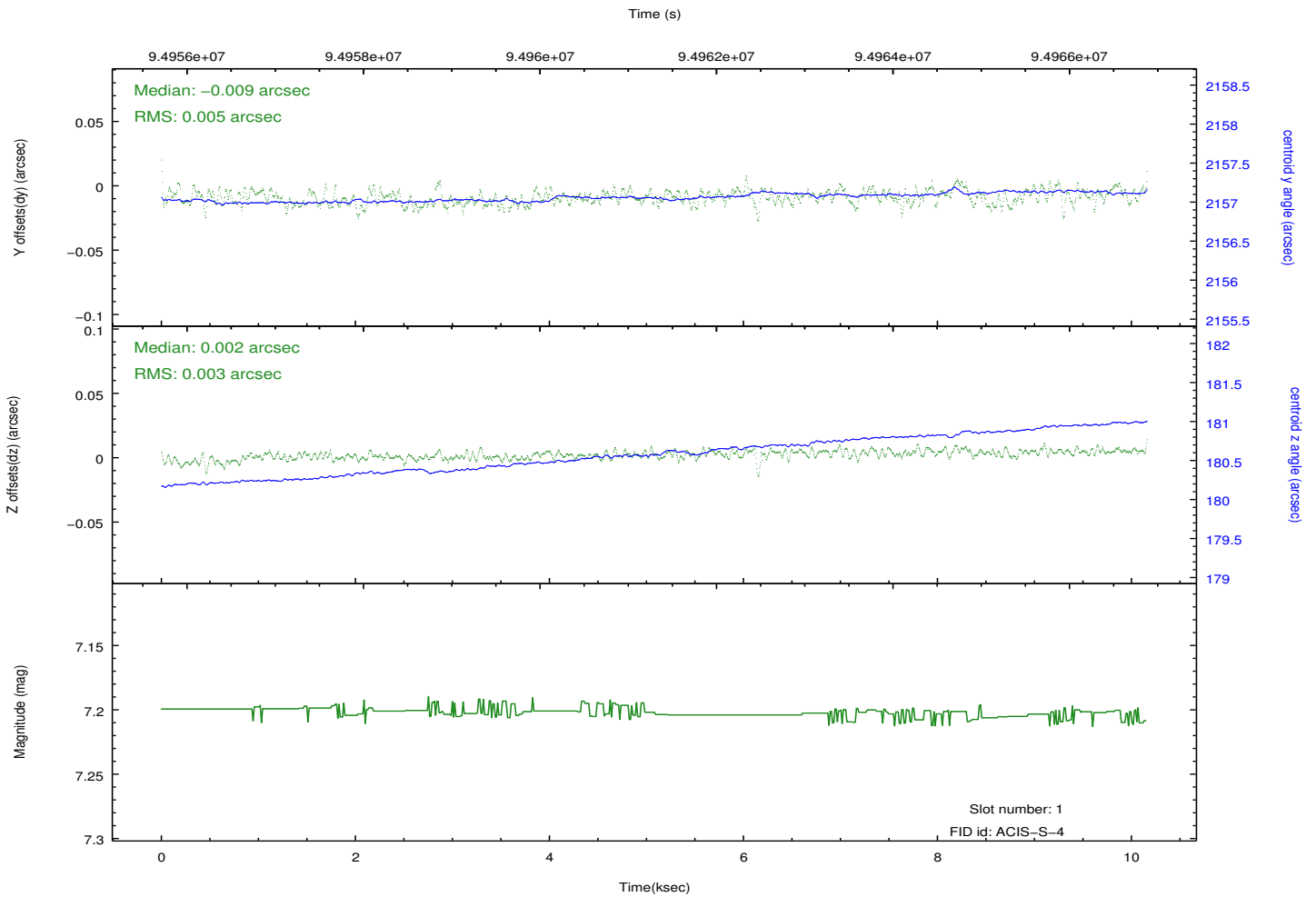
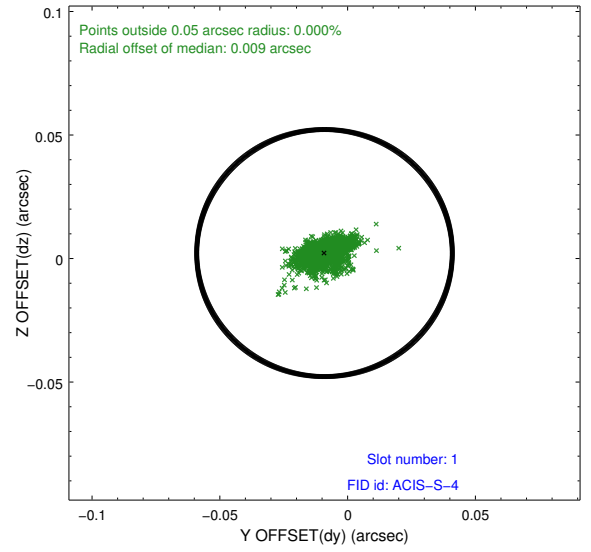
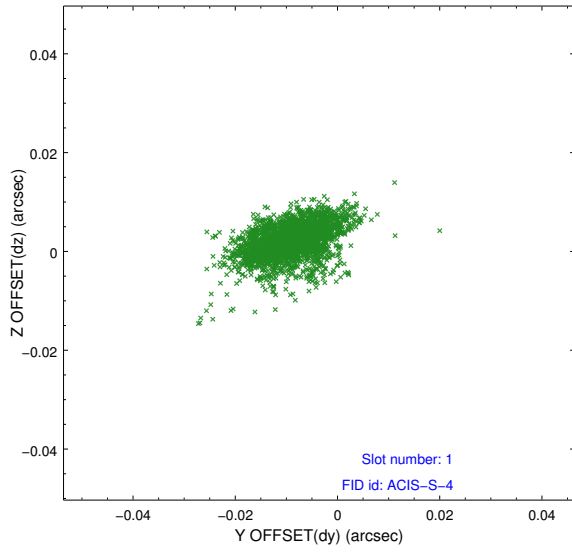


2.5 FID Slots

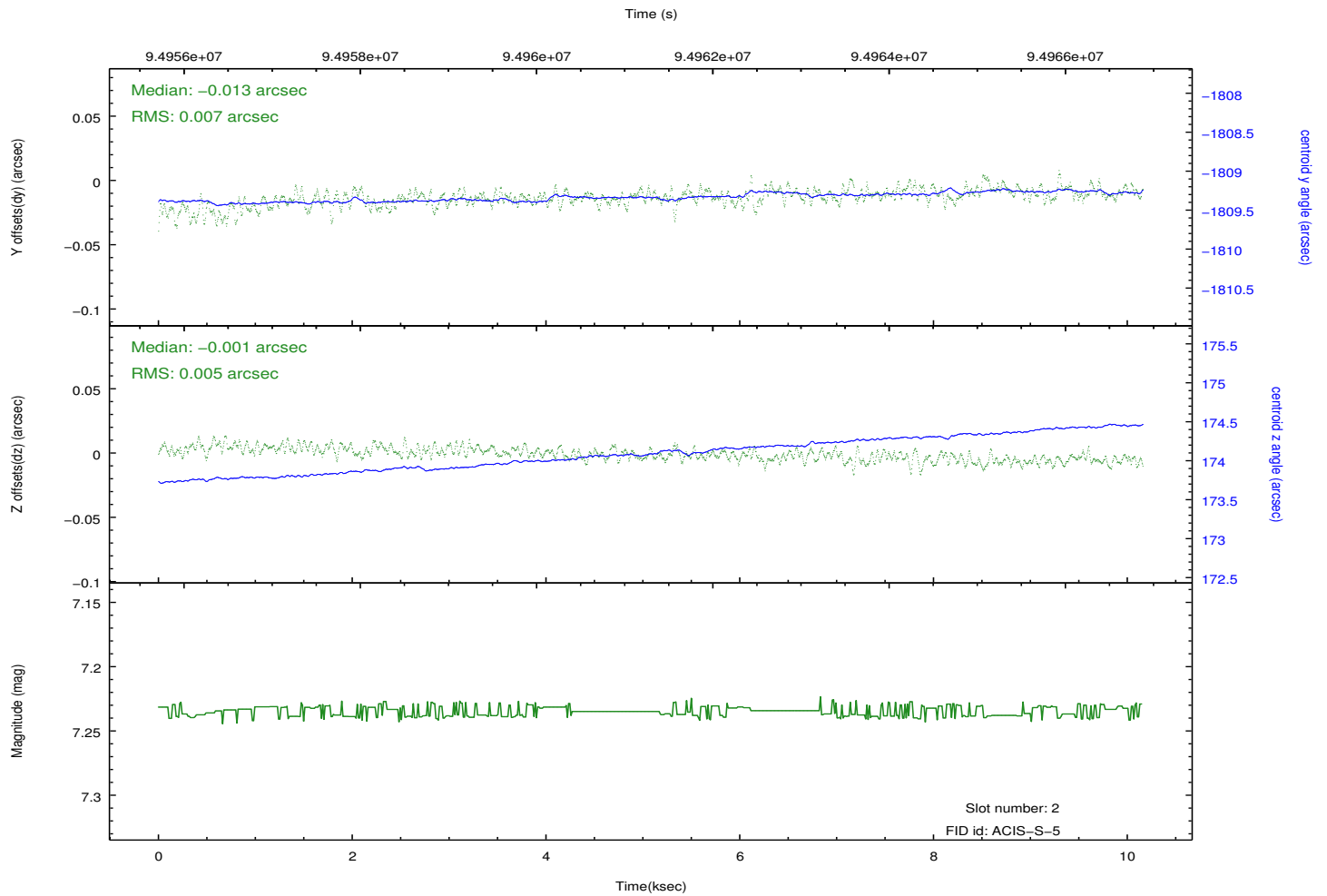
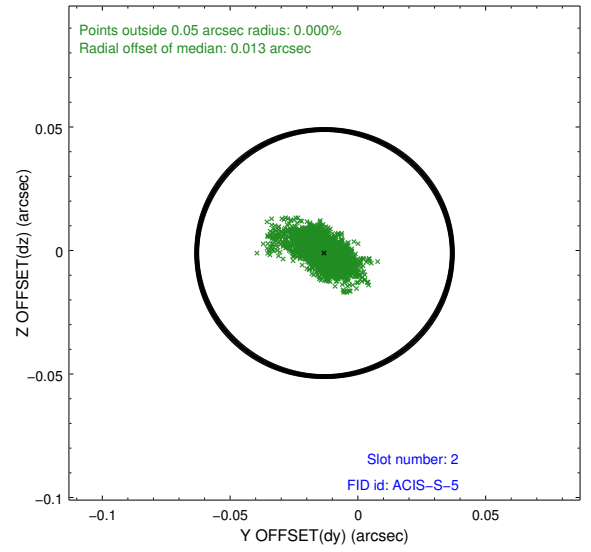
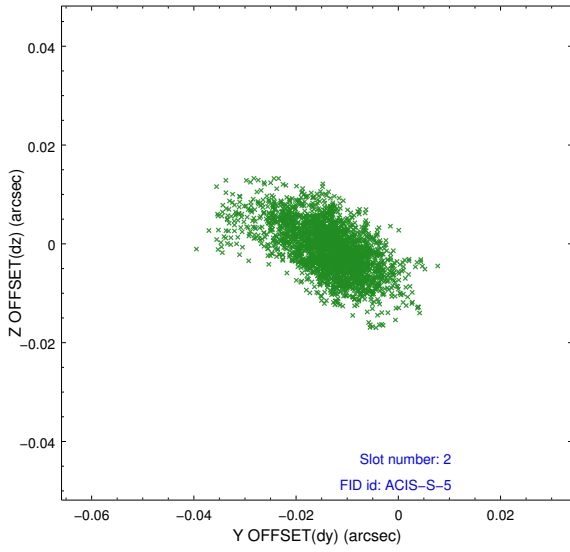
2.5.1 Slot 0



2.5.2 Slot 1

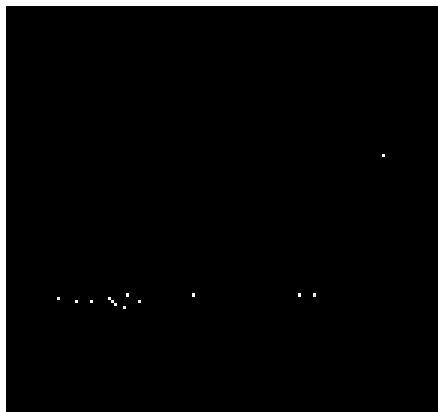


2.5.3 Slot 2

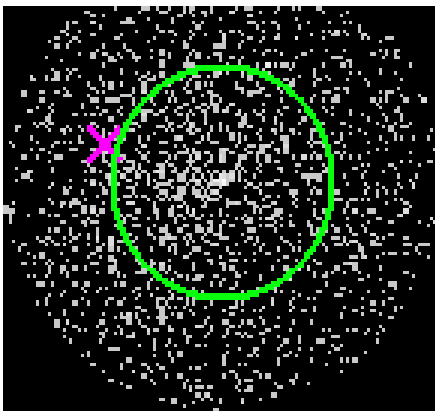


3 Gratings

3.1 HEG Arm



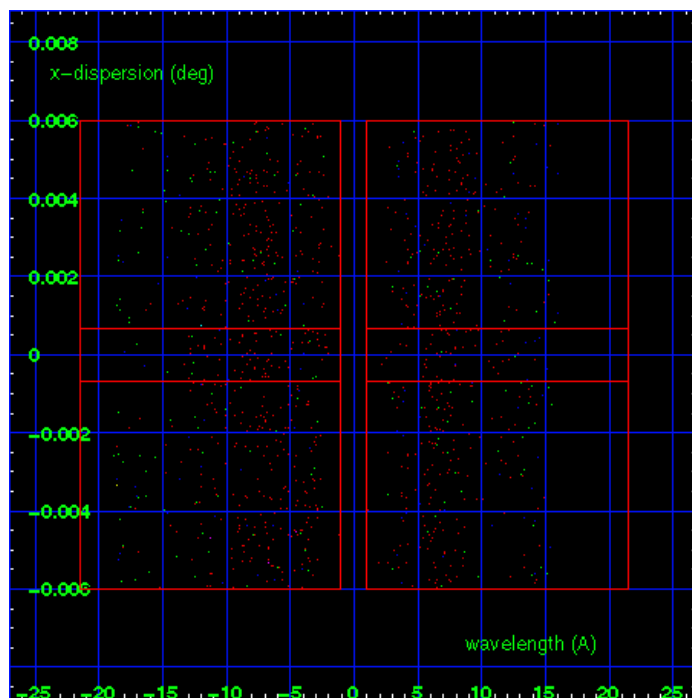
HEG Order Sort 123



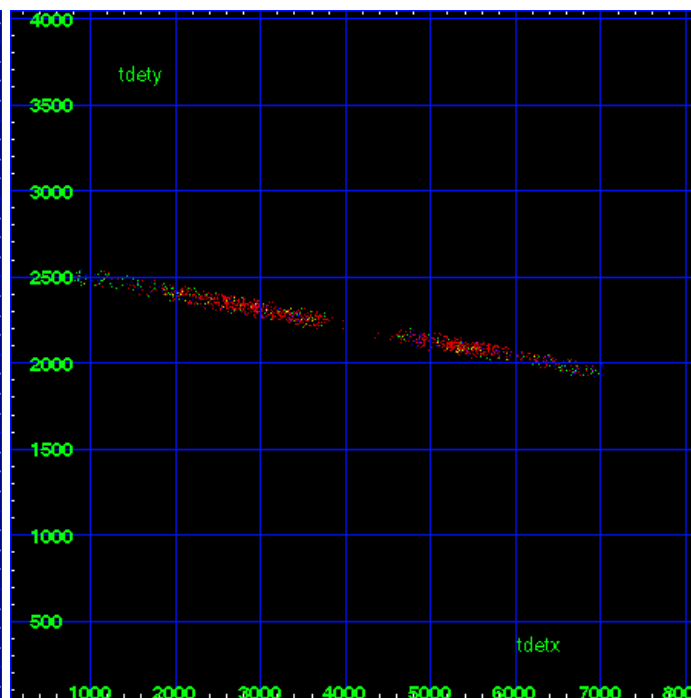
HEG Zero Order



HEG Order Sort ALL

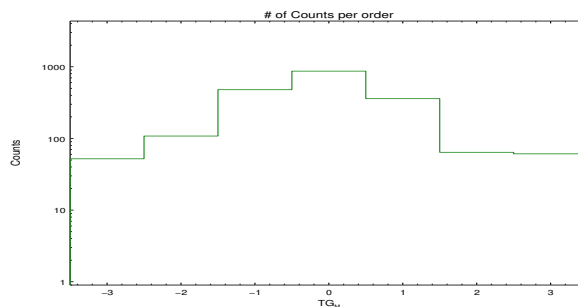


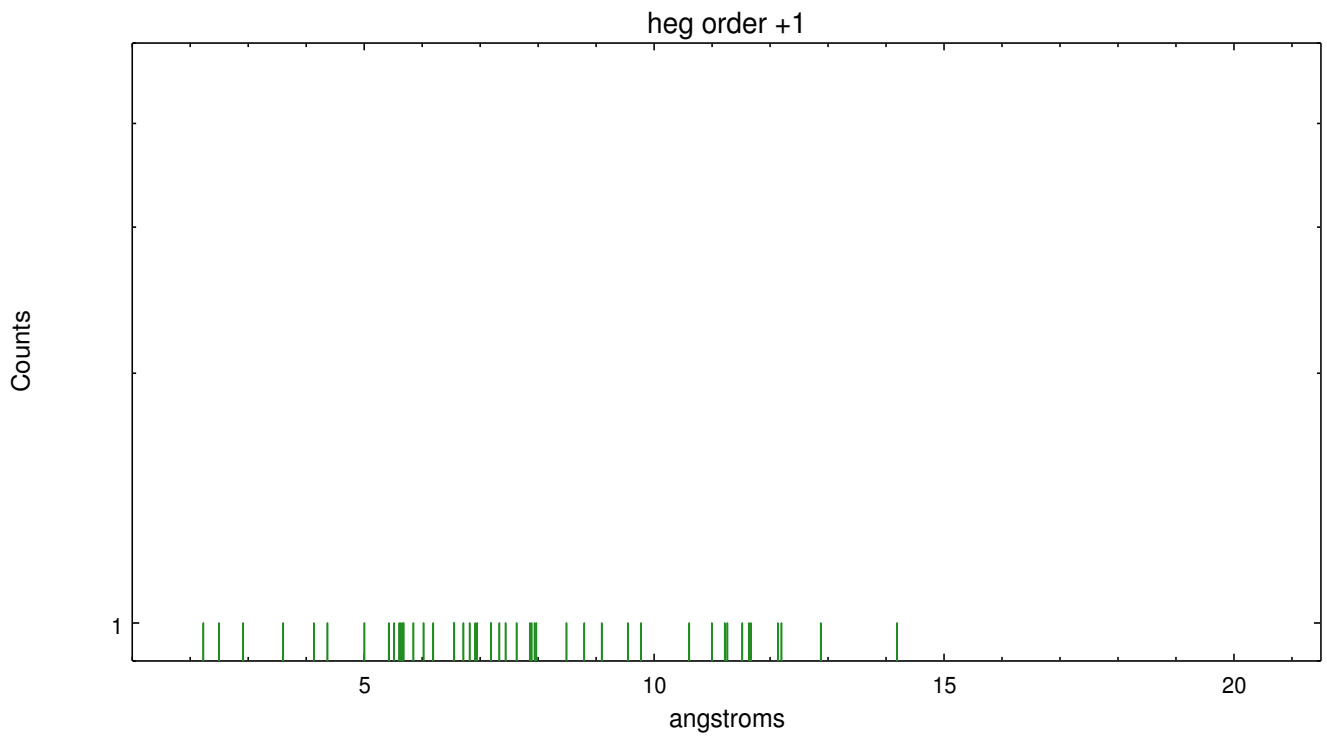
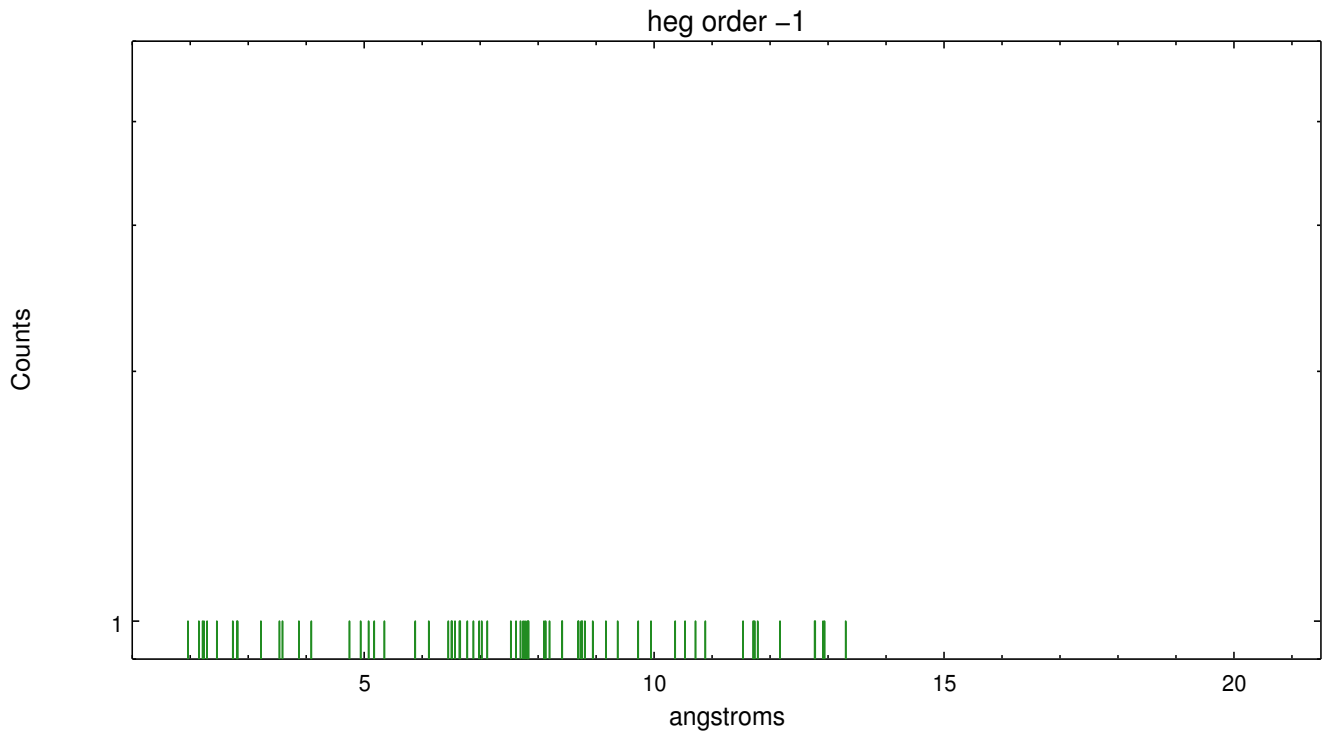
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	52	108	479	869	359	64	61

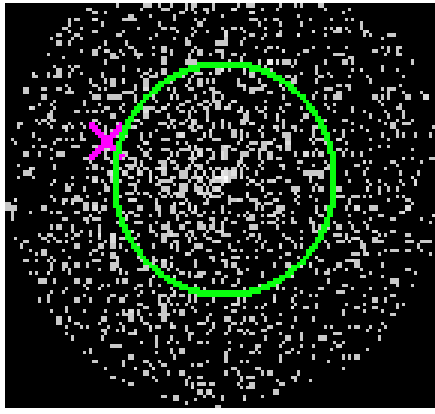




3.2 MEG Arm



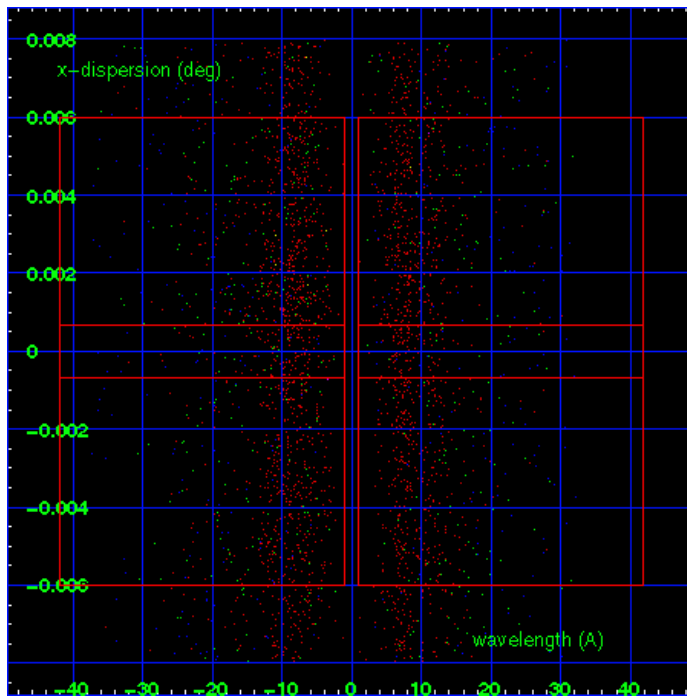
MEG Order Sort 123



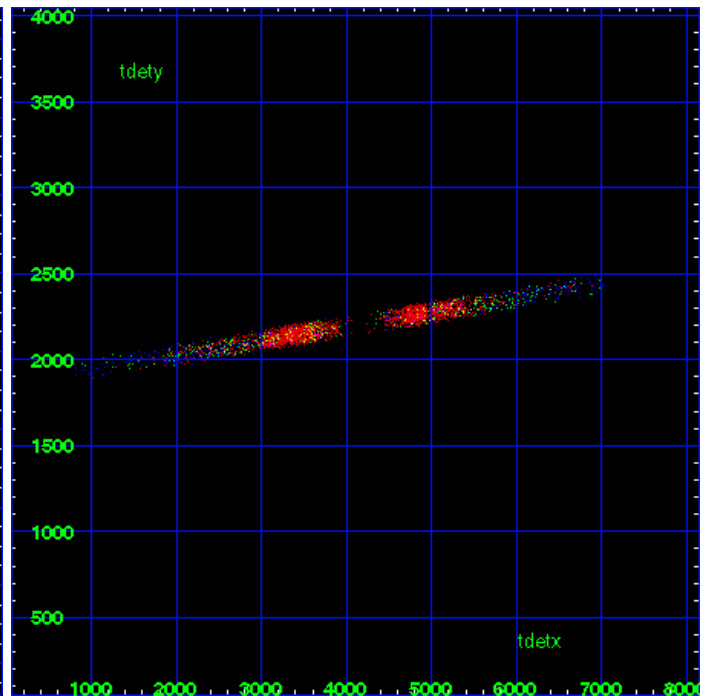
MEG Zero Order



MEG Order Sort ALL

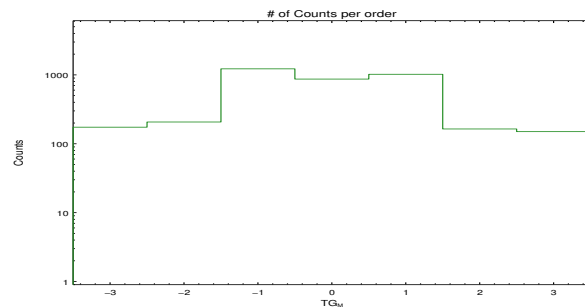


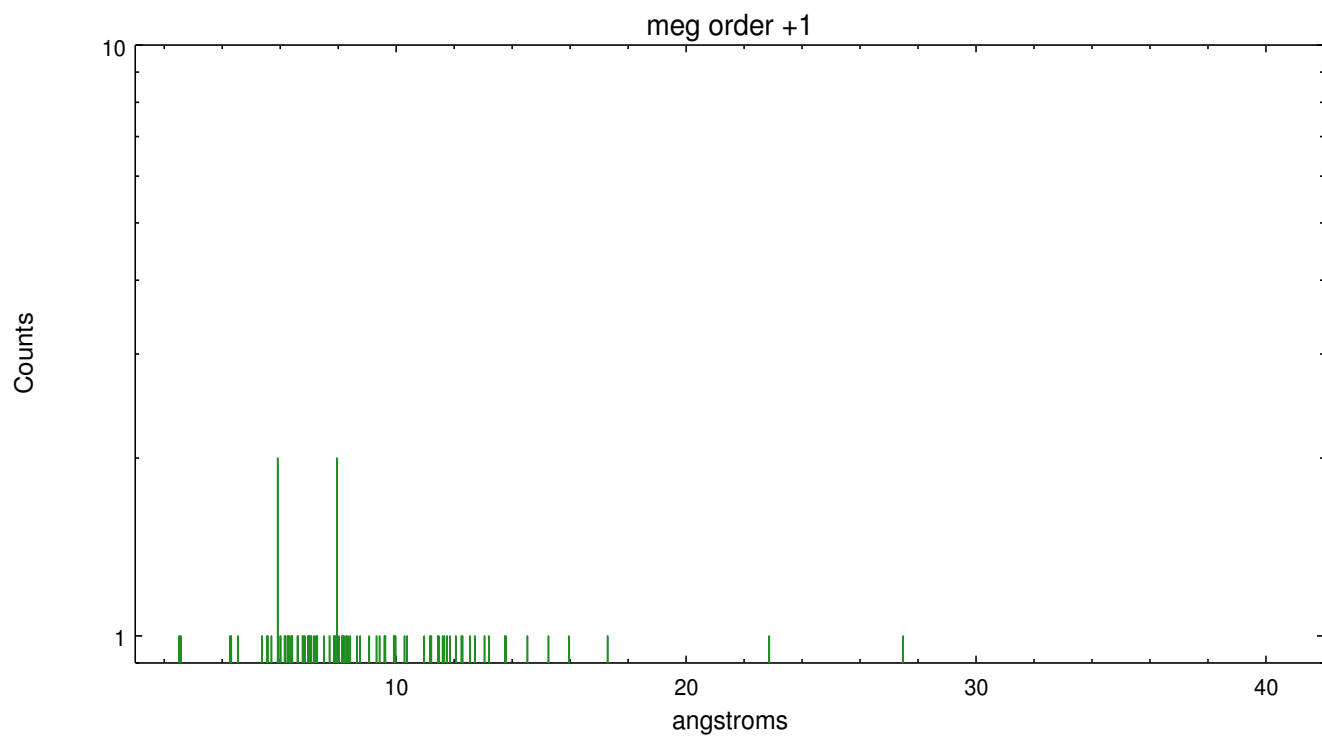
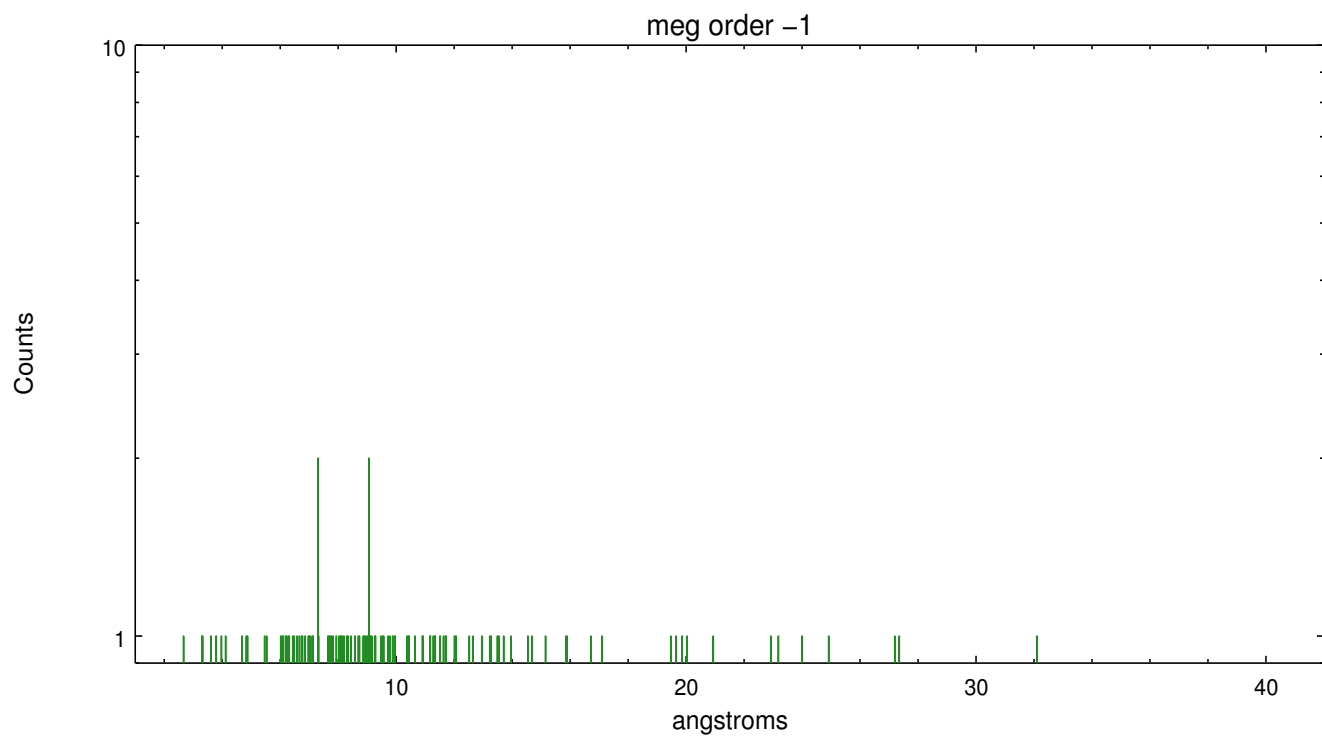
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	174	207	1224	869	1020	164	150





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	9.756

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 the position of the brightest emission (sky coordinates $x=4128.03$, $y=4085.99$). 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.