

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 21099 - L2 Version 1
Chandra X-Ray Center

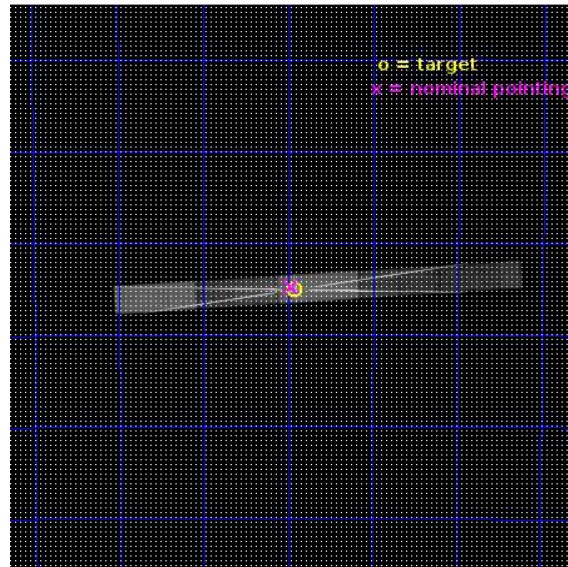
L2 Processing Date : Jun 2 2018

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
3	Gratings	17
3.1	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

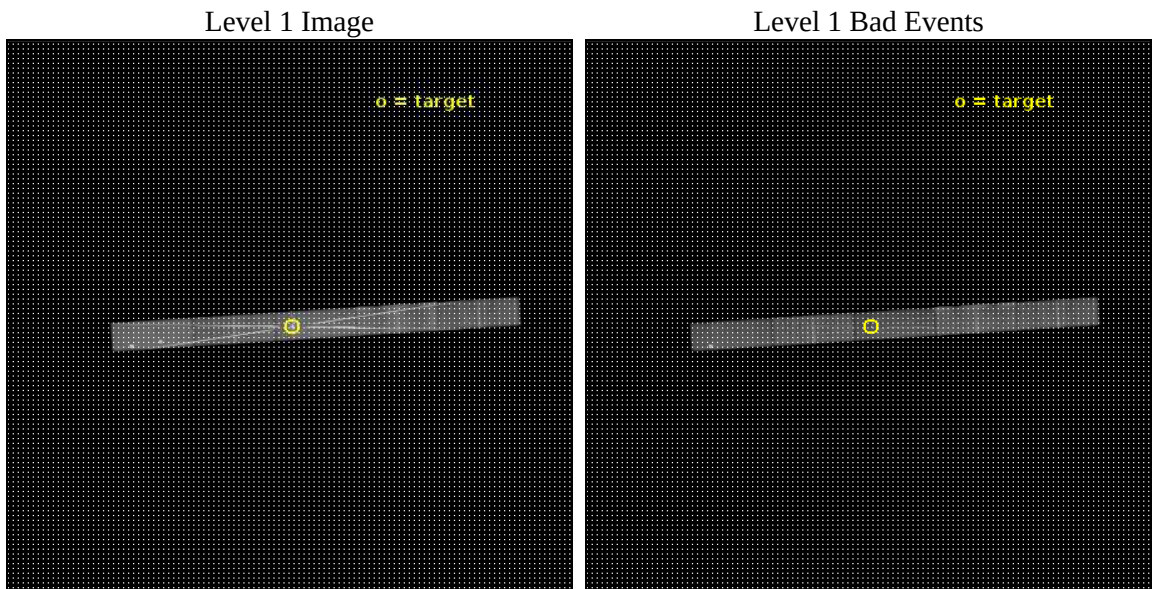
seq_num	901409	Sequence number
obs_id	21099	Observation id
title	Measure Si K and Fe L edges in 4U 1636-53	Proposal title
observer	Claude Canizares	Principal investigator
object	4U 1636-53	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	250.23125	Observer's specified target RA [deg]
dec_targ	-53.751389	Observer's specified target Dec [deg]
ra_nom	250.24102387241	Nominal RA [deg]
dec_nom	-53.746598437293	Nominal Dec [deg]
roll_nom	356.16450919553	Nominal Roll [deg]
revision	1	Processing version of data
ontime	33080.401314497	Sum of GTIs [s]
livetime	31986.464237572	Livetime [s]
ontime5	33080.401314497	Sum of GTIs [s]
ontime6	33079.160264373	Sum of GTIs [s]
ontime7	33080.401314497	Sum of GTIs [s]
ontime8	33080.401314497	Sum of GTIs [s]
ontime9	33080.401314497	Sum of GTIs [s]
l2events	670363	Number of level 2 events



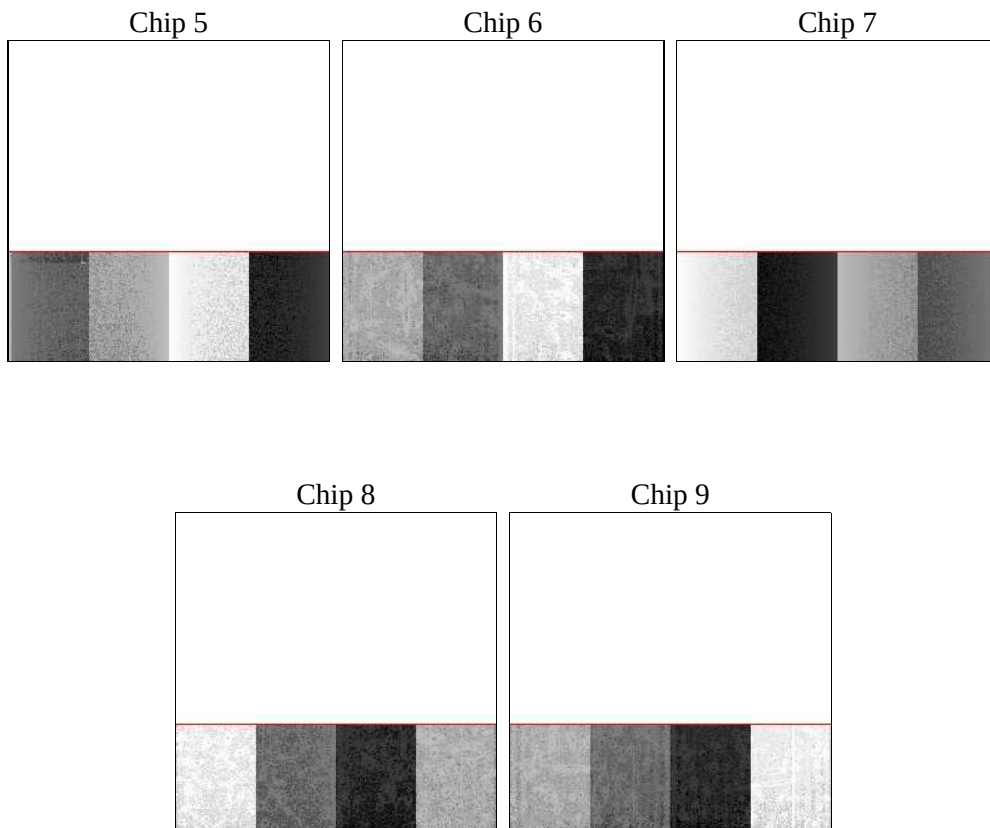
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	32995.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	33080.401314497	Sum of GTIs [s]
caldbver	4.7.8	 	ontime5	33080.401314497	Sum of GTIs [s]
date	2018-06-03T00:32:59	Date and time of file creation	ontime6	33079.160264373	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	33080.401314497	Sum of GTIs [s]
			ontime8	33080.401314497	Sum of GTIs [s]
			ontime9	33080.401314497	Sum of GTIs [s]
			l1events	1157671	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4137.31, 4060.94)	src1a sky pixel position
					src1a sky pixel position via

2.1.4 Events

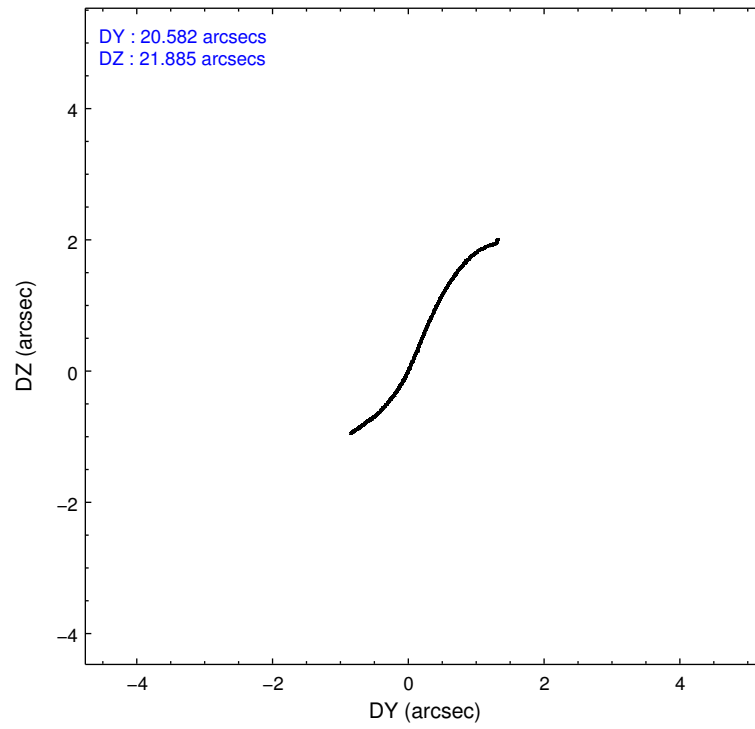
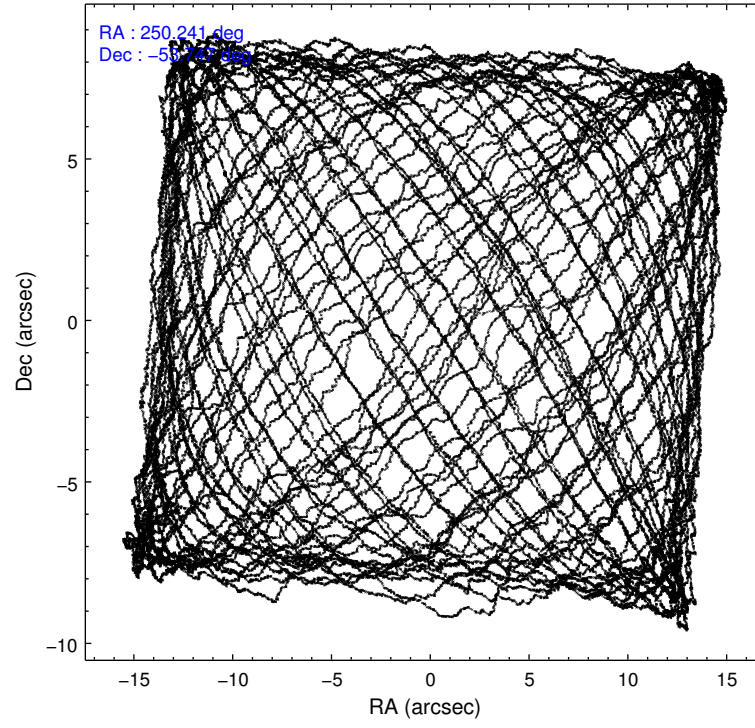
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	204415	301747	358186	201466	91857
rejected events	86488	86364	71949	93041	77757
rejected %	42%	28%	20%	46%	84%

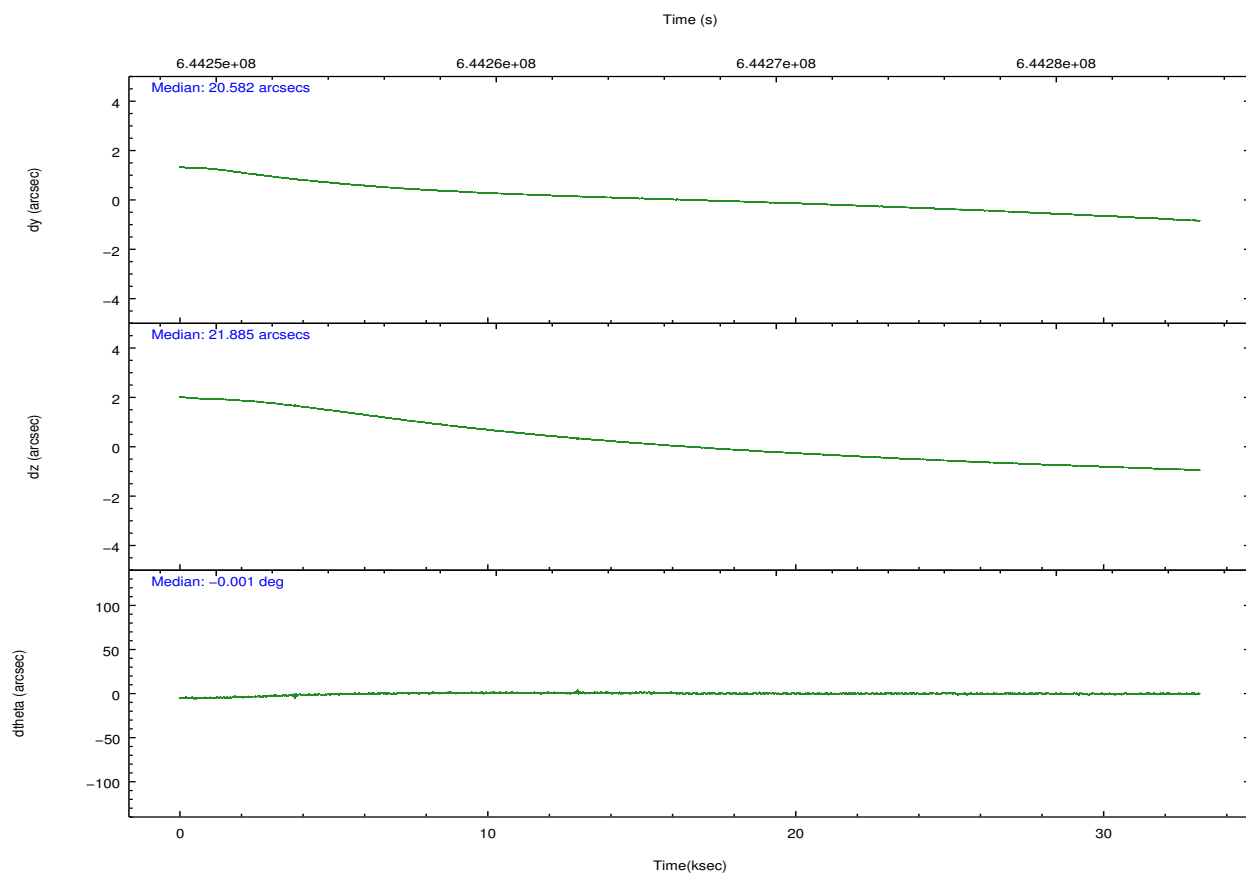
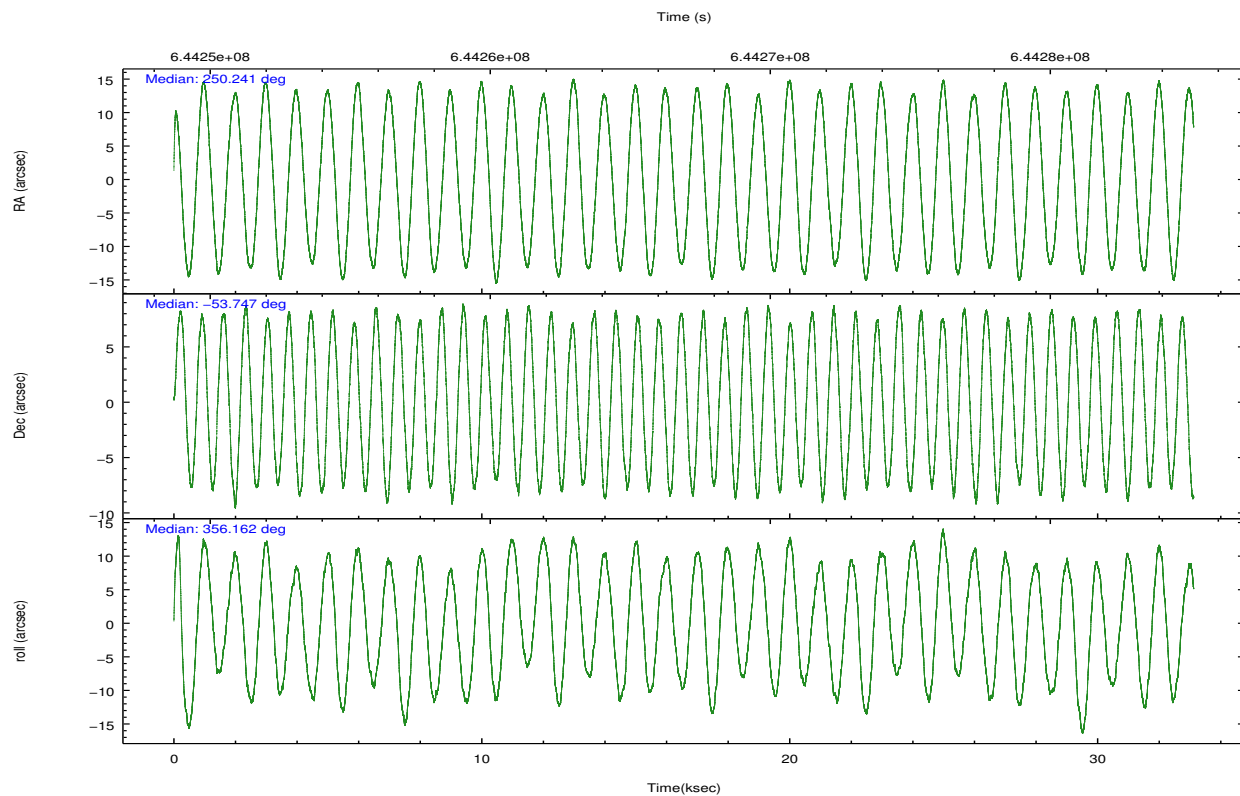
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	29830	157799	54726	68991	5945
	14%	52%	15%	34%	6%
grade 1 events	321	857	1007	244	47
	0%	0%	0%	0%	0%
grade 2 events	32345	27743	69083	15565	2763
	15%	9%	19%	7%	3%
grade 3 events	9335	9426	30680	6308	1553
	4%	3%	8%	3%	1%
grade 4 events	6716	9460	30798	6016	1502
	3%	3%	8%	2%	1%
grade 5 events	17736	4730	15413	5924	4369
	8%	1%	4%	2%	4%
grade 6 events	39713	10968	100956	11552	2337
	19%	3%	28%	5%	2%
grade 7 events	68419	80764	55523	86866	73341
	33%	26%	15%	43%	79%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-56789	ACIS-56789	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	250.199621	250.2410238724106	CCD I2 on	N	N
[deg] Pointing Dec	-53.759036	-53.74659843729331	CCD I3 on	N	N
[deg] Pointing Roll	355.974493	356.1645091955288	CCD S0 on	O1	N
[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	-182.132523	-182.1370004450064	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-8	-7.995522138001405	CCD S4 on	Y	Y
[s] Observation start time (MET)	644250464.184000	644249101.07441	CCD S5 on	O2	Y
Observation start date	2018-06-01T14:26:35	2018-06-01T14:05:01	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	644283459.184000	644284154.53899	On-chip summing requested	N	N
Observation end date	2018-06-01T23:36:30	2018-06-01T23:49:14	Subarray requested	CUSTOM	CUSTOM
Read mode	TIMED	TIMED	Subarray start row	1	1
			Subarray row count	350	350
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.2

2.3 Aspect



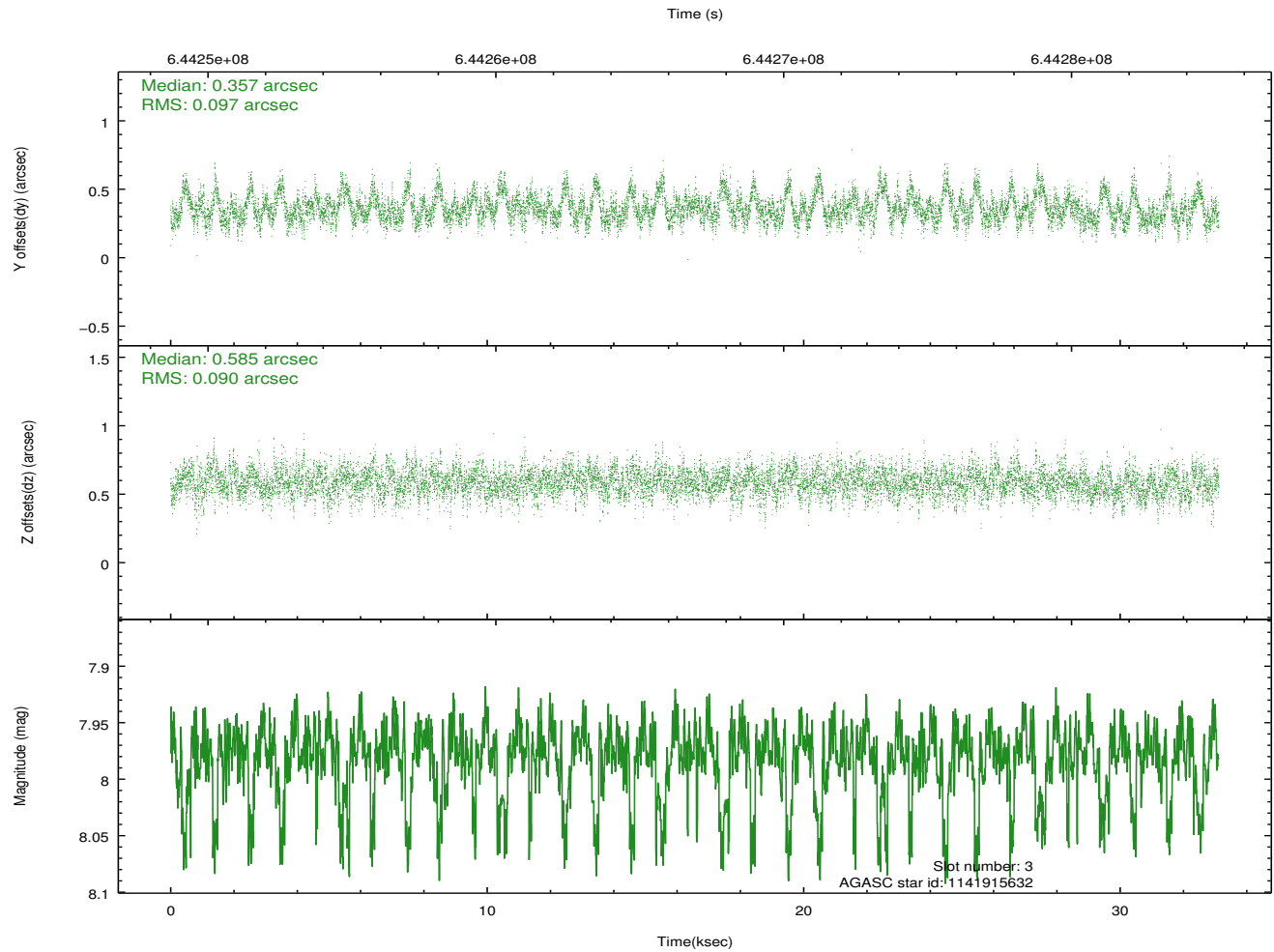
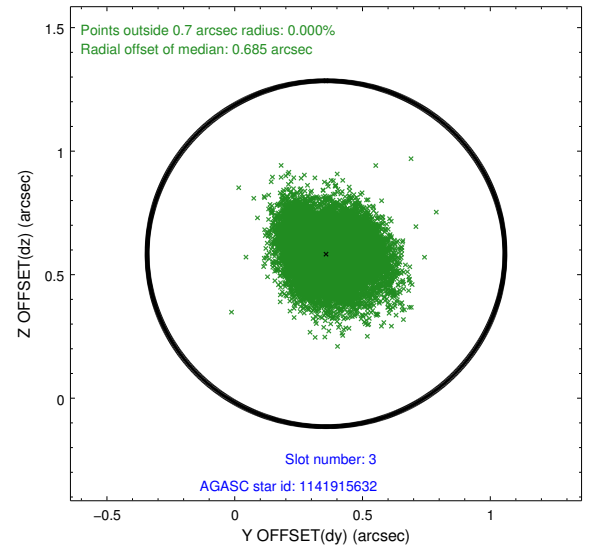
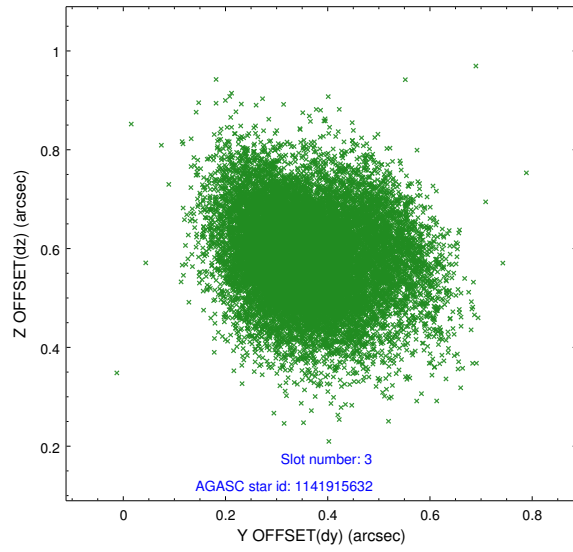


Slot Statistics

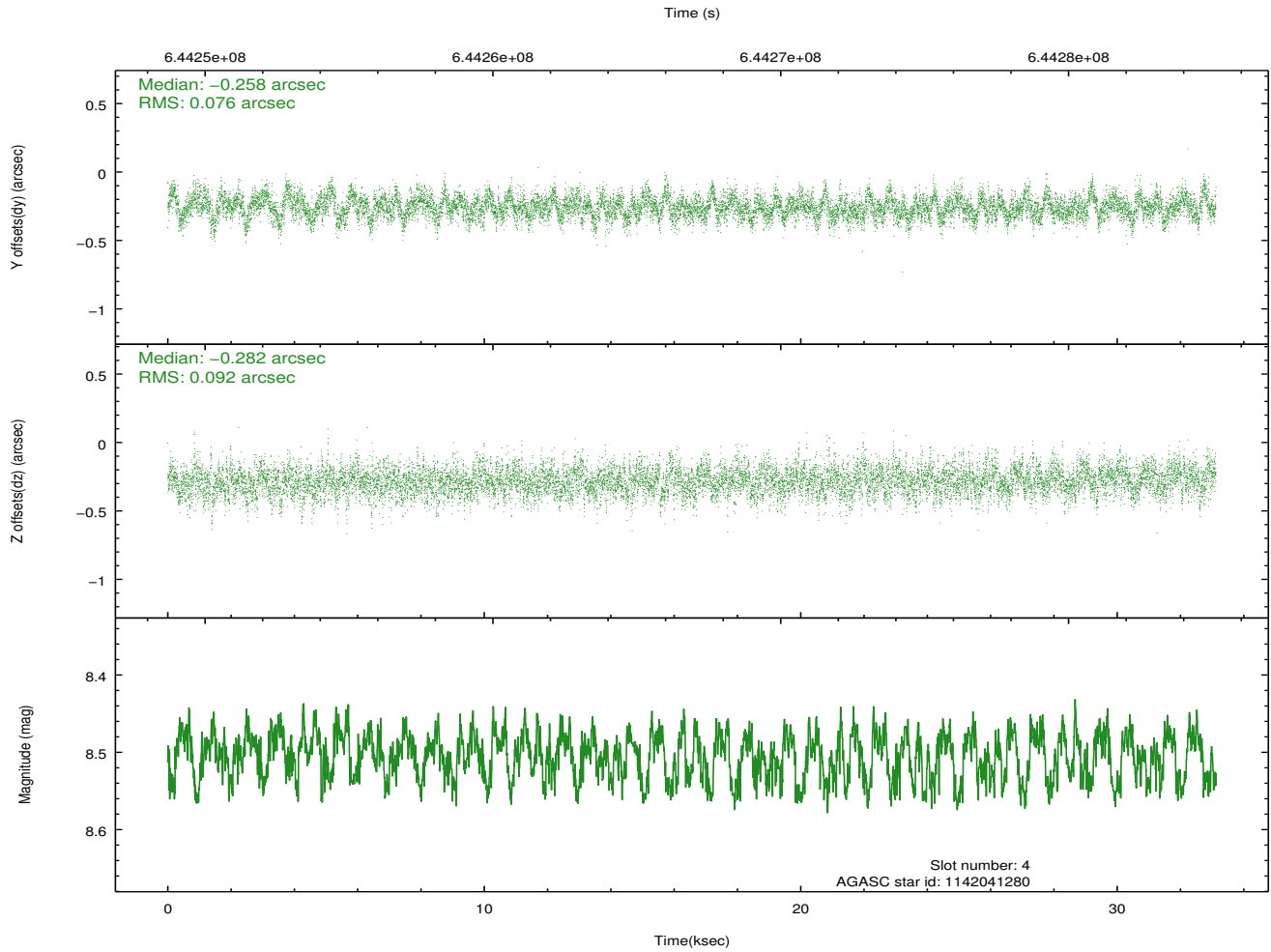
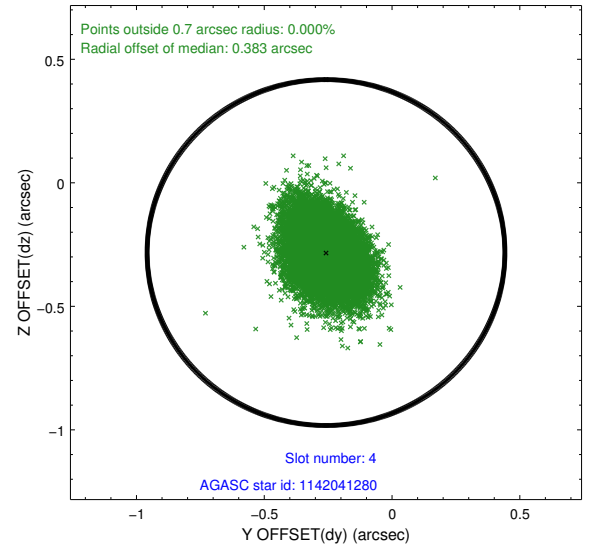
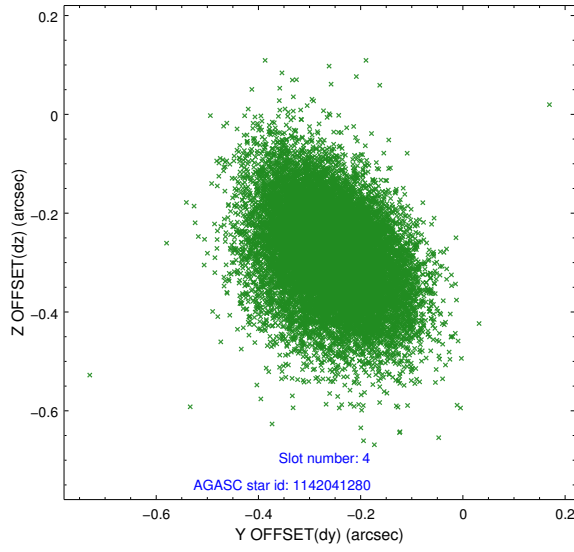
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.00	8079	-0.415	-0.290	0.025	0.066	0.000000	0.000000	-773.71	-1908.63
1	FID		ACIS-S-4	7.08	8078	0.424	0.247	0.009	0.019	0.000000	0.000000	2140.48	0.12
2	FID		ACIS-S-6	7.31	8076	-0.038	0.050	0.023	0.060	0.000000	0.000000	388.85	637.47
3	GUIDE	used	1141915632	7.98	16147	0.357	0.585	0.141	0.230	249.175229	-53.921117	-2123.58	-749.70
4	GUIDE	used	1142041280	8.50	16148	-0.258	-0.282	0.125	0.209	250.607191	-53.463271	796.64	1120.62
5	GUIDE	used	1142049296	8.30	16137	0.545	0.221	0.144	0.238	250.151068	-54.136674	-5.78	-1363.11
6	GUIDE	used	1142043648	8.32	16150	-0.344	-0.171	0.125	0.215	250.954624	-53.491932	1545.94	1063.57
7	GUIDE	used	1142047448	8.68	16145	-0.312	-0.353	0.129	0.220	250.987986	-53.236686	1562.97	1985.34

2.4 Star Slots

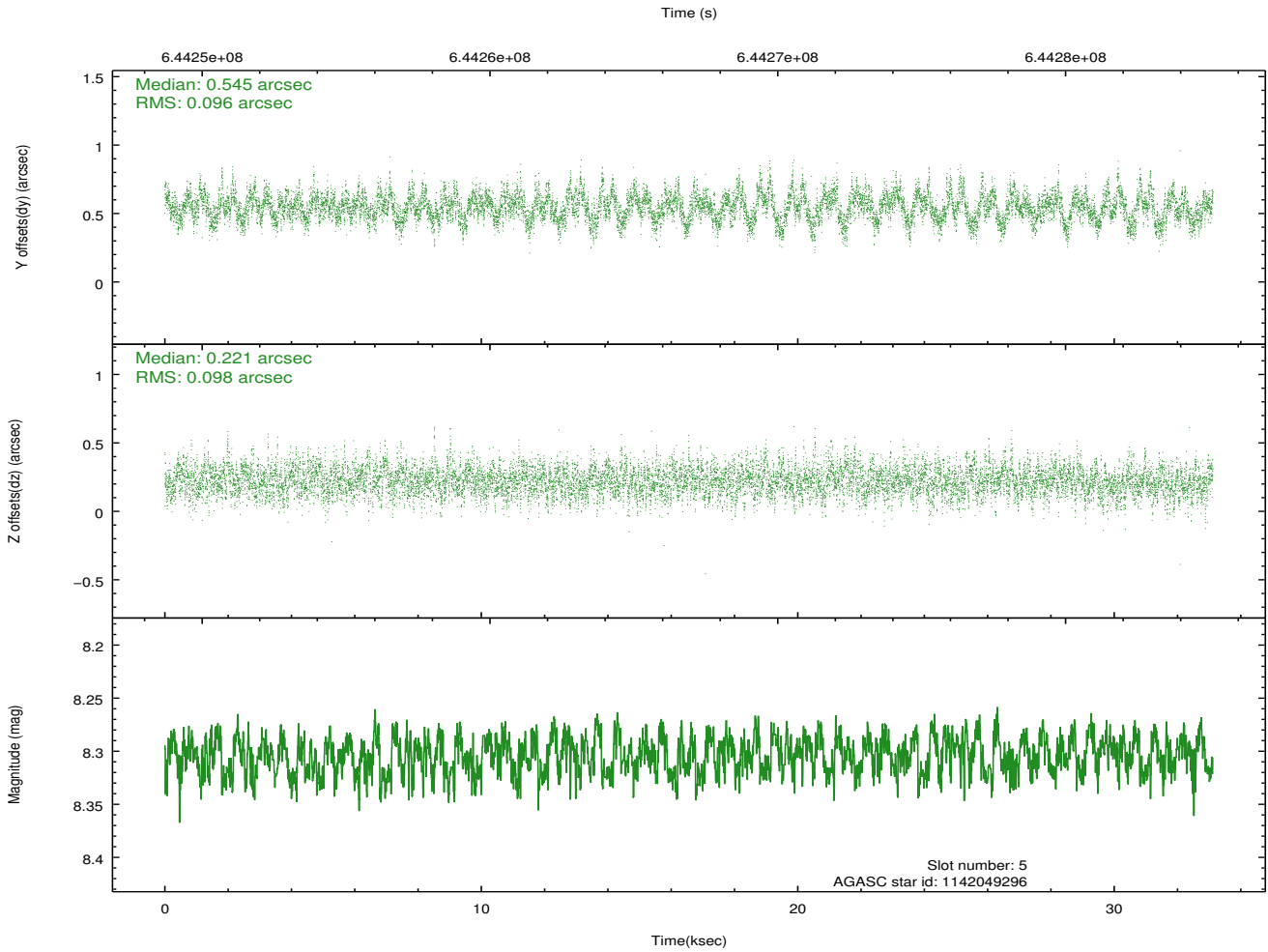
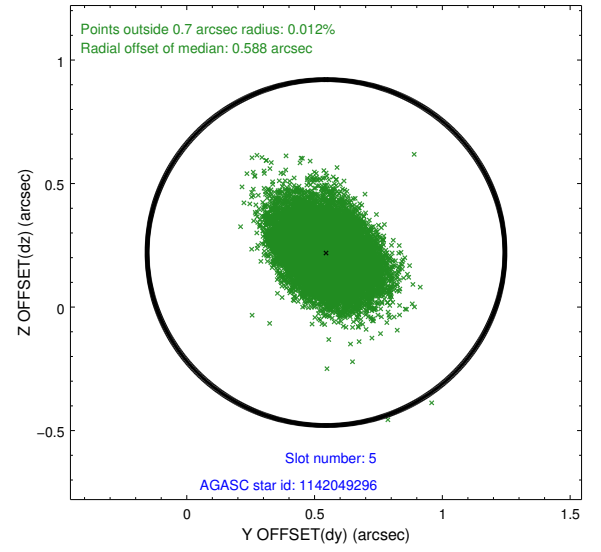
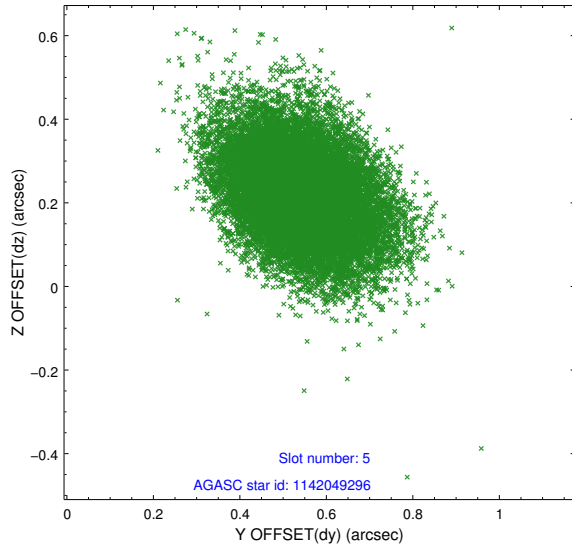
2.4.1 Slot 3



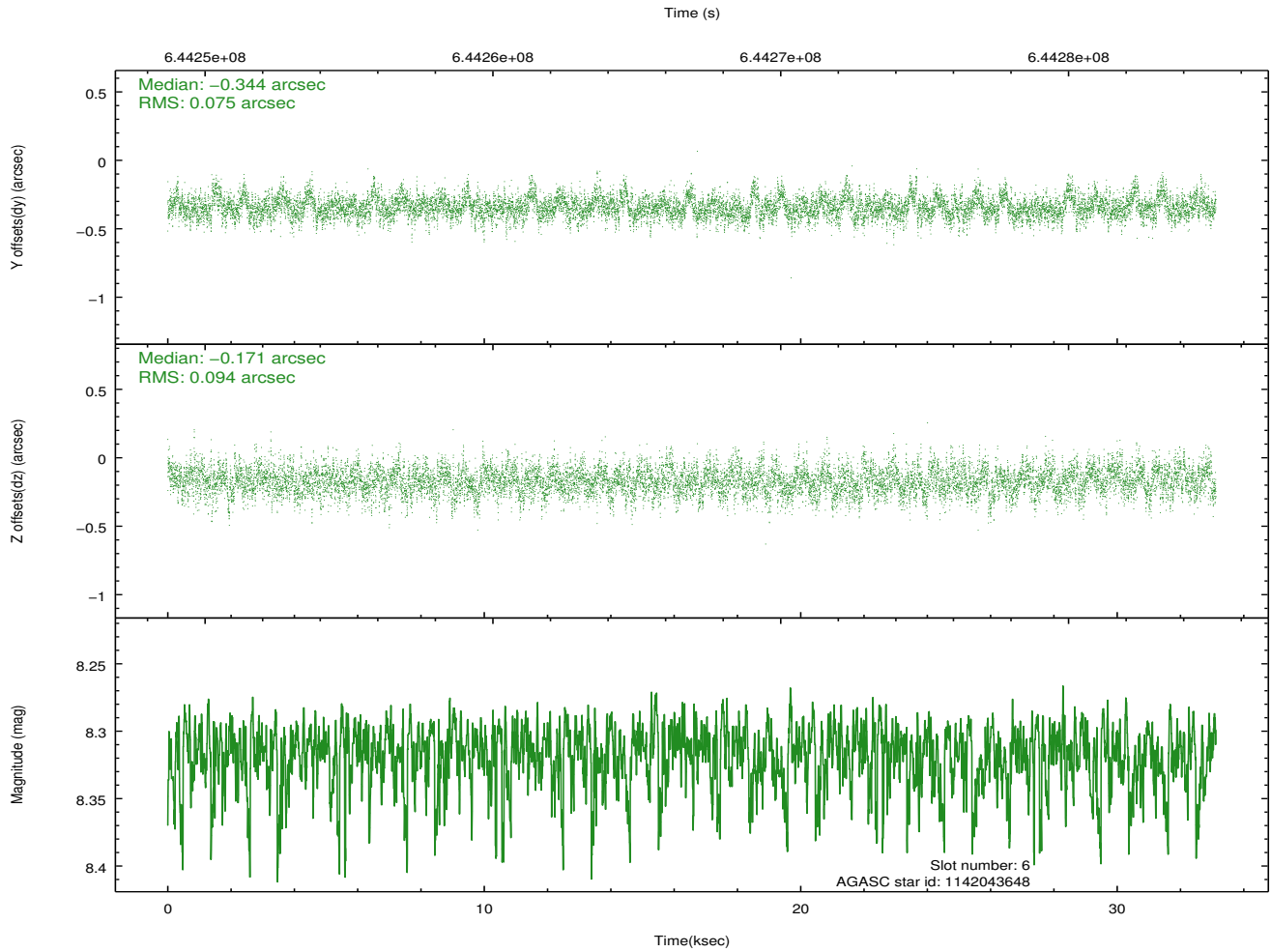
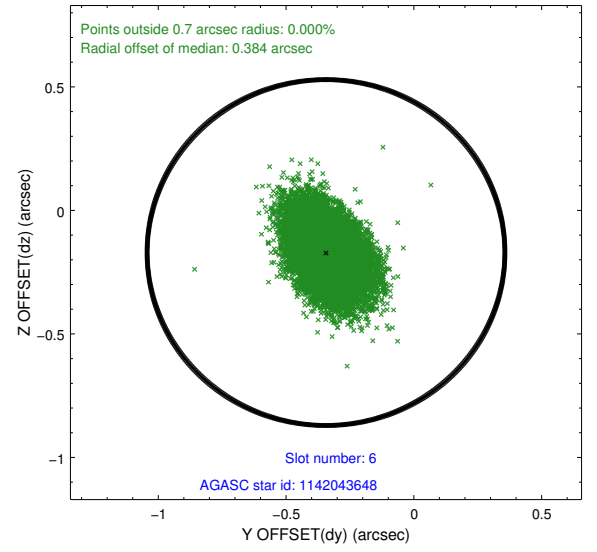
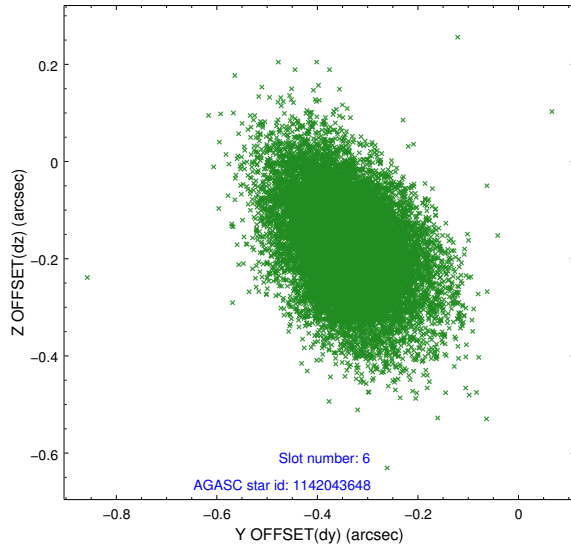
2.4.2 Slot 4



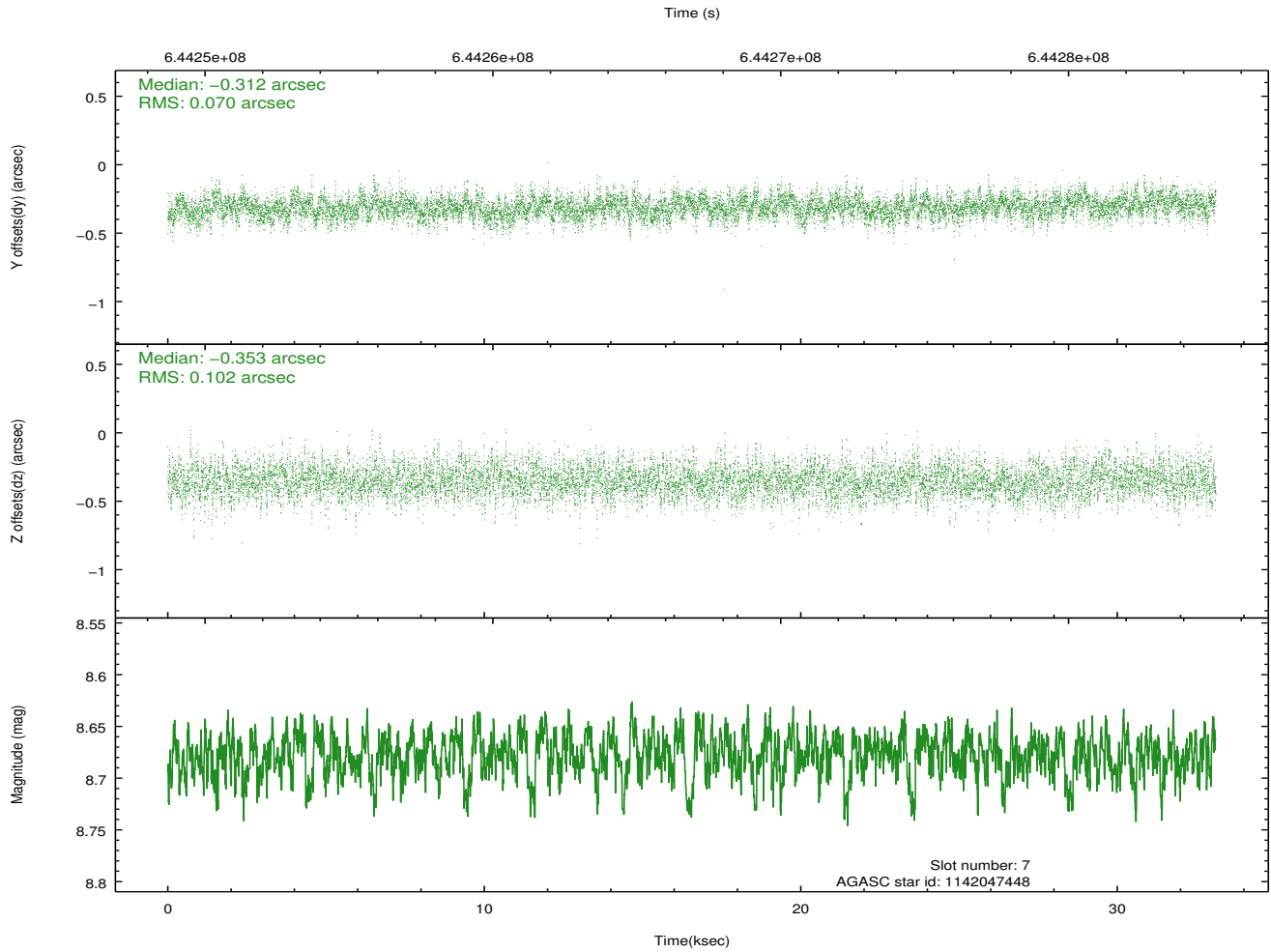
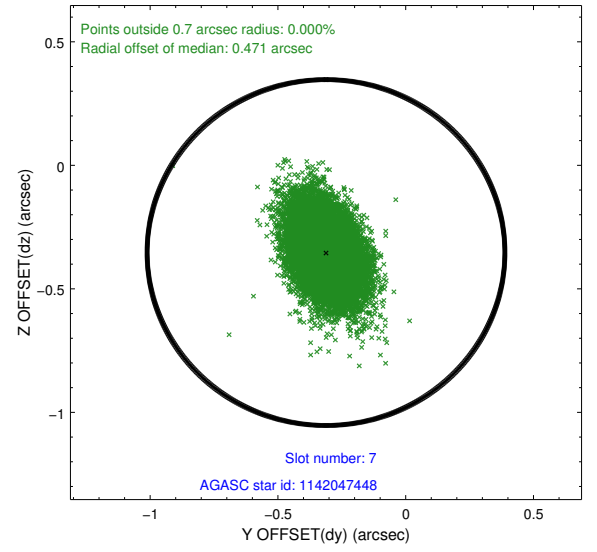
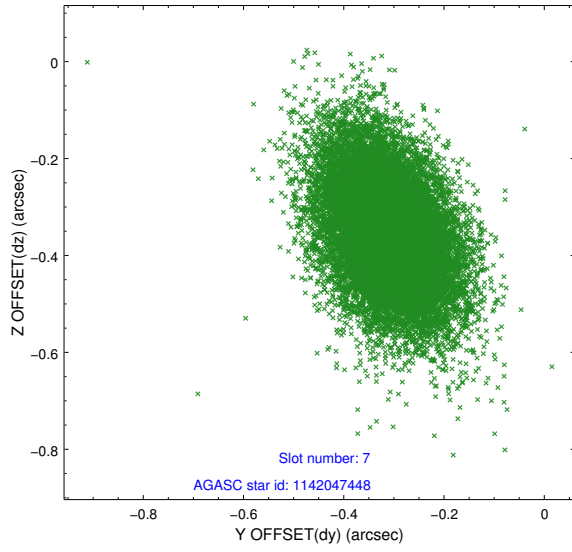
2.4.3 Slot 5



2.4.4 Slot 6

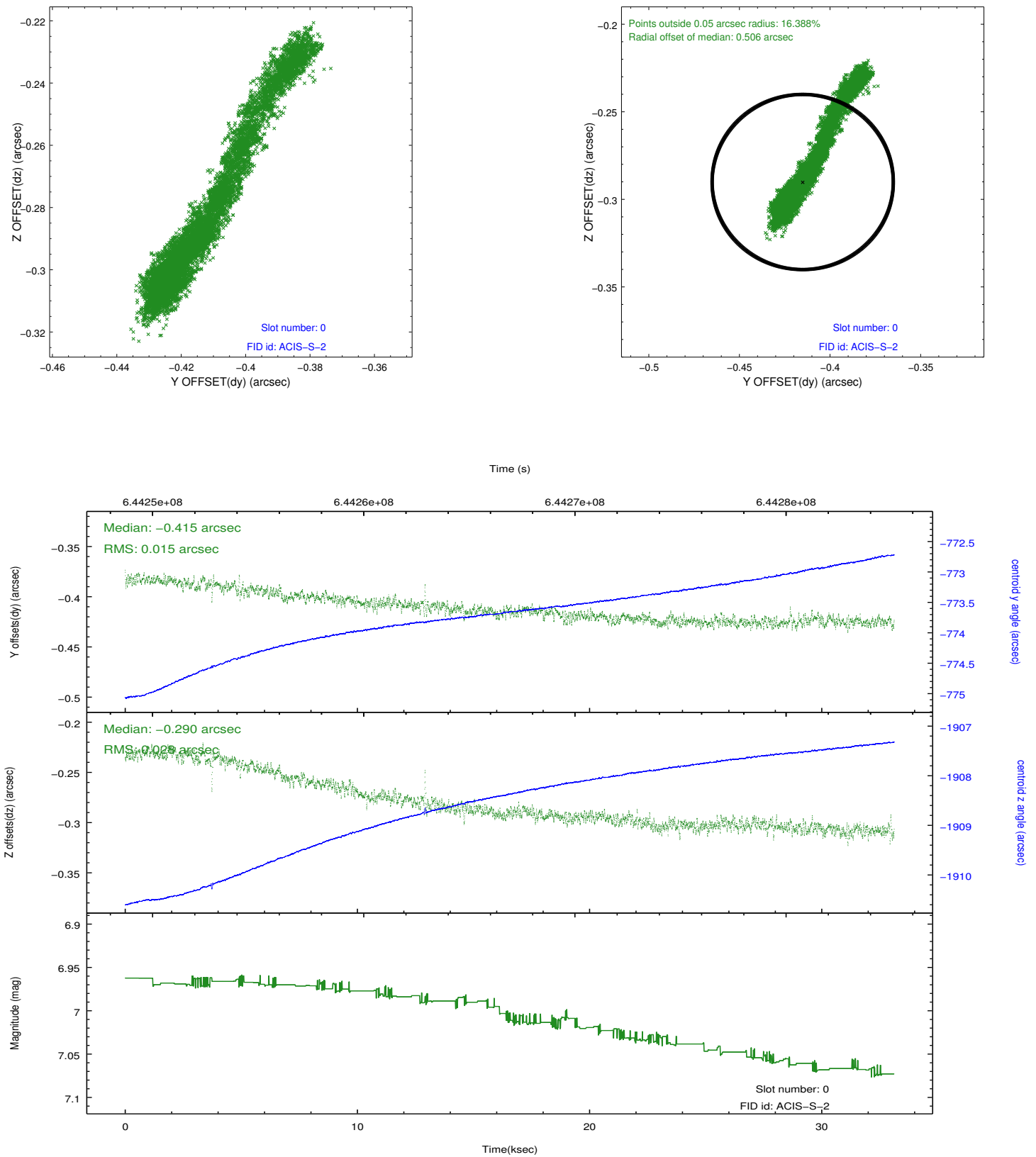


2.4.5 Slot 7

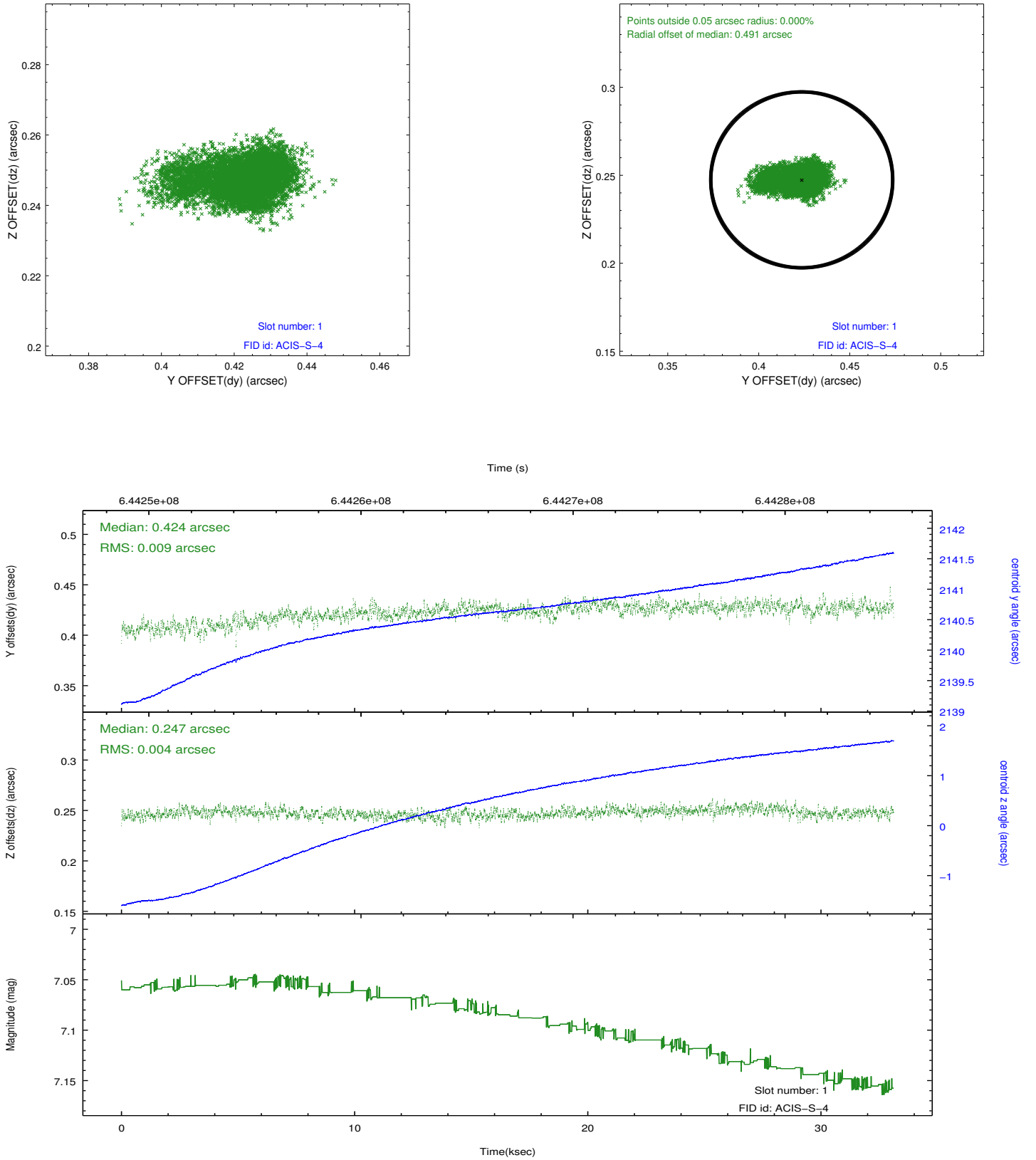


2.5 FID Slots

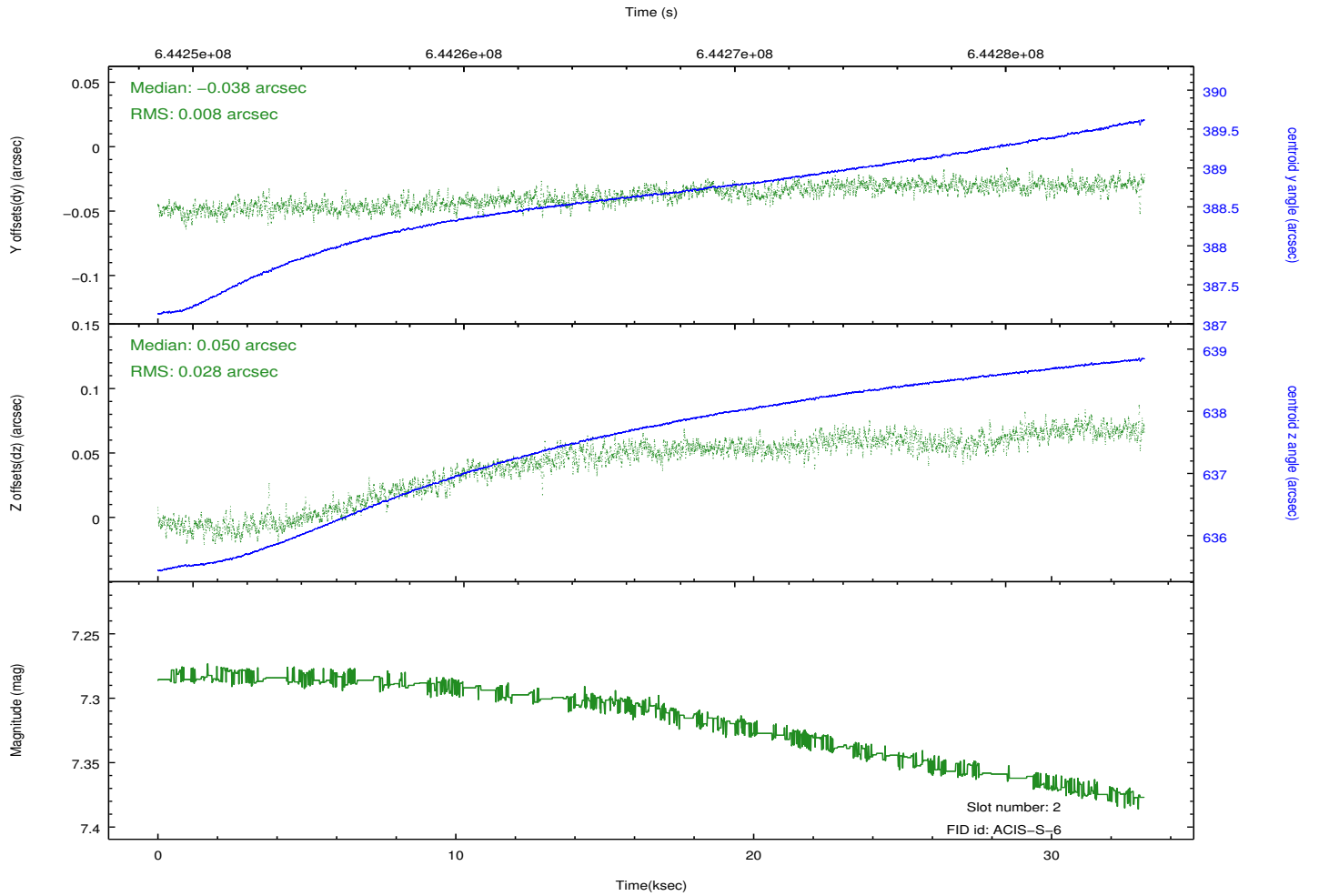
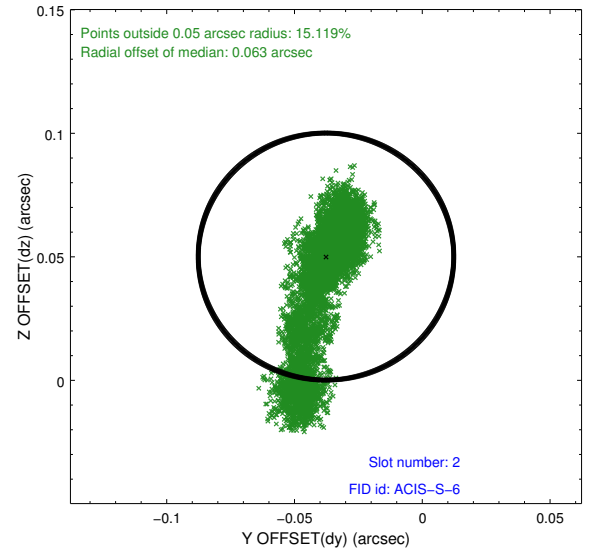
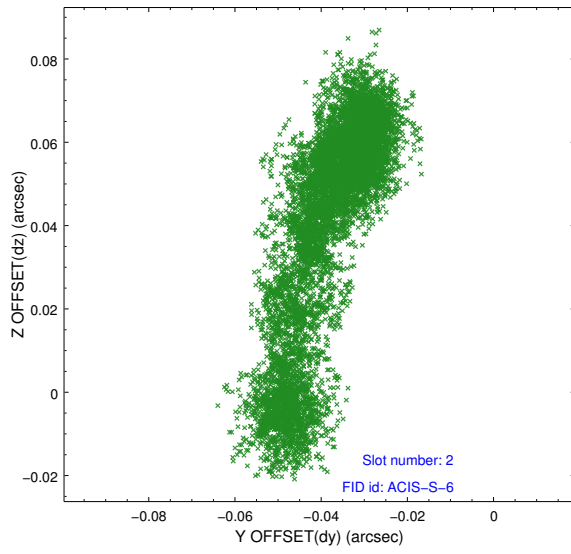
2.5.1 Slot 0



2.5.2 Slot 1

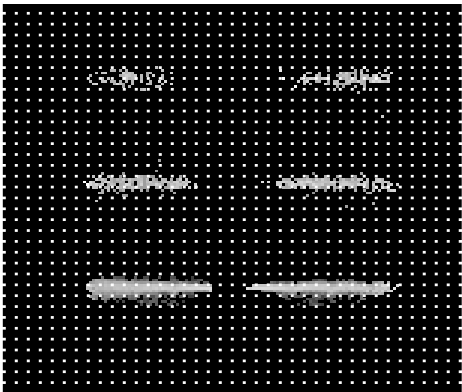


2.5.3 Slot 2

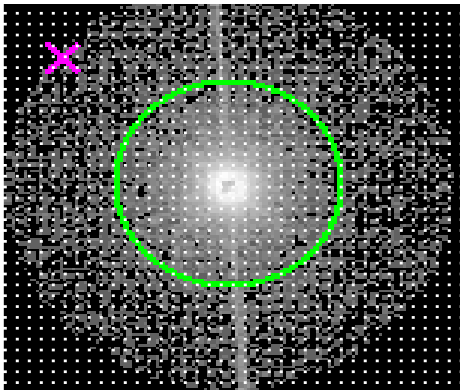


3 Gratings

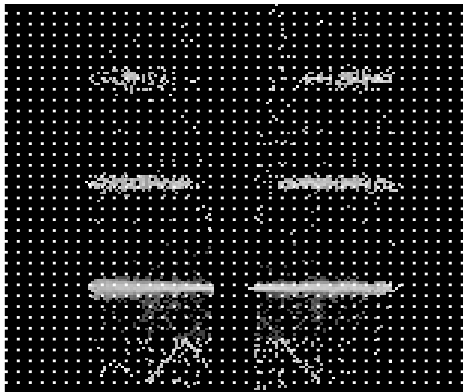
3.1 HEG Arm



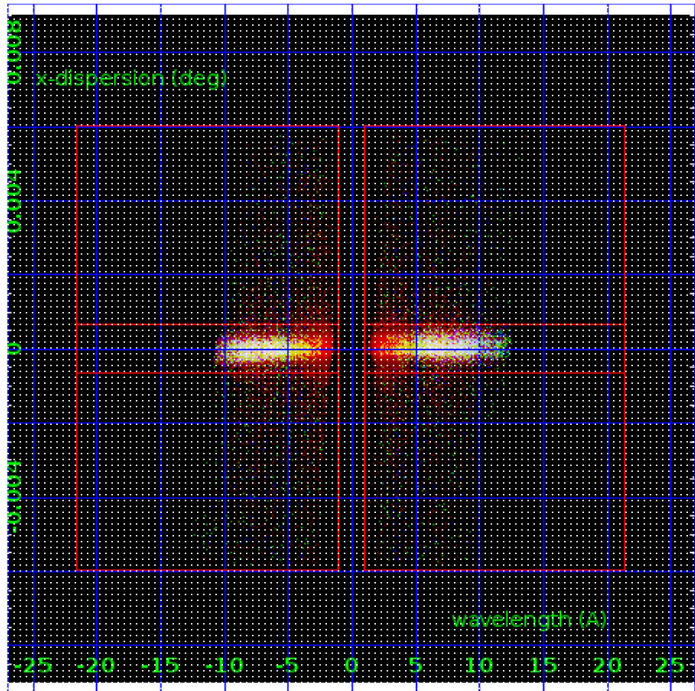
HEG Order Sort 123



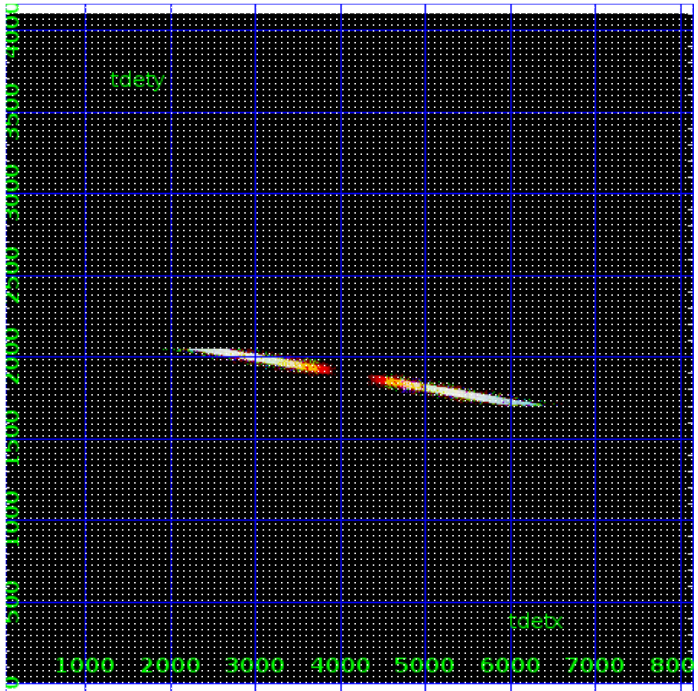
HEG Zero Order



HEG Order Sort ALL

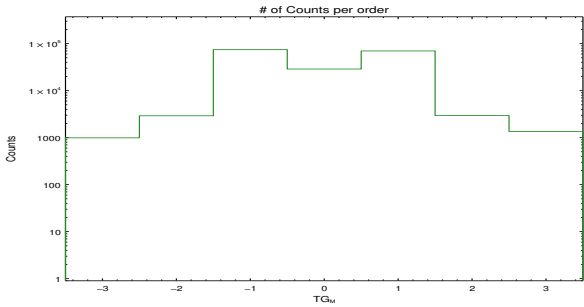


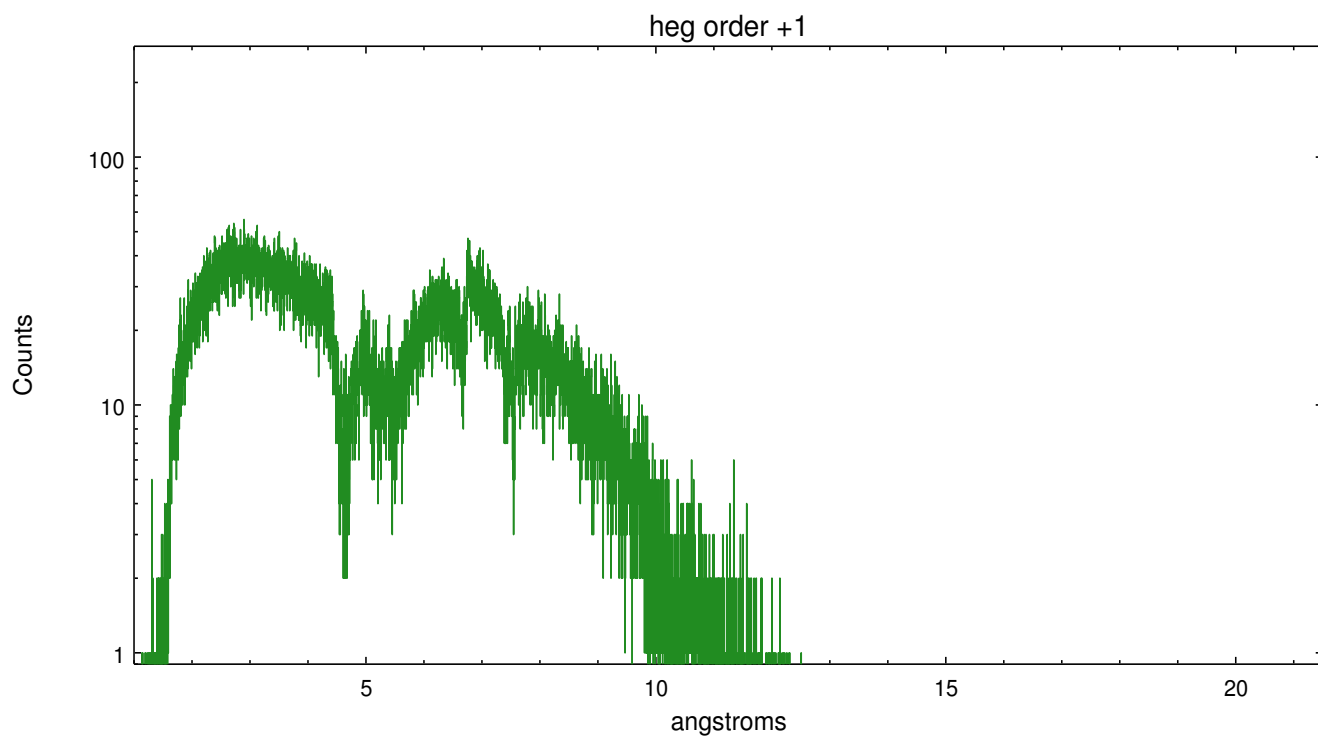
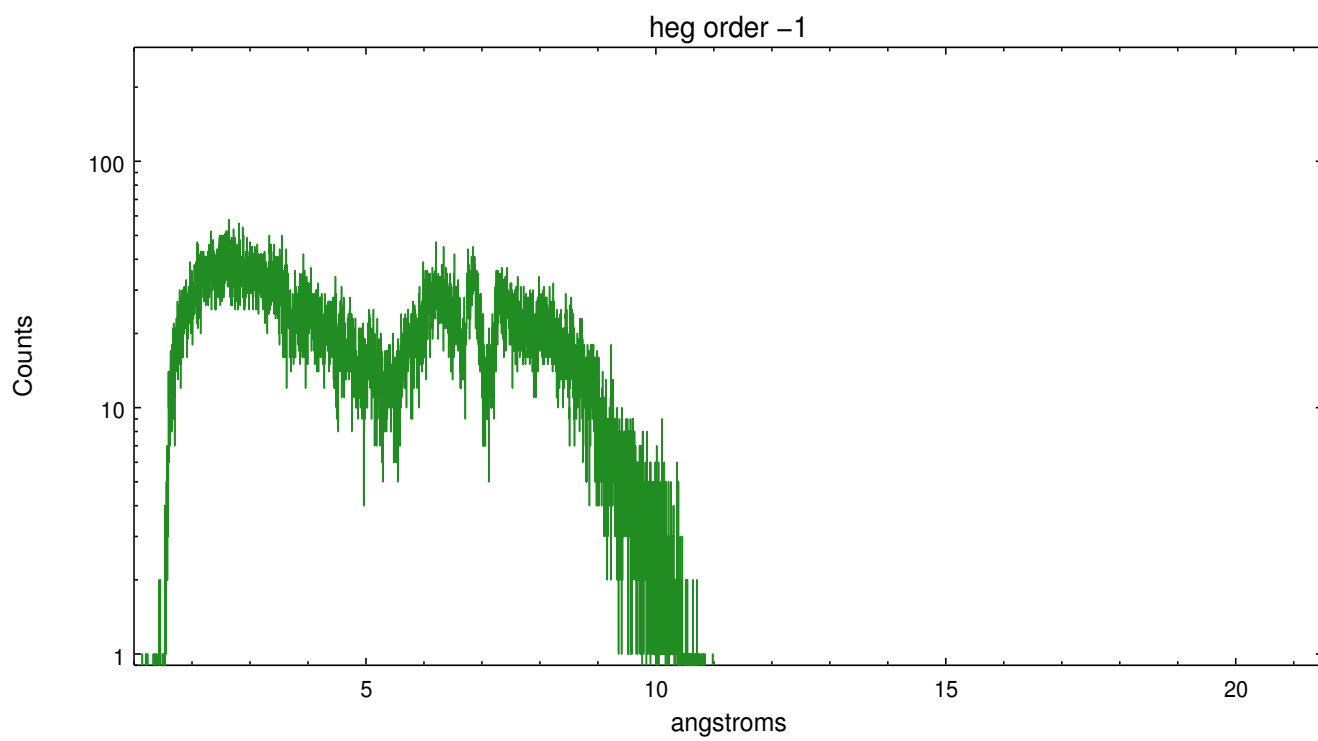
Spot Image HEG



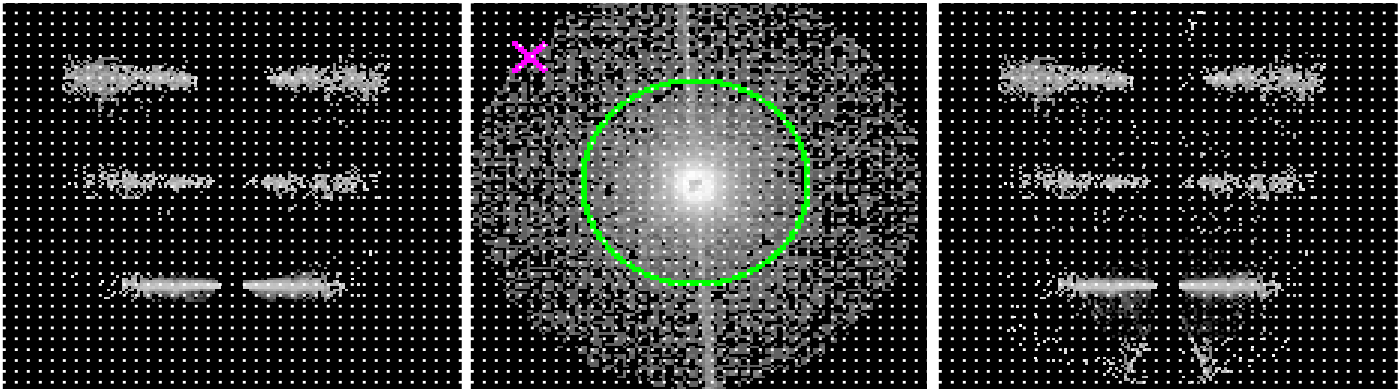
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	990	2918	74488	28794	69893	2942	1355





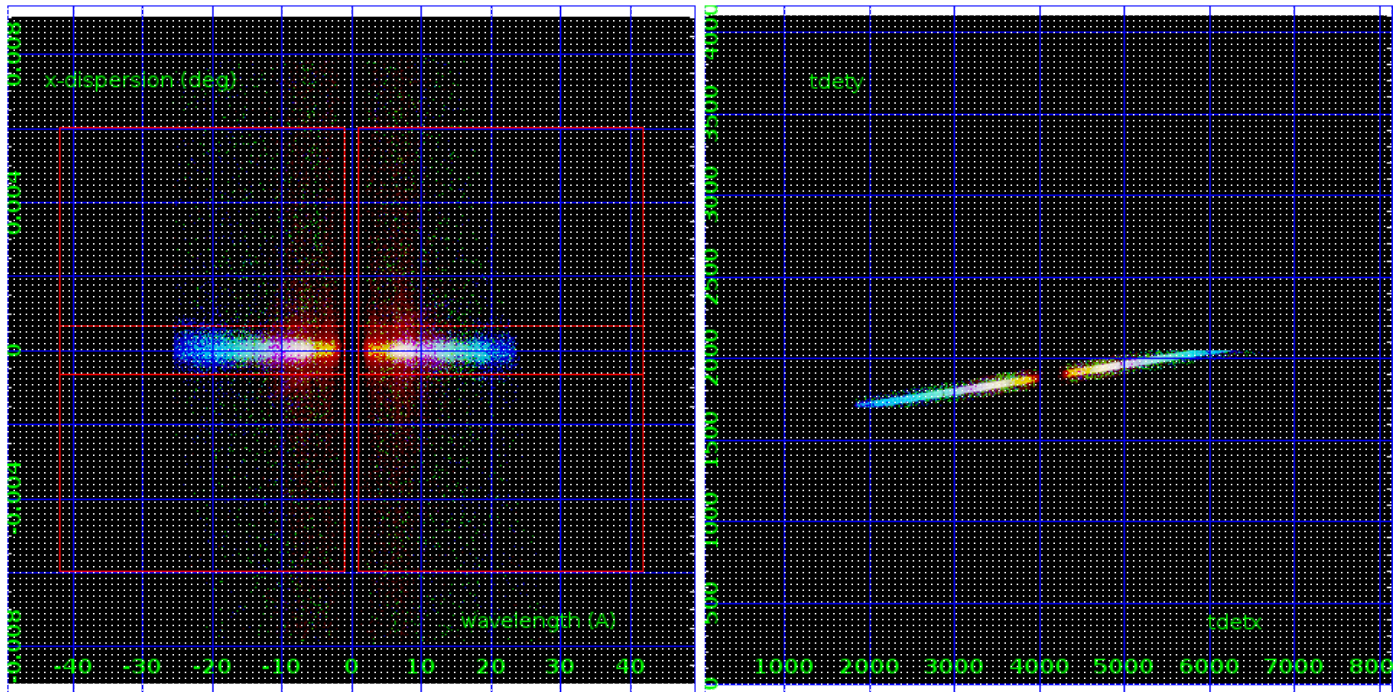
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

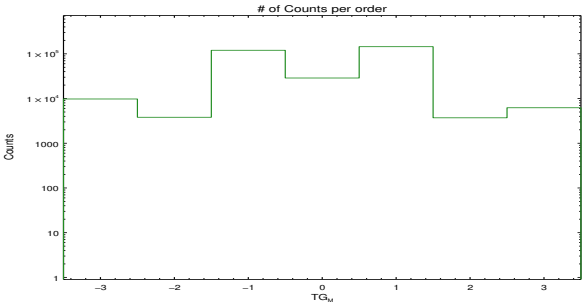
MEG Order Sort ALL

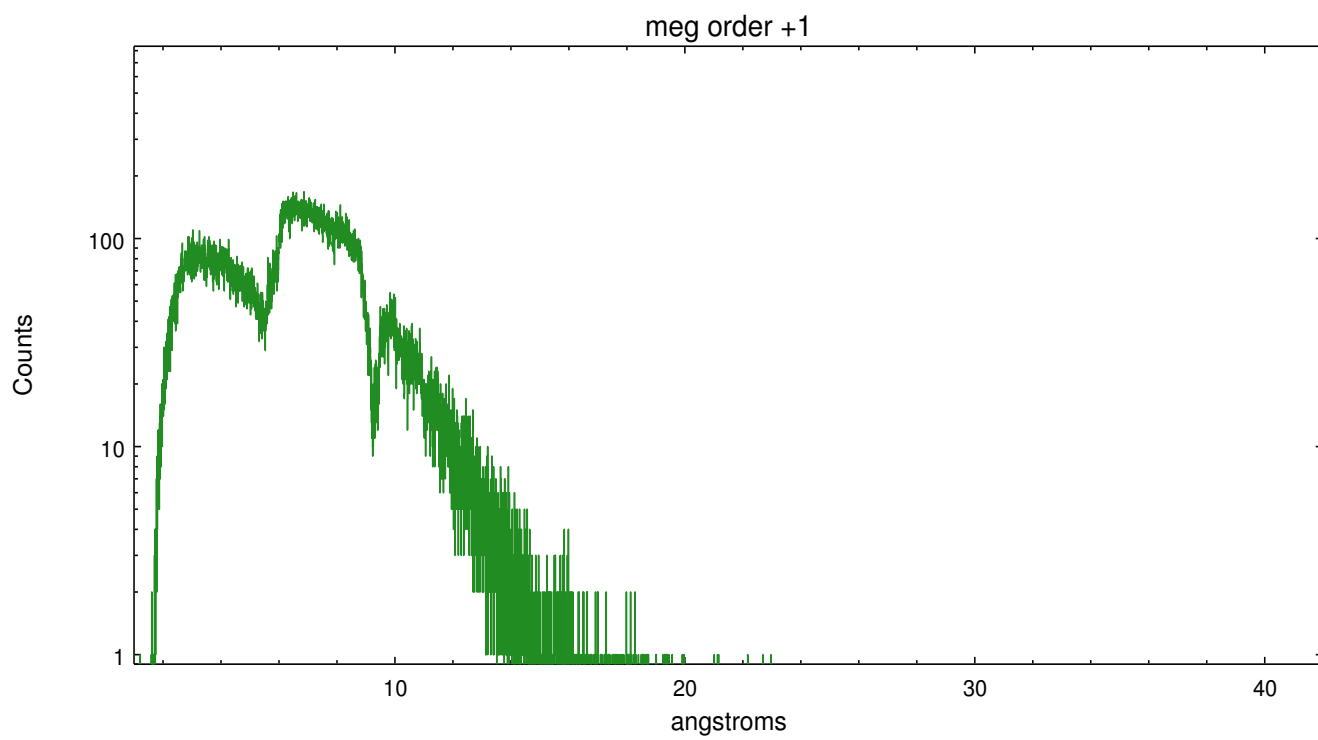
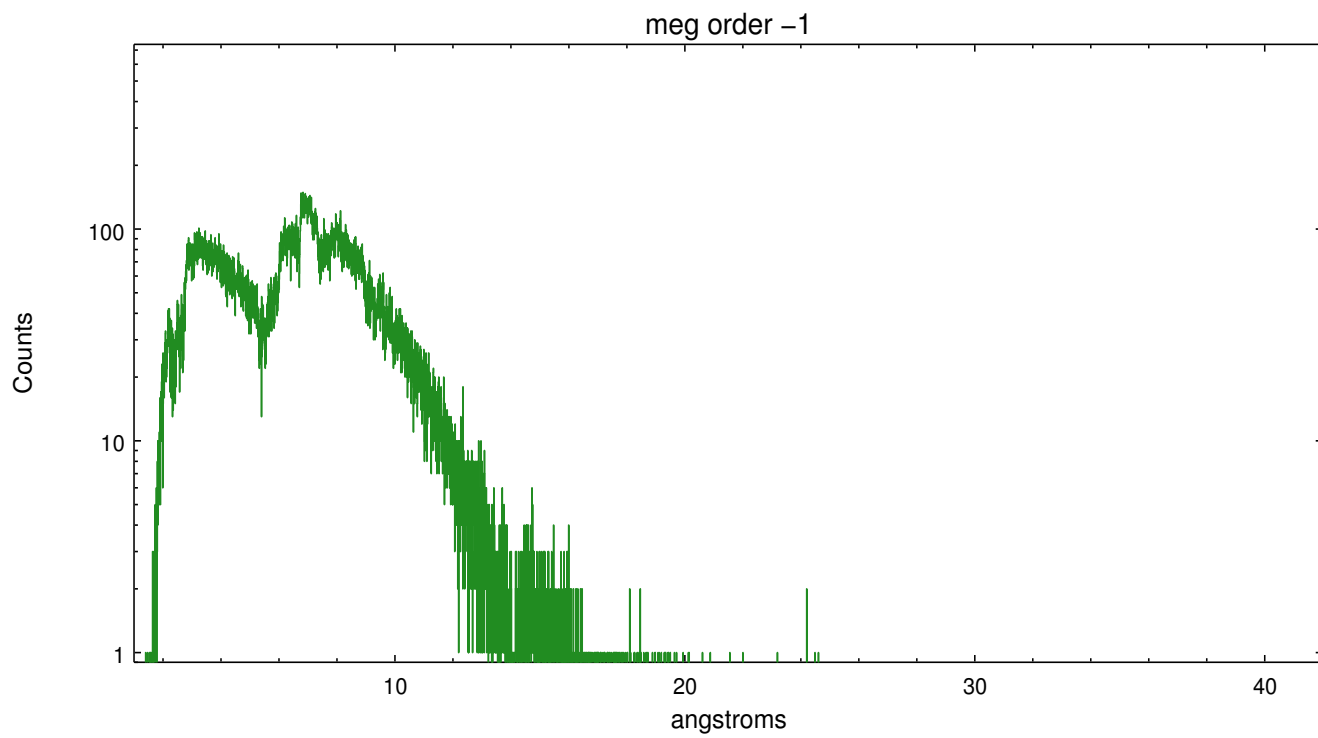


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	9773	3809	120061	28794	144551	3709	6226





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.06.03
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	33.080401314497

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.

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Faint grating spectra can be seen in an image of bad events. This is probably due to pileup in the spectrum, causing migration to bad grades. This should be considered in analysis.