

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 21100 - L2 Version 2
Chandra X-Ray Center

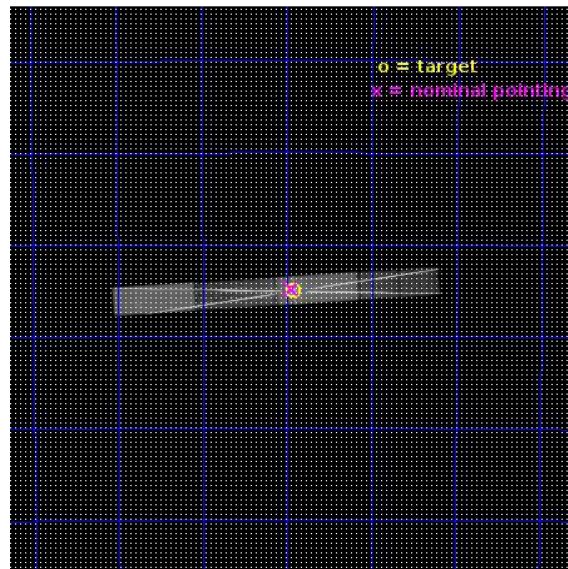
L2 Processing Date : Jun 4 2018

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1 Front

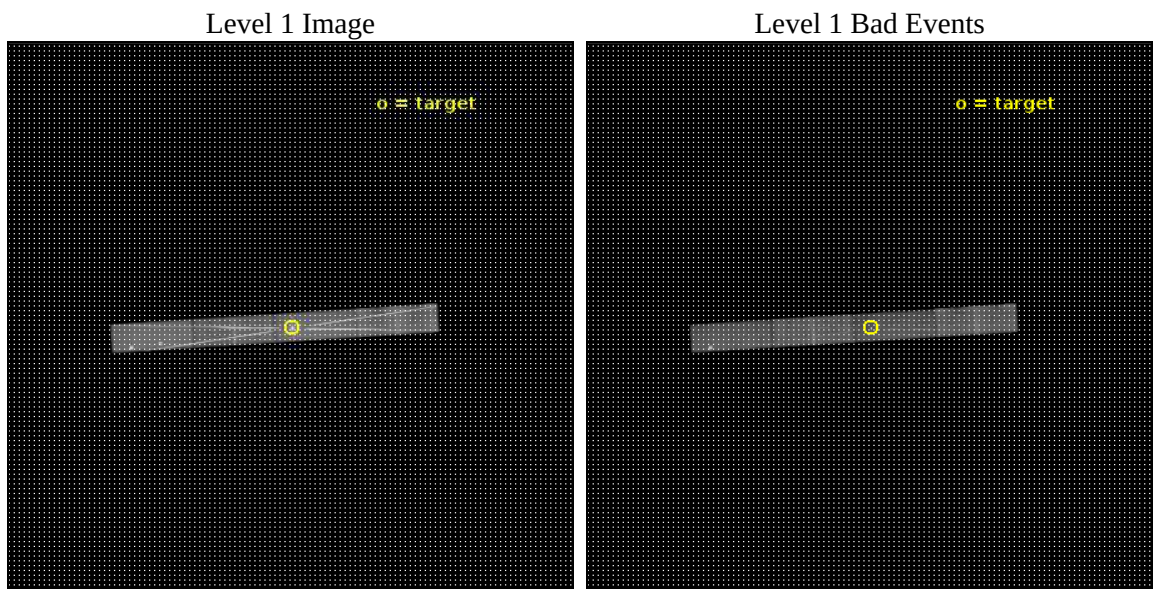
seq_num	901409	Sequence number
obs_id	21100	Observation id
title	Measure Si K and Fe L edges in 4U 1636-53	Proposal title
observer	Claude Canizares	Principal investigator
object	4U 1636-53	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	250.23125	Observer's specified target RA [deg]
dec_targ	-53.751389	Observer's specified target Dec [deg]
ra_nom	250.23776826959	Nominal RA [deg]
dec_nom	-53.747389202232	Nominal Dec [deg]
roll_nom	356.16188700198	Nominal Roll [deg]
revision	2	Processing version of data
ontime	34079.605484247	Sum of GTIs [s]
livetime	32952.625685793	Livetime [s]
ontime5	34079.564444304	Sum of GTIs [s]
ontime6	34079.523404241	Sum of GTIs [s]
ontime7	34079.605484247	Sum of GTIs [s]
ontime8	34079.482364297	Sum of GTIs [s]
l2events	676552	Number of level 2 events



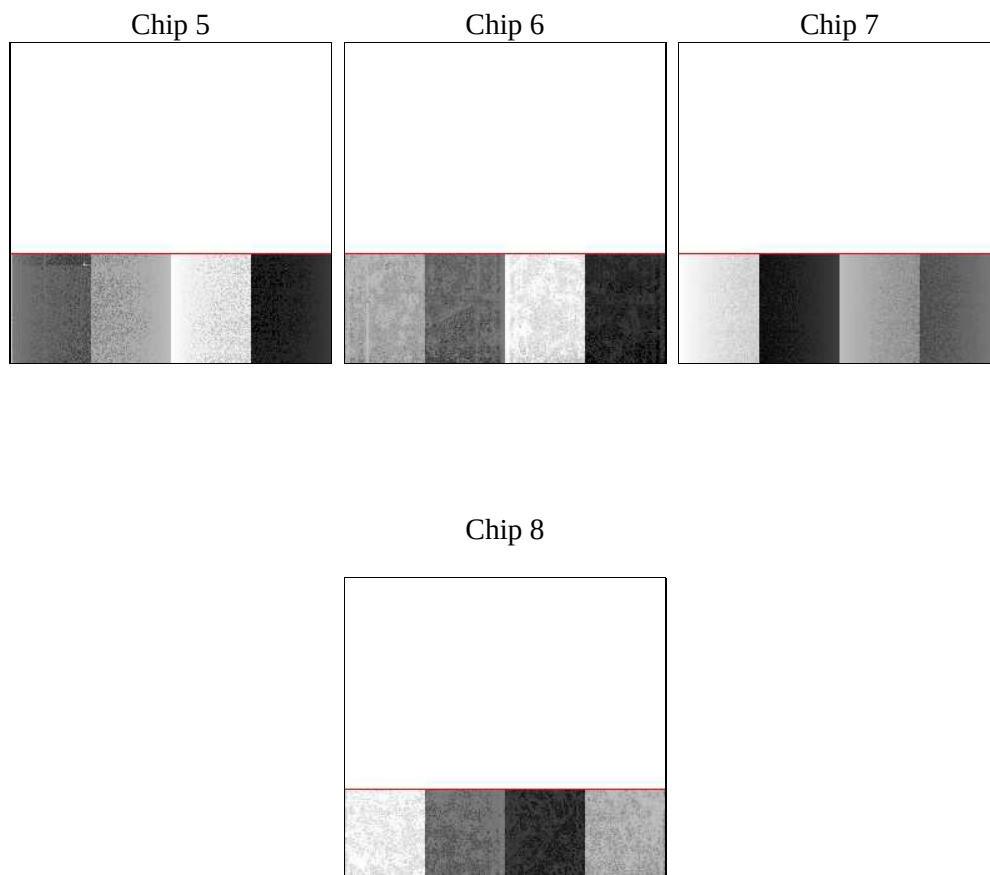
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	34000.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	34079.605484247	Sum of GTIs [s]
caldbver	4.7.8	 	ontime5	34079.564444304	Sum of GTIs [s]
date	2018-06-04T20:33:10	Date and time of file creation	ontime6	34079.523404241	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	34079.605484247	Sum of GTIs [s]
			ontime8	34079.482364297	Sum of GTIs [s]
			l1events	1076229	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4122.33, 4066.73)	src1a sky pixel position
			zo_pos_tgd	(4122.54, 4066.51)	src1a sky pixel position via radetect

2.1.4 Events

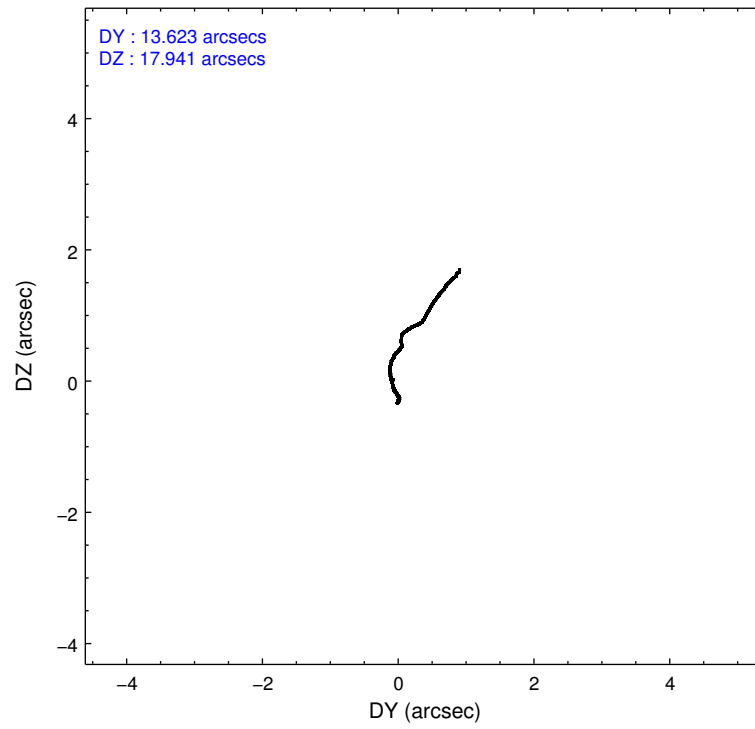
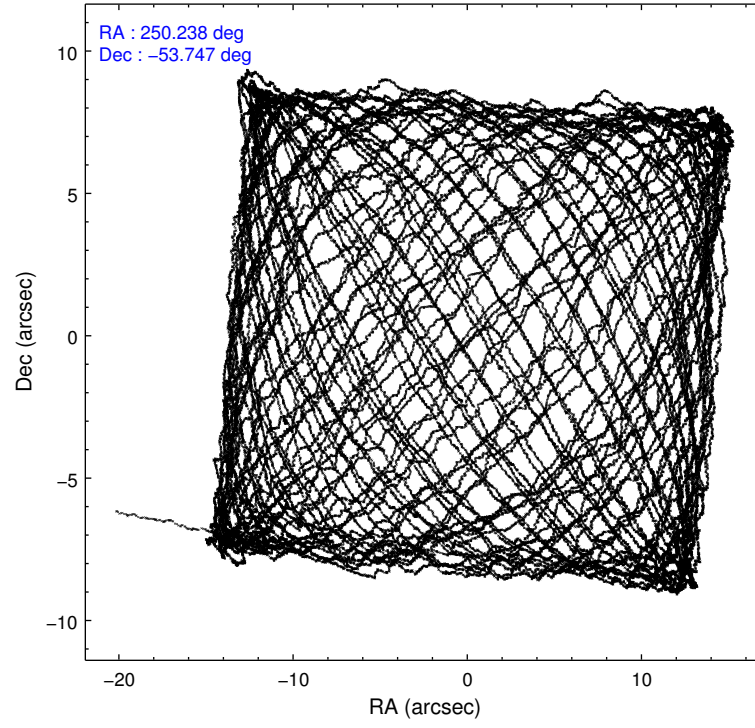
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	200158	307356	365709	203006
rejected events	81394	86634	71446	91072
rejected %	40%	28%	19%	44%

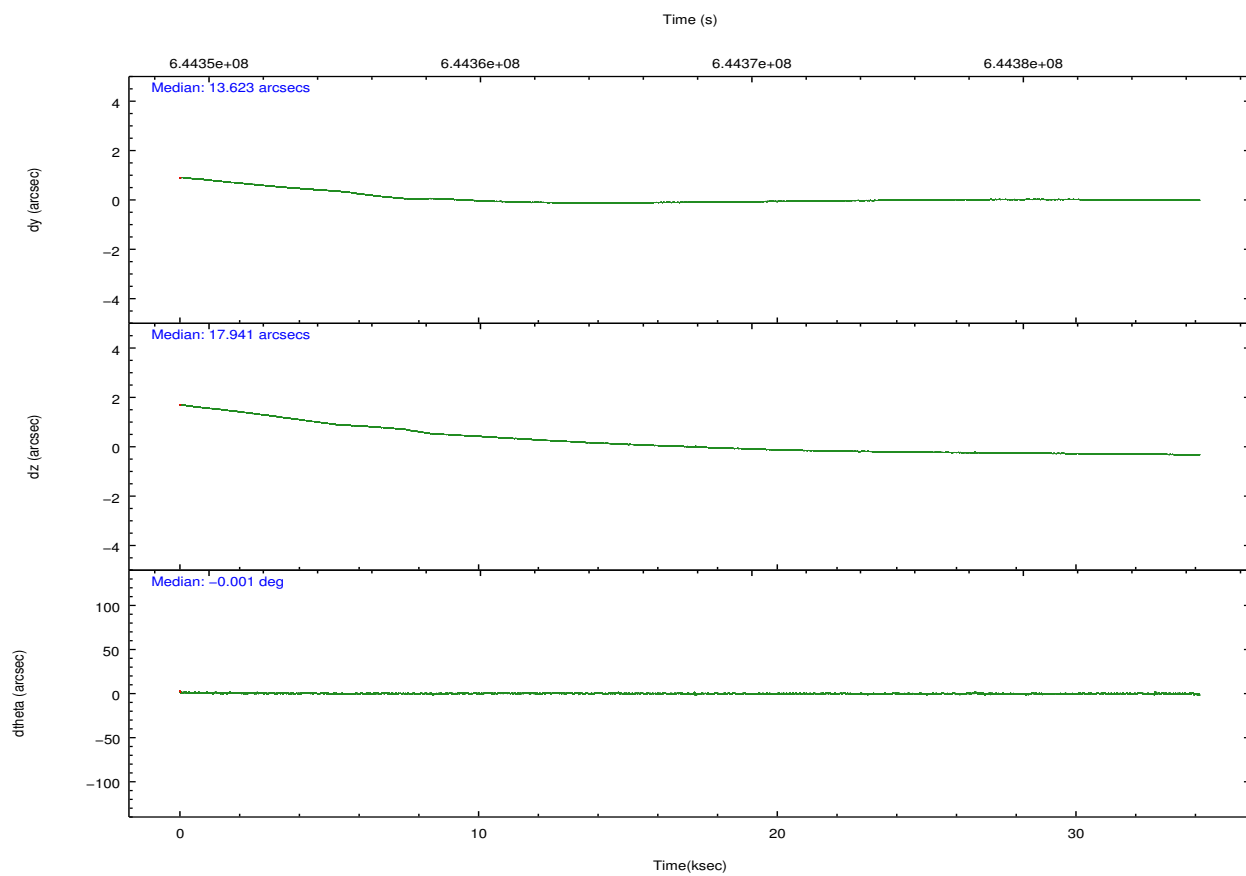
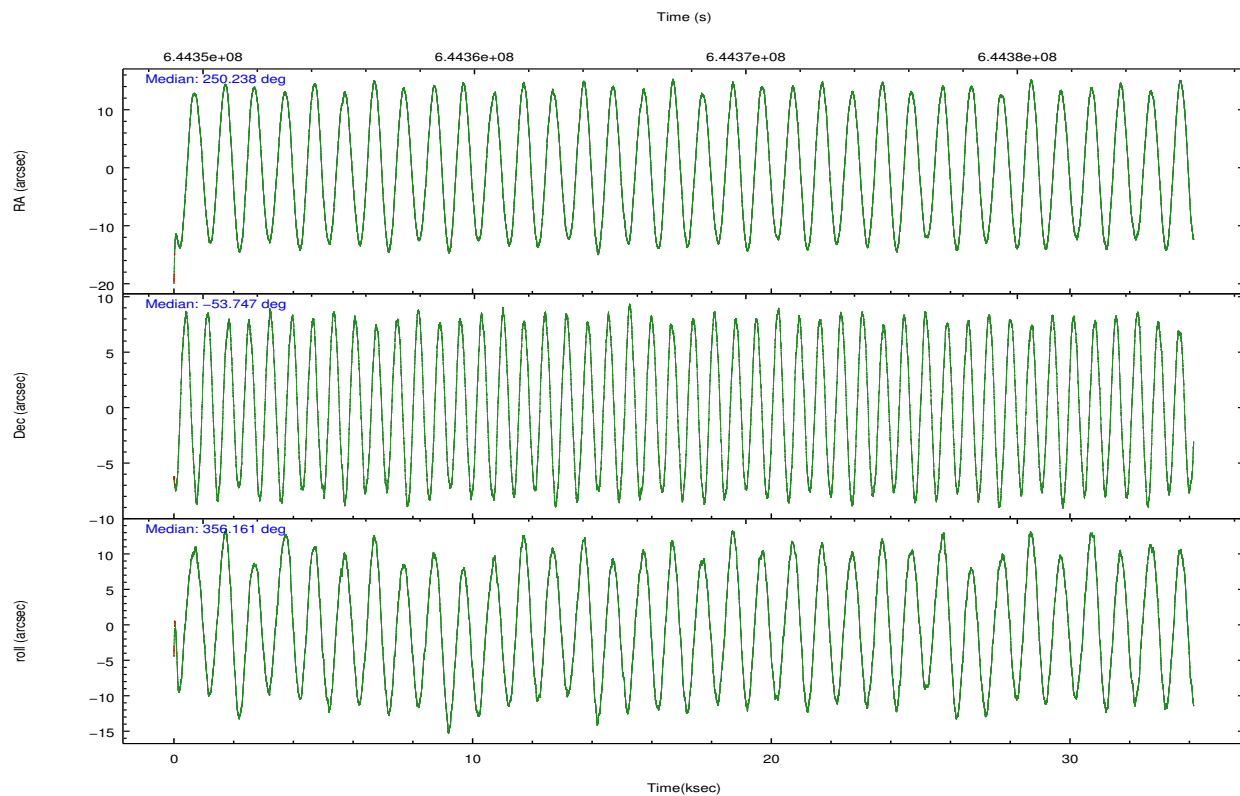
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	27040	161585	56163	71423
	13%	52%	15%	35%
grade 1 events	271	903	1066	236
	0%	0%	0%	0%
grade 2 events	35320	28210	71901	16013
	17%	9%	19%	7%
grade 3 events	8848	9880	31289	6640
	4%	3%	8%	3%
grade 4 events	7066	9675	31609	6255
	3%	3%	8%	3%
grade 5 events	17204	4586	15859	5955
	8%	1%	4%	2%
grade 6 events	40500	11387	103316	11640
	20%	3%	28%	5%
grade 7 events	63909	81130	54506	84844
	31%	26%	14%	41%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-5678	ACIS-5678	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	250.196388	250.2377682695888	CCD I2 on	N	N
[deg] Pointing Dec	-53.759793	-53.74738920223225	CCD I3 on	N	N
[deg] Pointing Roll	355.971884	356.1618870019764	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	-182.1344861297048	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-8	-7.998036453302973	CCD S4 on	Y	Y
[s] Observation start time (MET)	644350769.184000	644349484.96785	CCD S5 on	O2	N
Observation start date	2018-06-02T18:18:20	2018-06-02T17:58:04	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	644384769.184000	644385848.895	On-chip summing requested	N	N
Observation end date	2018-06-03T03:45:00	2018-06-03T04:04:08	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



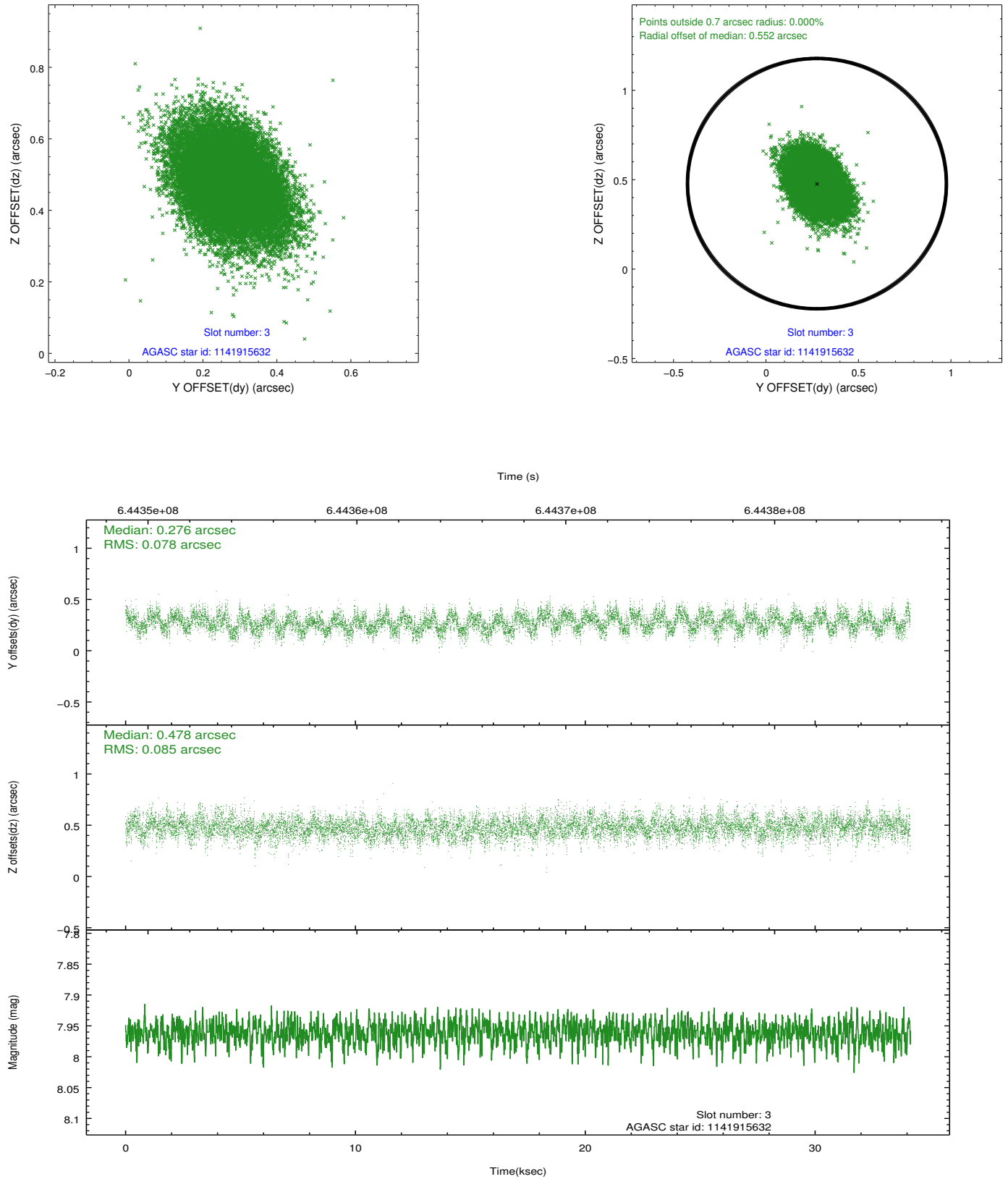


Slot Statistics

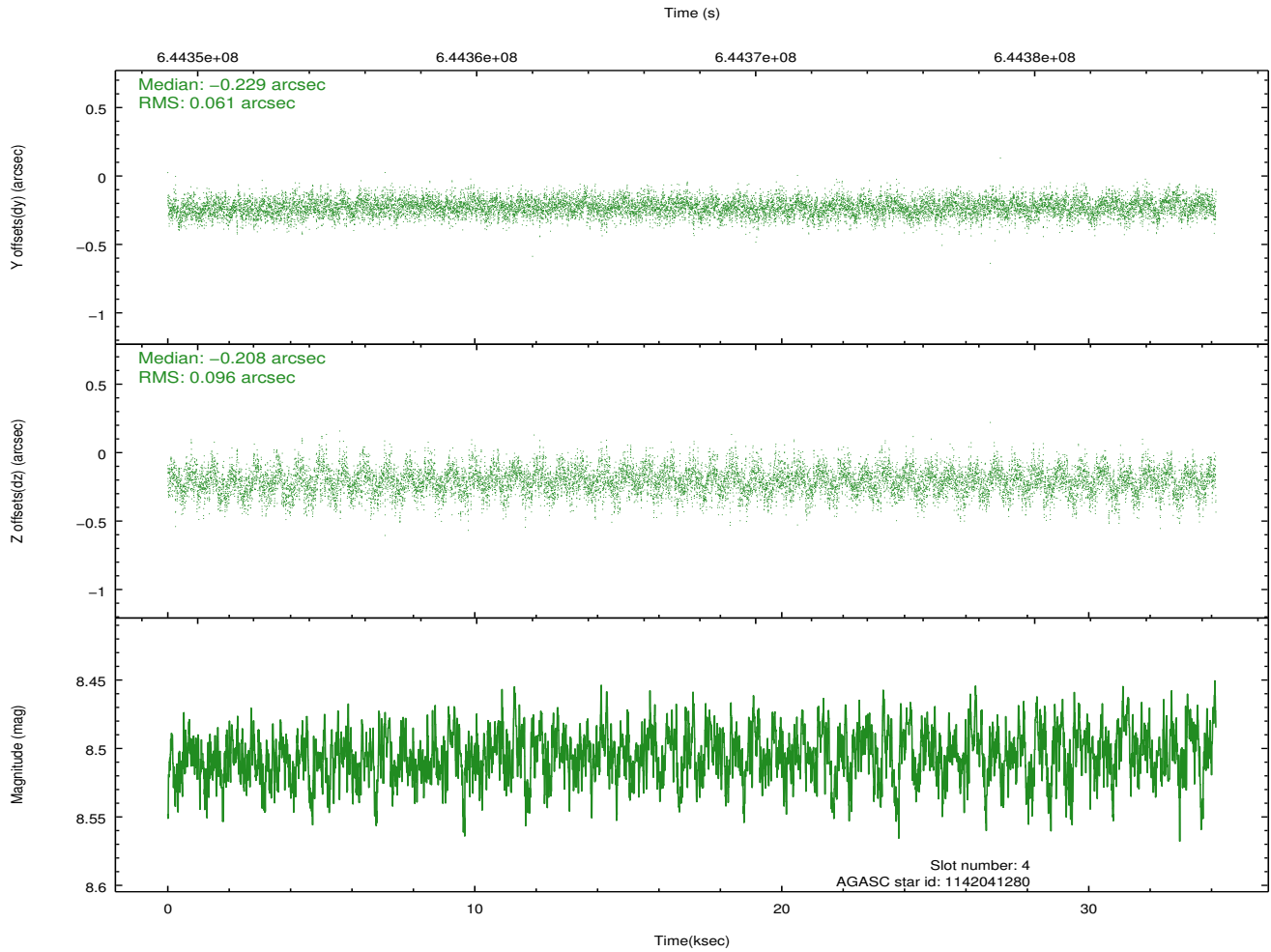
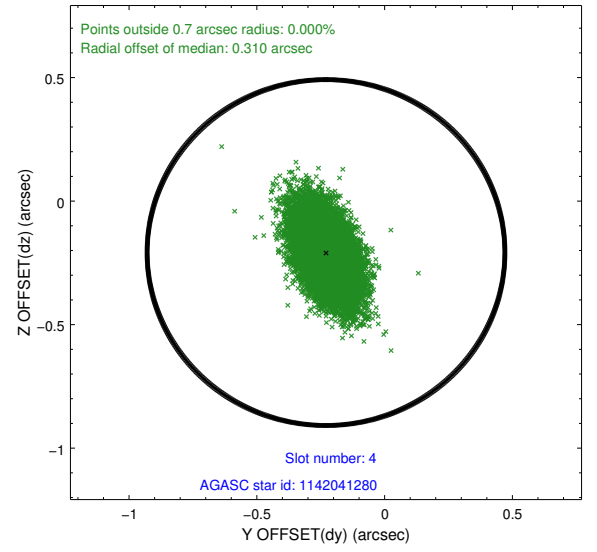
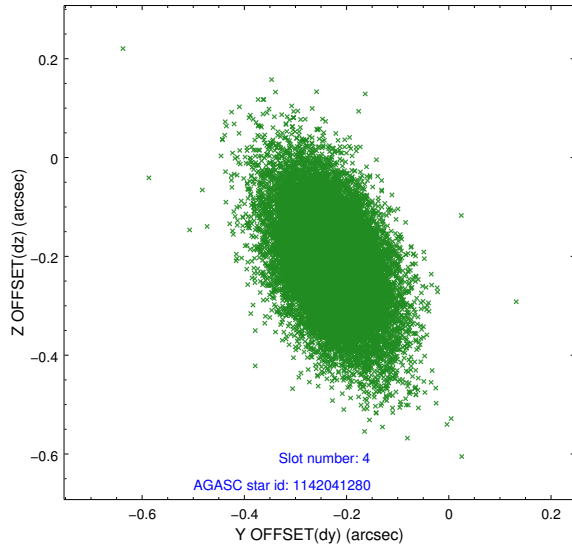
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.92	8327	-0.275	-0.193	0.013	0.027	0.000000	0.000000	-766.43	-1904.55
1	FID		ACIS-S-4	7.01	8326	0.316	0.145	0.010	0.040	0.000000	0.000000	2147.51	4.05
2	FID		ACIS-S-6	7.24	8324	-0.069	0.057	0.012	0.038	0.000000	0.000000	395.94	641.49
3	GUIDE	used	1141915632	7.96	16646	0.276	0.478	0.122	0.202	249.175229	-53.921117	-2116.97	-746.40
4	GUIDE	used	1142041280	8.50	16638	-0.229	-0.208	0.116	0.207	250.607191	-53.463271	803.41	1124.05
5	GUIDE	used	1142049296	8.29	16649	0.455	0.141	0.132	0.229	250.151068	-54.136674	0.82	-1359.82
6	GUIDE	used	1142043648	8.32	16648	-0.288	-0.145	0.114	0.199	250.954624	-53.491932	1552.72	1066.94
7	GUIDE	used	1142047448	8.67	16639	-0.214	-0.264	0.125	0.216	250.987986	-53.236686	1569.81	1988.77

2.4 Star Slots

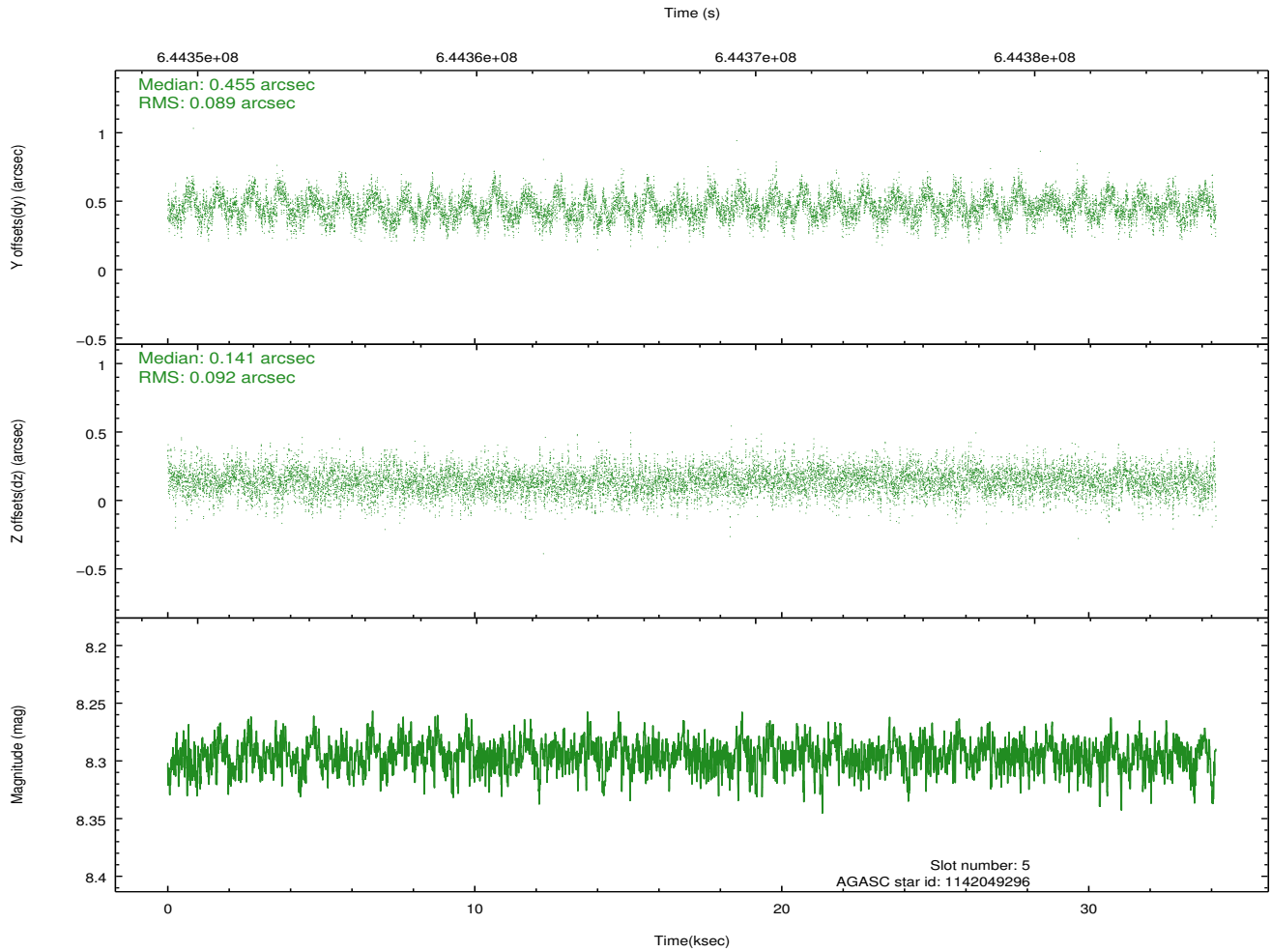
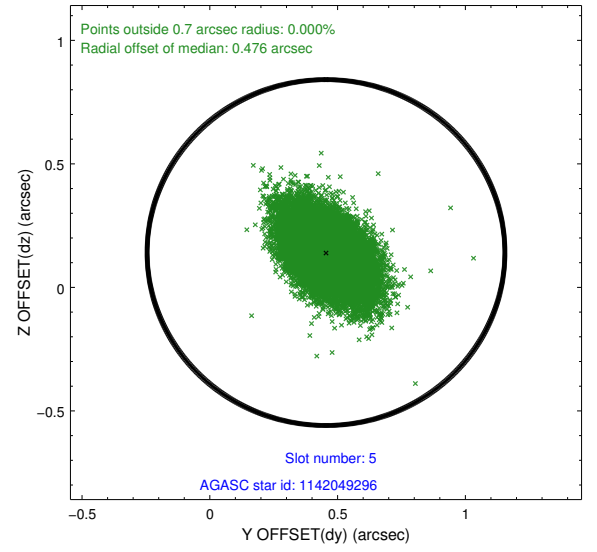
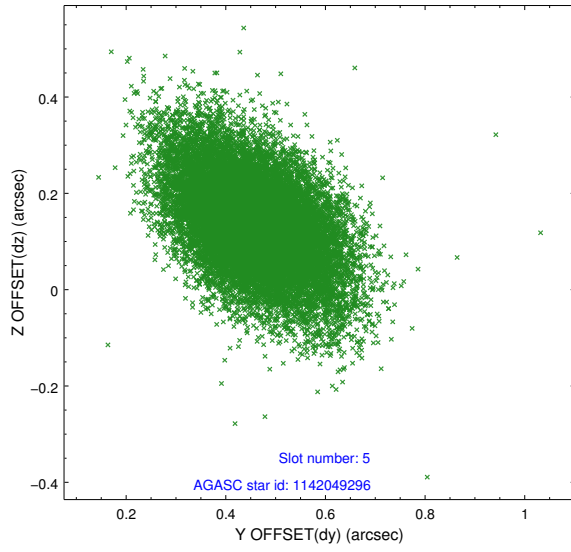
2.4.1 Slot 3



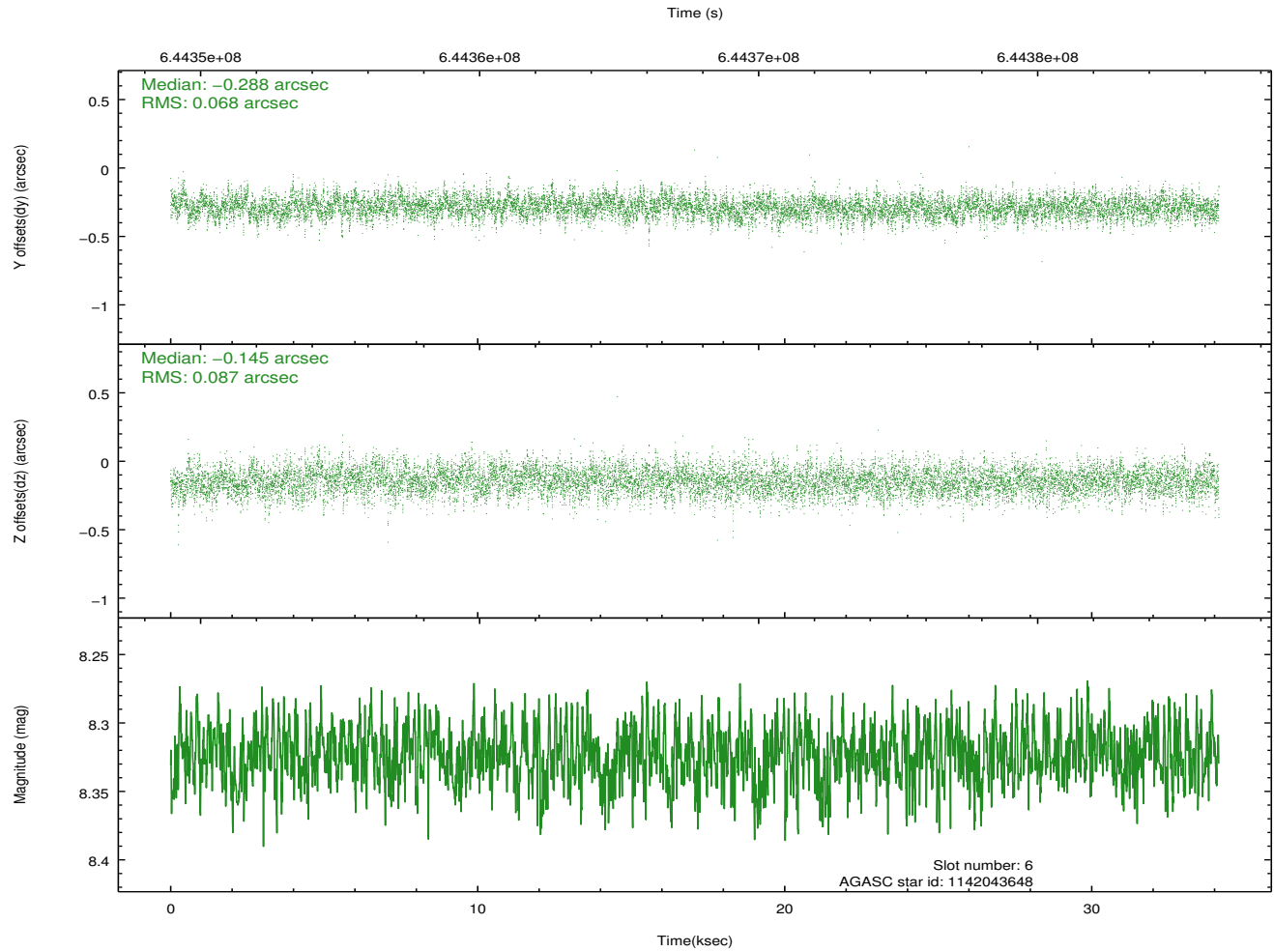
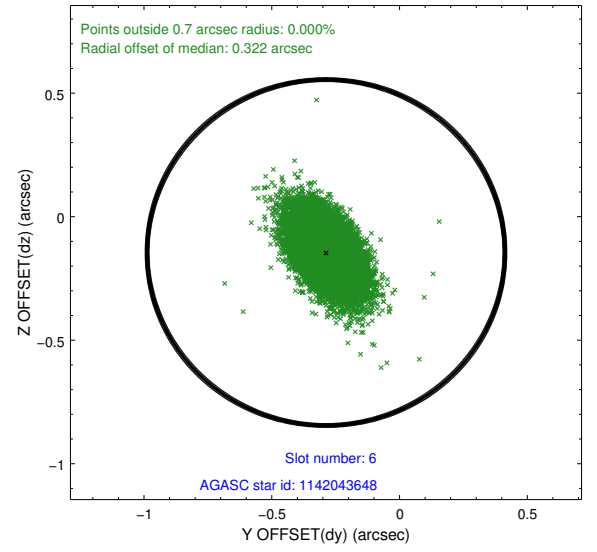
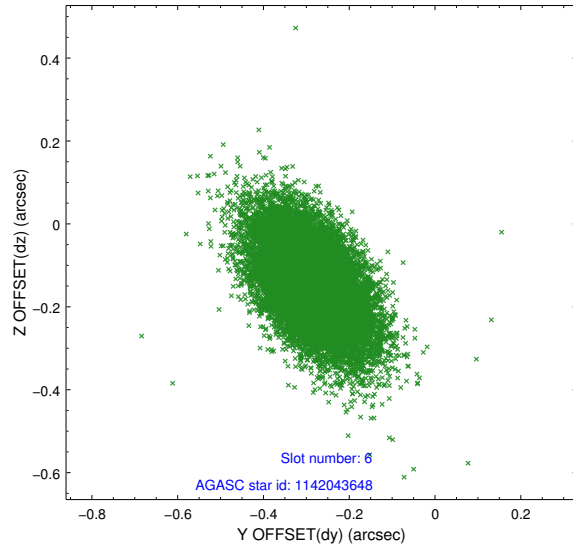
2.4.2 Slot 4



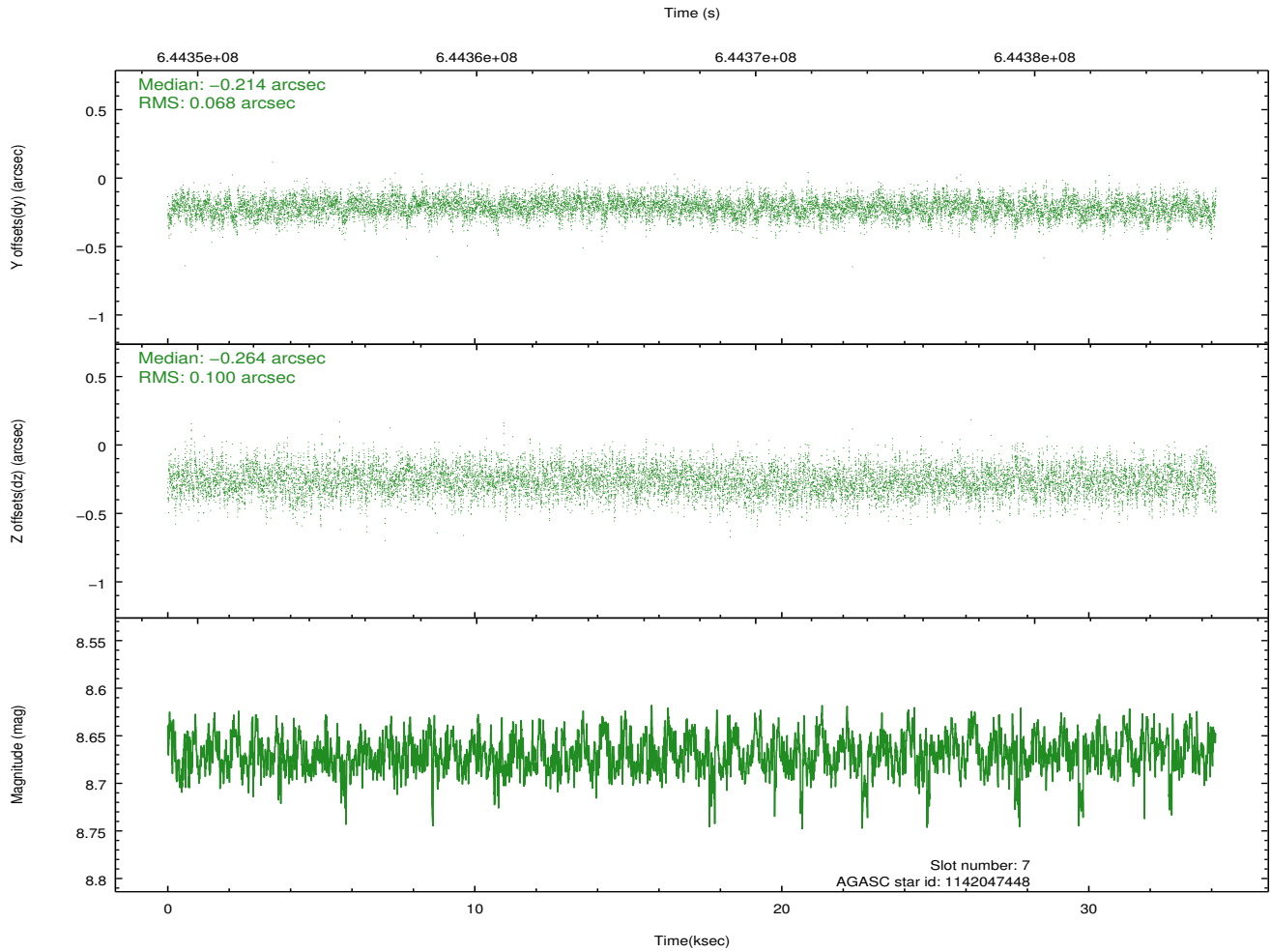
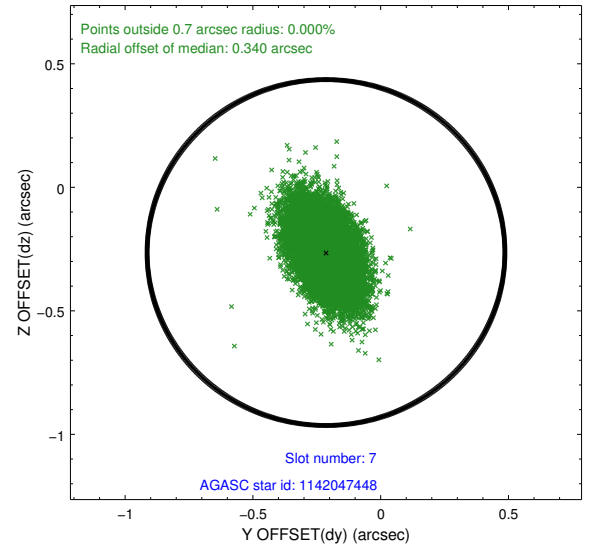
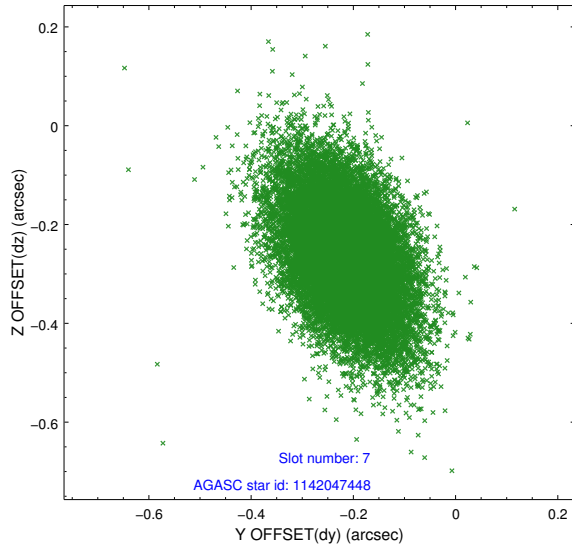
2.4.3 Slot 5



2.4.4 Slot 6

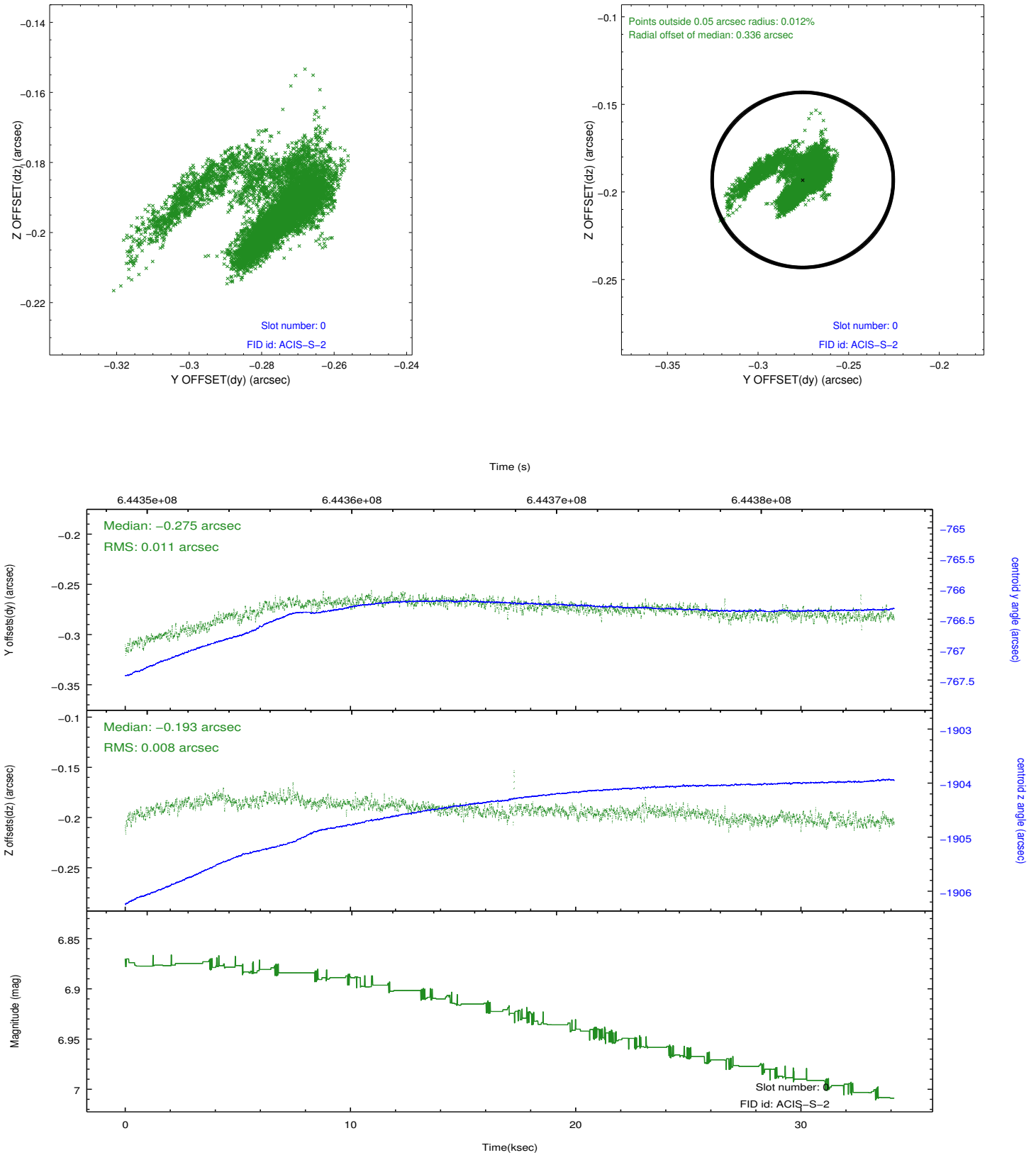


2.4.5 Slot 7

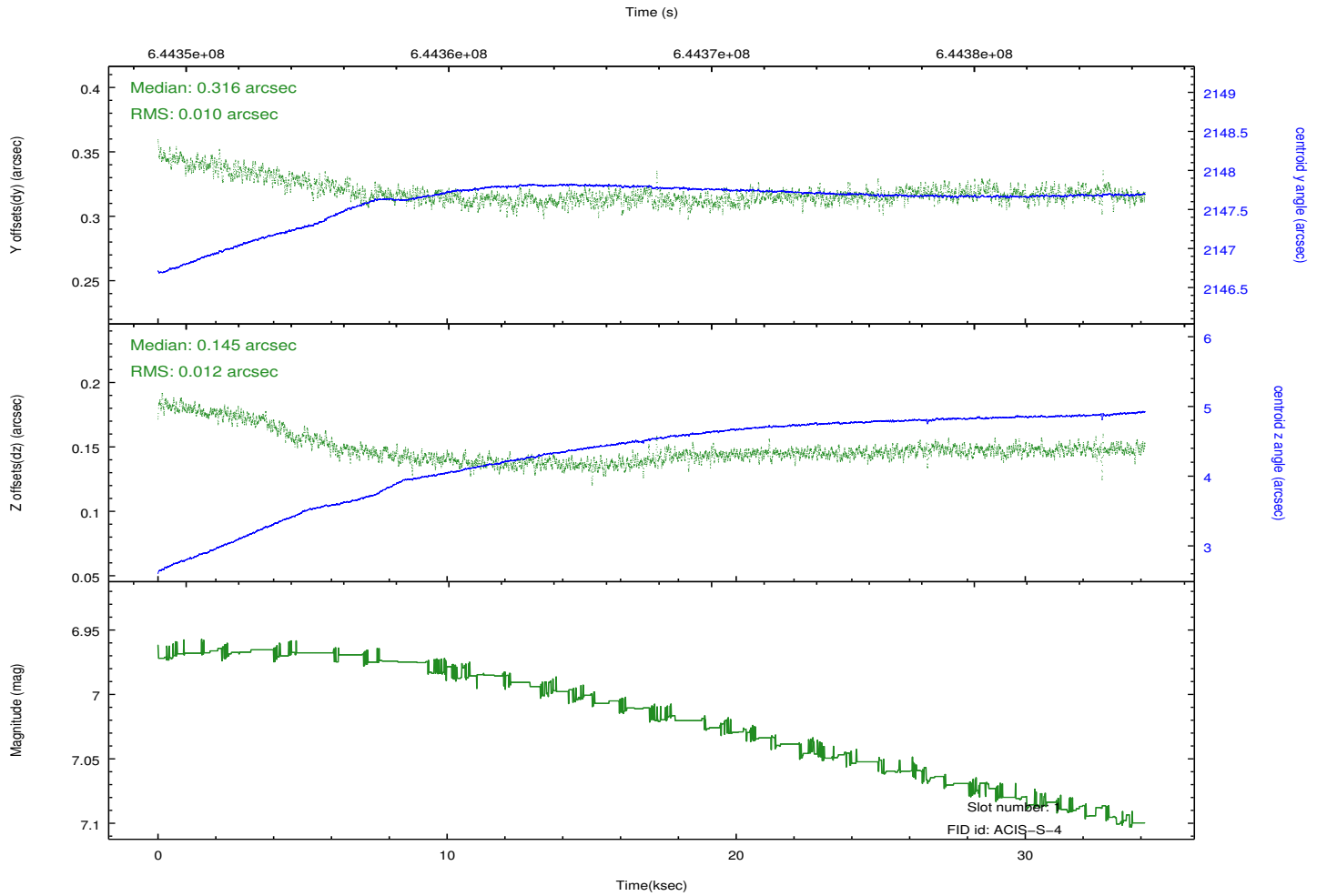
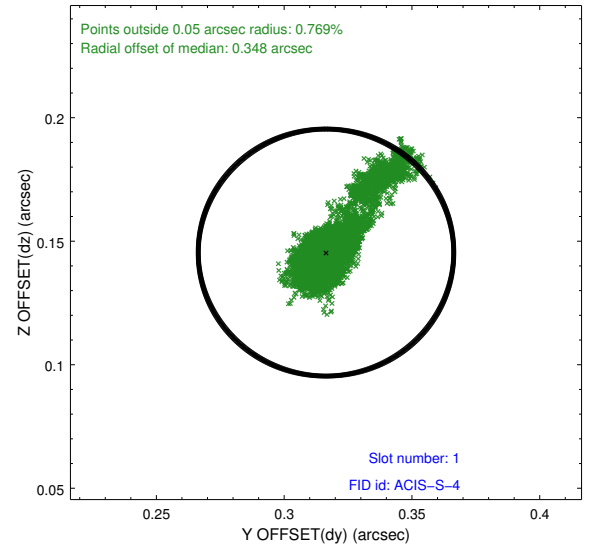
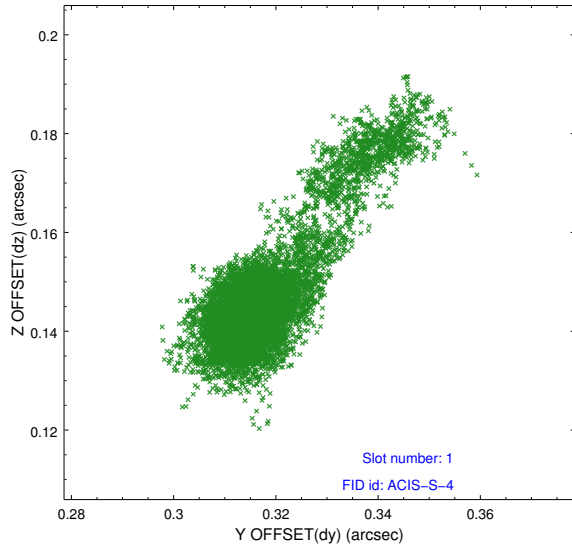


2.5 FID Slots

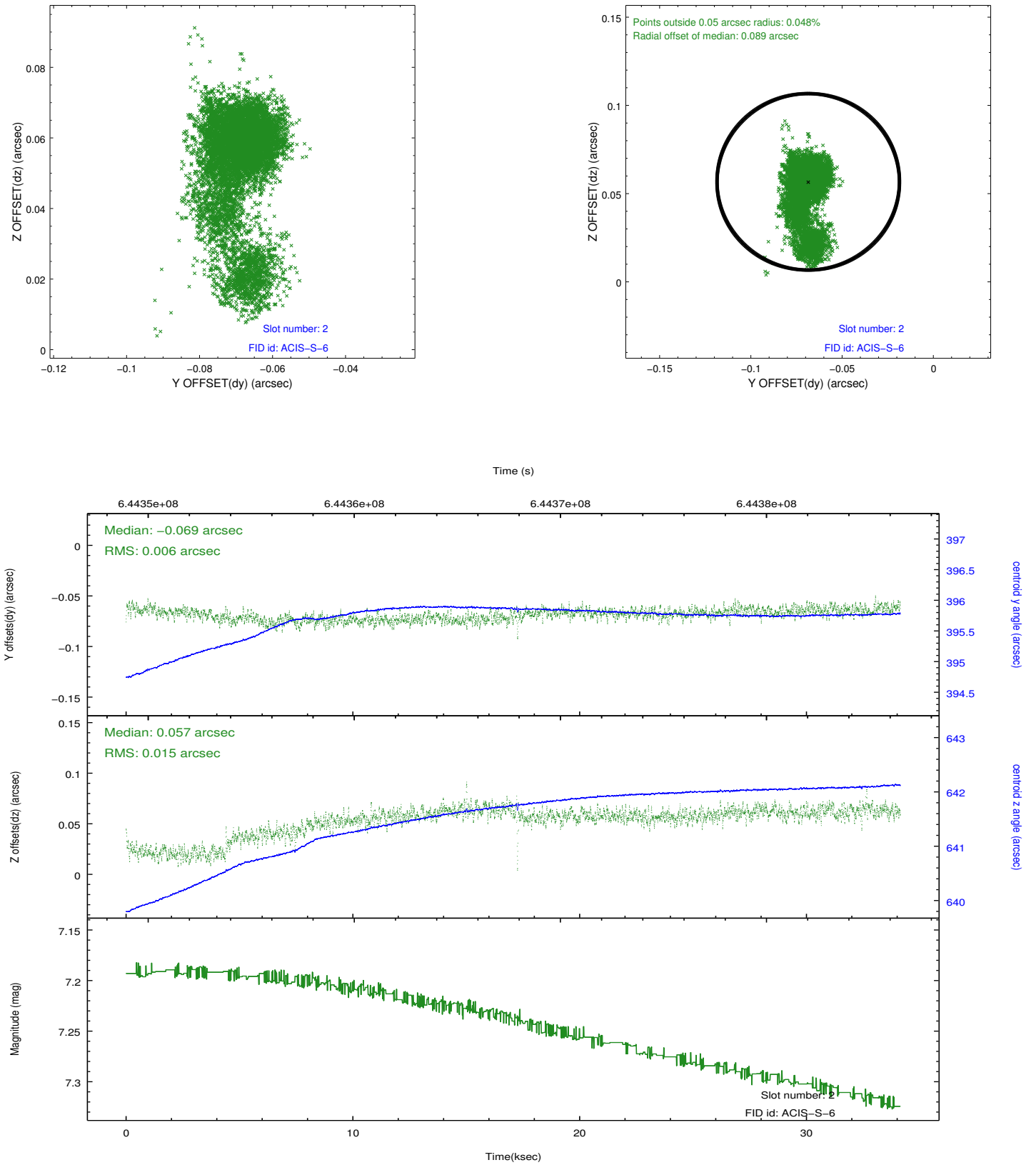
2.5.1 Slot 0



2.5.2 Slot 1

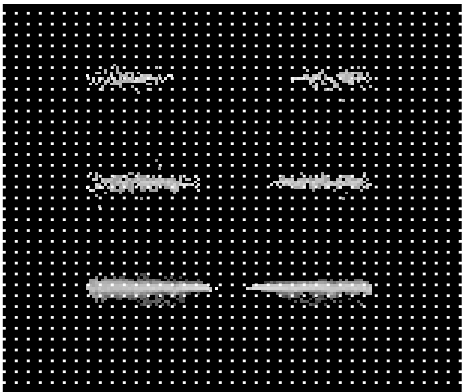


2.5.3 Slot 2

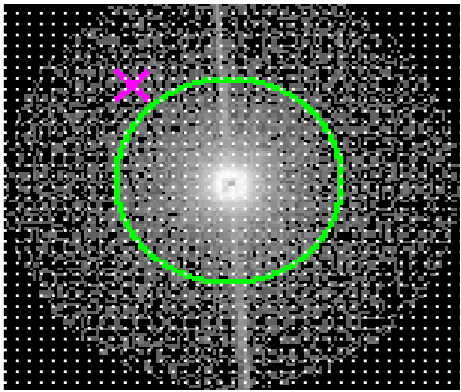


3 Gratings

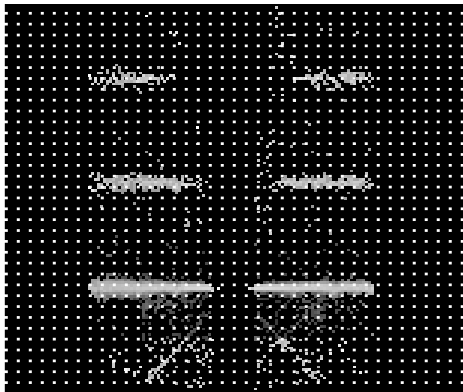
3.1 HEG Arm



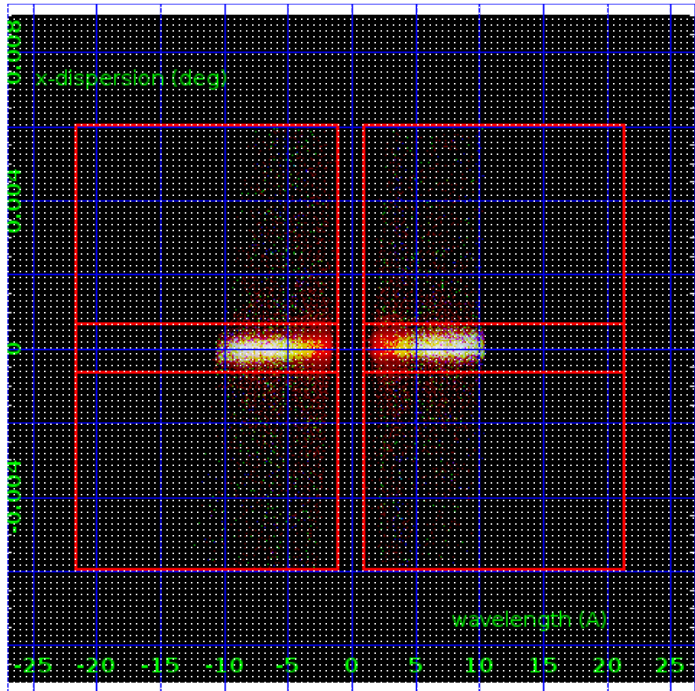
HEG Order Sort 123



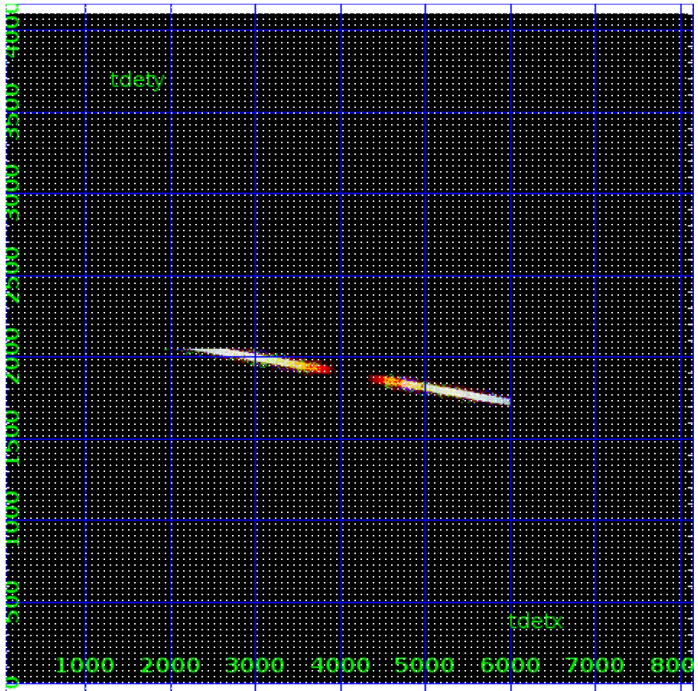
HEG Zero Order



HEG Order Sort ALL

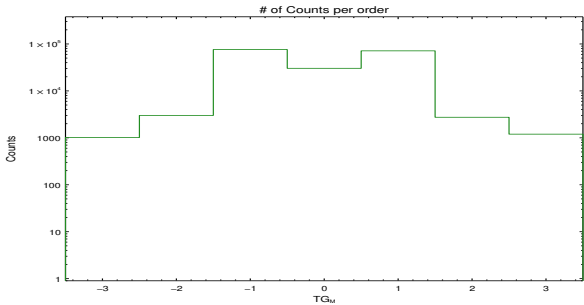


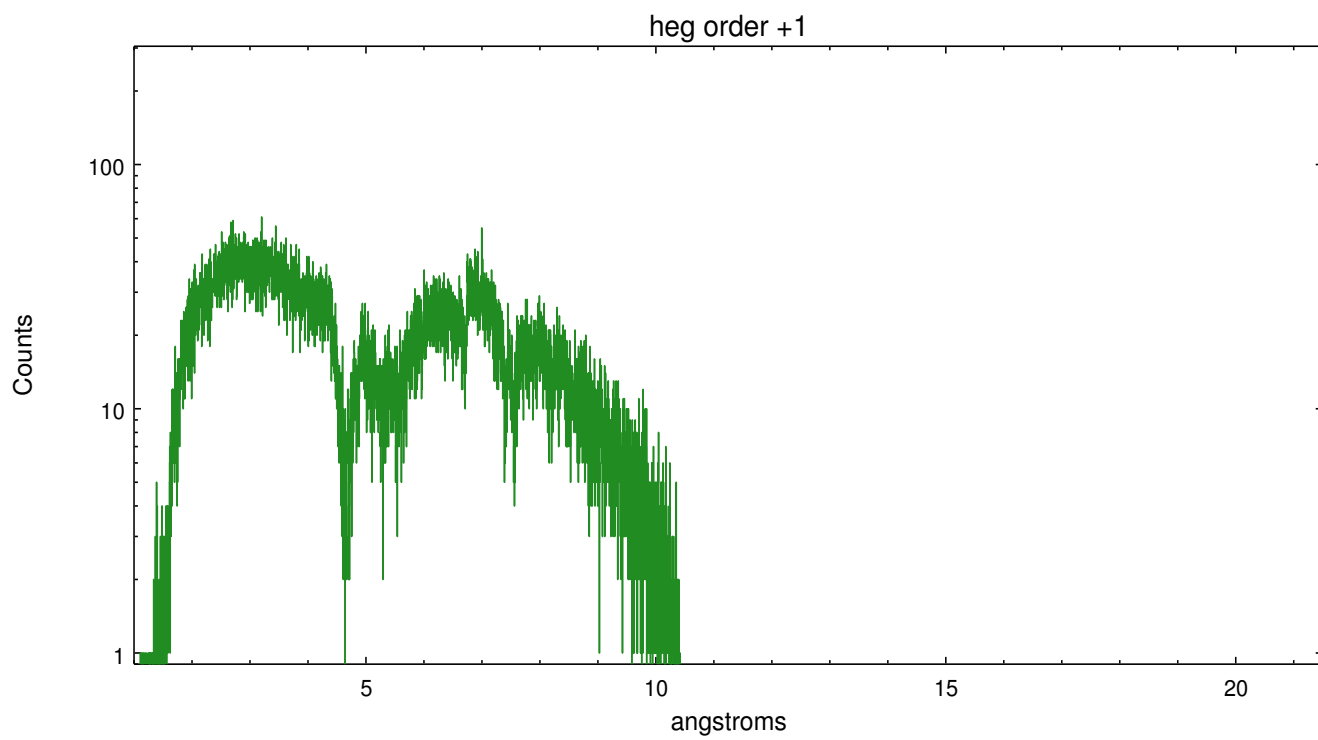
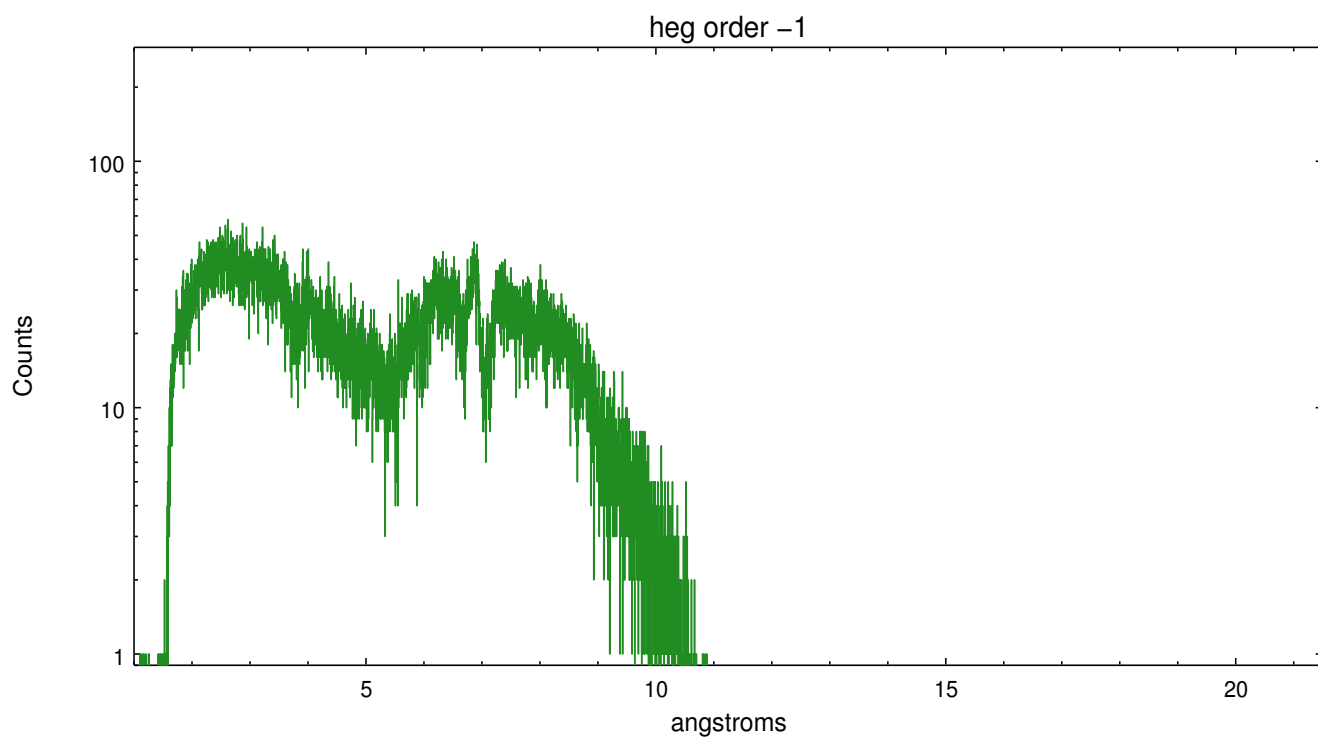
Spot Image HEG



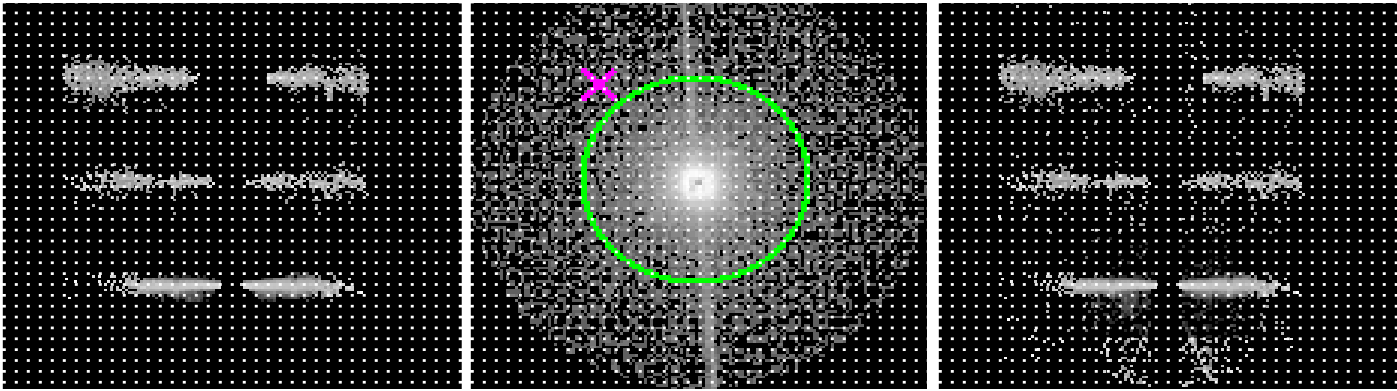
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1017	3006	75876	30264	71399	2741	1197





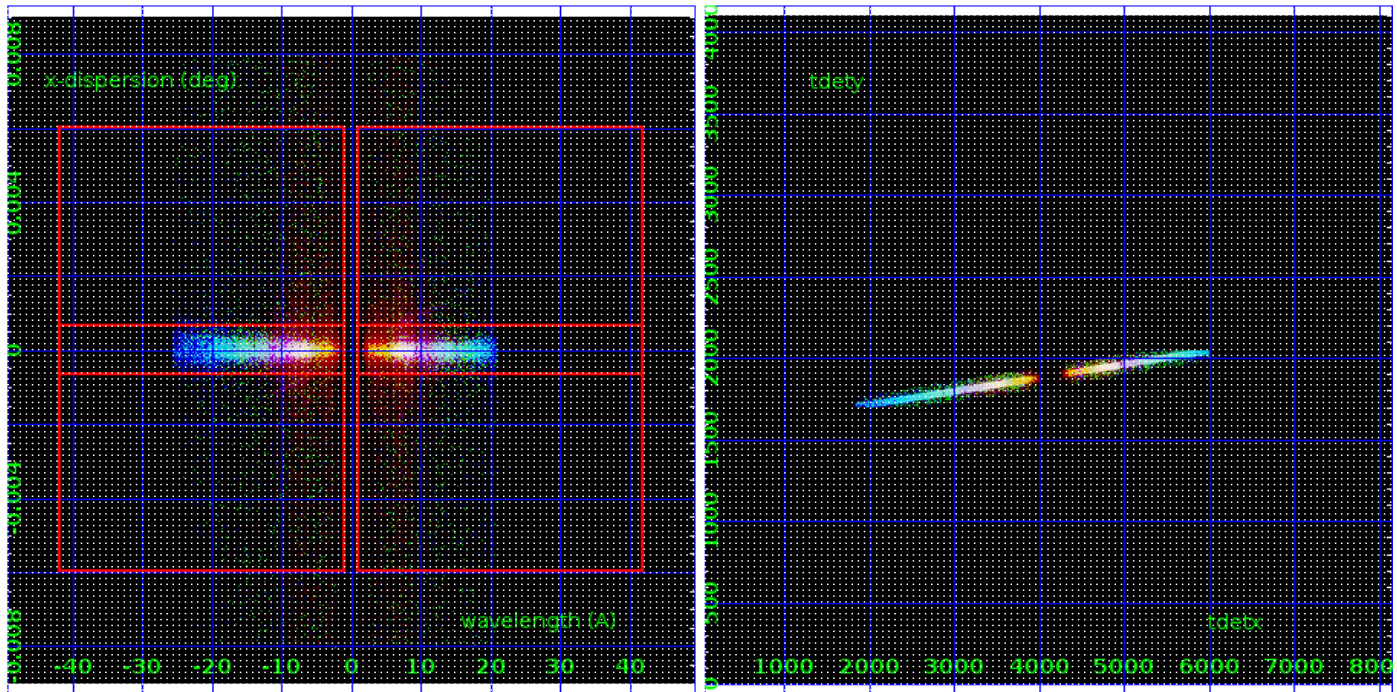
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

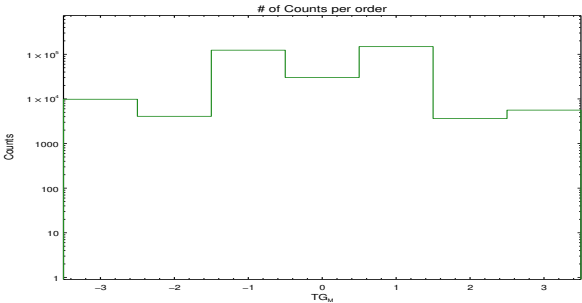
MEG Order Sort ALL

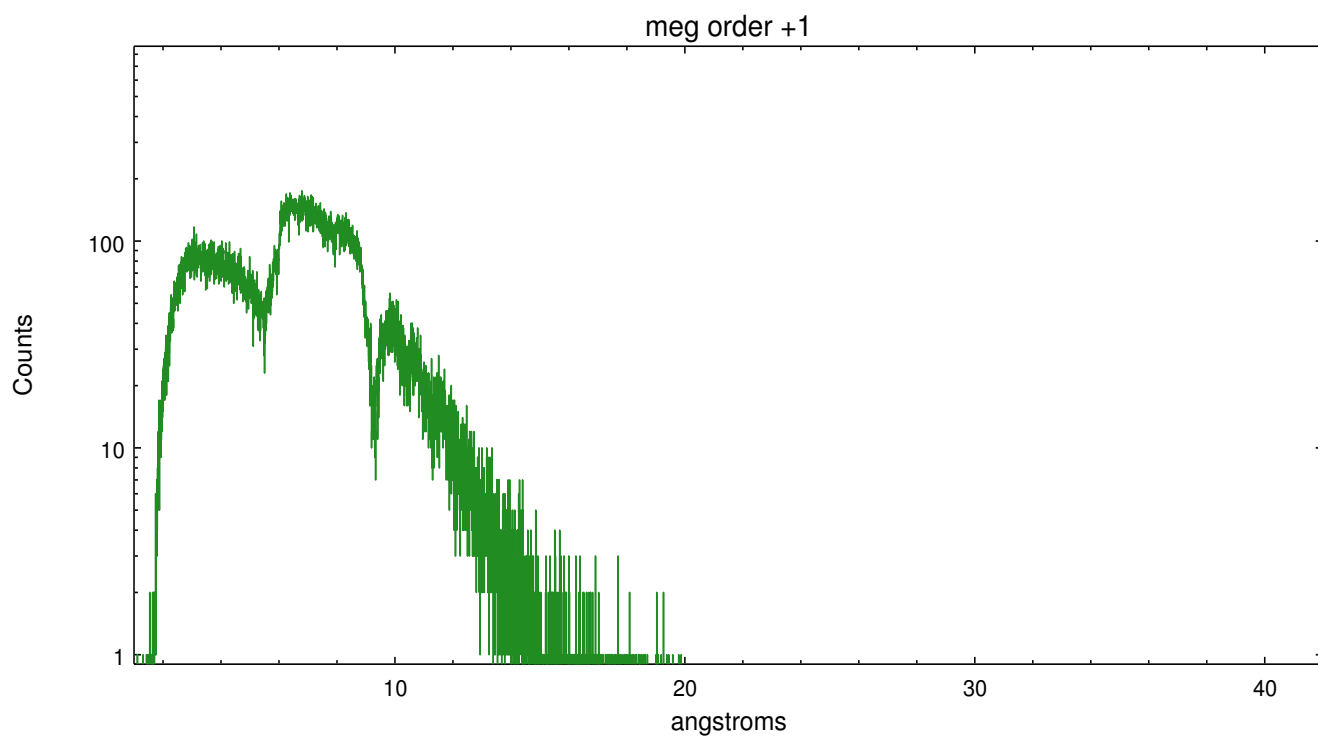
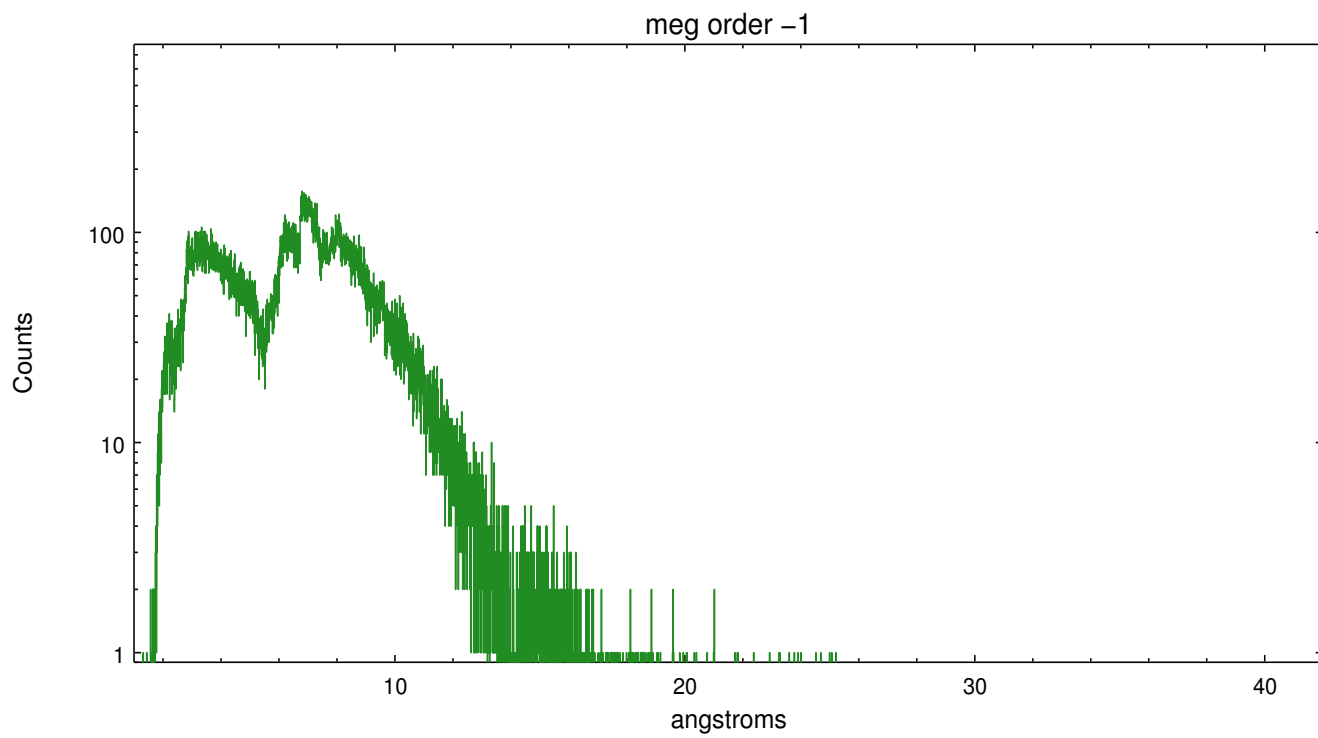


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	9820	4070	123650	30264	148700	3637	5608





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.06.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	34.079605484247

A.2 Comments

Thirty rows of the bias map (190-220) for chip 6 are missing due to dropped telemetry. The data are not recoverable. Bias map for chips 6 was reconstructed using scaled data from a comparable bias map for another observation to fill the data gap.

===

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. === 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.