

V&V Reference Report

L2 ASCDS Version : 10.3.1

Observation 17565 - L2 Version 1
Chandra X-Ray Center

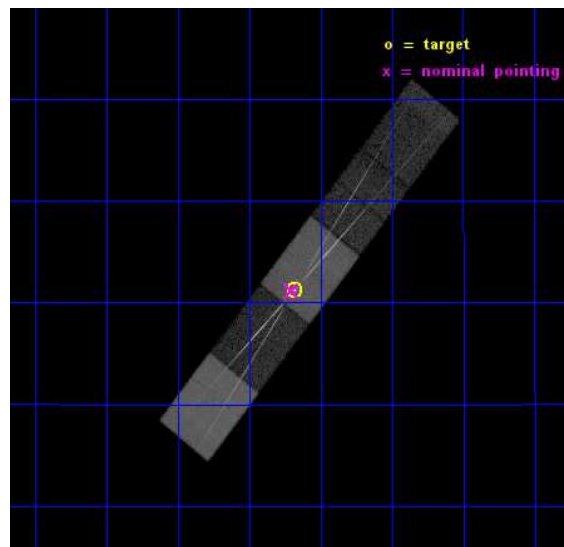
L2 Processing Date : Dec 28 2014

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1 Front

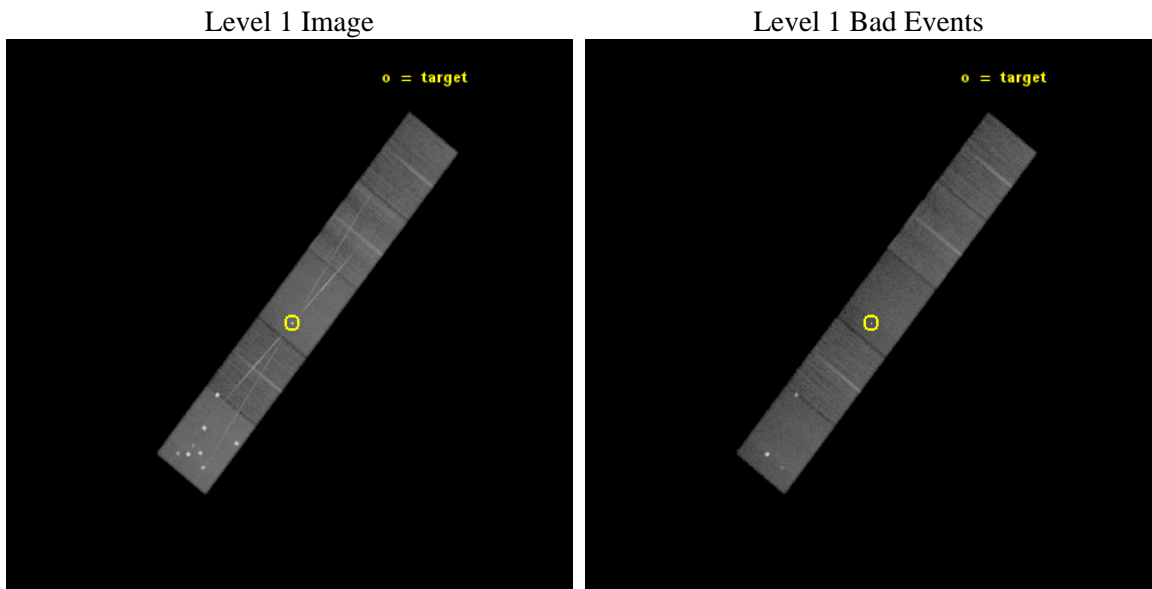
seq_num	703009	Sequence number
obs_id	17565	Observation id
title	Unifying X-ray winds in radio galaxies with Chandra HETG	Proposal
observer	Dr. Francesco Tombesi	Principal investigator
object	3C 120	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	68.29625	Observer's specified target RA [deg]
dec_targ	5.354333	Observer's specified target Dec [deg]
ra_nom	68.300909340189	Nominal RA [deg]
dec_nom	5.3526293857669	Nominal Dec [deg]
roll_nom	308.15619570029	Nominal Roll [deg]
revision	1	Processing version of data
ontime	44047.19956243	Sum of GTIs [s]
livetime	43306.655749121	Livetime [s]
ontime5	44047.19956243	Sum of GTIs [s]
ontime6	44047.19956243	Sum of GTIs [s]
ontime7	44047.19956243	Sum of GTIs [s]
ontime8	44047.19956243	Sum of GTIs [s]
ontime9	44047.19956243	Sum of GTIs [s]
l2events	316039	Number of level 2 events



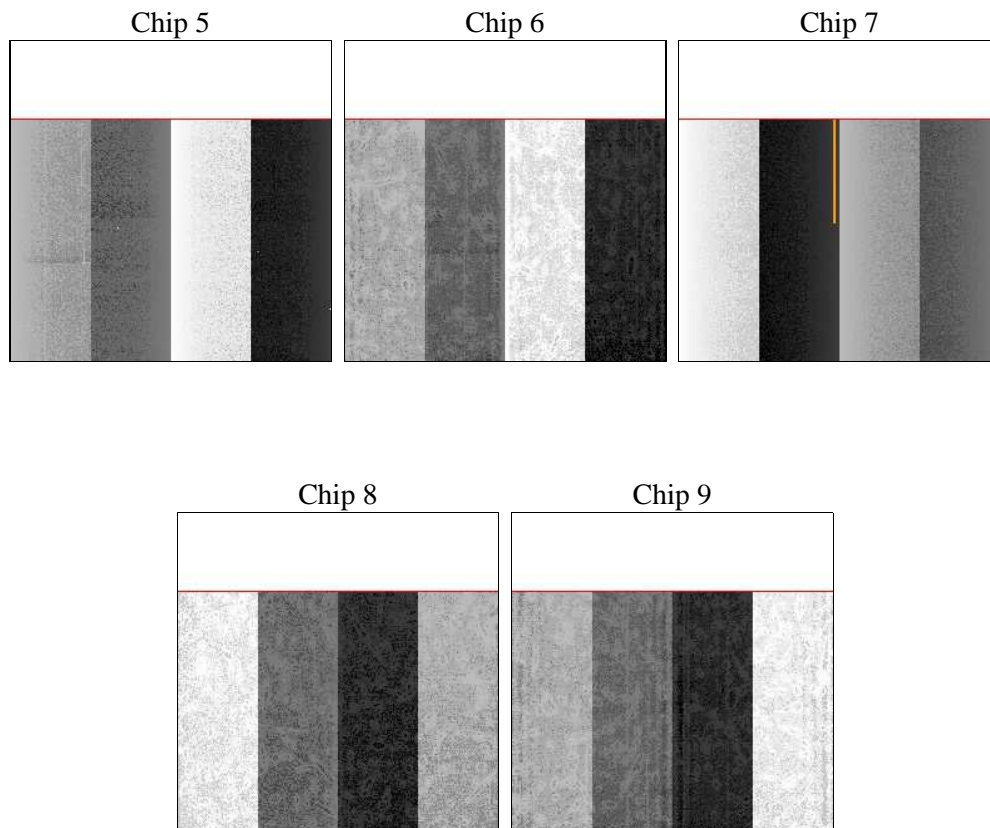
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	2	Obi number	sched_exp_time	44000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	44047.19956243	Sum of GTIs [s]
caldbver	4.6.5	 	ontime5	44047.19956243	Sum of GTIs [s]
date	2014-12-28T05:38:01	Date and time of file creation	ontime6	44047.19956243	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	44047.19956243	Sum of GTIs [s]
			ontime8	44047.19956243	Sum of GTIs [s]
			ontime9	44047.19956243	Sum of GTIs [s]
			l1events	1144692	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4131.21, 4108.97)	src1a sky pixel position

2.1.4 Events

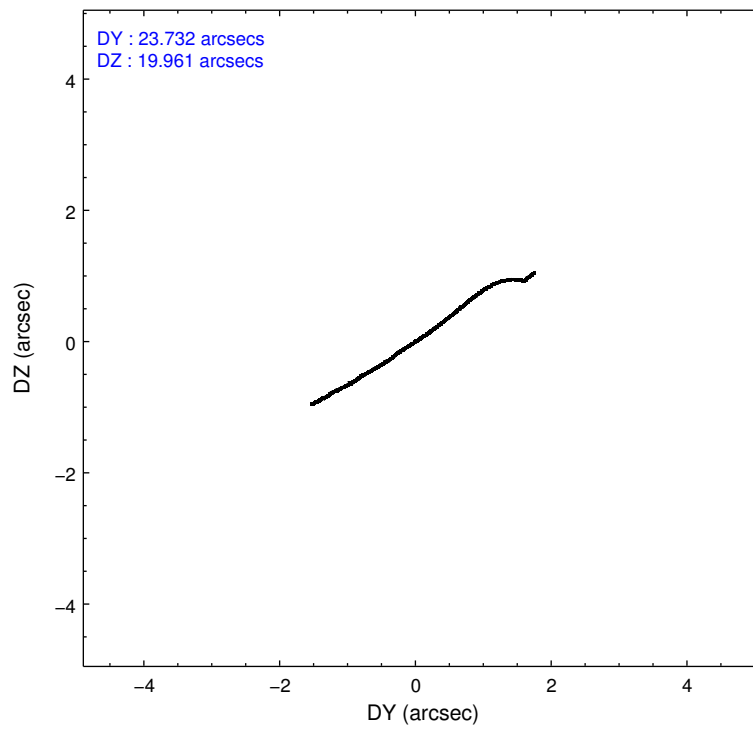
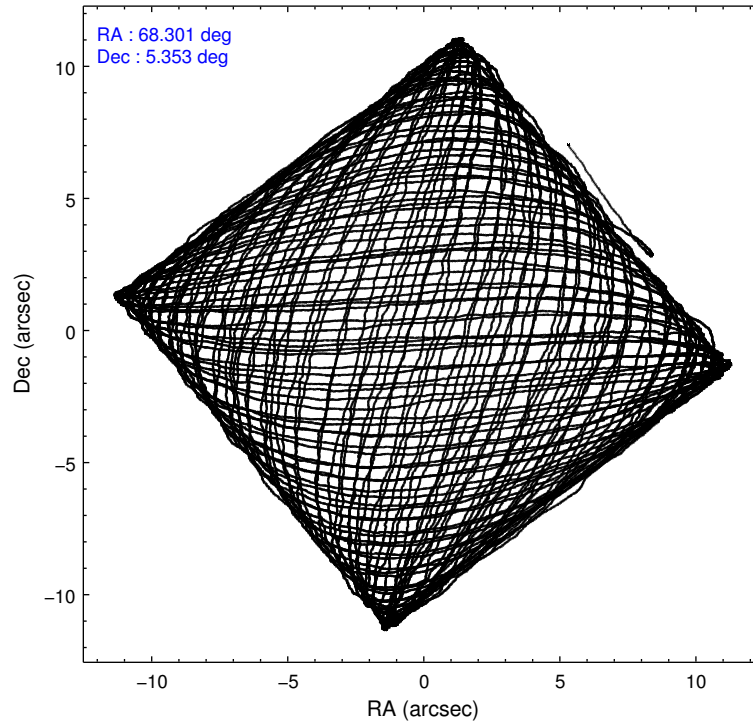
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	348445	176615	247104	212776	159752
rejected events	153042	140613	125348	152320	137999
rejected %	43%	79%	50%	71%	86%

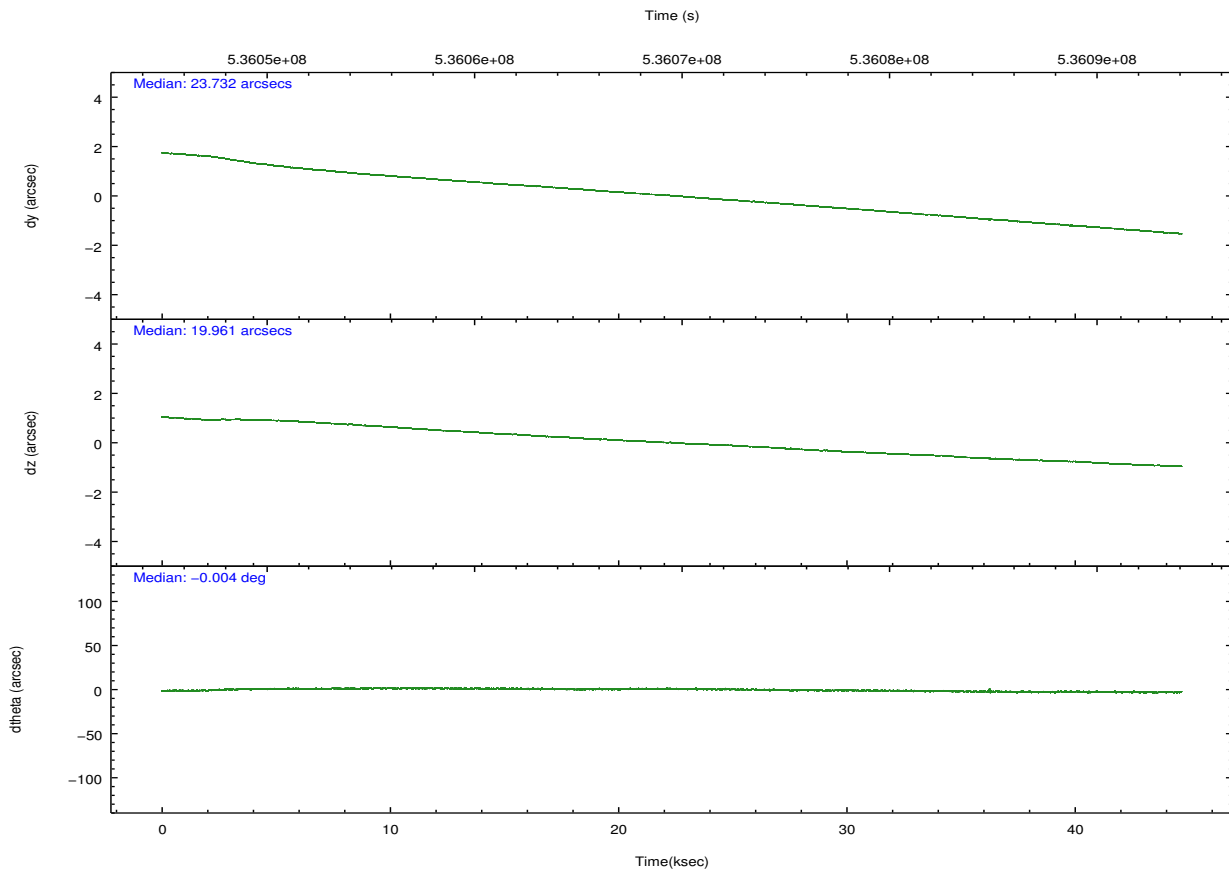
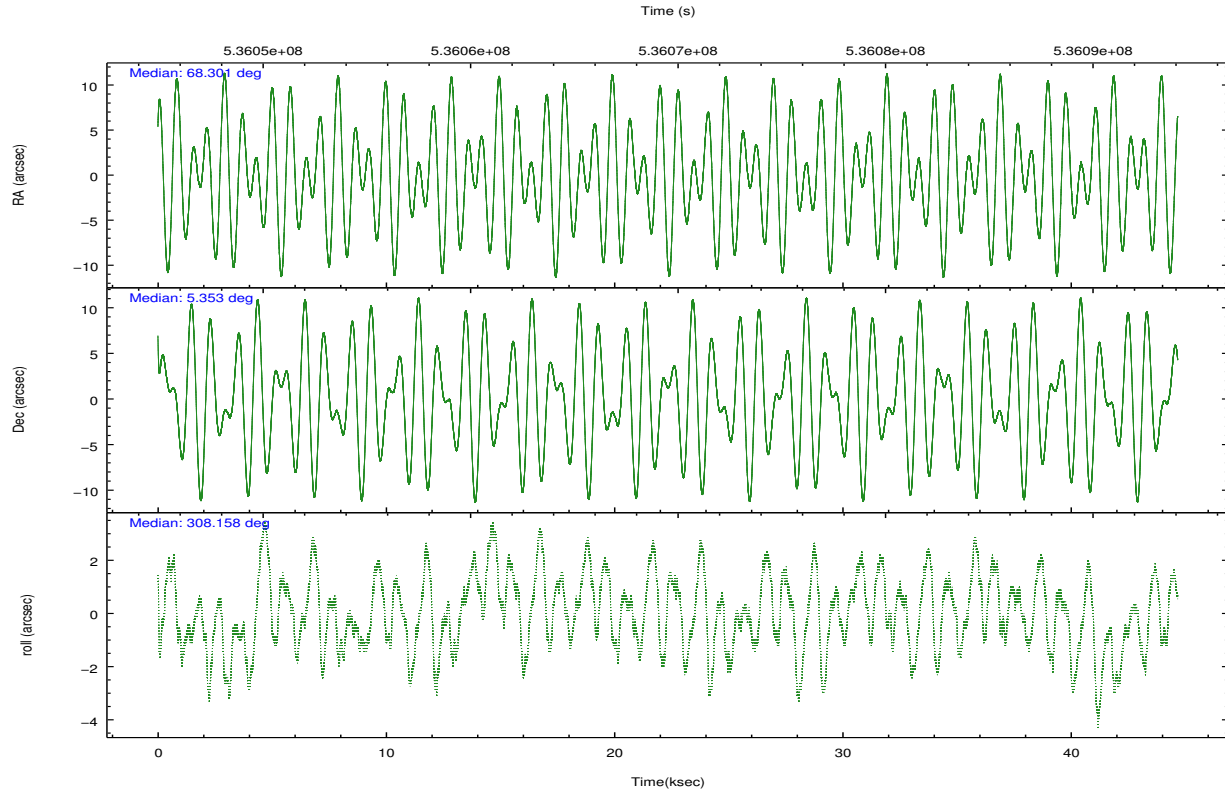
	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	58818	19300	13756	20331	8168
	16%	10%	5%	9%	5%
grade 1 events	764	116	476	143	84
	0%	0%	0%	0%	0%
grade 2 events	45591	6329	26013	13677	4651
	13%	3%	10%	6%	2%
grade 3 events	7979	2651	10946	6133	2261
	2%	1%	4%	2%	1%
grade 4 events	8947	2653	10865	5703	2162
	2%	1%	4%	2%	1%
grade 5 events	21059	7862	22775	11573	8744
	6%	4%	9%	5%	5%
grade 6 events	74082	5070	60182	14613	4511
	21%	2%	24%	6%	2%
grade 7 events	131205	132634	102091	140603	129171
	37%	75%	41%	66%	80%

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	68.275193	68.30090934018867	CCD I2 on	N	N
[deg] Pointing Dec	5.362483	5.35262938576694	CCD I3 on	N	N
[deg] Pointing Roll	308.001966	308.1561957002862	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	-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)	536047830.184000	536045953.64151	CCD S5 on	O2	Y
Observation start date	2014-12-27T06:09:23	2014-12-27T05:39:13	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	536091830.184000	536092840.73163	On-chip summing requested	N	N
Observation end date	2014-12-27T18:22:43	2014-12-27T18:40:40	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	2.4

2.3 Aspect





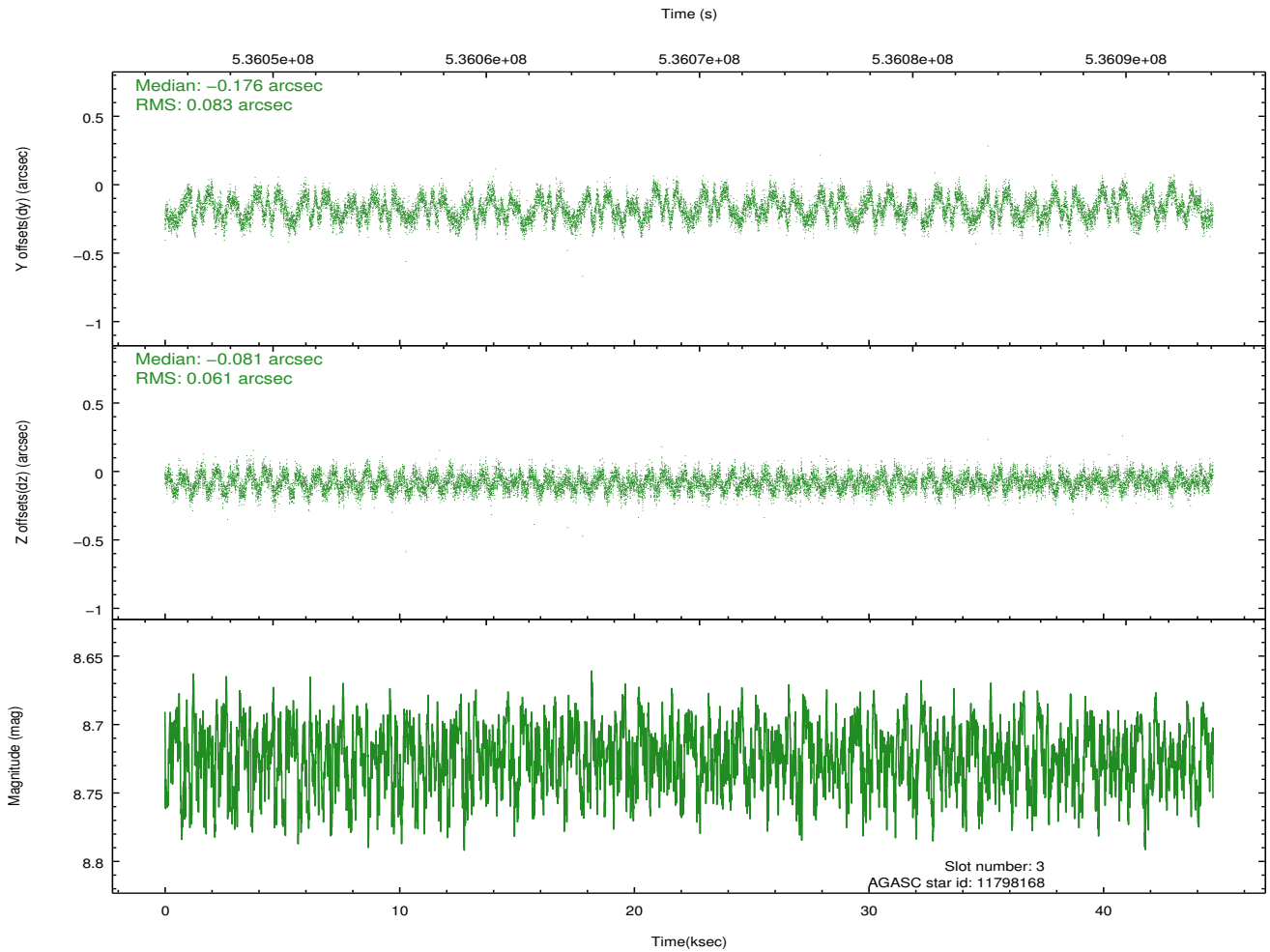
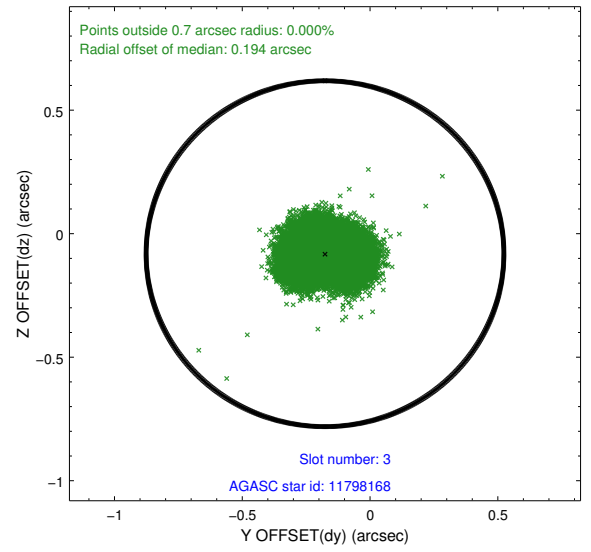
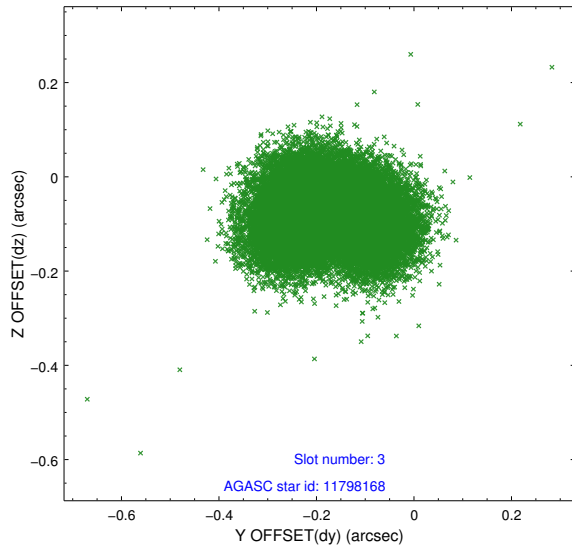
Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.05	10896	-0.171	-0.082	0.032	0.045	0.000000	0.000000	-776.93	-1803.71
1	FID		ACIS-S-4	7.13	10894	0.382	0.107	0.034	0.056	0.000000	0.000000	2136.91	104.94
2	FID		ACIS-S-5	7.17	10896	-0.232	-0.019	0.016	0.026	0.000000	0.000000	-1829.82	98.49
3	GUIDE	used	11798168	8.72	21704	-0.176	-0.081	0.112	0.172	68.723067	4.993277	2036.53	447.93
4	GUIDE	used	11801400	7.90	21792	-0.224	-0.174	0.087	0.137	68.459989	5.385023	346.54	568.37
5	GUIDE	used	11805784	8.87	21788	0.117	0.115	0.125	0.201	68.291152	4.970127	1150.14	-824.17
6	GUIDE	used	12323392	8.91	21778	0.130	0.080	0.106	0.179	68.029576	5.625661	-1287.26	-109.53
7	GUIDE	used	12327088	8.60	21785	0.154	0.060	0.078	0.125	67.823561	5.844308	-2362.64	-205.82

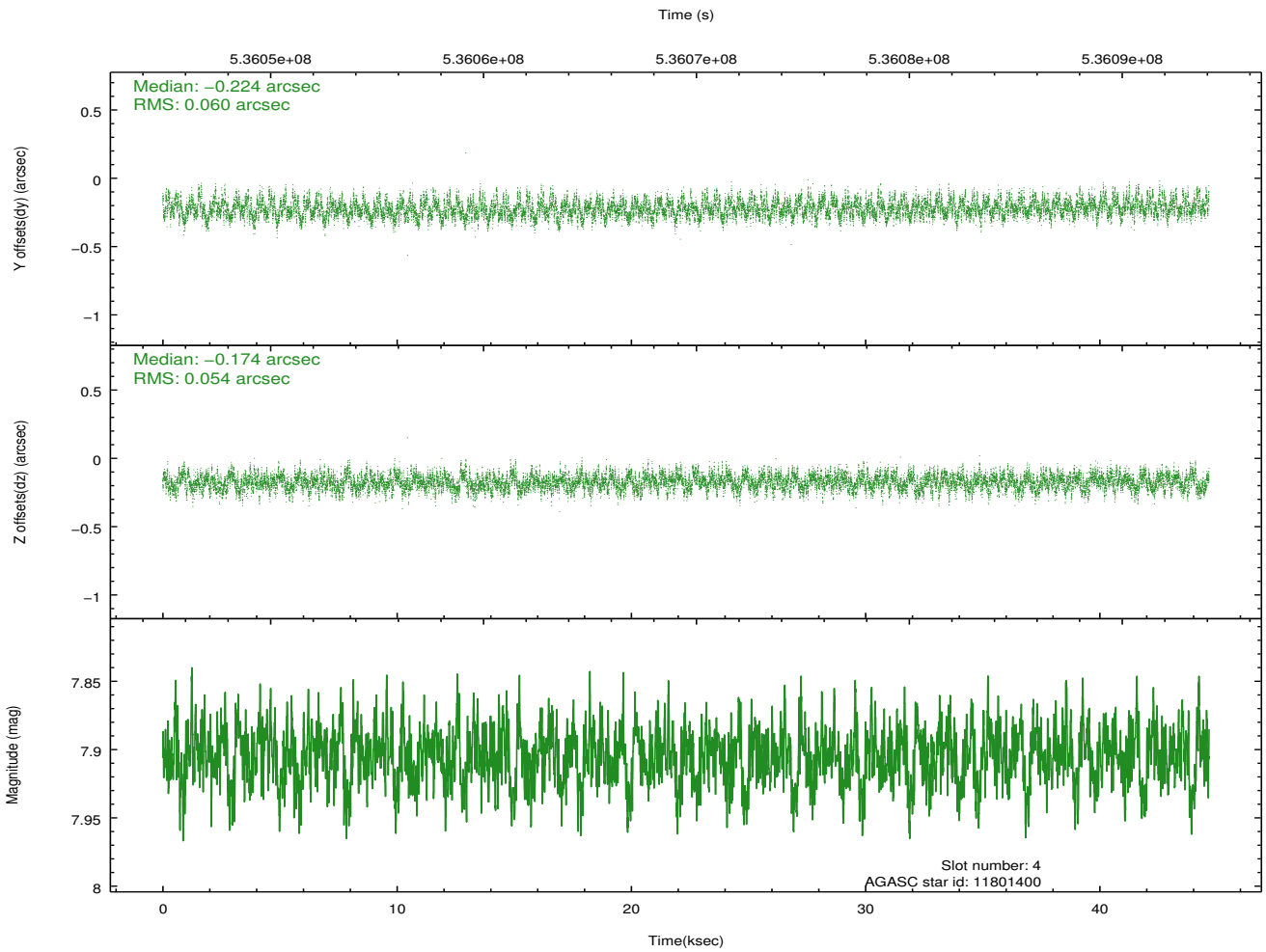
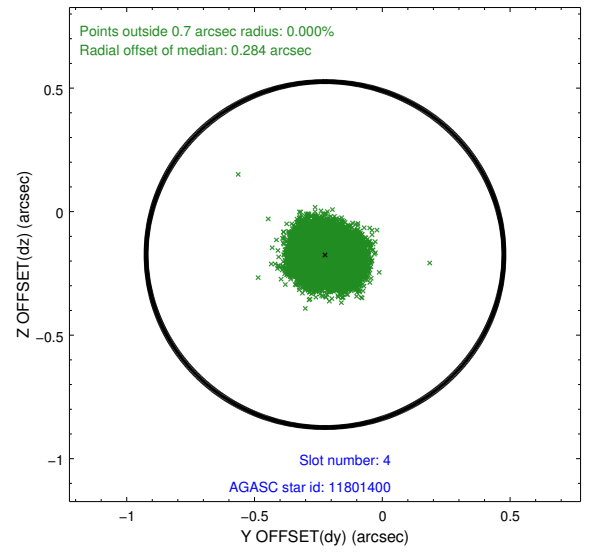
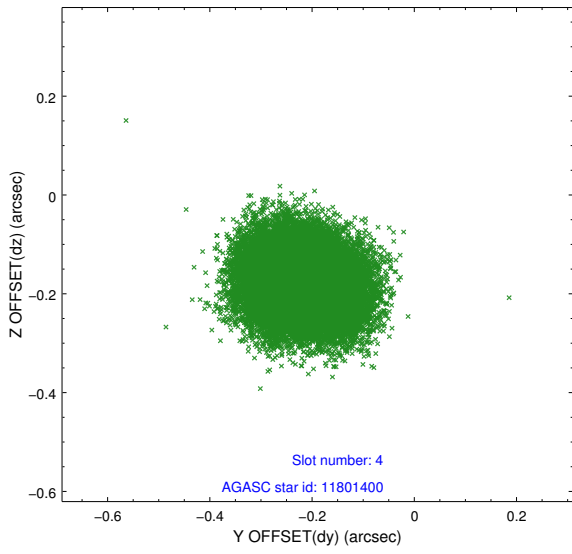
∞

2.4 Star Slots

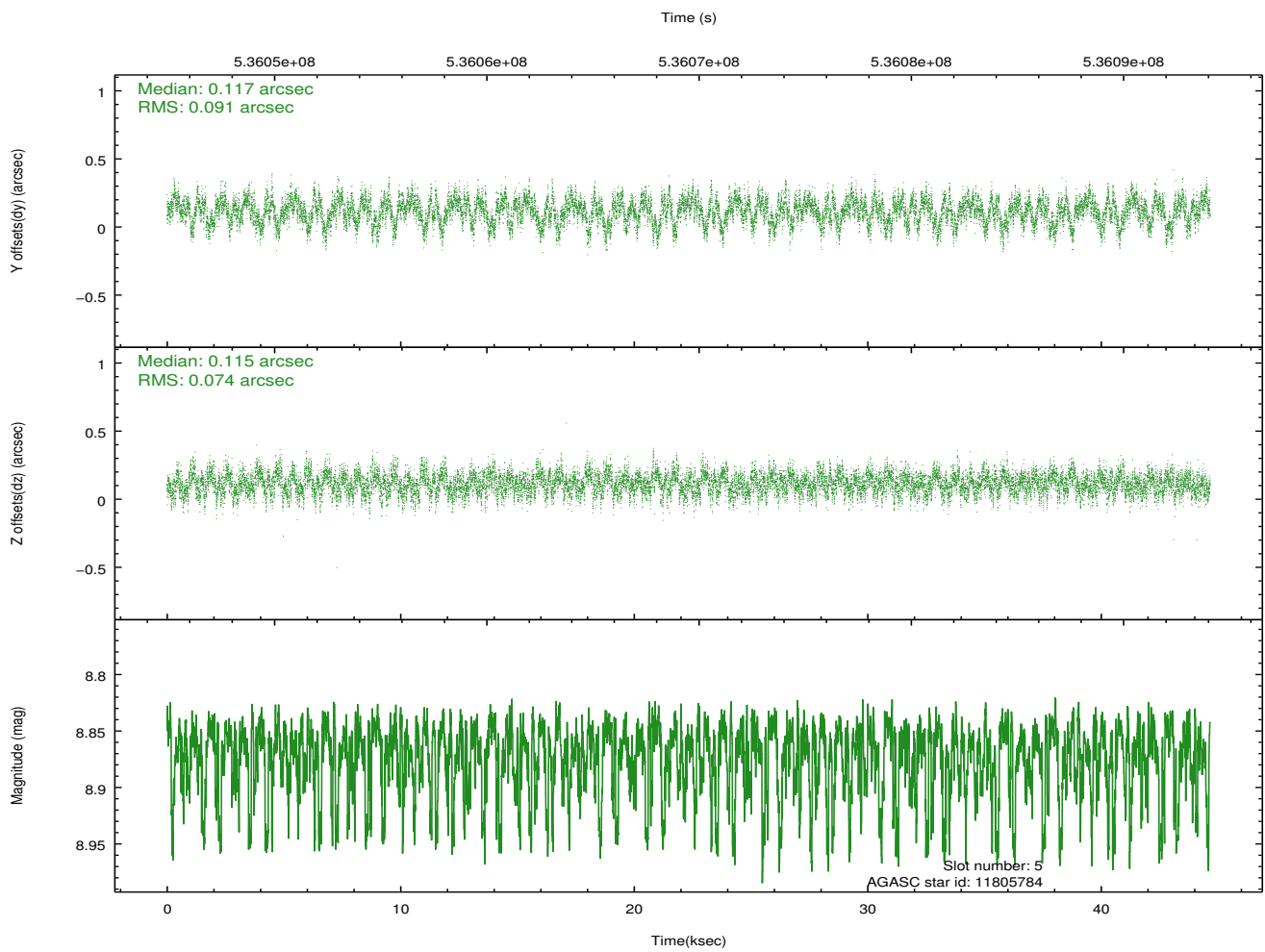
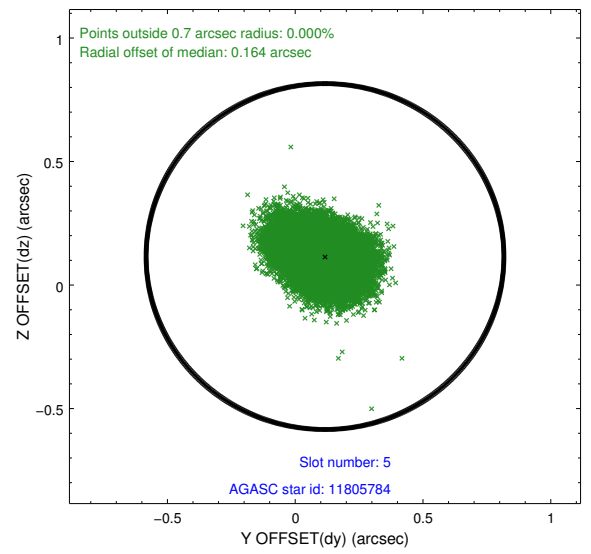
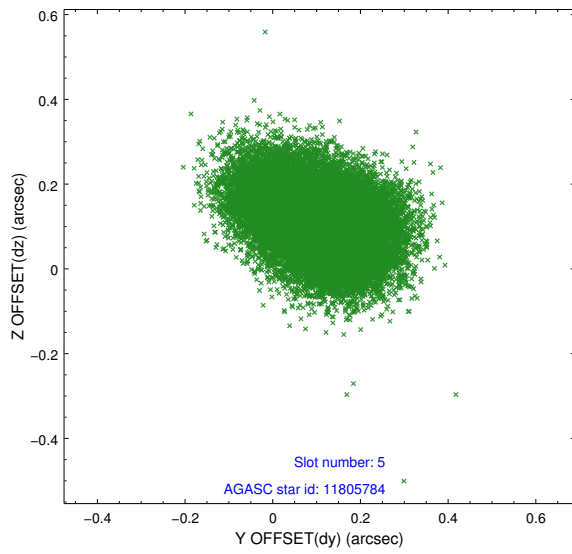
2.4.1 Slot 3



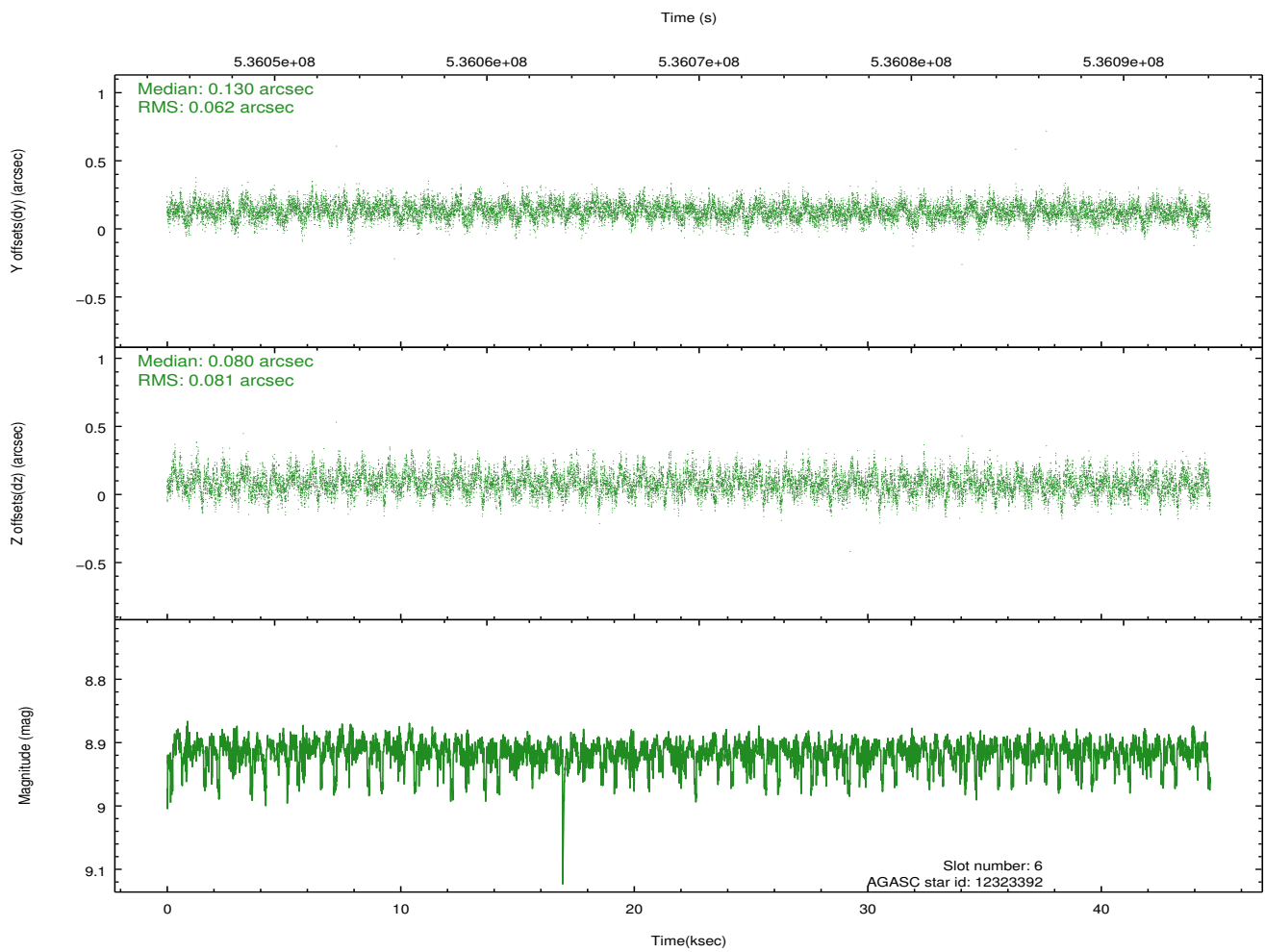
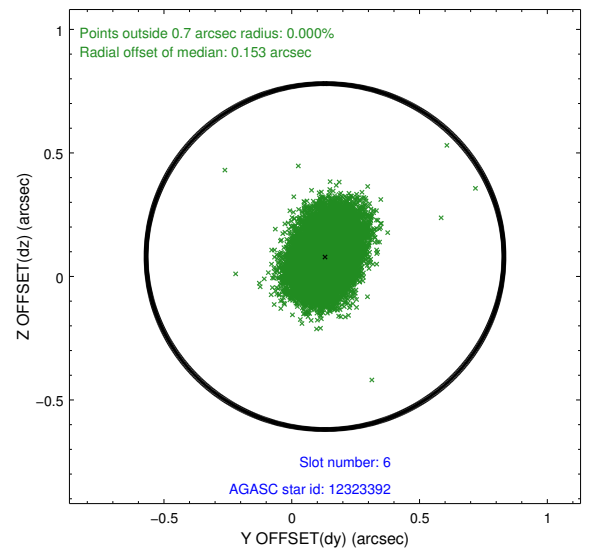
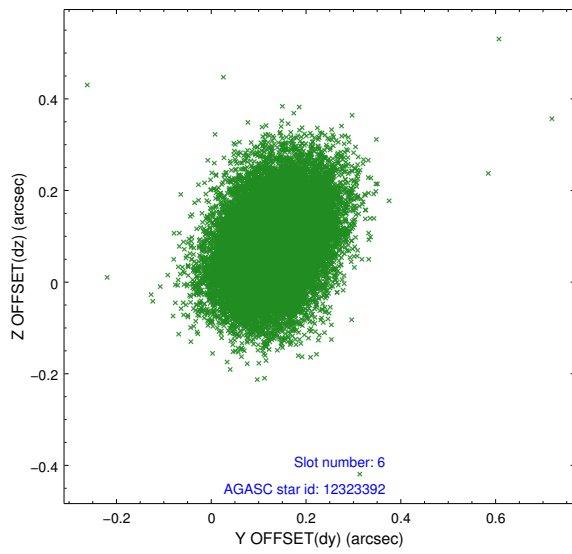
2.4.2 Slot 4



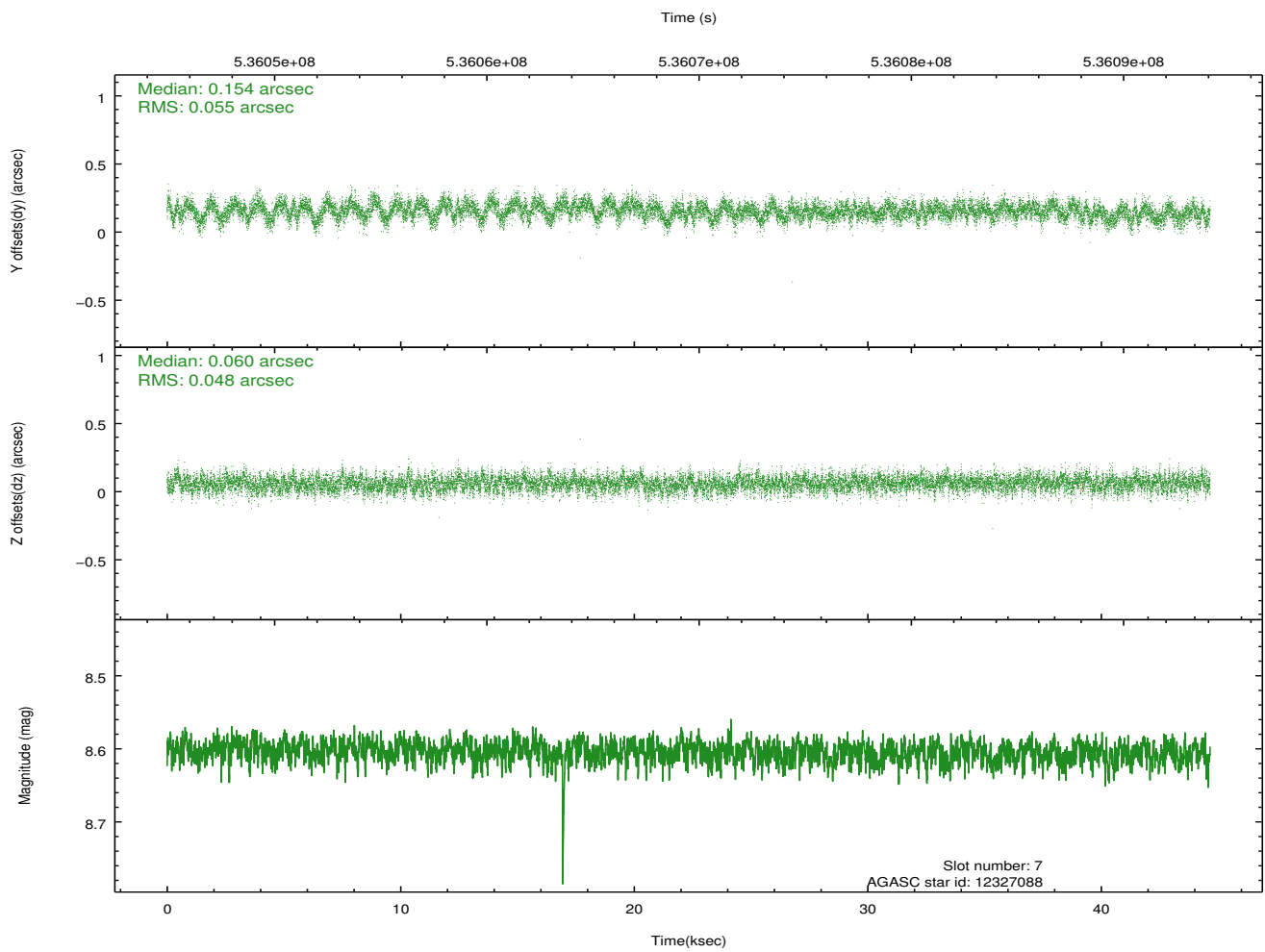
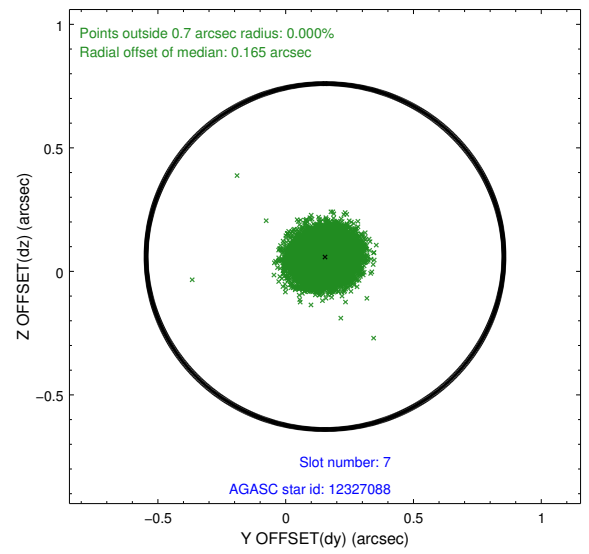
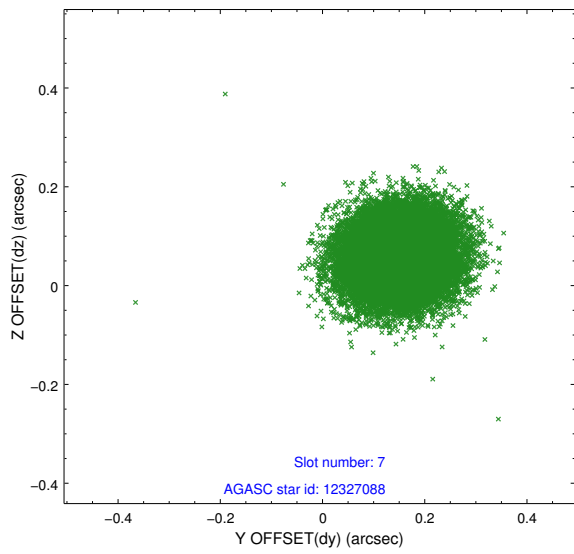
2.4.3 Slot 5



2.4.4 Slot 6

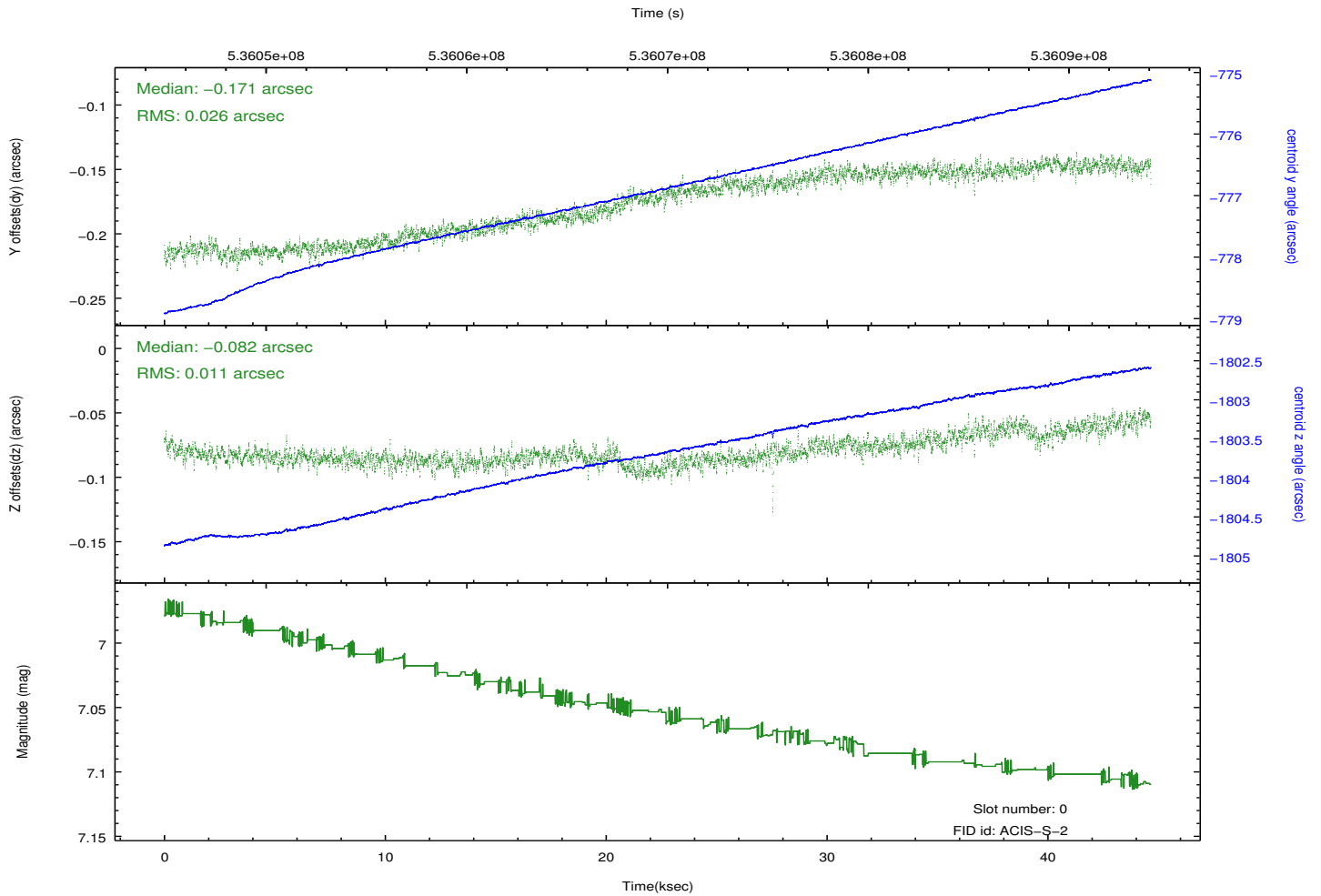
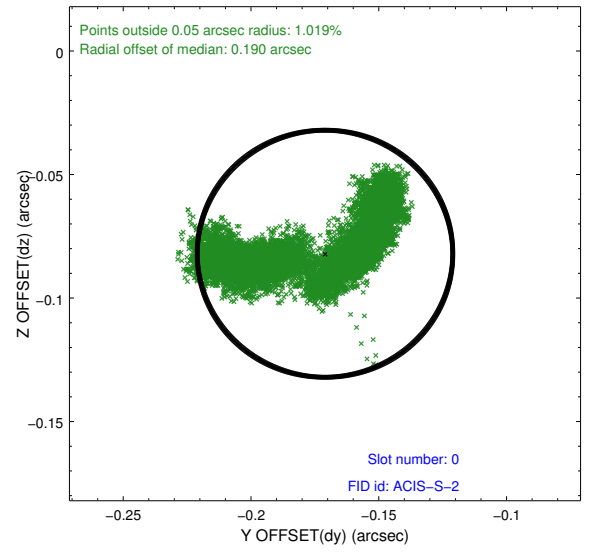
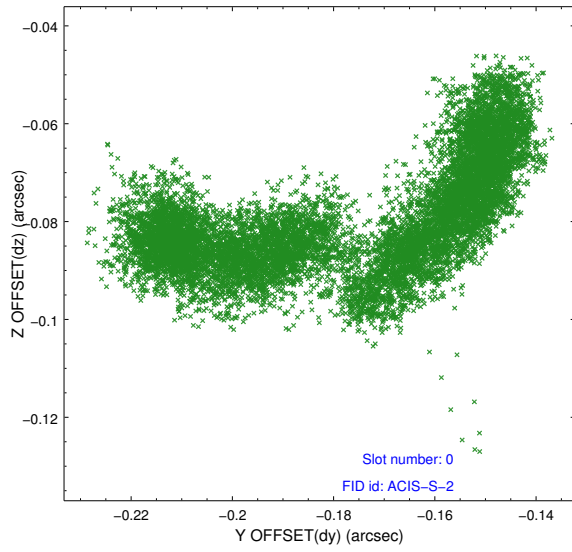


2.4.5 Slot 7

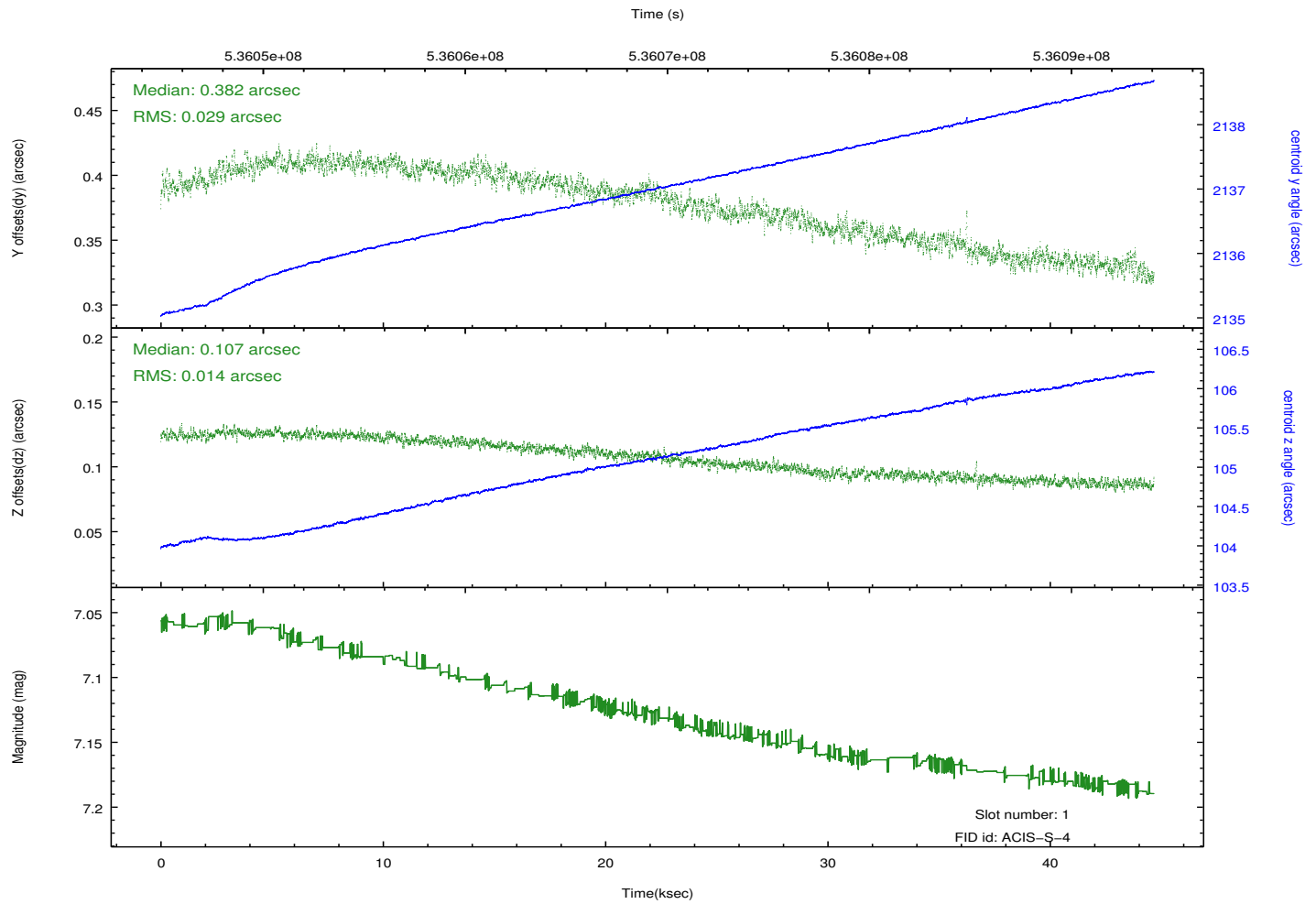
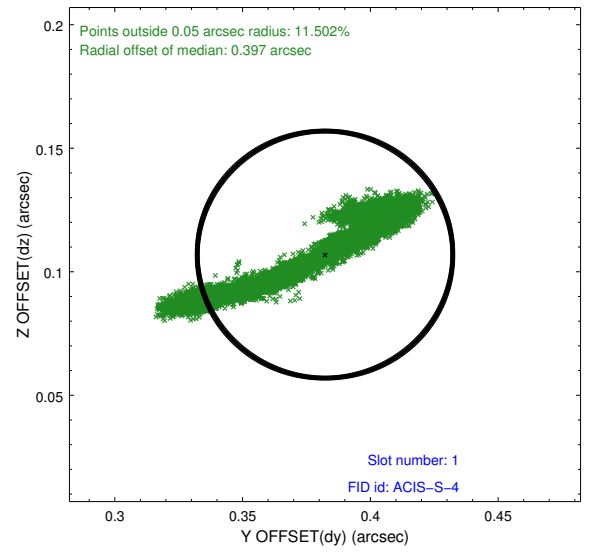
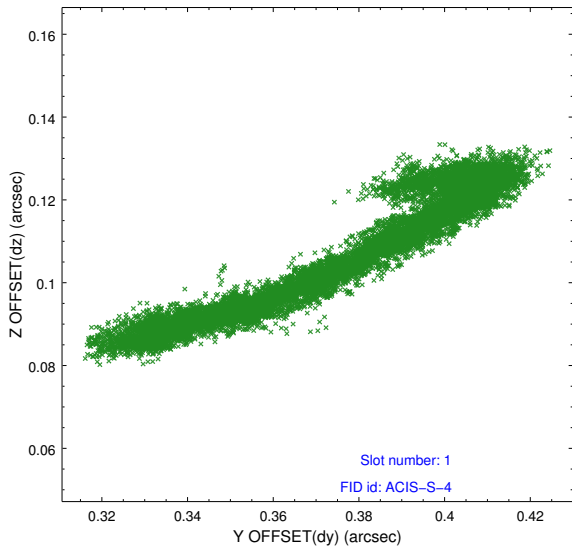


2.5 FID Slots

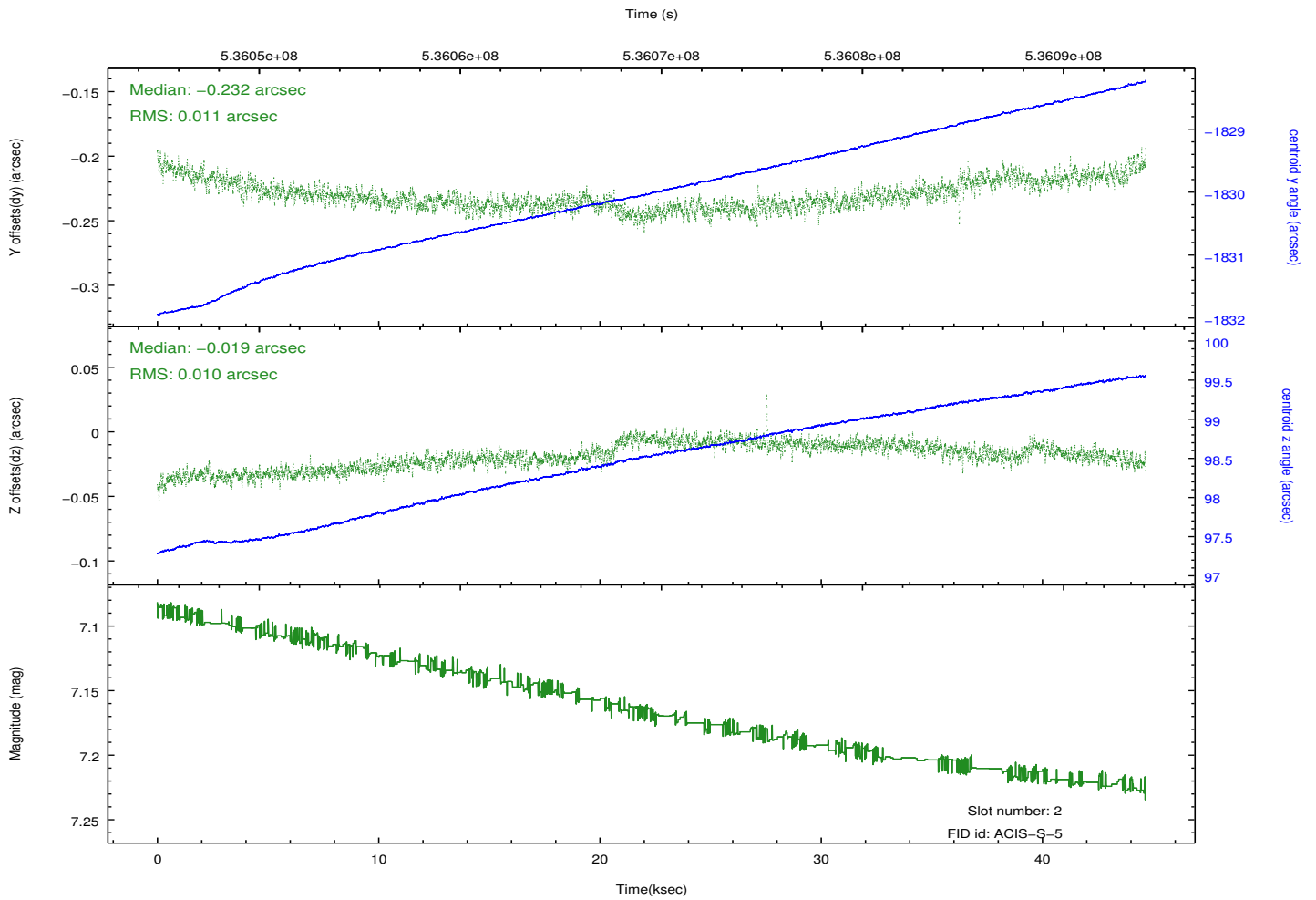
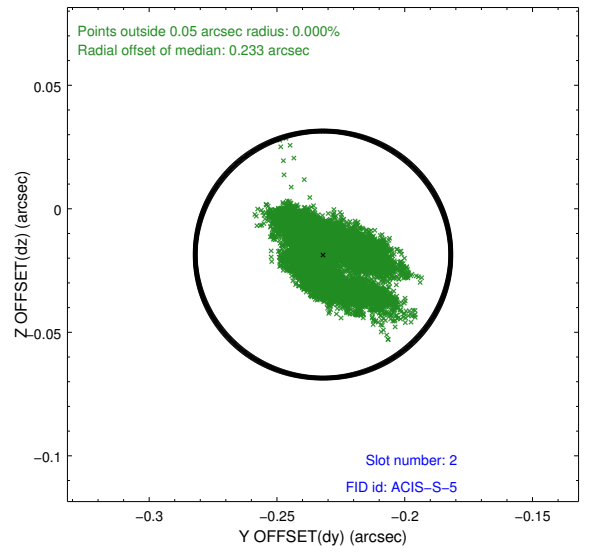
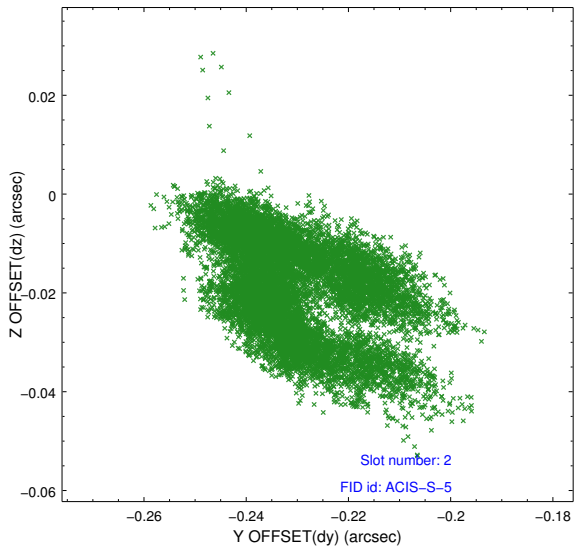
2.5.1 Slot 0



2.5.2 Slot 1

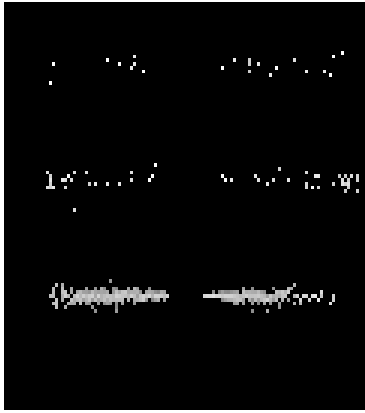


2.5.3 Slot 2

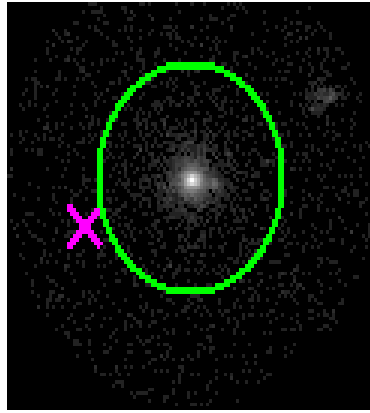


3 Gratings

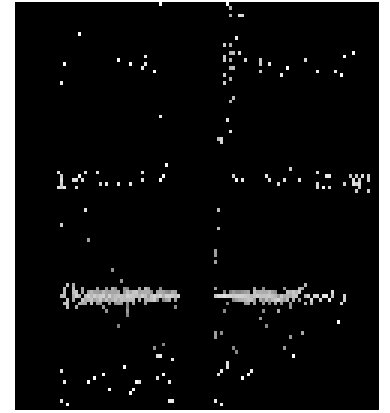
3.1 HEG Arm



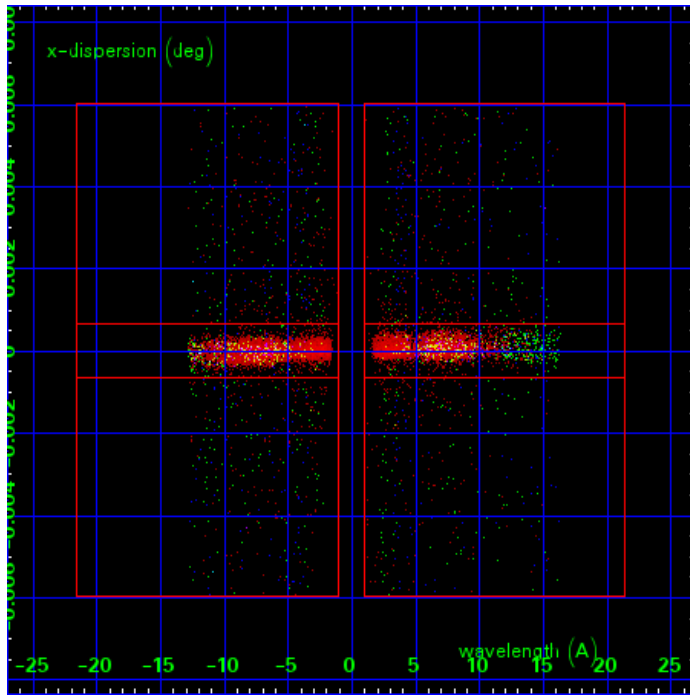
HEG Order Sort 123



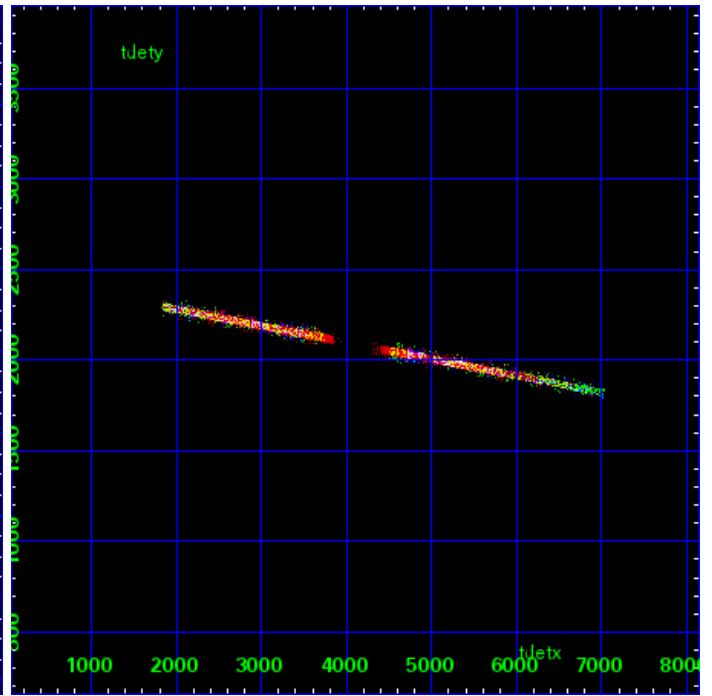
HEG Zero Order



HEG Order Sort ALL

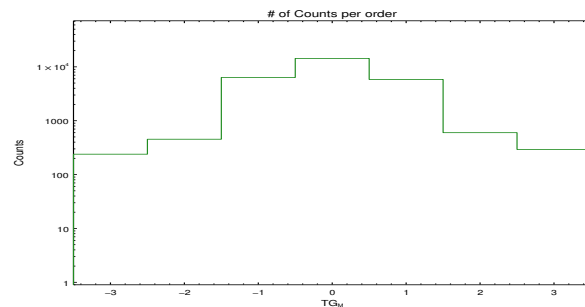


Spot Image HEG

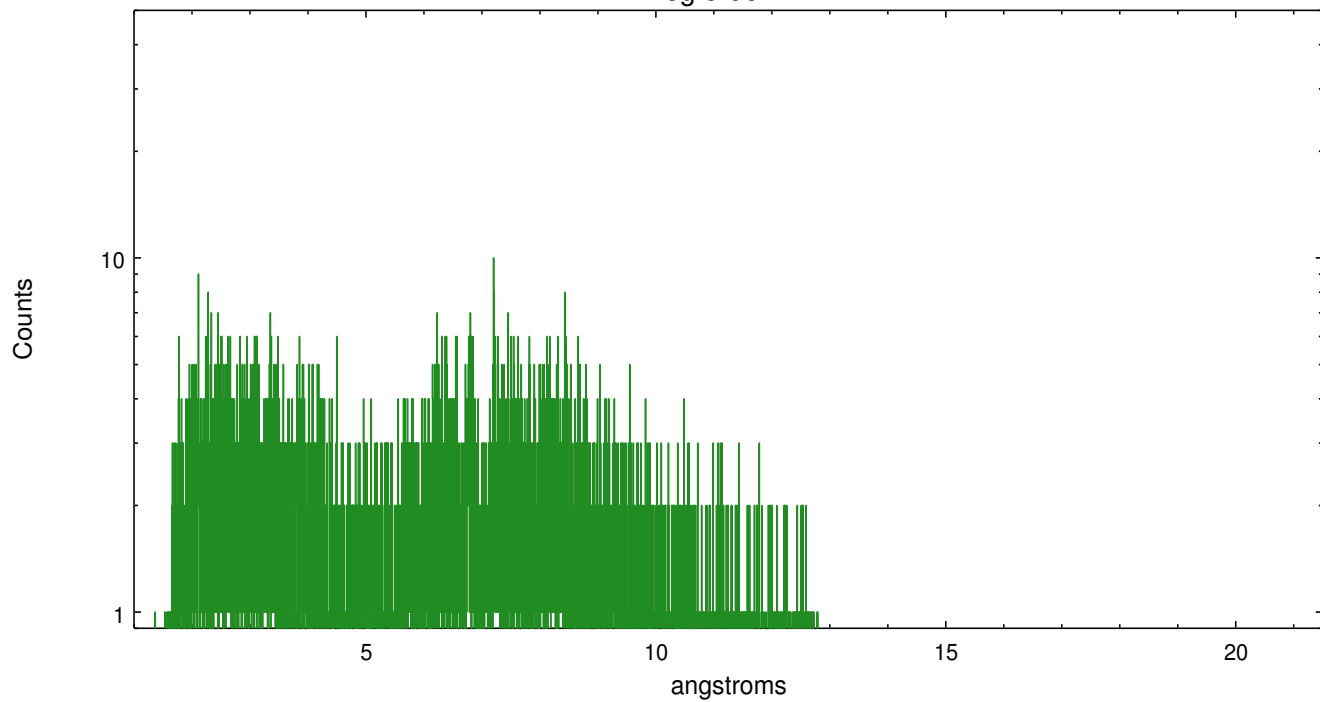


Full Detector HEG

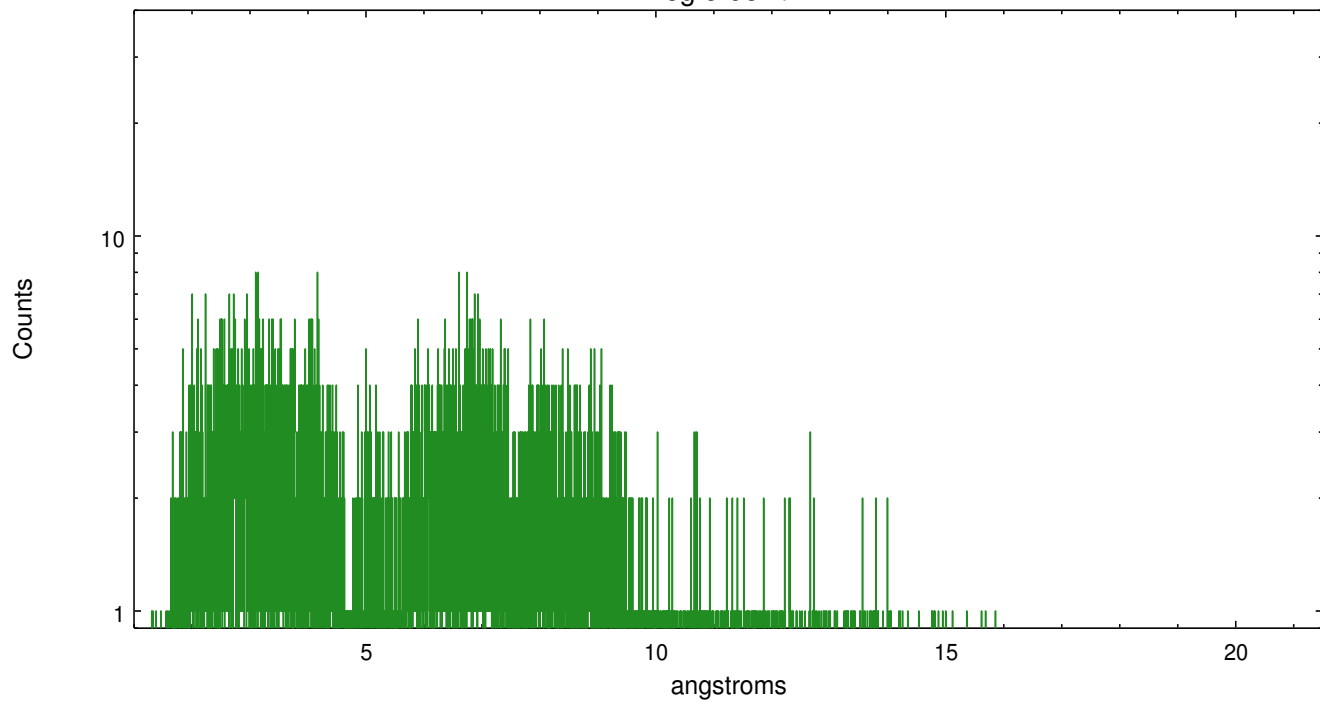
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	239	453	6345	14320	5837	600	293



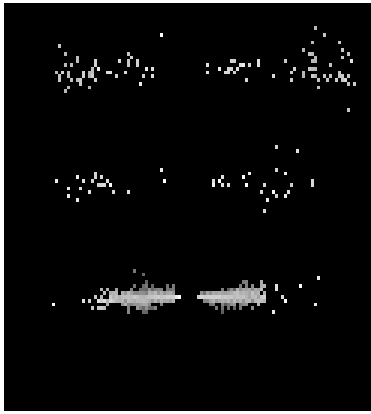
heg order -1



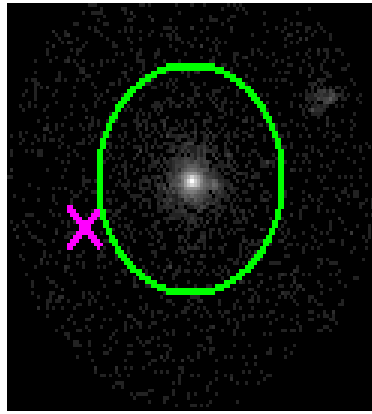
heg order +1



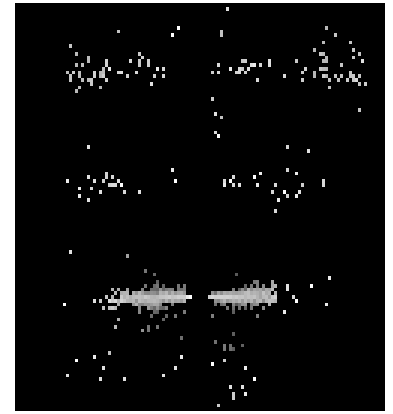
3.2 MEG Arm



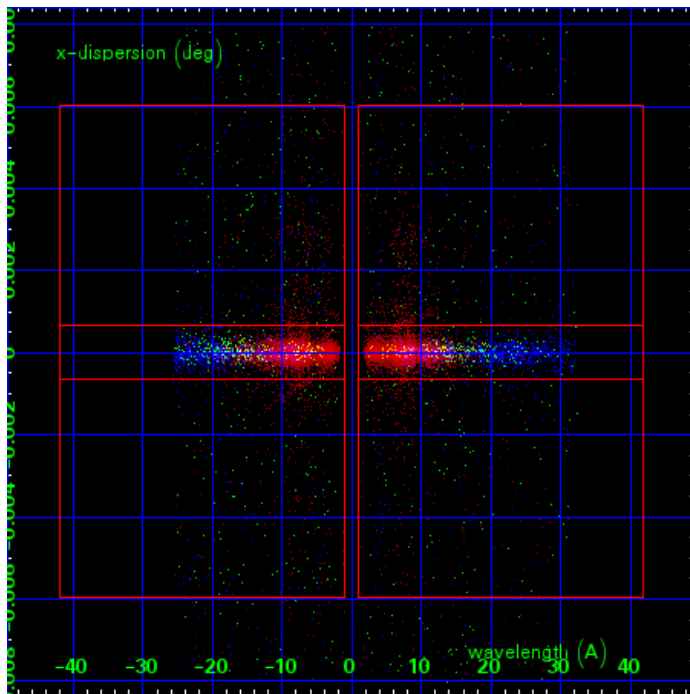
MEG Order Sort 123



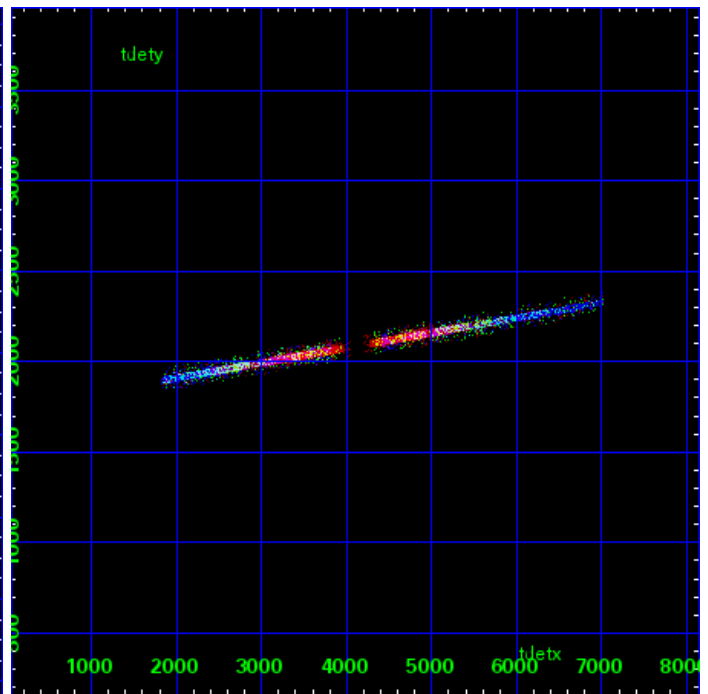
MEG Zero Order



MEG Order Sort ALL

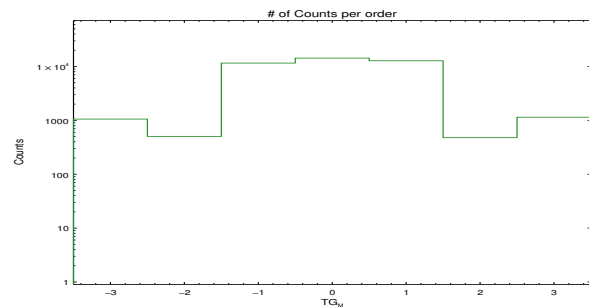


Spot Image MEG

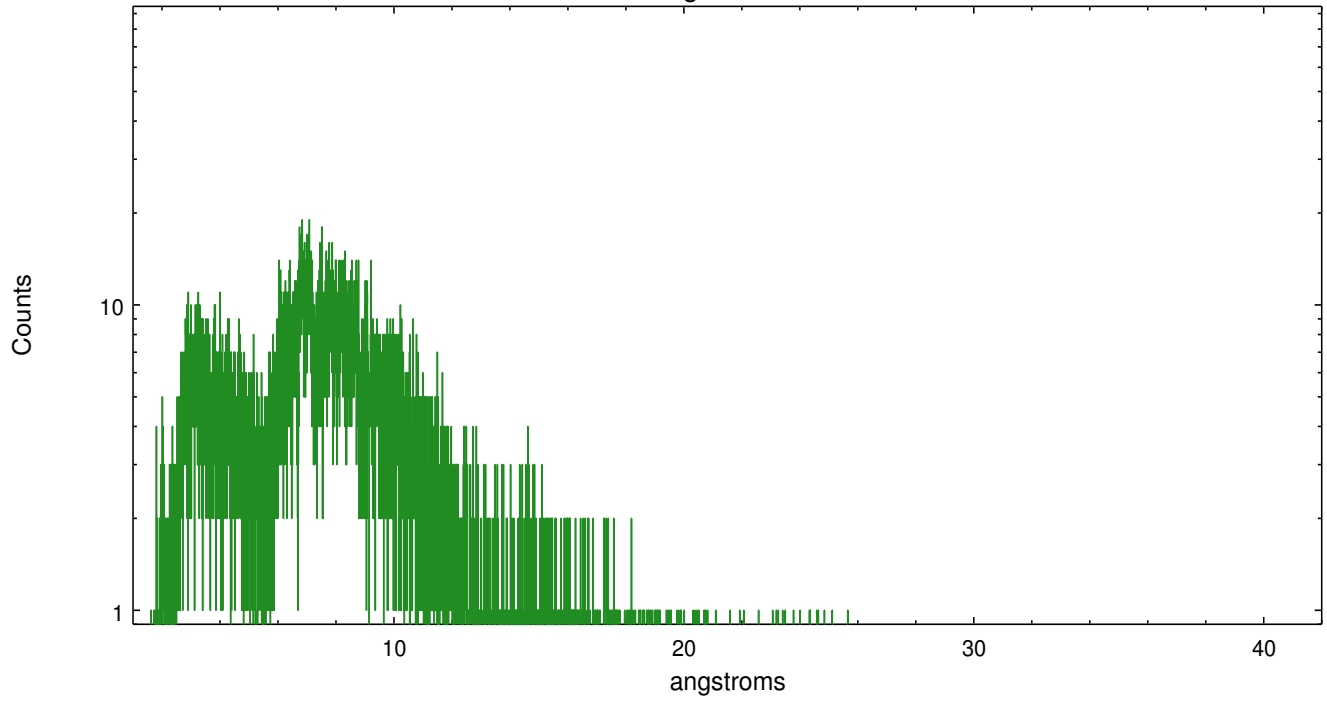


Full Detector MEG

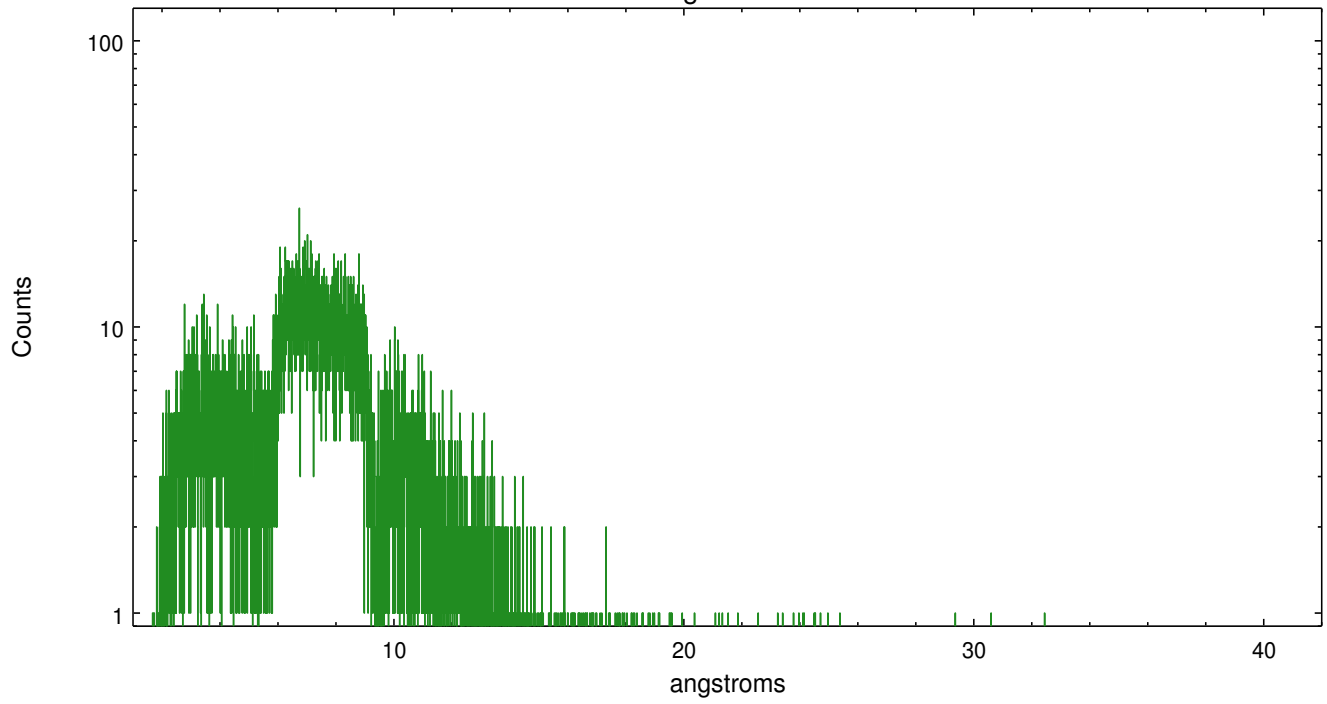
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1056	504	11566	14320	12761	476	1144



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2014.12.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	44.04719956243

A.2 Comments

Zeroth order image is asymmetric and somewhat 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.