

V&V Reference Report

L2 ASCDS Version : 10.4.3.1

Observation 18787 - L2 Version 1
Chandra X-Ray Center

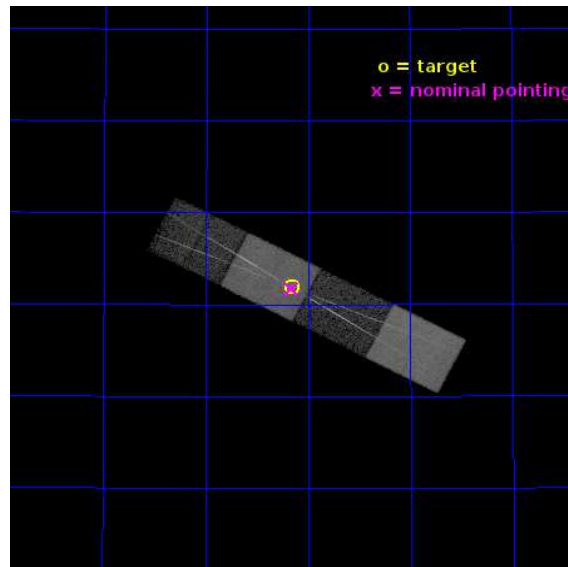
L2 Processing Date : Apr 14 2016

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1 Front

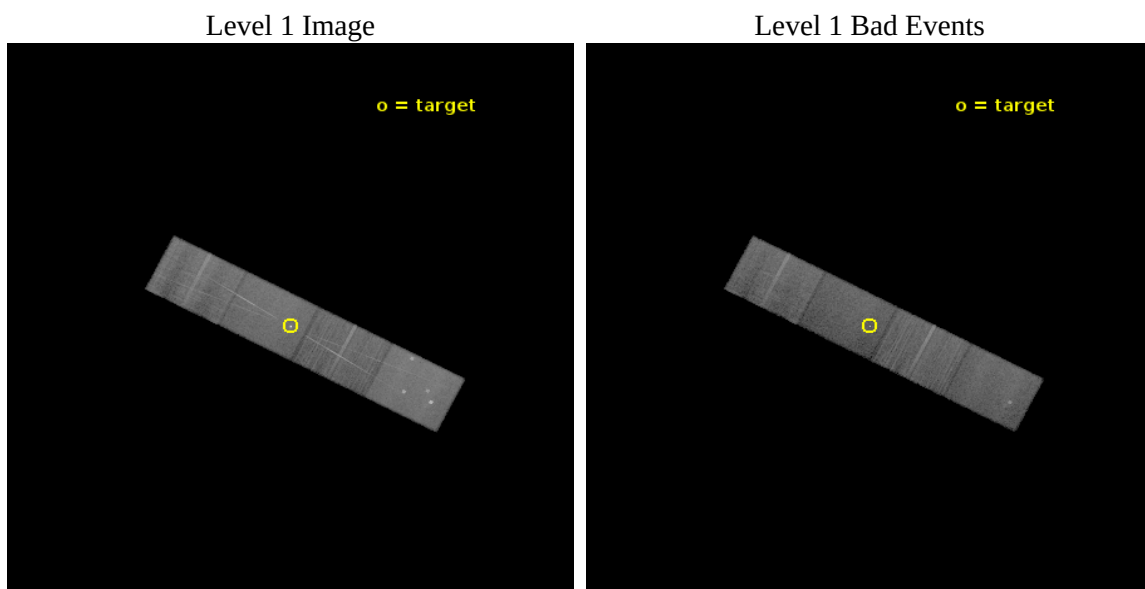
seq_num	703106	Sequence number
obs_id	18787	Observation id
title	Uncovering the True Nature of Warm-Absorbing Winds: The Power of the Fe XXII Doublet	Proposal title
observer	Dr. Ashley King	Principal investigator
object	NGC 4051	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	180.79	Observer's specified target RA [deg]
dec_targ	44.531389	Observer's specified target Dec [deg]
ra_nom	180.79063606461	Nominal RA [deg]
dec_nom	44.528709199342	Nominal Dec [deg]
roll_nom	207.15618601361	Nominal Roll [deg]
revision	1	Processing version of data
ontime	25787.965464115	Sum of GTIs [s]
livetime	25354.405136285	Livetime [s]
ontime5	25787.924424171	Sum of GTIs [s]
ontime6	25787.883384109	Sum of GTIs [s]
ontime7	25787.965464115	Sum of GTIs [s]
ontime8	25787.842344165	Sum of GTIs [s]
l2events	197263	Number of level 2 events



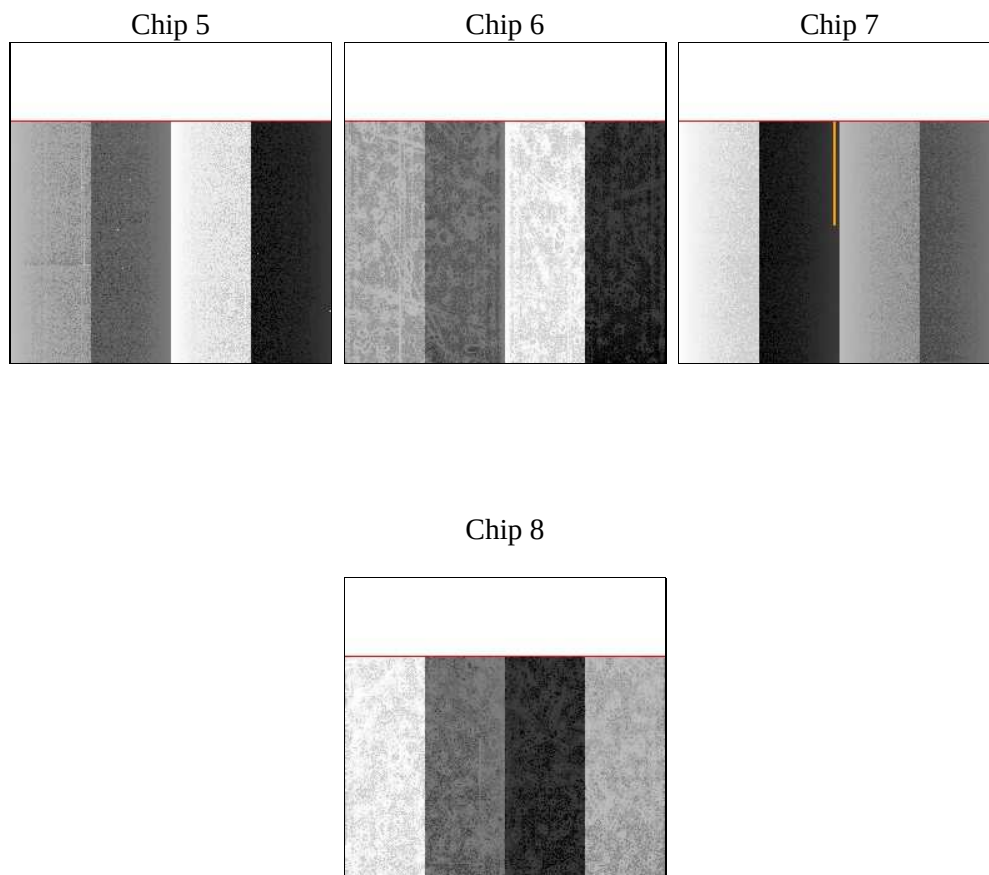
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	25700.000000	[s] Scheduled observation exposure time
ascdsver	10.4.3.1	Processing system revision	ontime	25787.965464115	Sum of GTIs [s]
caldsver	4.7.1	 	ontime5	25787.924424171	Sum of GTIs [s]
date	2016-04-15T01:26:22	Date and time of file creation	ontime6	25787.883384109	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	25787.965464115	Sum of GTIs [s]
			ontime8	25787.842344165	Sum of GTIs [s]
			l1events	650537	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4099.20, 4114.91)	src1a sky pixel position
			zo_pos_tgd	(4099.07, 4114.94)	src1a sky pixel position via radetect

2.1.4 Events

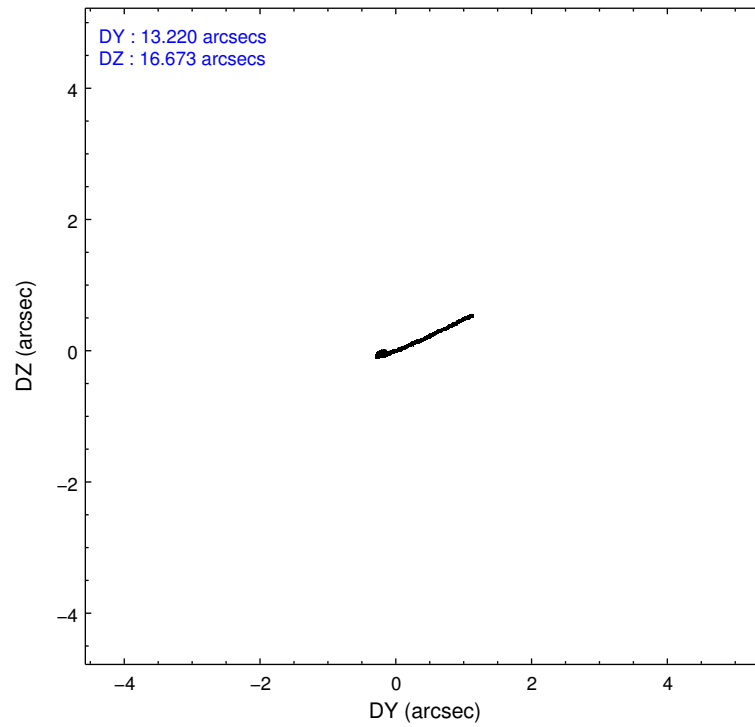
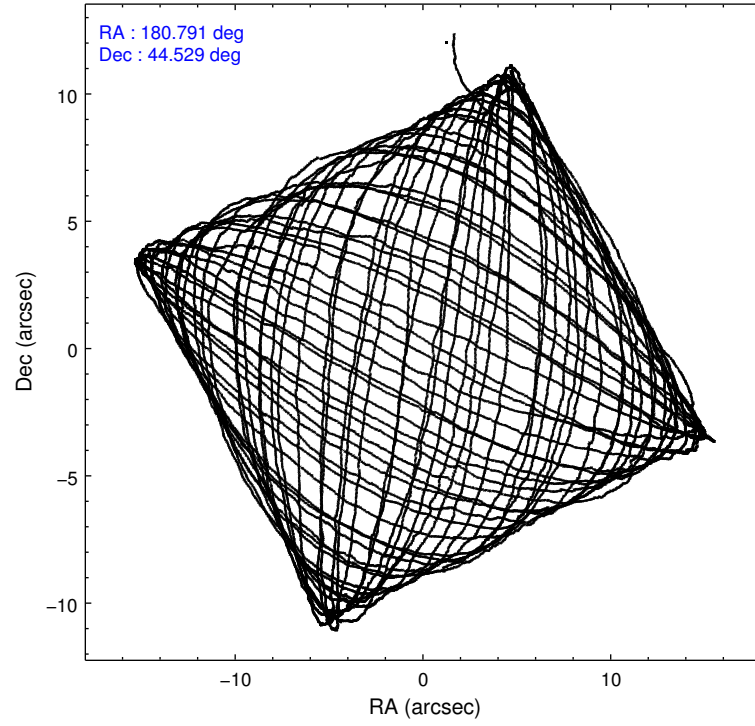
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	194916	130689	166634	158298
rejected events	98604	110154	87692	115828
rejected %	50%	84%	52%	73%

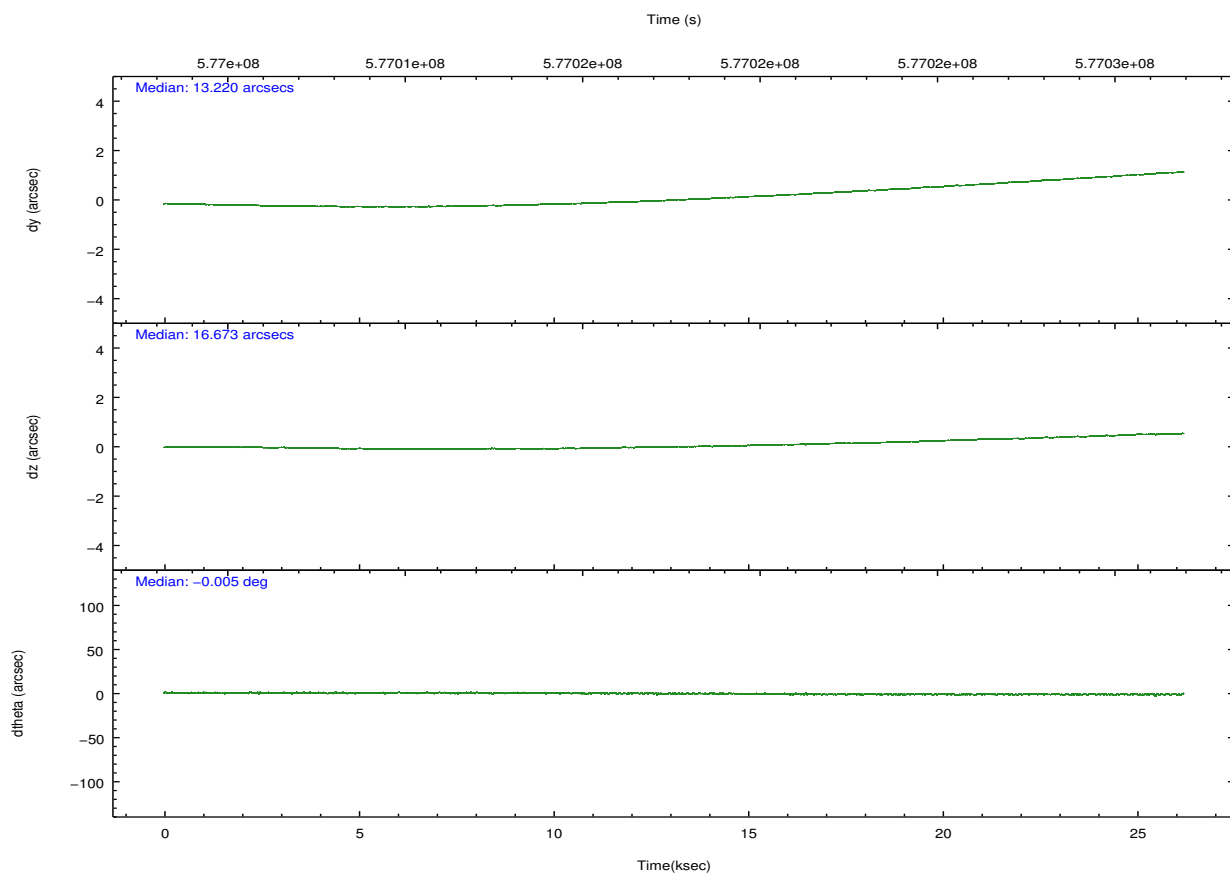
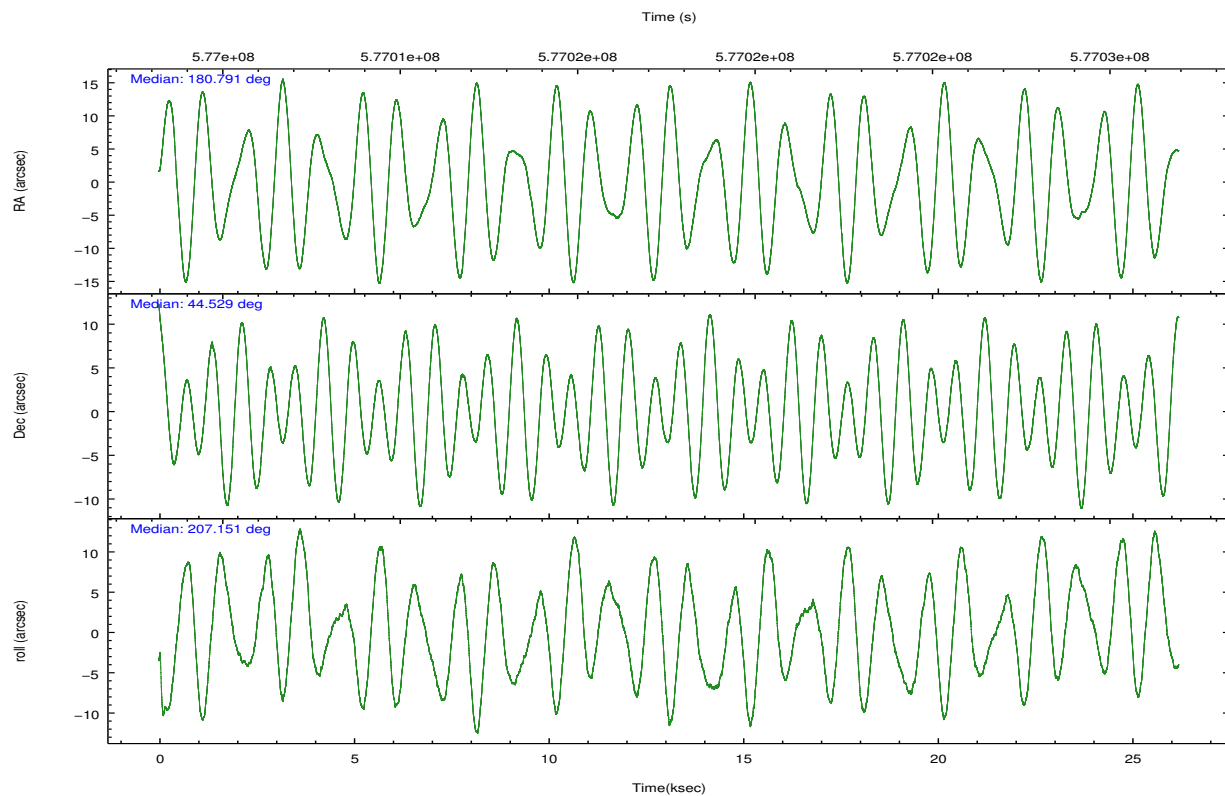
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	12466	9657	8323	13237
	6%	7%	4%	8%
grade 1 events	1187	57	321	116
	0%	0%	0%	0%
grade 2 events	27851	4107	16855	10046
	14%	3%	10%	6%
grade 3 events	3207	1608	6679	4079
	1%	1%	4%	2%
grade 4 events	3103	1678	6674	3842
	1%	1%	4%	2%
grade 5 events	12704	5321	15042	8125
	6%	4%	9%	5%
grade 6 events	49692	3492	40421	11271
	25%	2%	24%	7%
grade 7 events	84706	104769	72319	107582
	43%	80%	43%	67%

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	180.811083	180.790636064614	CCD I2 on	N	N
[deg] Pointing Dec	44.551949	44.52870919934241	CCD I3 on	N	N
[deg] Pointing Roll	206.985214	207.1561860136131	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	-187.1254020033014	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-3	-3.007120579706367	CCD S4 on	Y	Y
[s] Observation start time (MET)	577004957.184000	577003830.71346	CCD S5 on	O2	N
Observation start date	2016-04-14T07:08:09	2016-04-14T06:50:30	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	577030657.184000	577031893.67756	On-chip summing requested	N	N
Observation end date	2016-04-14T14:16:29	2016-04-14T14:38:13	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



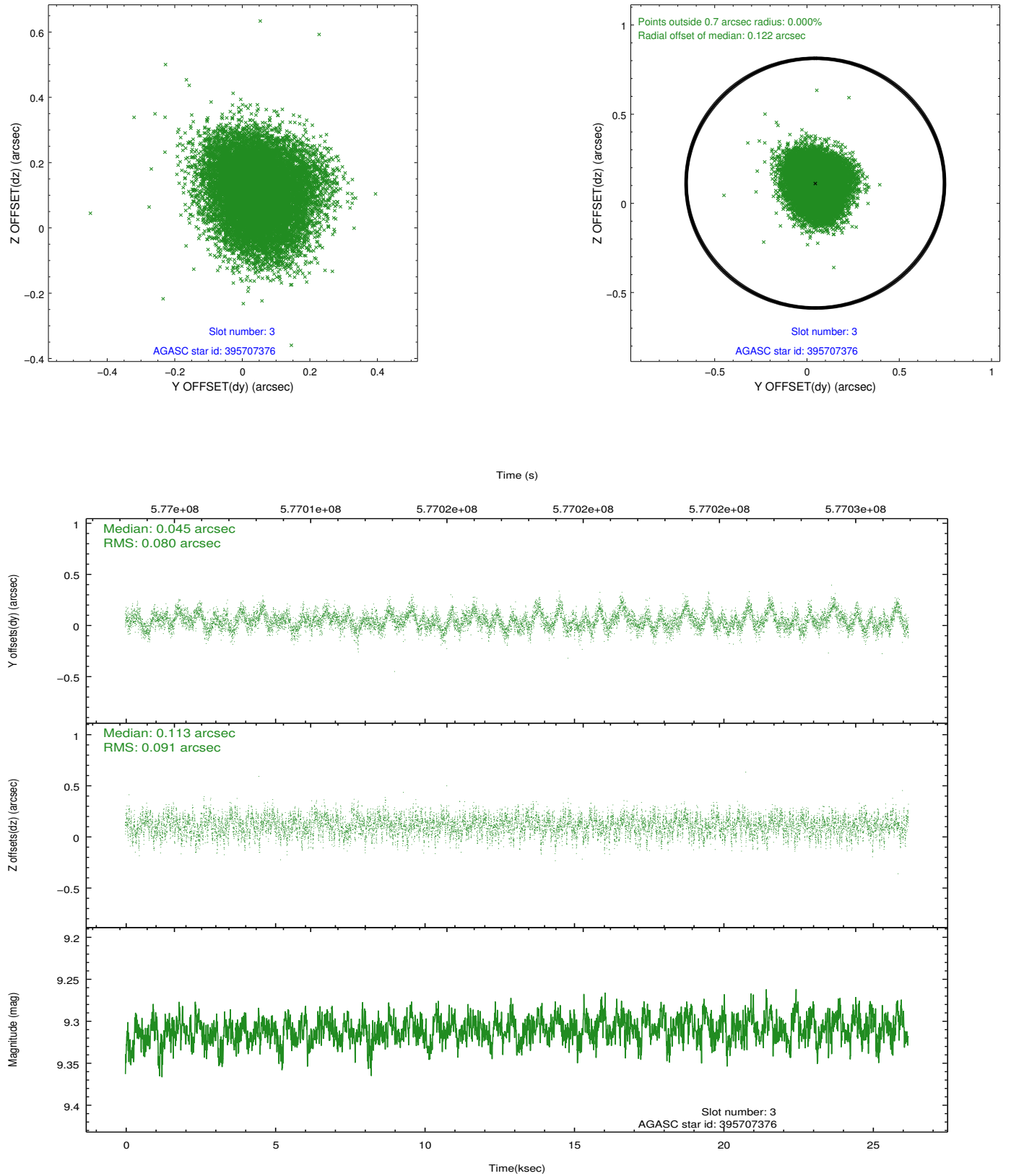


Slot Statistics

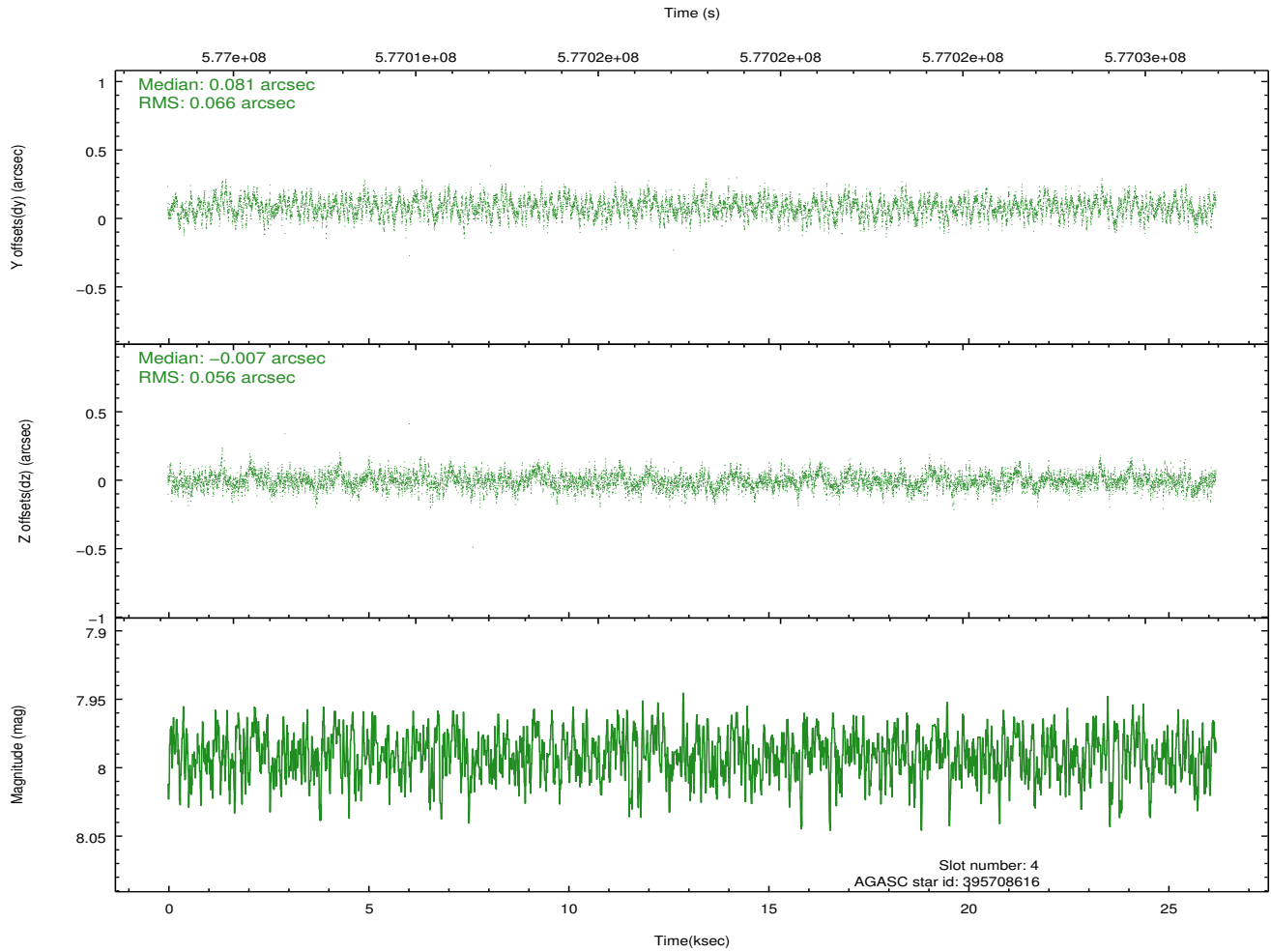
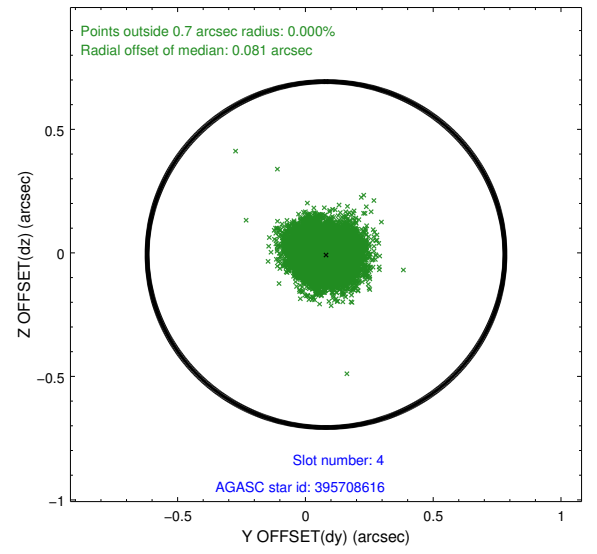
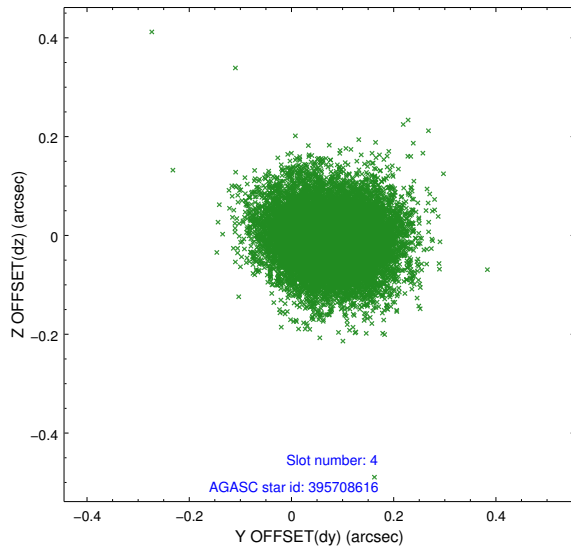
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.11	6391	-0.166	-0.102	0.016	0.036	0.000000	0.000000	-766.25	-1800.39
1	FID		ACIS-S-4	7.22	6391	0.399	0.108	0.017	0.049	0.000000	0.000000	2147.53	108.21
2	FID		ACIS-S-5	7.24	6391	-0.266	0.004	0.017	0.035	0.000000	0.000000	-1819.08	101.84
3	GUIDE	used	395707376	9.31	12770	0.045	0.113	0.131	0.207	180.967983	44.858789	-857.09	-802.06
4	GUIDE	used	395708616	7.99	12781	0.081	-0.007	0.092	0.149	180.101872	44.630343	1487.93	-1082.50
5	GUIDE	used	395708696	8.85	12776	0.187	-0.245	0.114	0.182	180.383726	44.624291	857.16	-731.31
6	GUIDE	used	395709608	8.35	12777	-0.192	-0.047	0.094	0.150	181.055130	44.450389	-393.09	609.86
7	GUIDE	used	395710032	8.77	12778	-0.123	0.189	0.095	0.161	181.512910	44.376001	-1325.17	1377.56

2.4 Star Slots

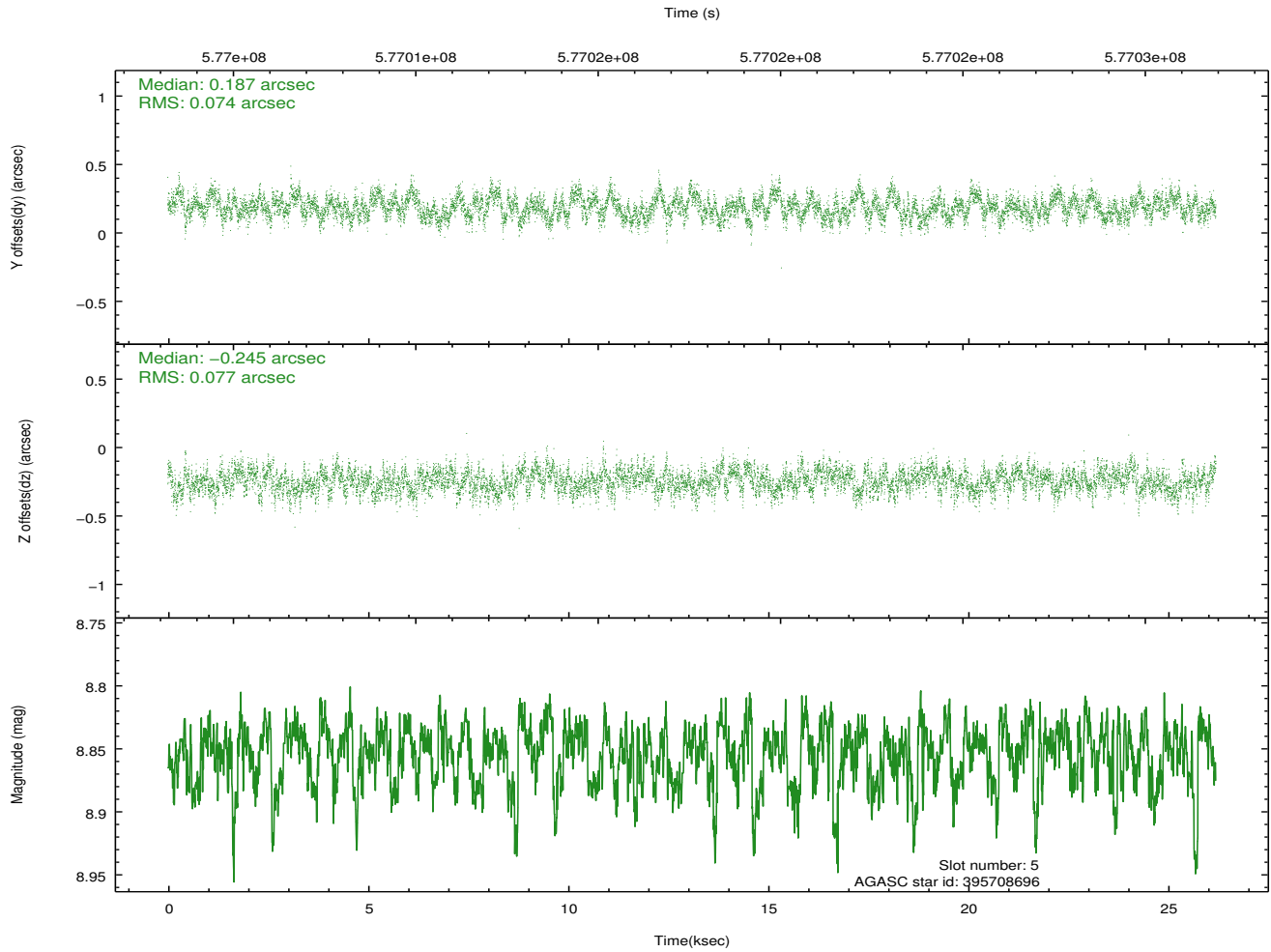
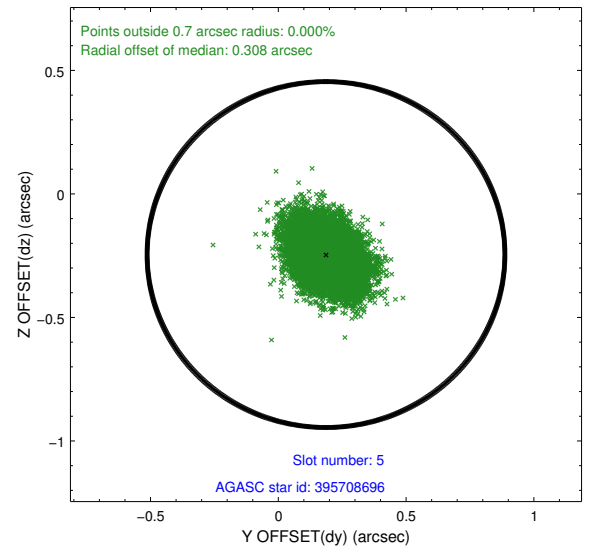
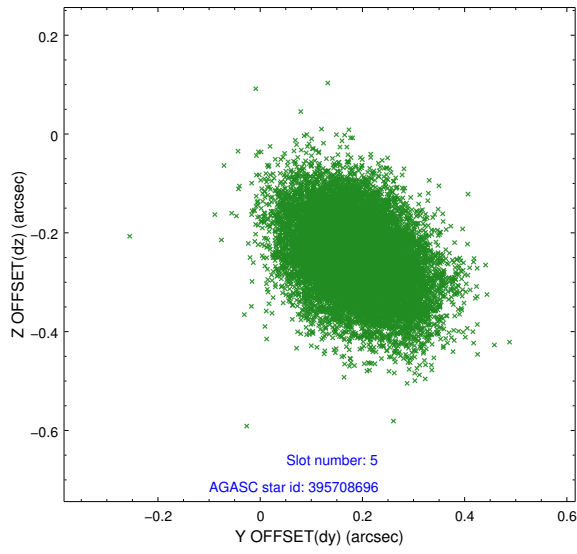
2.4.1 Slot 3



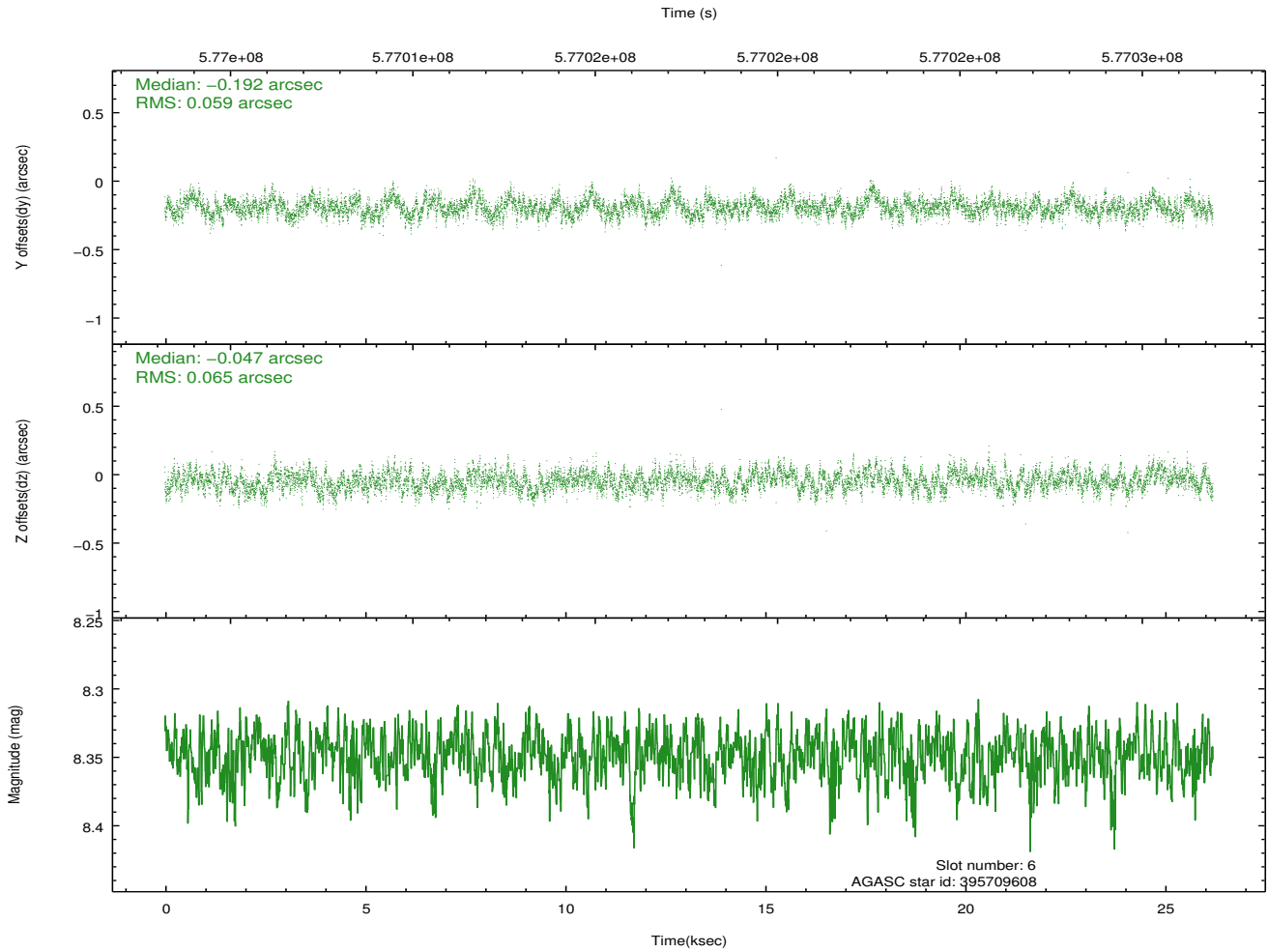
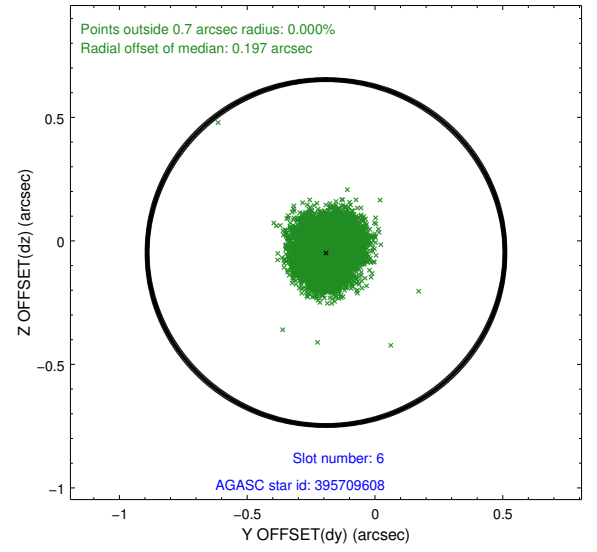
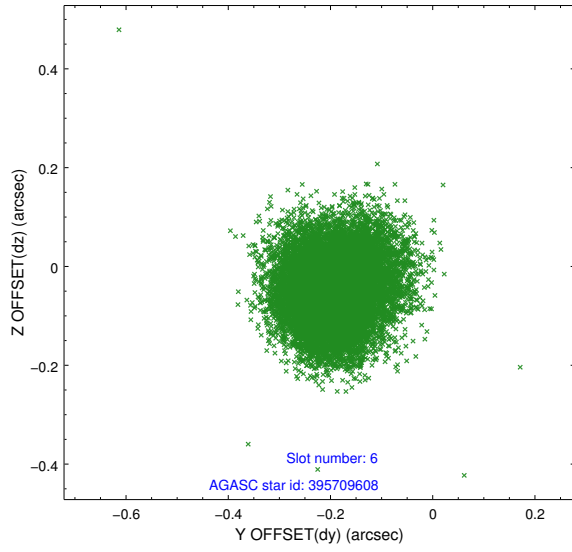
2.4.2 Slot 4



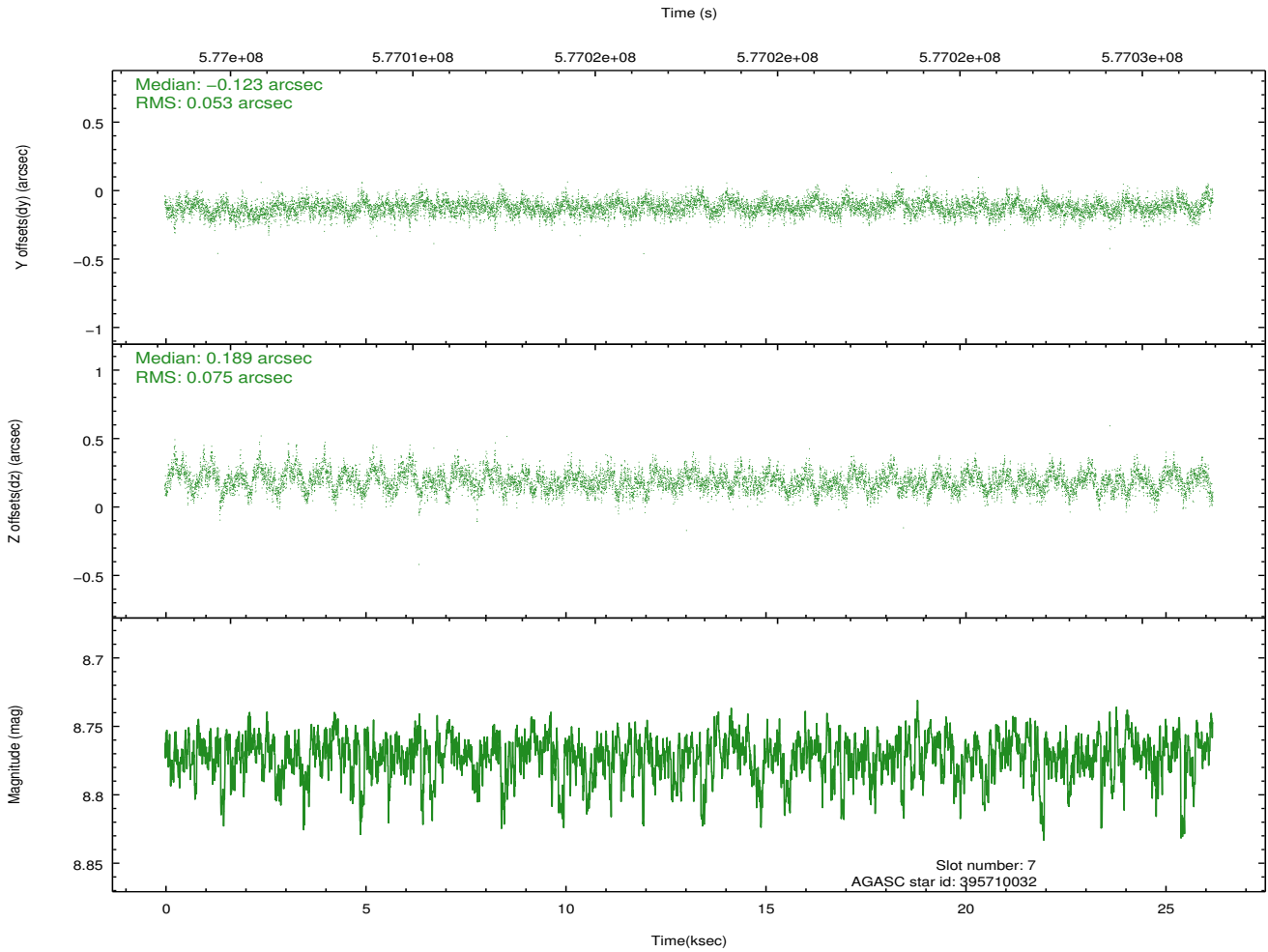
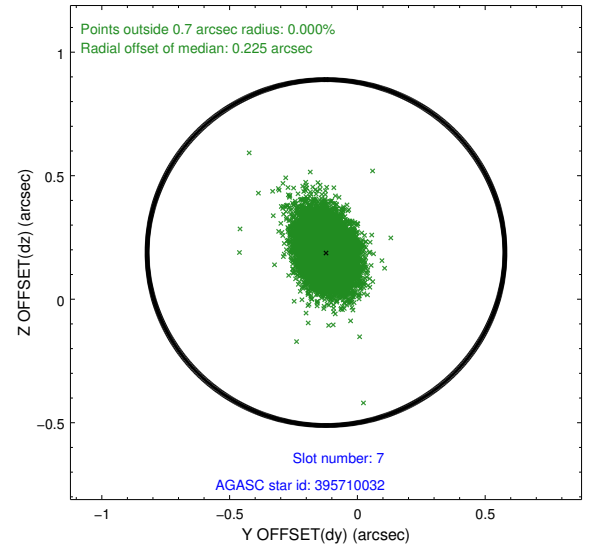
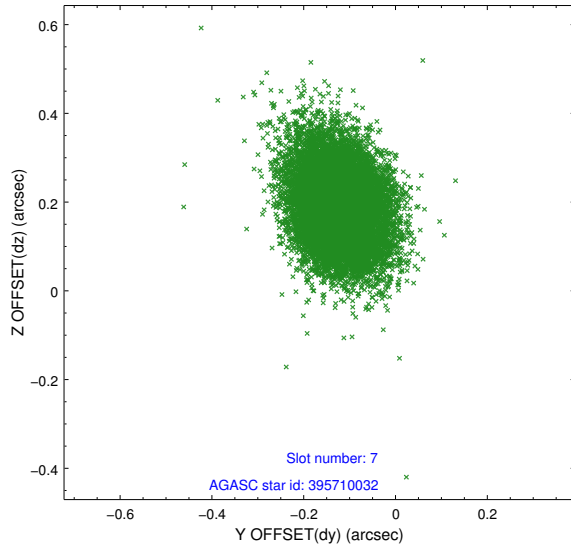
2.4.3 Slot 5



2.4.4 Slot 6

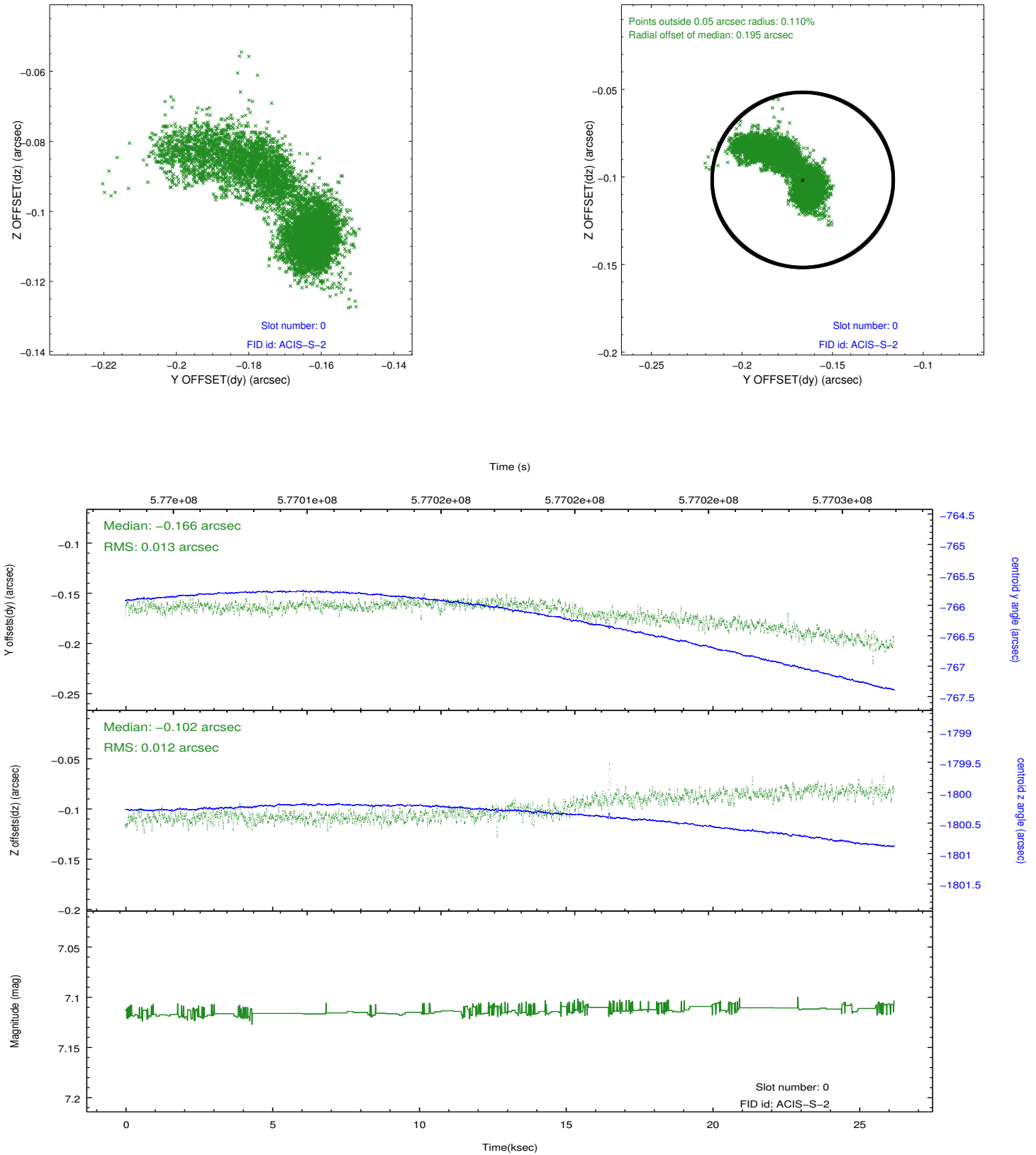


2.4.5 Slot 7

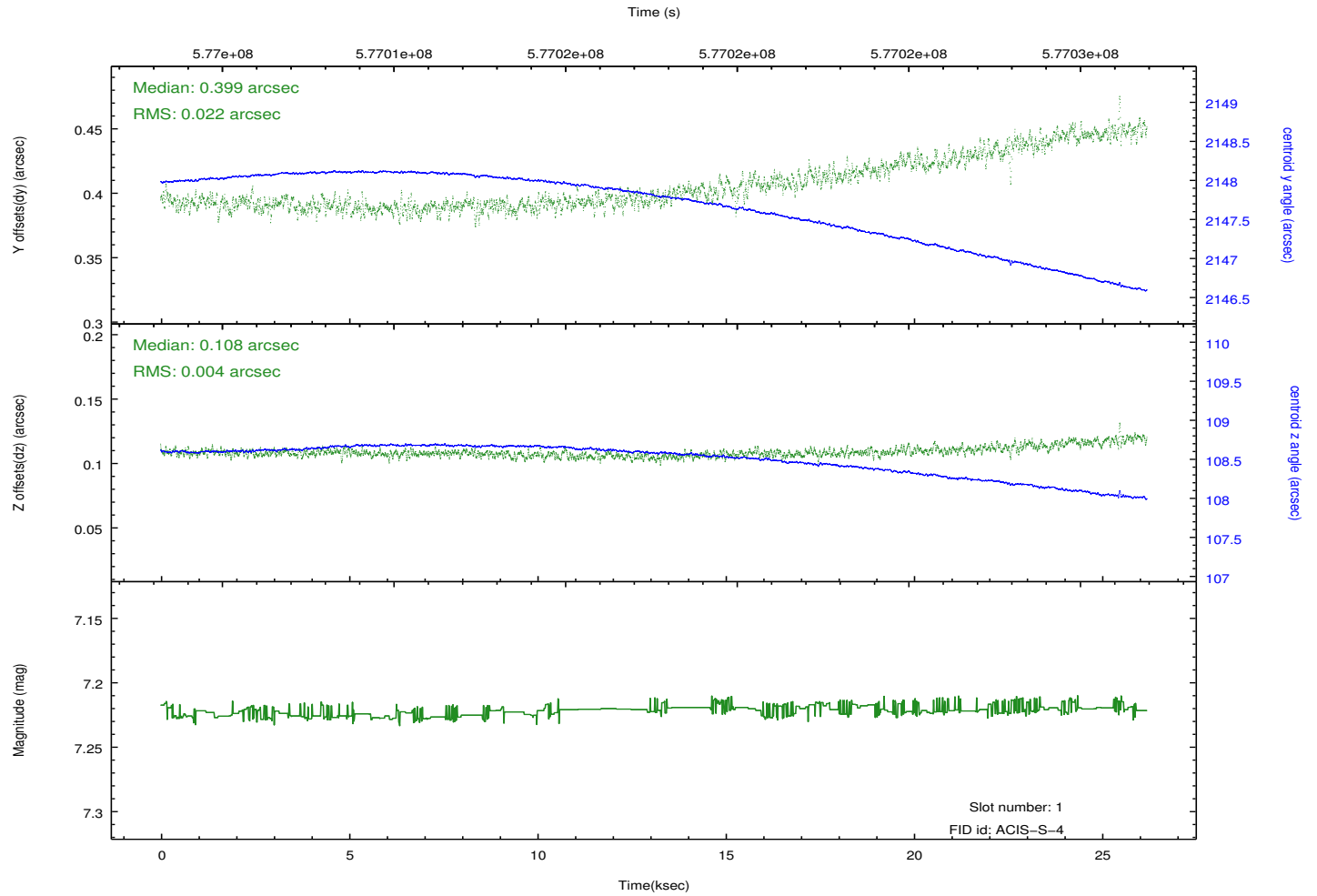
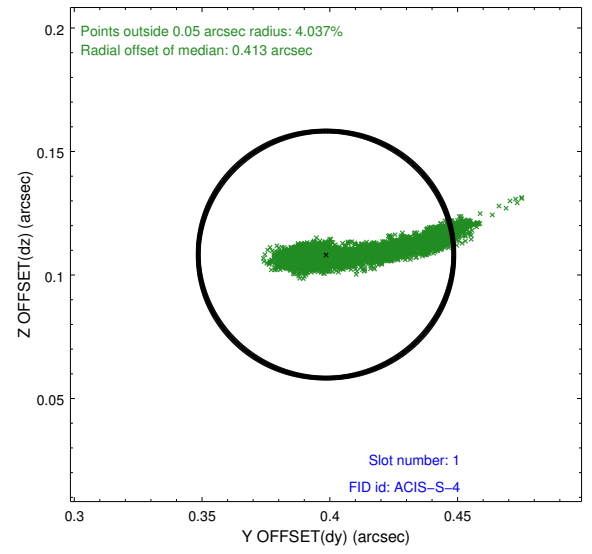
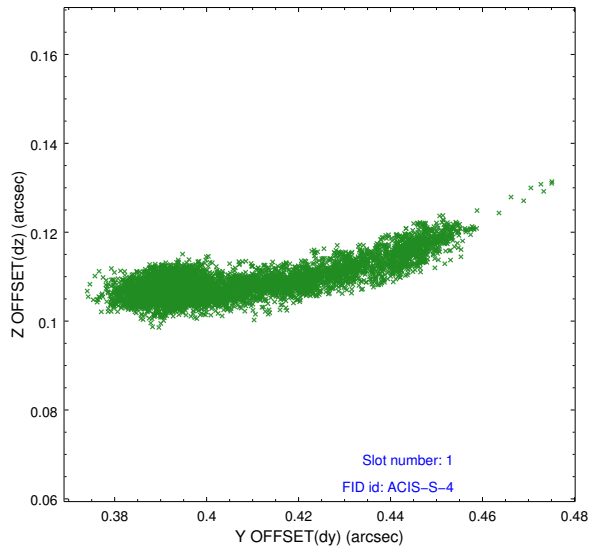


2.5 FID Slots

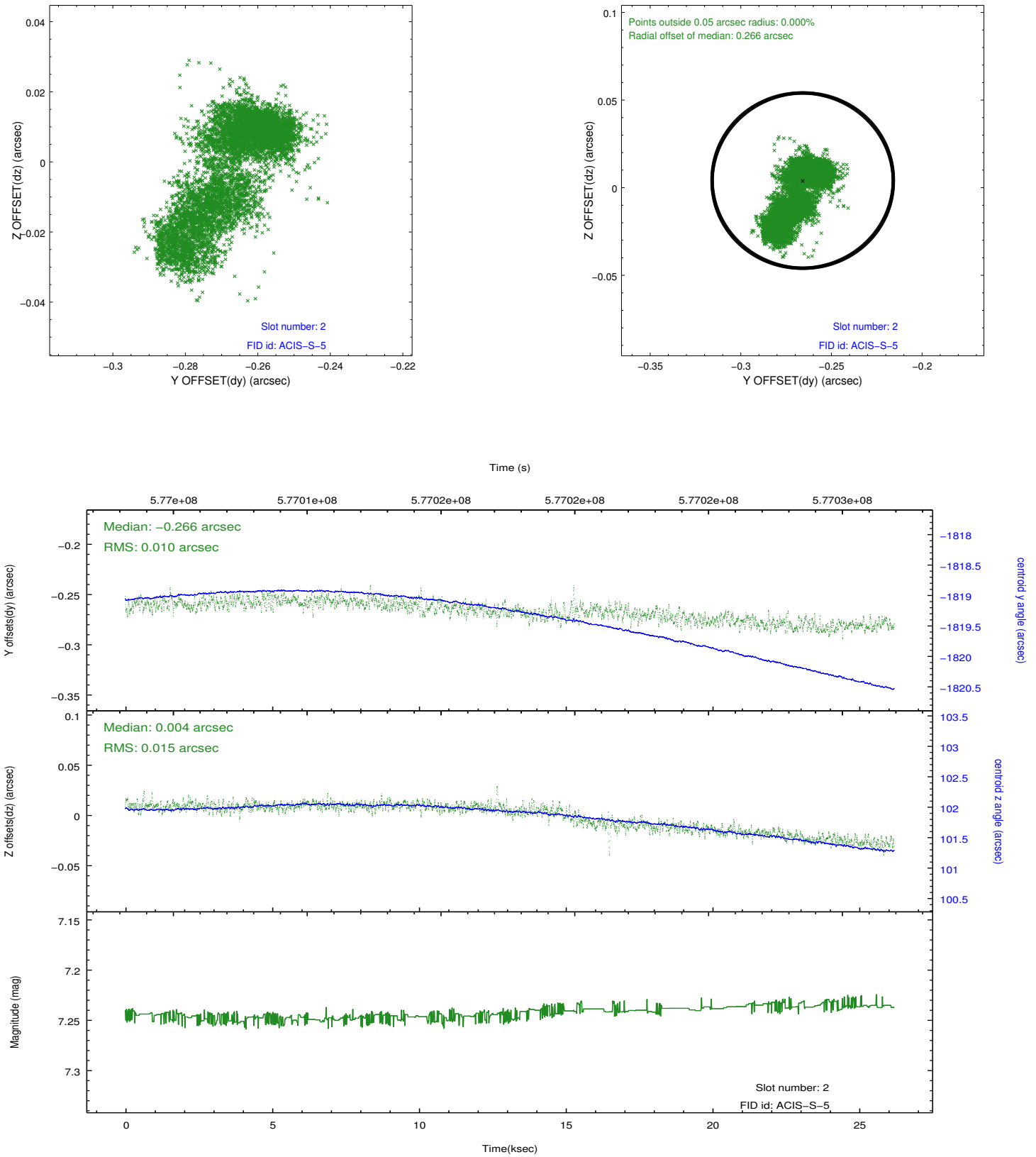
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

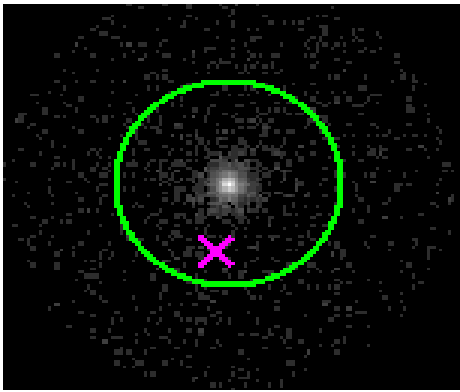


3 Gratings

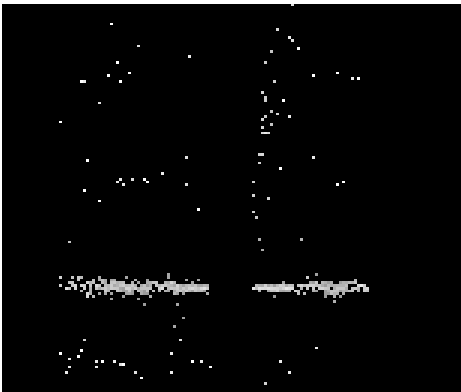
3.1 HEG Arm



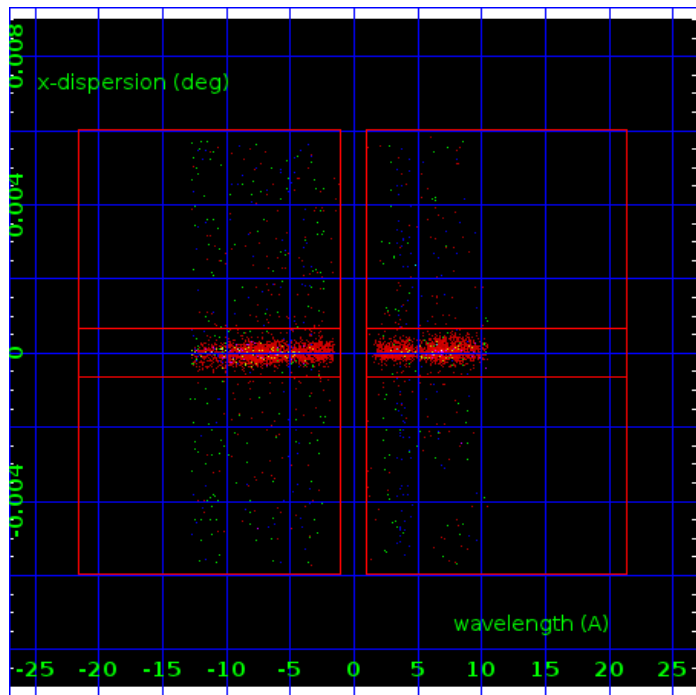
HEG Order Sort 123



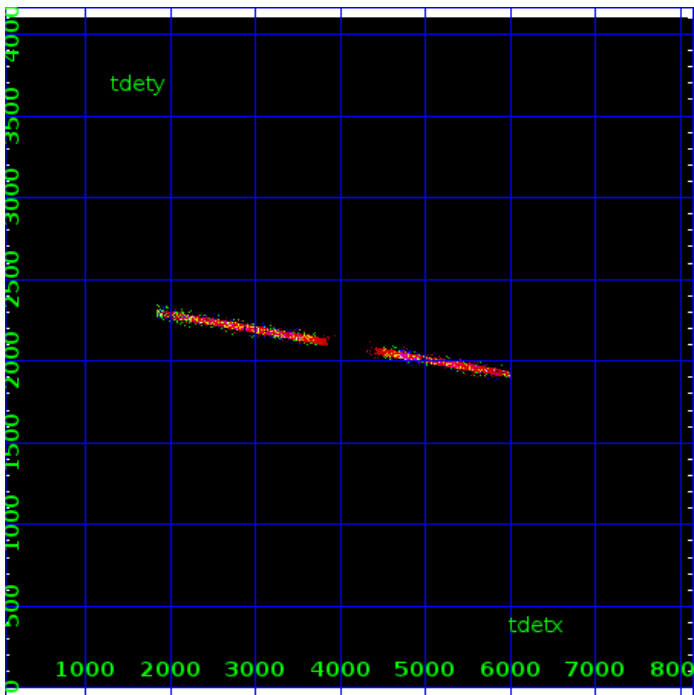
HEG Zero Order



HEG Order Sort ALL

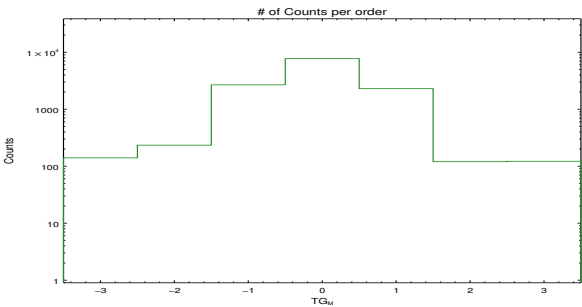


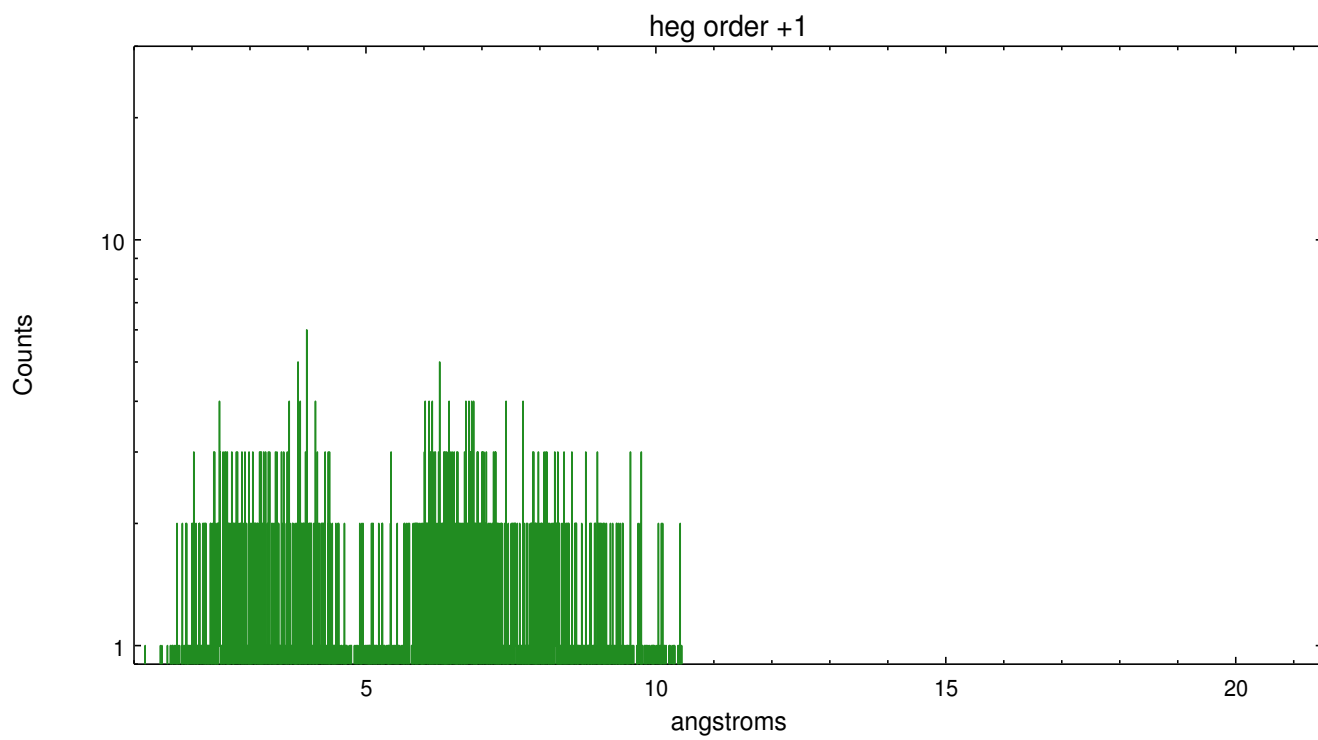
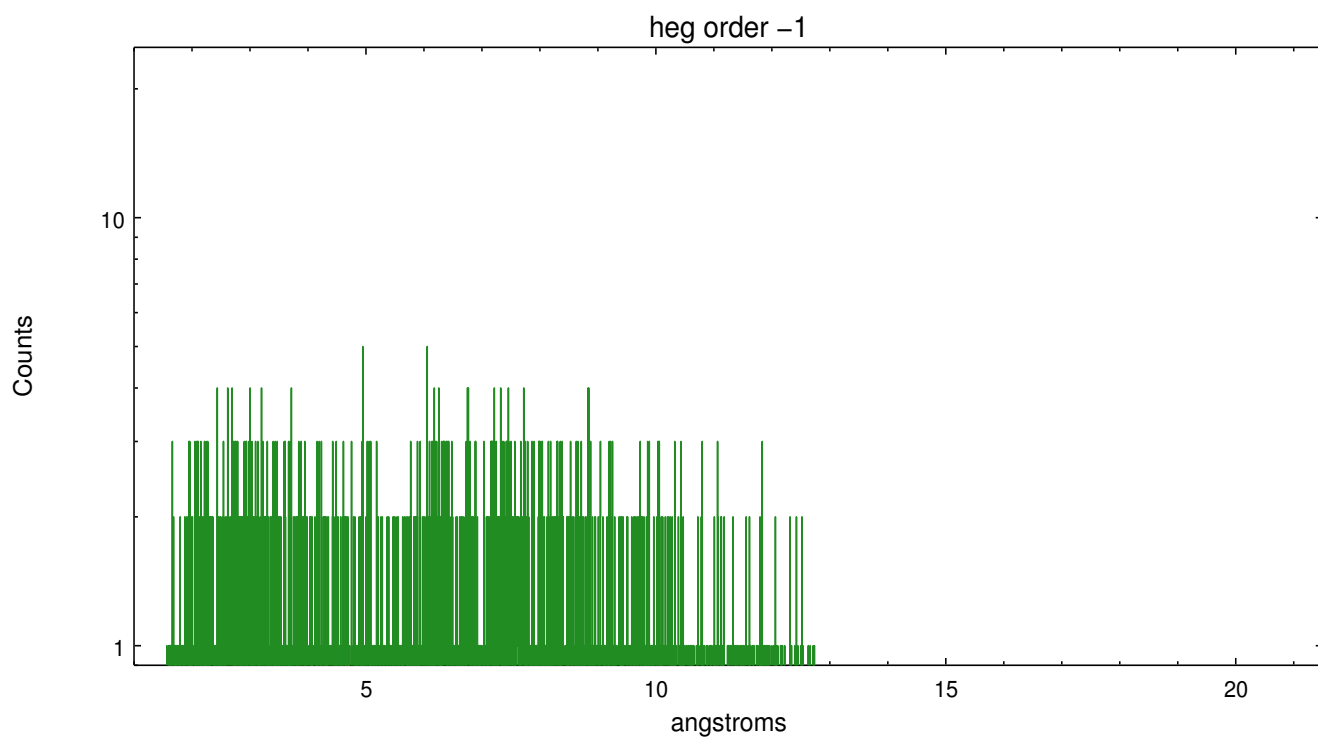
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	140	234	2678	7727	2297	120	122

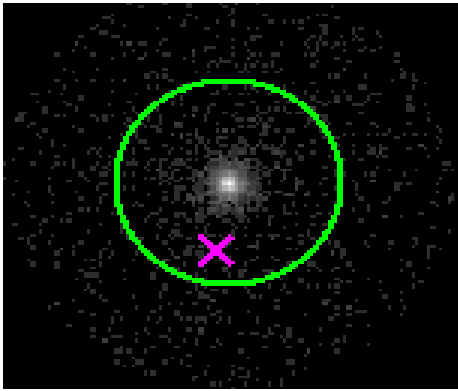




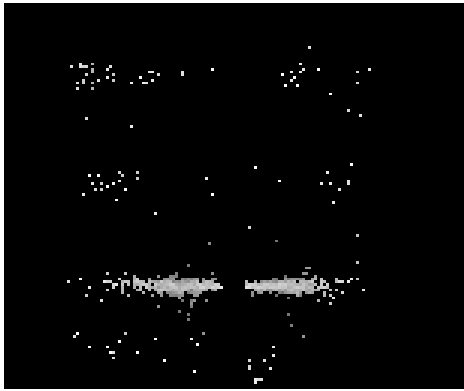
3.2 MEG Arm



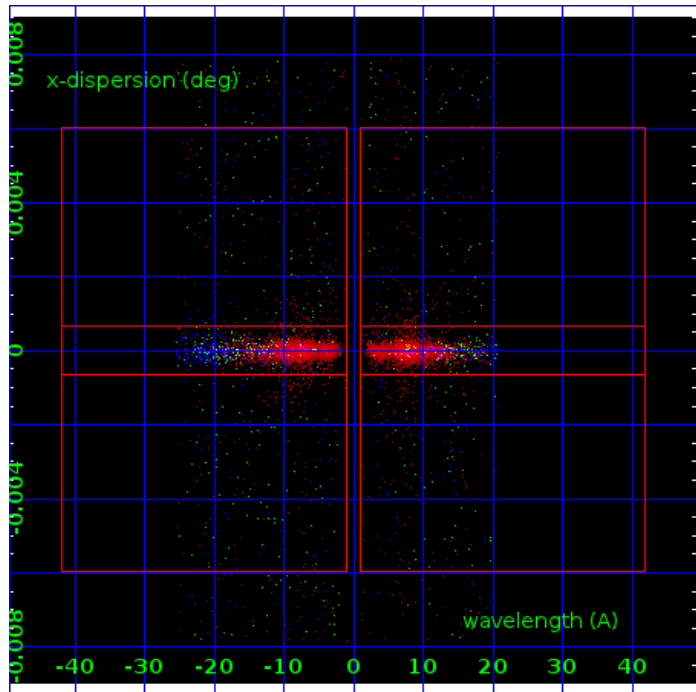
MEG Order Sort 123



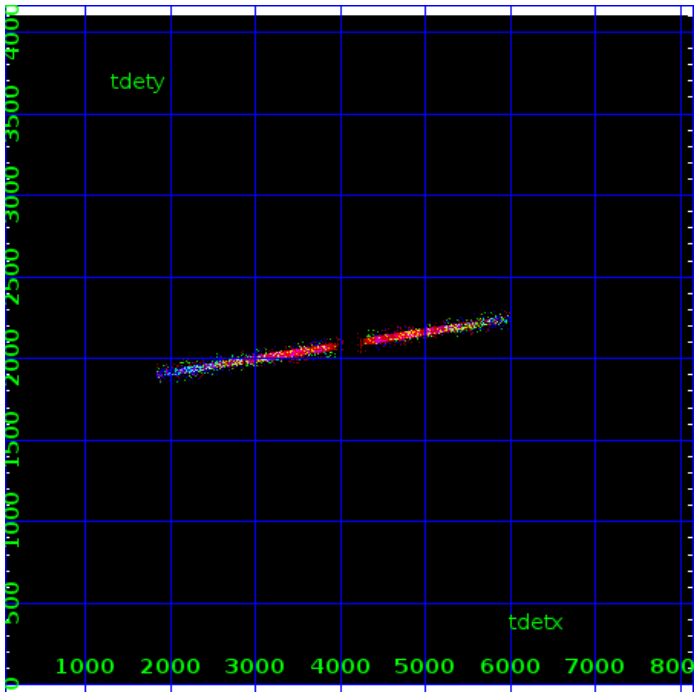
MEG Zero Order



MEG Order Sort ALL

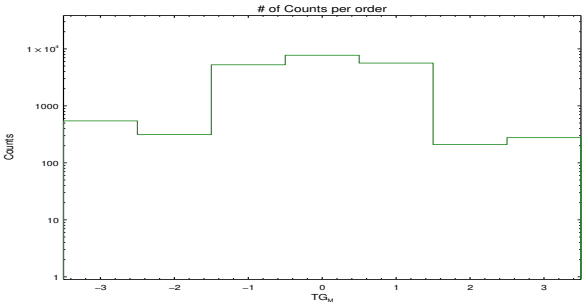


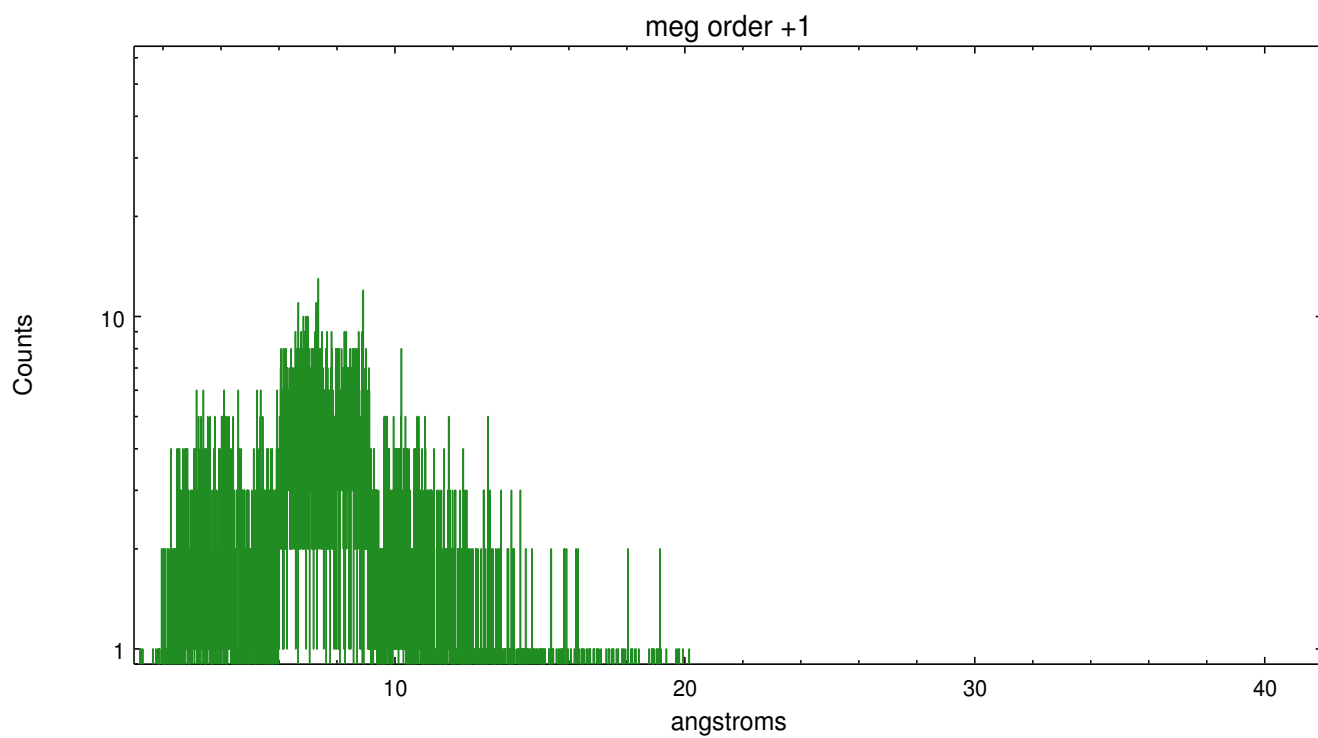
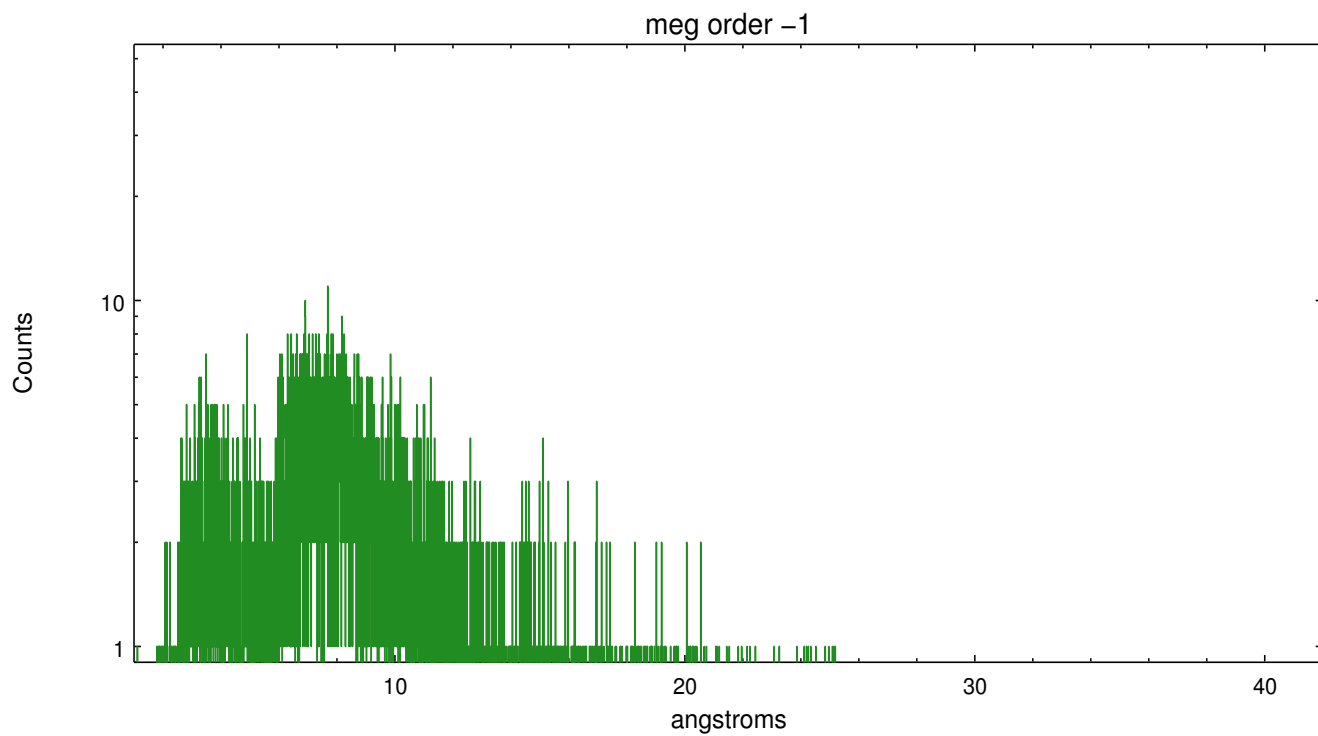
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	545	313	5258	7727	5630	209	277





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2016.04.15
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	25.787965464115

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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