

V&V Reference Report

L2 ASCDS Version : 10.4.3

Observation 18738 - L2 Version 1
Chandra X-Ray Center

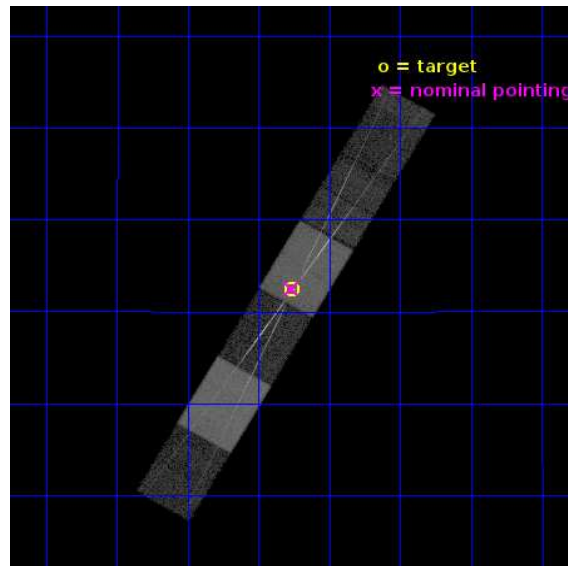
L2 Processing Date : Jan 7 2016

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

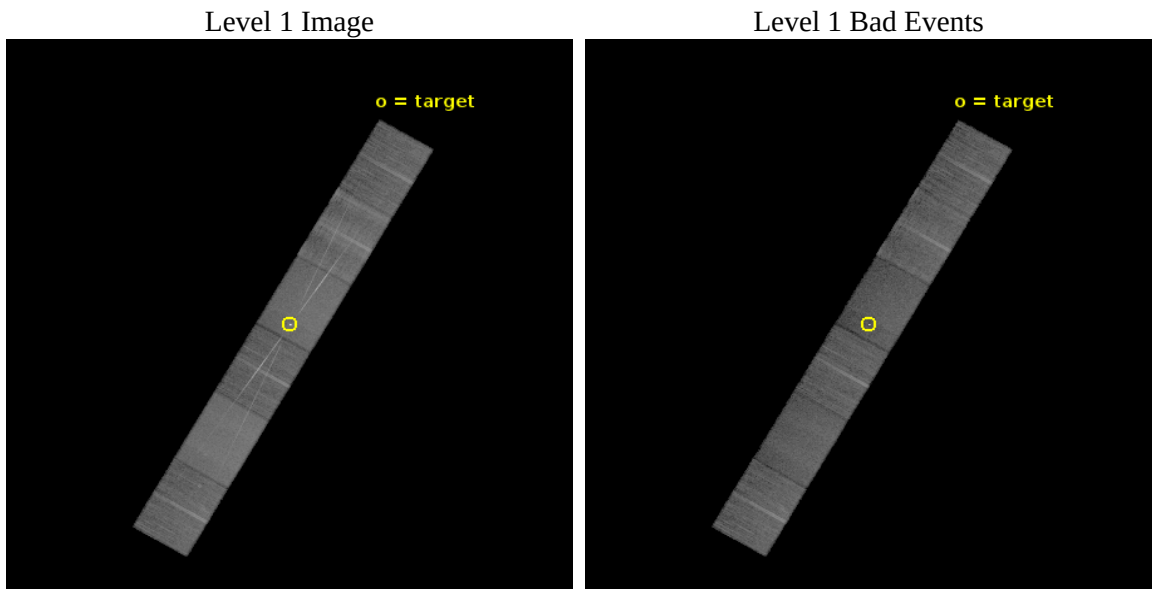
seq_num	703293	Sequence number
obs_id	18738	Observation id
title	Deciphering the ionised outflows in NGC 7469	Proposal title
observer	Prof Jelle Kaastra	Principal investigator
object	NGC 7469	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	345.815	Observer's specified target RA [deg]
dec_targ	8.873917	Observer's specified target Dec [deg]
ra_nom	345.81717097956	Nominal RA [deg]
dec_nom	8.8750000056259	Nominal Dec [deg]
roll_nom	300.15629402846	Nominal Roll [deg]
revision	1	Processing version of data
ontime	27217.5	Sum of GTIs [s]
livetime	26777.913767591	Livetime [s]
ontime4	27217.5	Sum of GTIs [s]
ontime5	27217.5	Sum of GTIs [s]
ontime6	27217.5	Sum of GTIs [s]
ontime7	27217.5	Sum of GTIs [s]
ontime8	27217.5	Sum of GTIs [s]
ontime9	27214.958989739	Sum of GTIs [s]
l2events	248163	Number of level 2 events



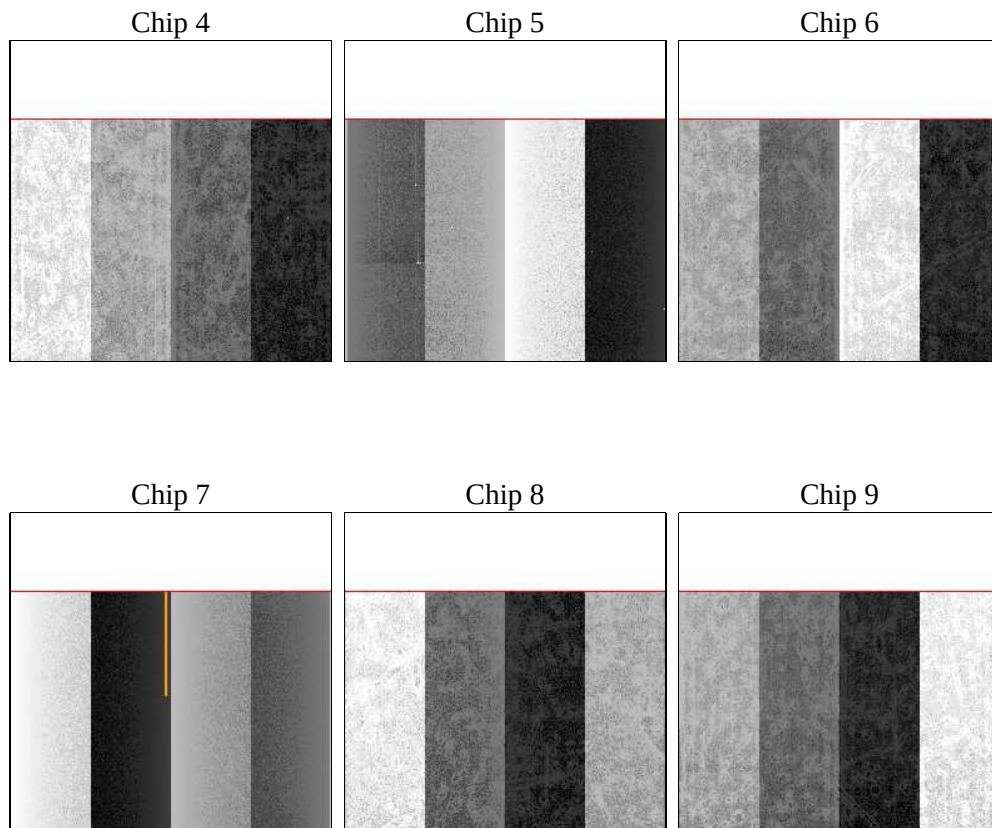
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	27200.000000	[s] Scheduled observation exposure time
ascdsver	10.4.3	Processing system revision	ontime	27217.5	Sum of GTIs [s]
caldsver	4.7.0	 	ontime4	27217.5	Sum of GTIs [s]
date	2016-01-07T18:06:50	Date and time of file creation	ontime5	27217.5	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	27217.5	Sum of GTIs [s]
			ontime7	27217.5	Sum of GTIs [s]
			ontime8	27217.5	Sum of GTIs [s]
			ontime9	27214.958989739	Sum of GTIs [s]
			l1events	935206	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			src1a_pos	(4111.07, 4088.65)	src1a sky pixel position

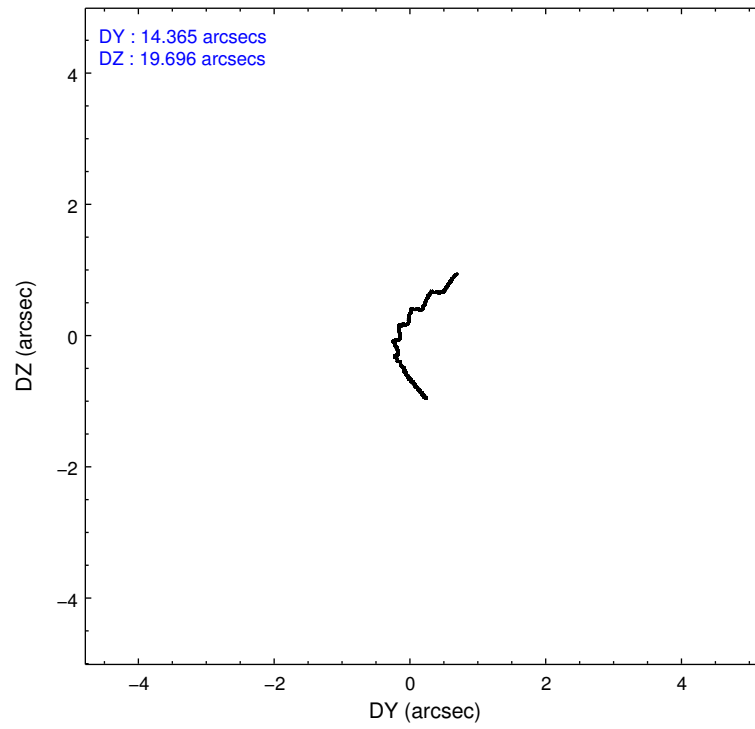
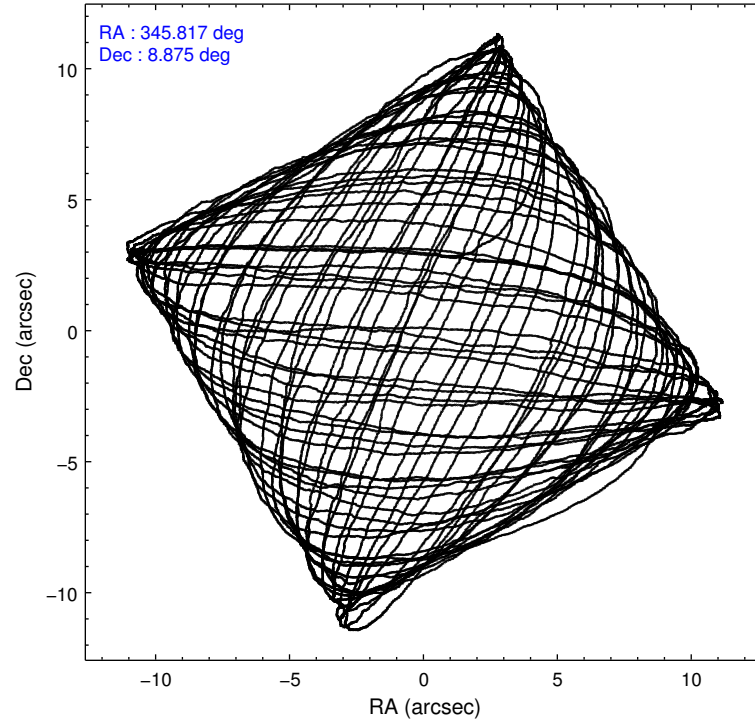
2.1.4 Events

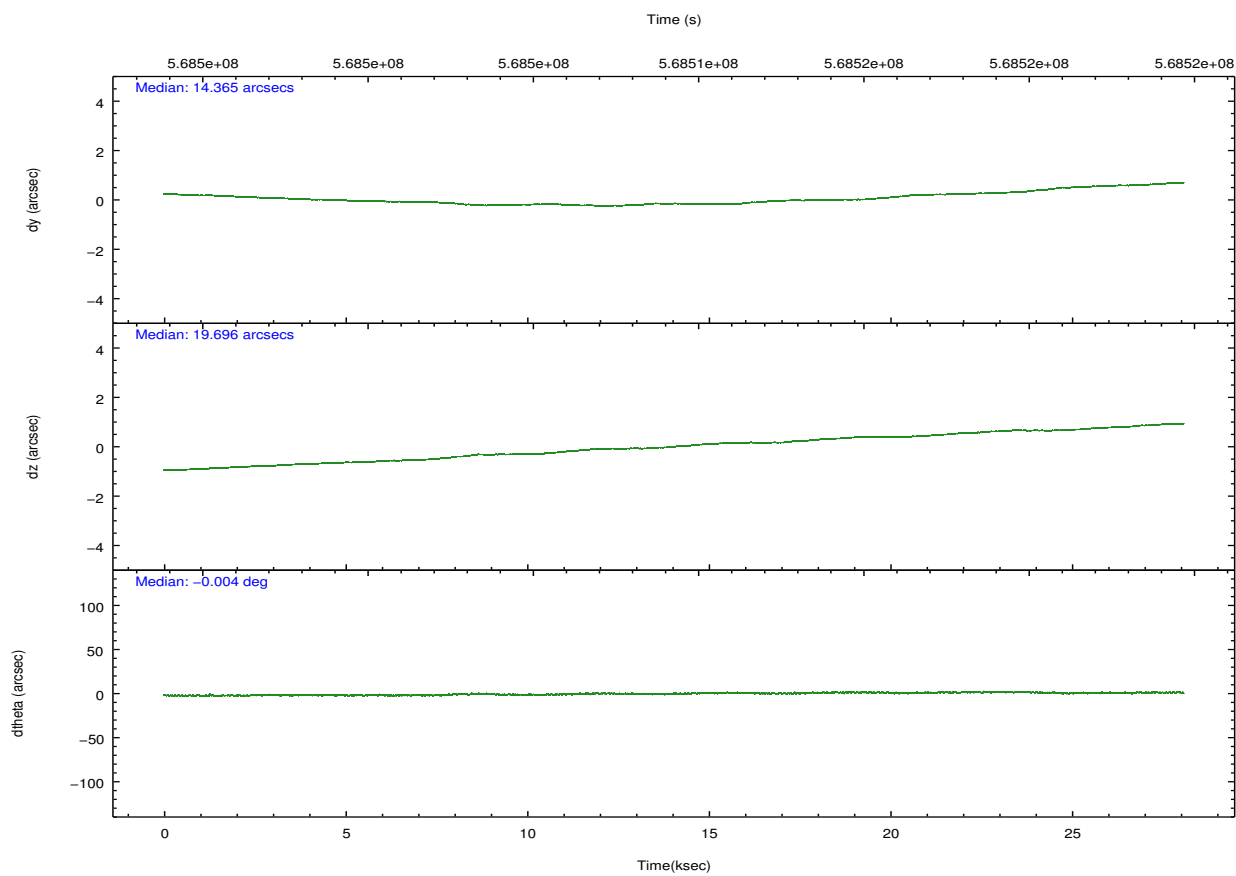
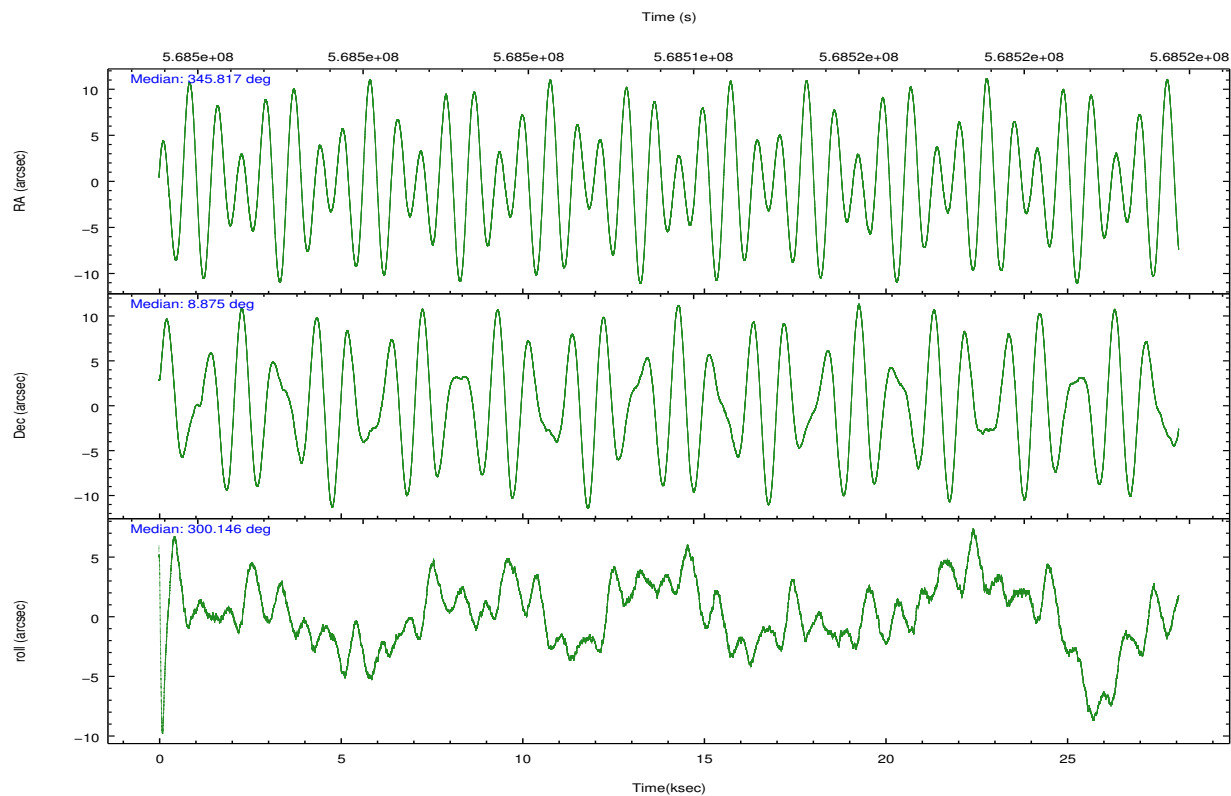
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	136376	191805	133437	179775	171699	122114	grade 0 events	6987	6706	13591	9839	17059	5863
rejected events	119636	98115	108046	91070	121200	106204		5%	3%	10%	5%	9%	4%
rejected %	87%	51%	80%	50%	70%	86%	grade 1 events	95	351	76	402	132	66
								0%	0%	0%	0%	0%	0%
							grade 2 events	3931	28665	4546	19127	11625	3534
								2%	14%	3%	10%	6%	2%
							grade 3 events	1633	4009	1852	8007	4652	1714
								1%	2%	1%	4%	2%	1%
							grade 4 events	1540	3812	1855	7806	4318	1610
								1%	1%	1%	4%	2%	1%
							grade 5 events	5893	14483	5707	17227	8647	6495
								4%	7%	4%	9%	5%	5%
							grade 6 events	2654	50503	3551	43937	12847	3189
								1%	26%	2%	24%	7%	2%
							grade 7 events	113643	83276	102259	73430	112419	99643
								83%	43%	76%	40%	65%	81%

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	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	345.792893	345.8171709795587	CCD I2 on	N	N
[deg] Pointing Dec	8.888339	8.875000005625891	CCD I3 on	N	N
[deg] Pointing Roll	300.003412	300.1562940284601	CCD S0 on	O1	Y
[s] Window start time (MET)	567075668.184000	567075668.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	568000868.184000	568000868.184000	CCD S2 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S3 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S4 on	Y	Y
[mm] SIM translation stage pos	-187.132523	-187.1228876879999	CCD S5 on	Y	Y
[mm] SIM translation stage offset	-3	-3.009634895007935	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	568496091.184000	568494757.4308	On-chip summing requested	N	N
Observation start date	2016-01-06T19:33:43	2016-01-06T19:12:37	Subarray requested	CUSTOM	CUSTOM
[s] Observation end time (MET)	568523291.184000	568524026.81996	Subarray start row	1	1
Observation end date	2016-01-07T03:07:03	2016-01-07T03:20:26	Subarray row count	774	774
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	2.5

2.3 Aspect



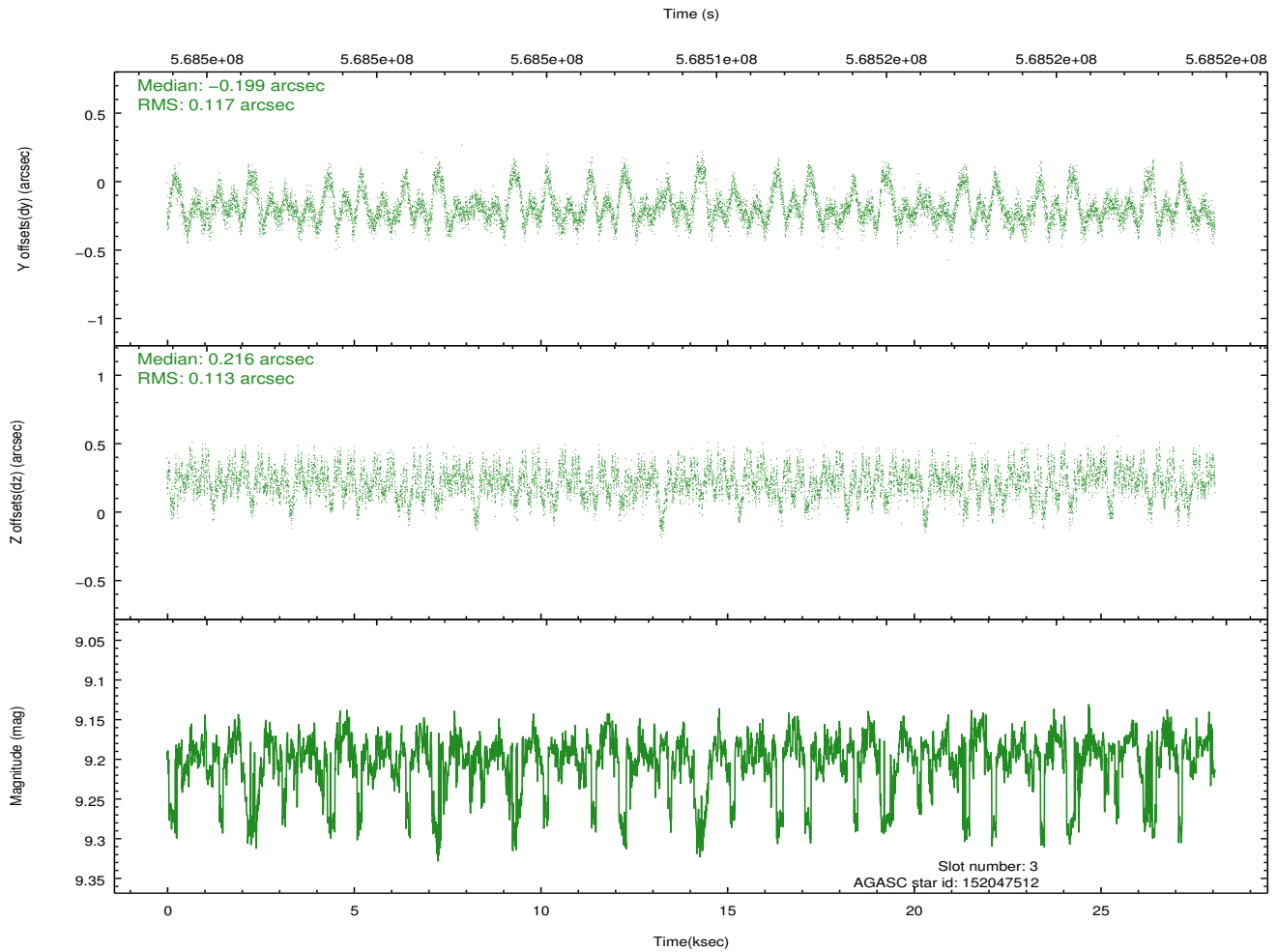
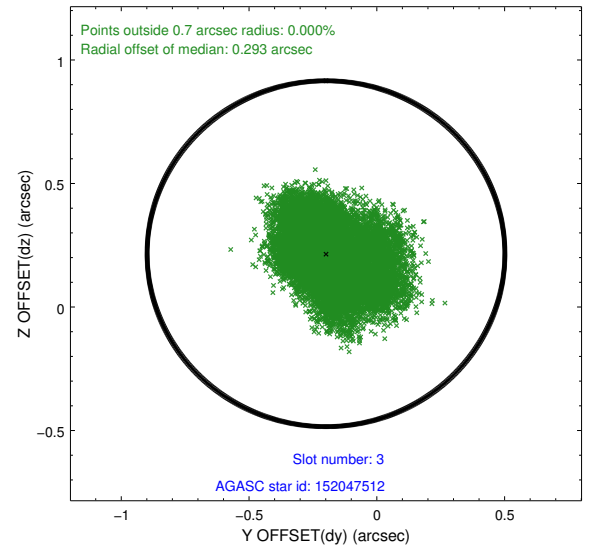
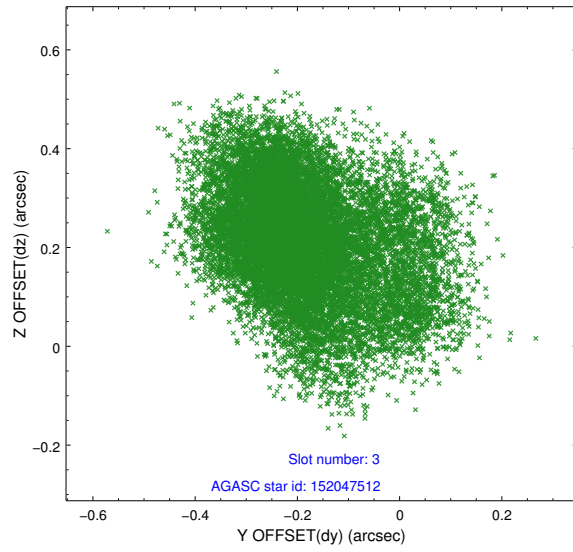


Slot Statistics

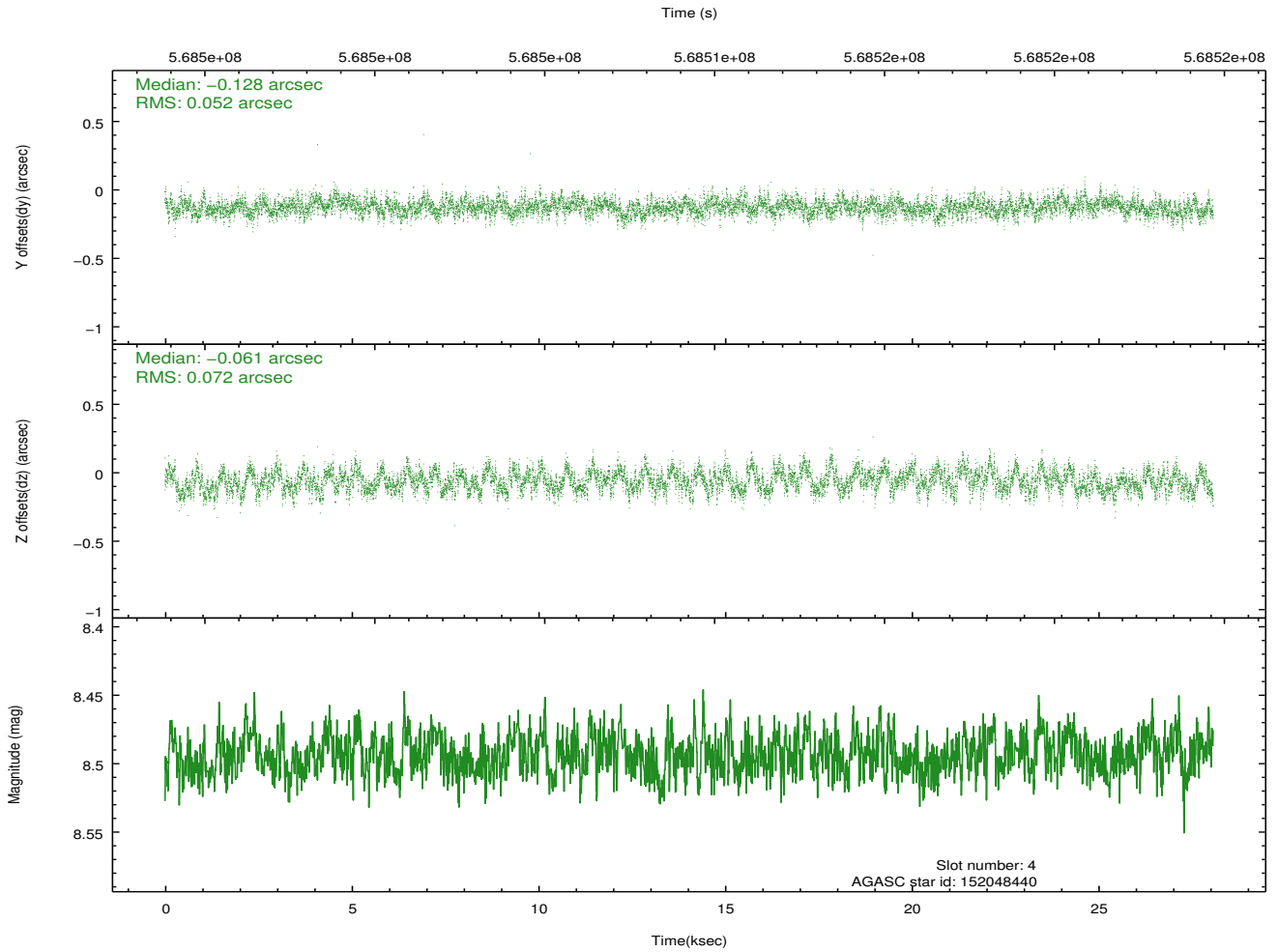
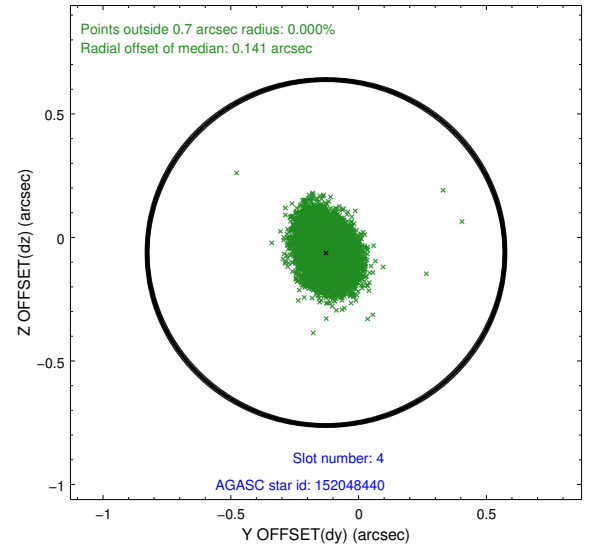
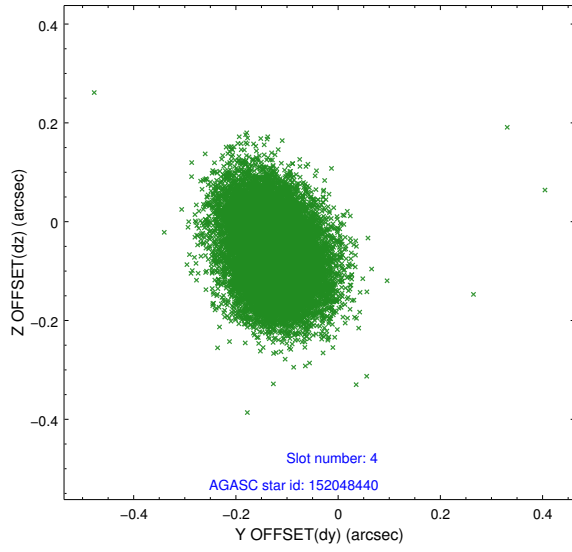
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.10	6849	-0.178	-0.124	0.016	0.040	0.000000	0.000000	-767.35	-1803.46
1	FID		ACIS-S-4	7.20	6848	0.397	0.120	0.012	0.025	0.000000	0.000000	2146.45	105.18
2	FID		ACIS-S-5	7.23	6849	-0.249	0.013	0.014	0.035	0.000000	0.000000	-1820.16	98.81
3	GUIDE	used	152047512	9.20	13685	-0.199	0.216	0.172	0.285	345.446790	9.155873	-1449.06	-582.95
4	GUIDE	used	152048440	8.49	13690	-0.128	-0.061	0.095	0.151	346.200519	9.070077	157.23	1582.72
5	GUIDE	used	152053112	8.14	13692	0.485	0.690	0.086	0.145	345.154715	8.750450	-706.02	-2212.69
6	GUIDE	used	152056136	6.62	13697	-0.148	-0.504	0.085	0.134	346.466795	8.896005	1172.55	2089.87
7	GUIDE	used	152052088	8.97	13690	-0.019	-0.338	0.143	0.219	345.509667	8.677615	153.26	-1251.87

2.4 Star Slots

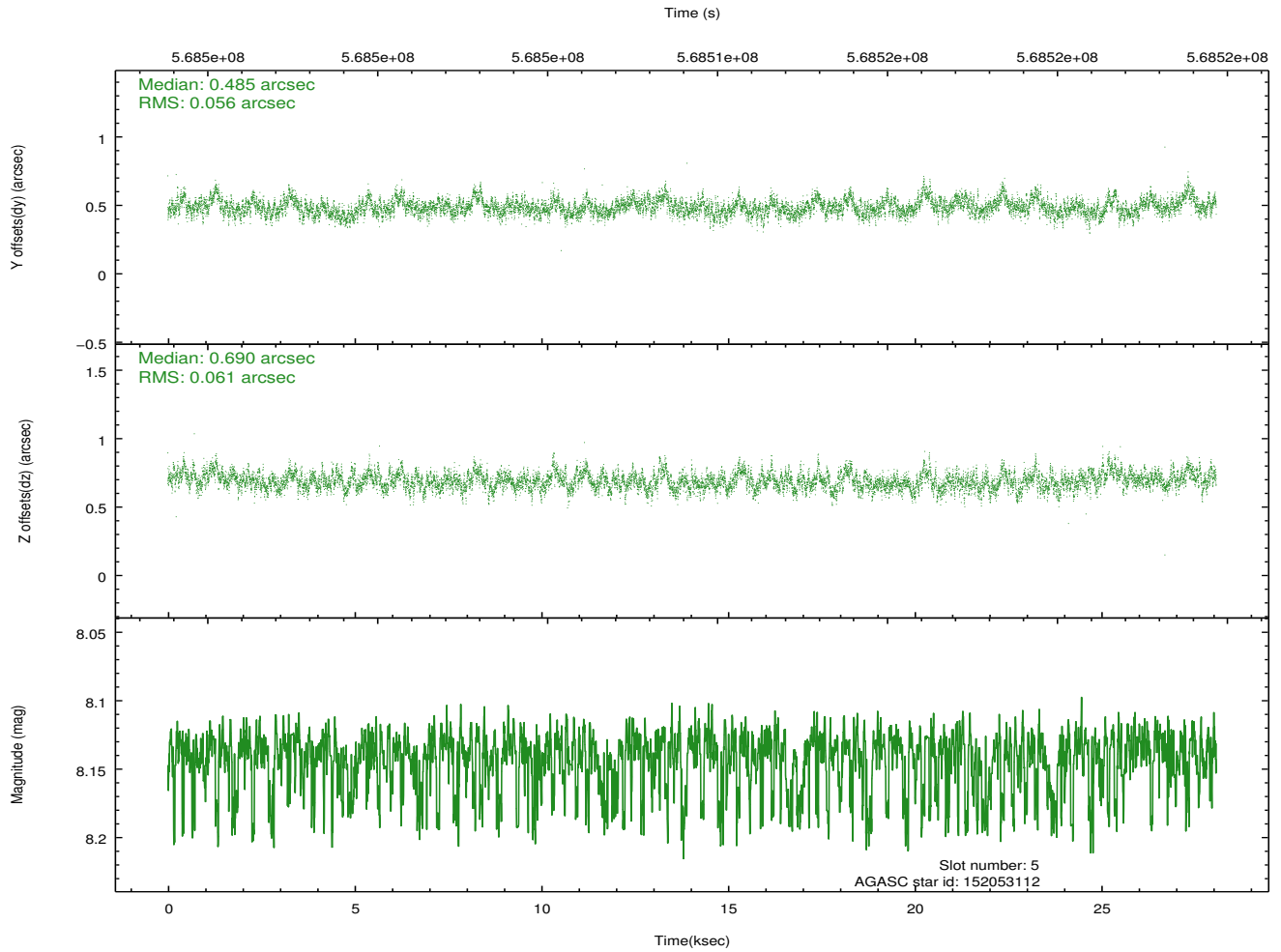
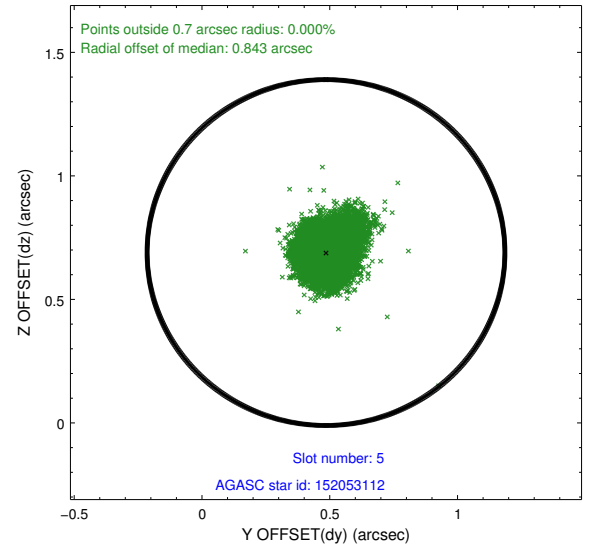
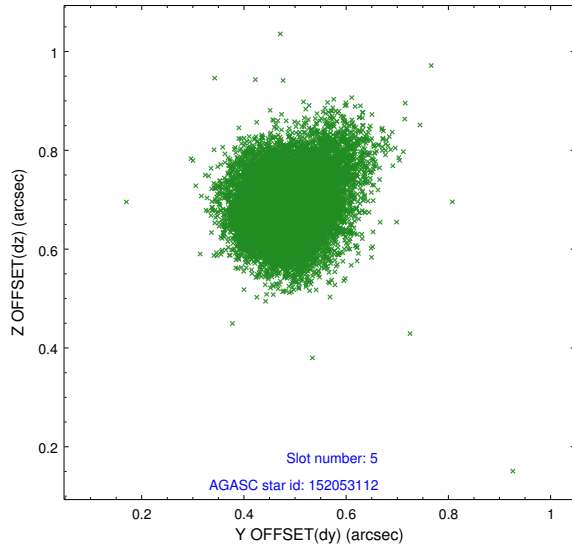
2.4.1 Slot 3



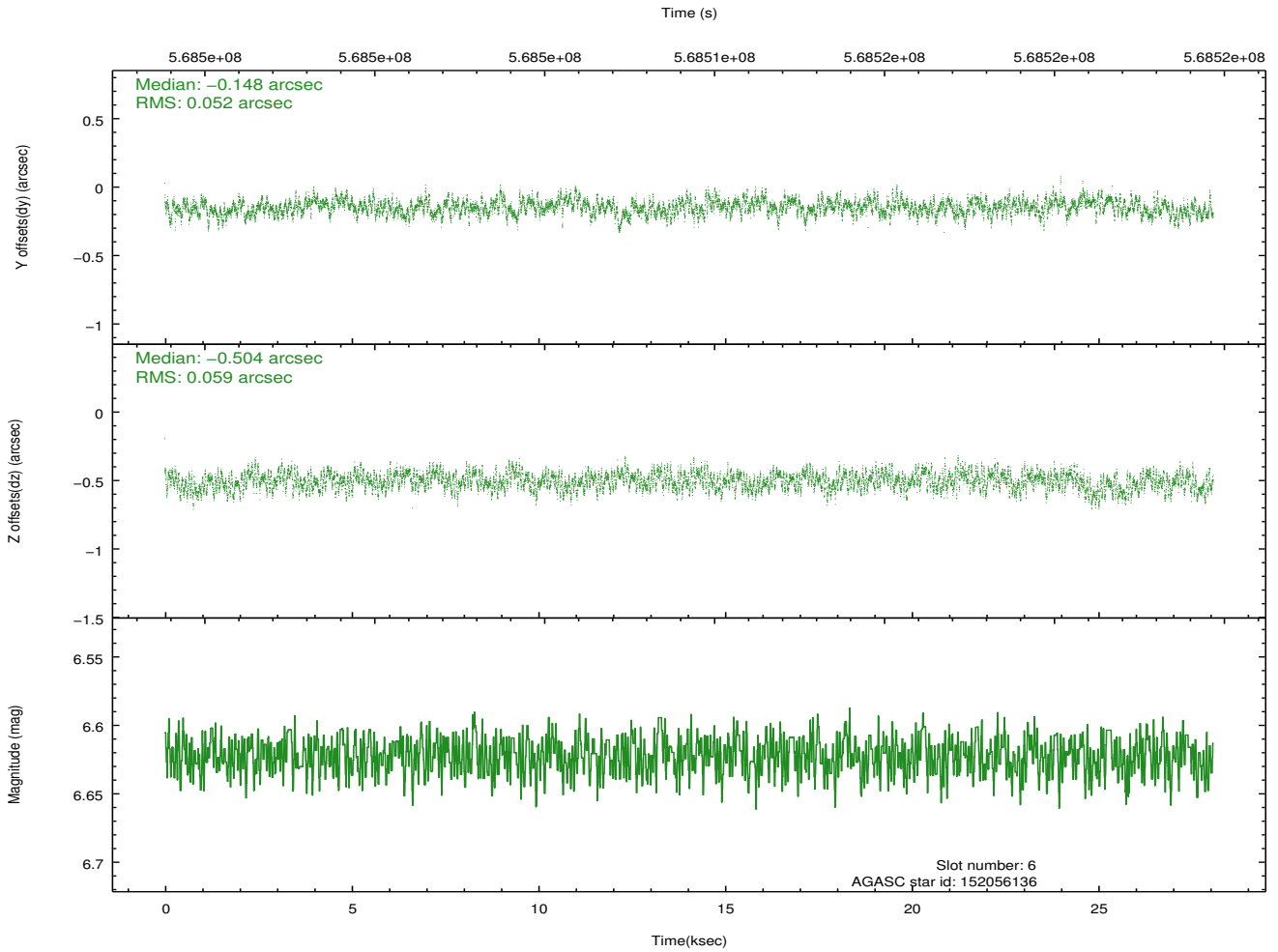
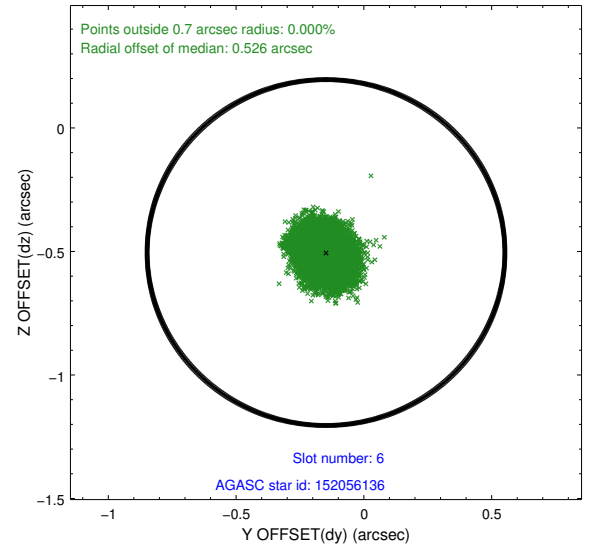
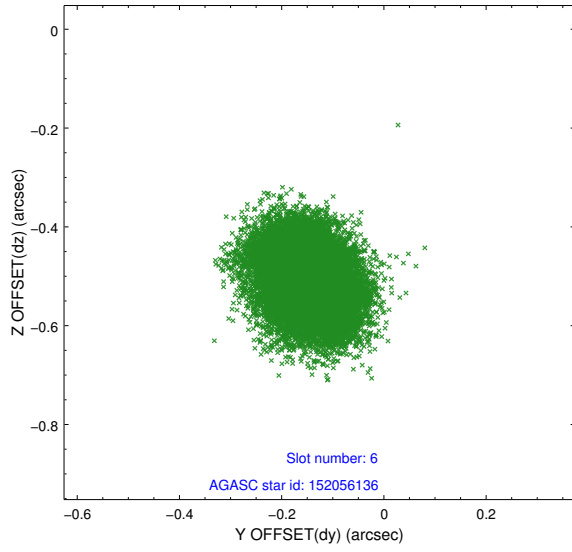
2.4.2 Slot 4



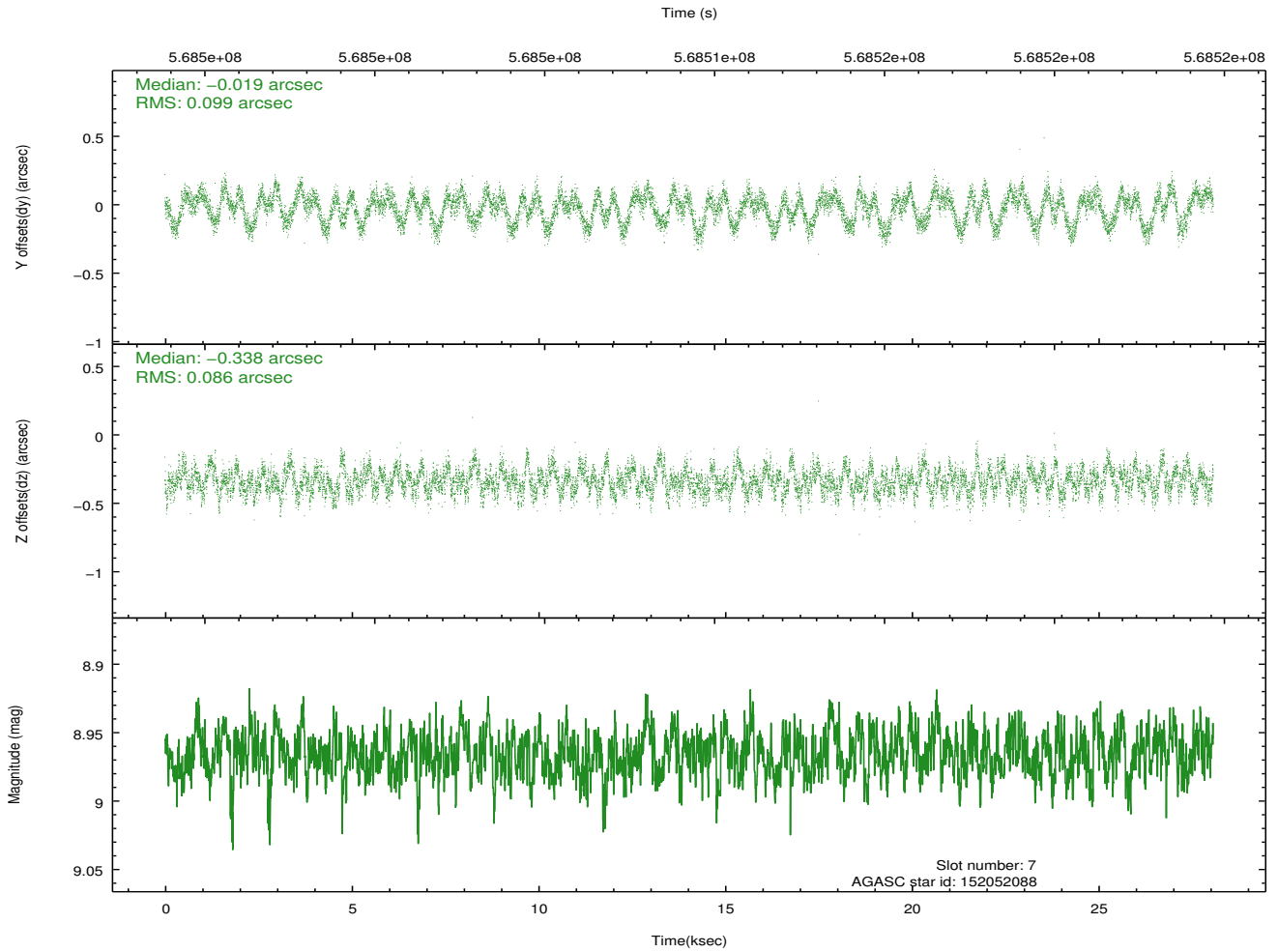
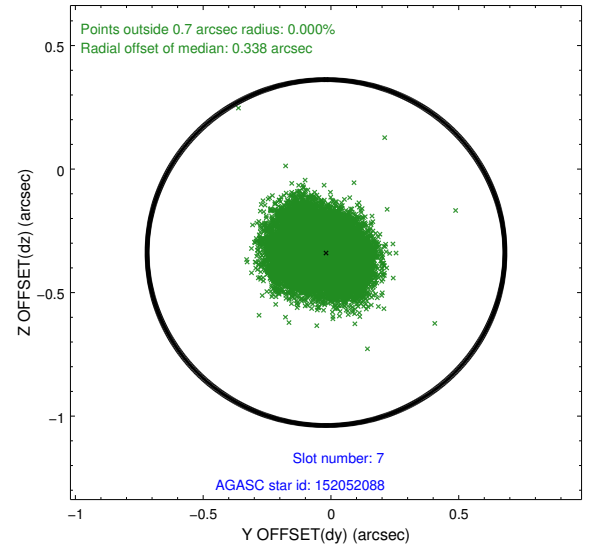
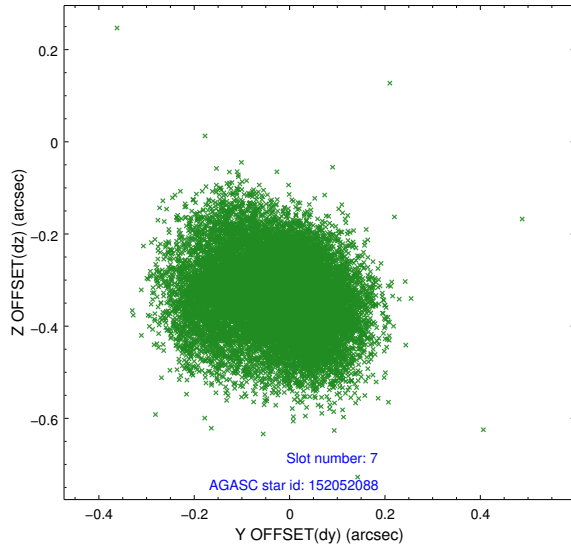
2.4.3 Slot 5



2.4.4 Slot 6

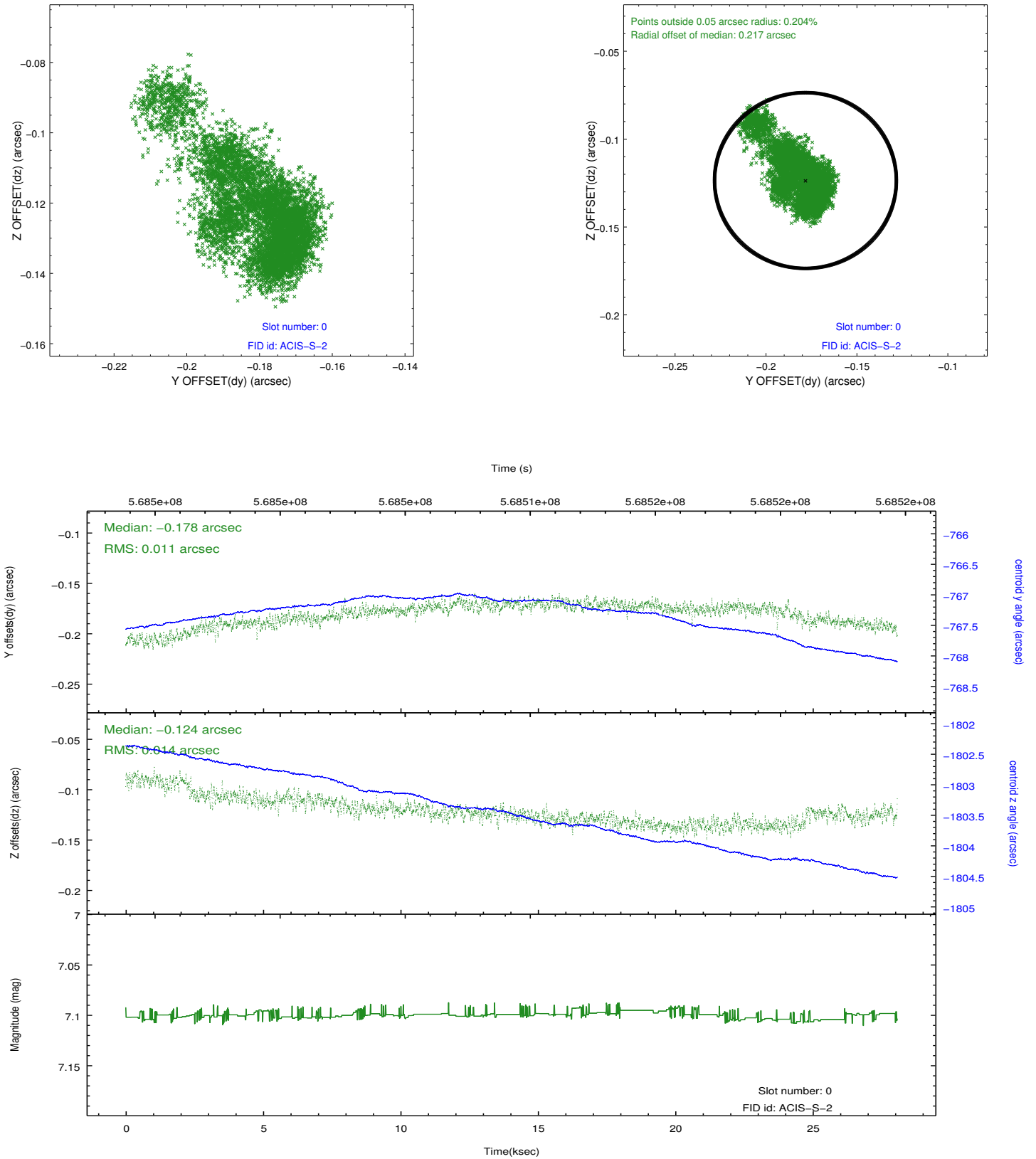


2.4.5 Slot 7

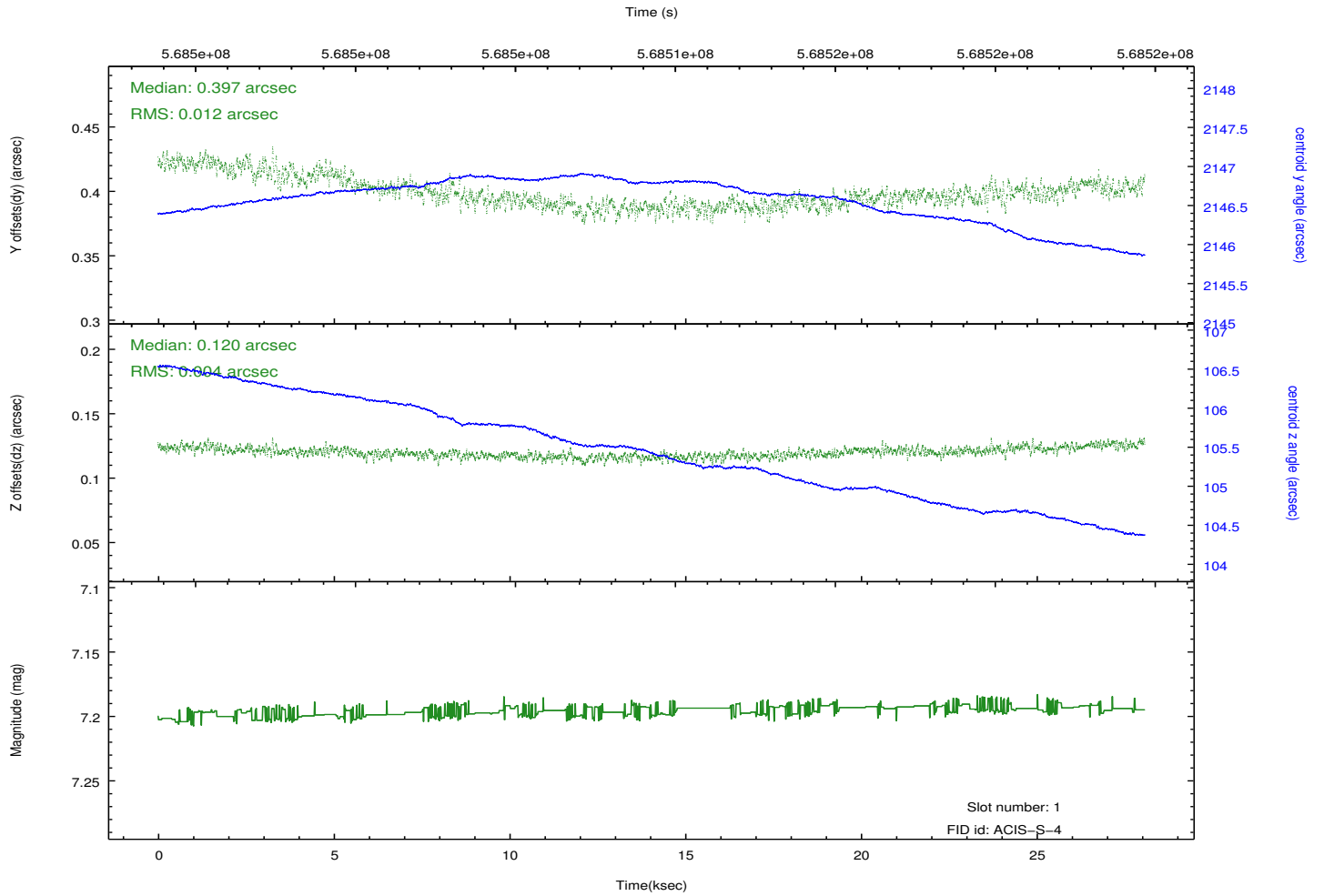
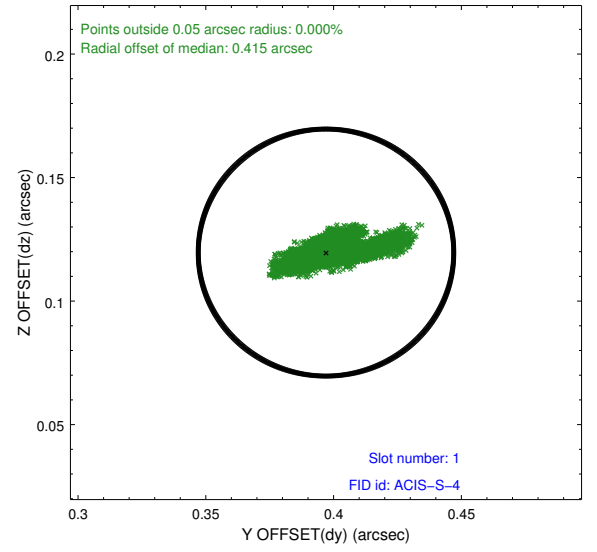
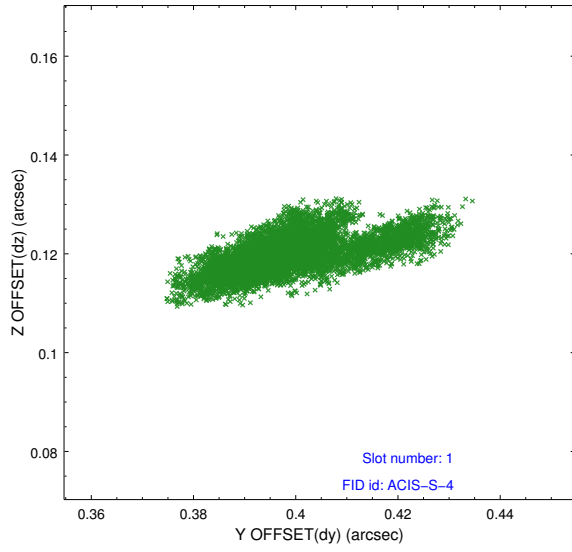


2.5 FID Slots

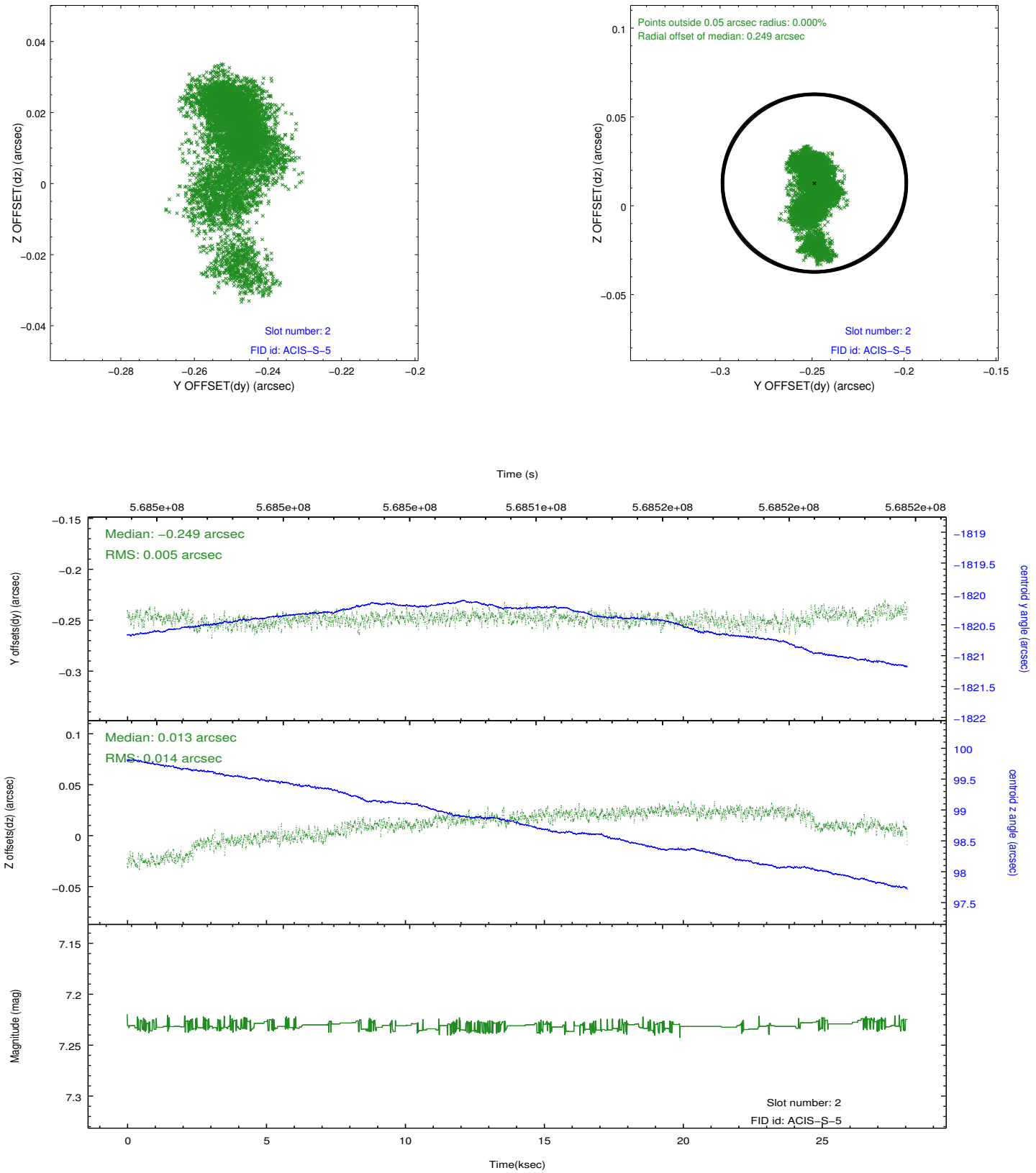
2.5.1 Slot 0



2.5.2 Slot 1

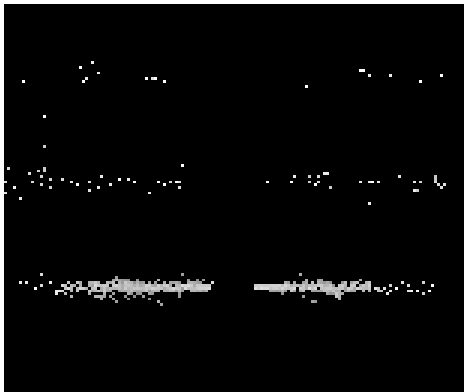


2.5.3 Slot 2

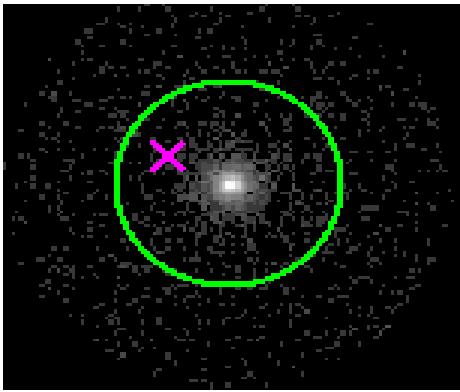


3 Gratings

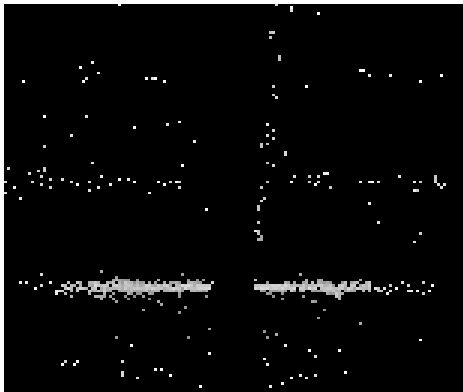
3.1 HEG Arm



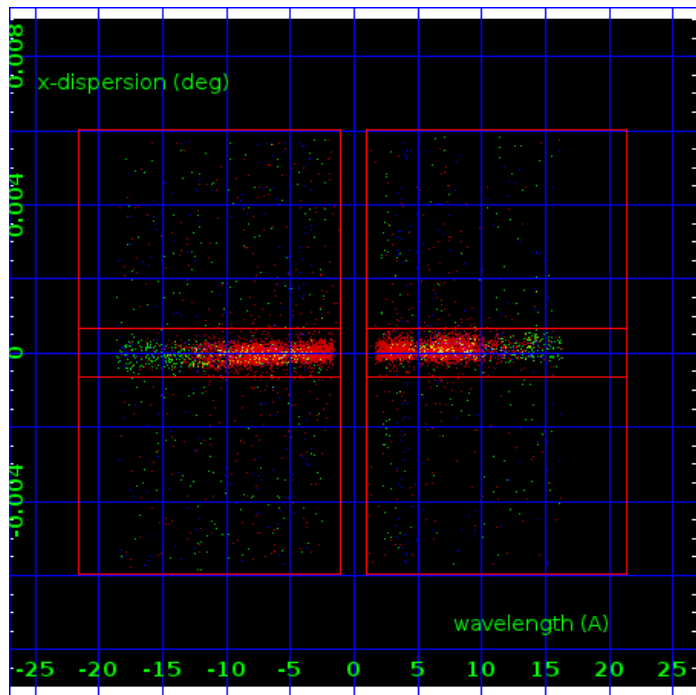
HEG Order Sort 123



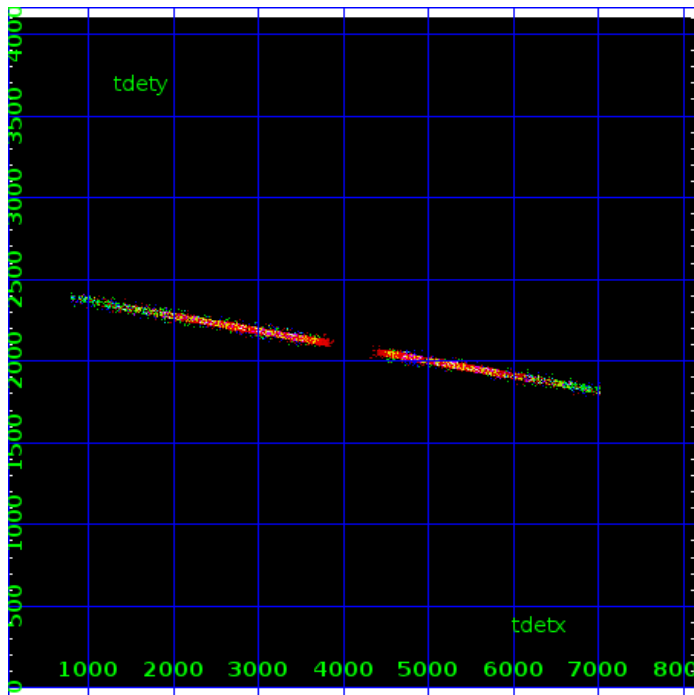
HEG Zero Order



HEG Order Sort ALL

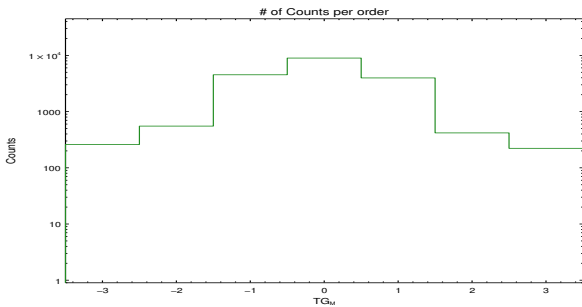


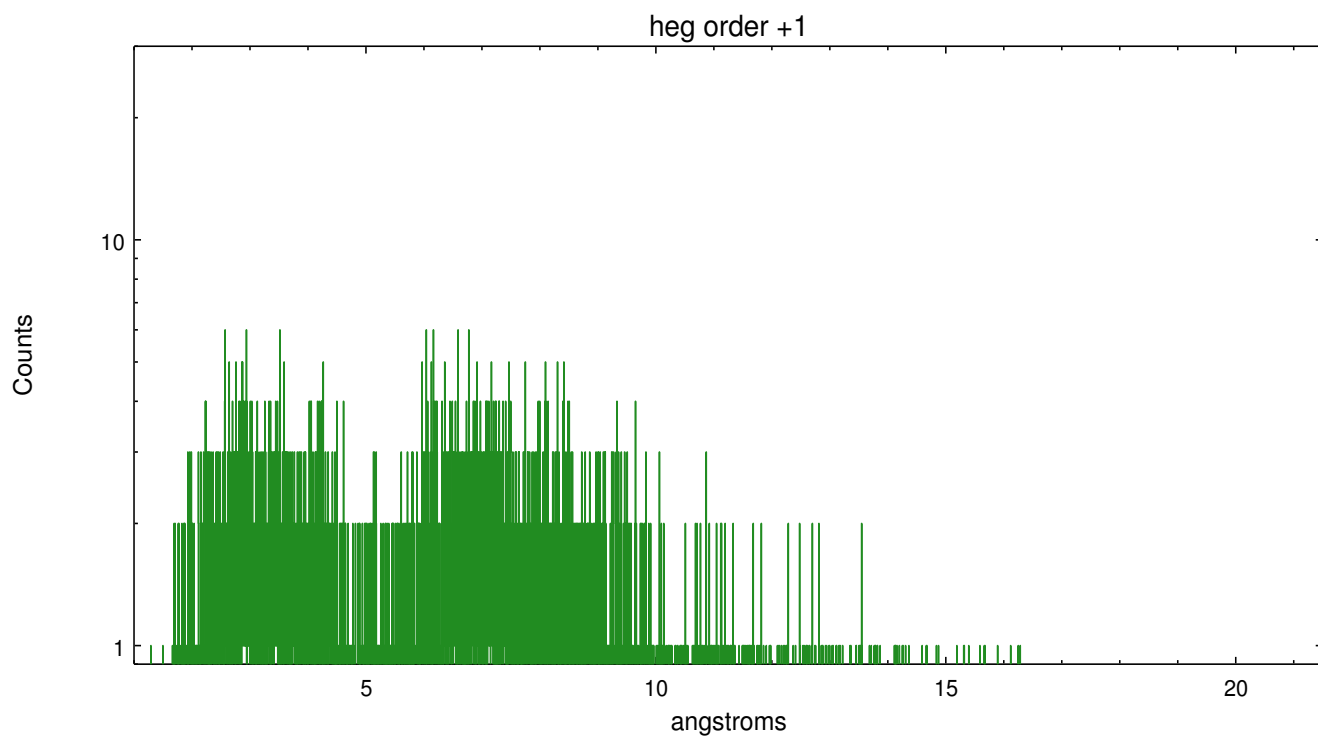
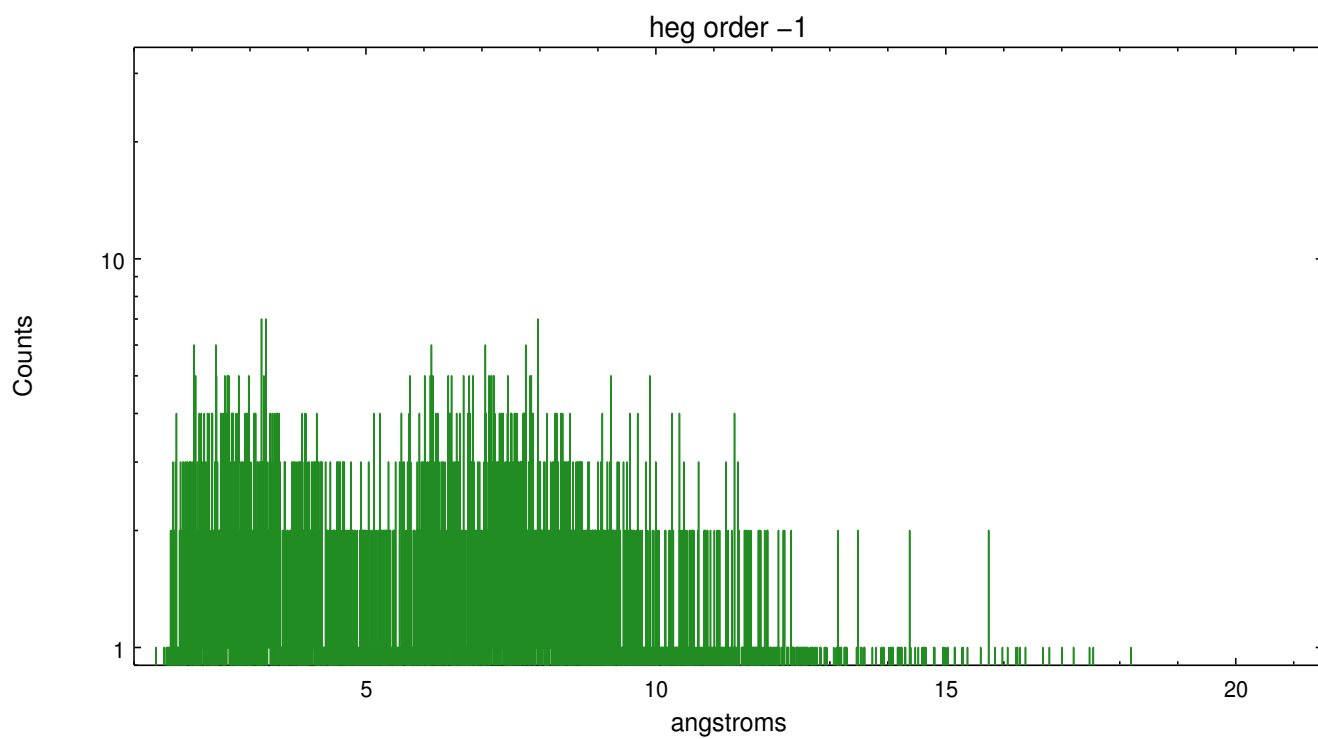
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	260	552	4523	8964	3975	418	222

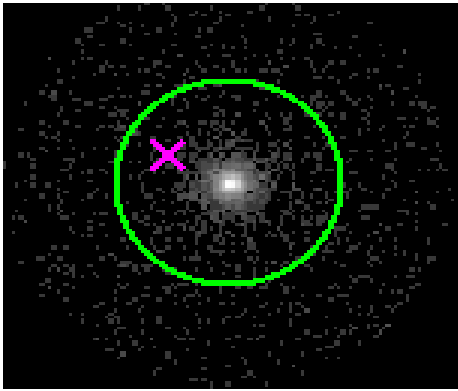




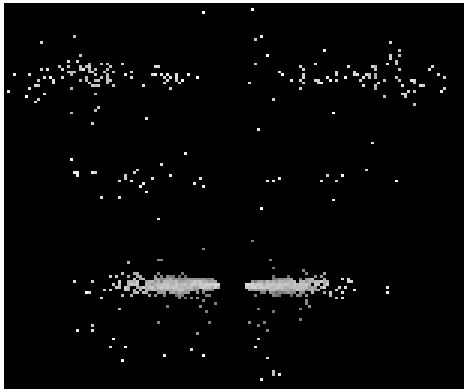
3.2 MEG Arm



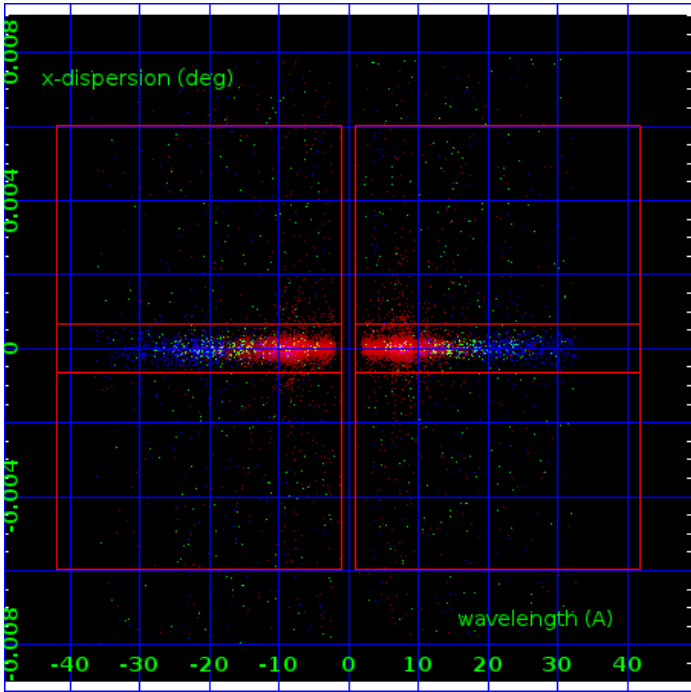
MEG Order Sort 123



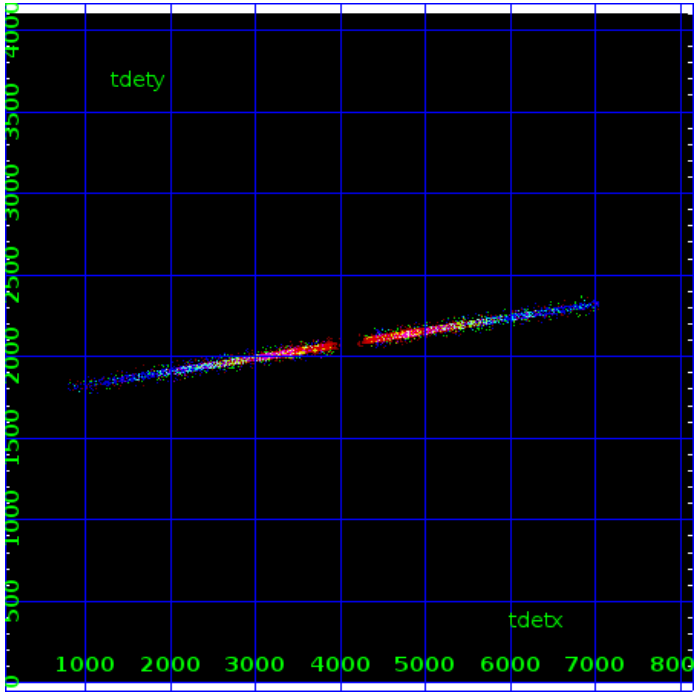
MEG Zero Order



MEG Order Sort ALL

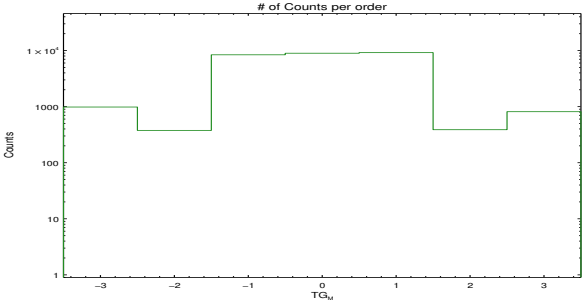


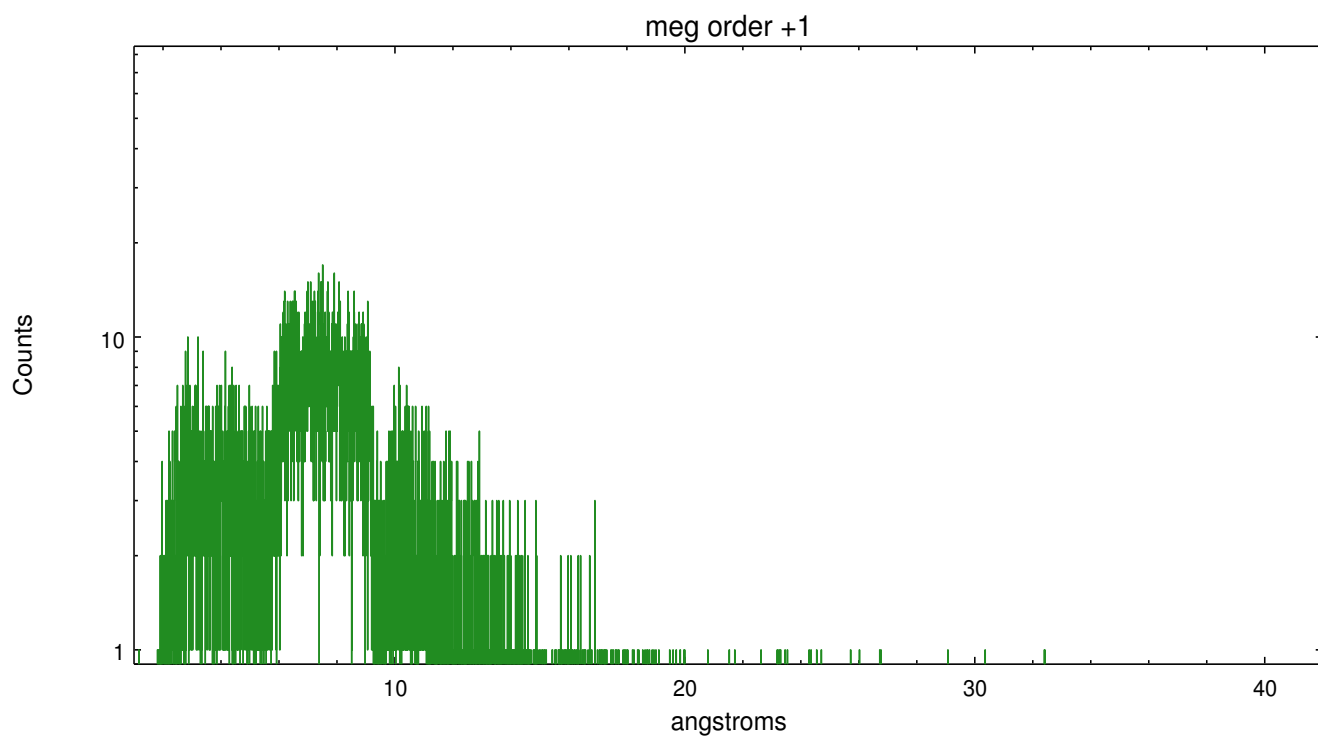
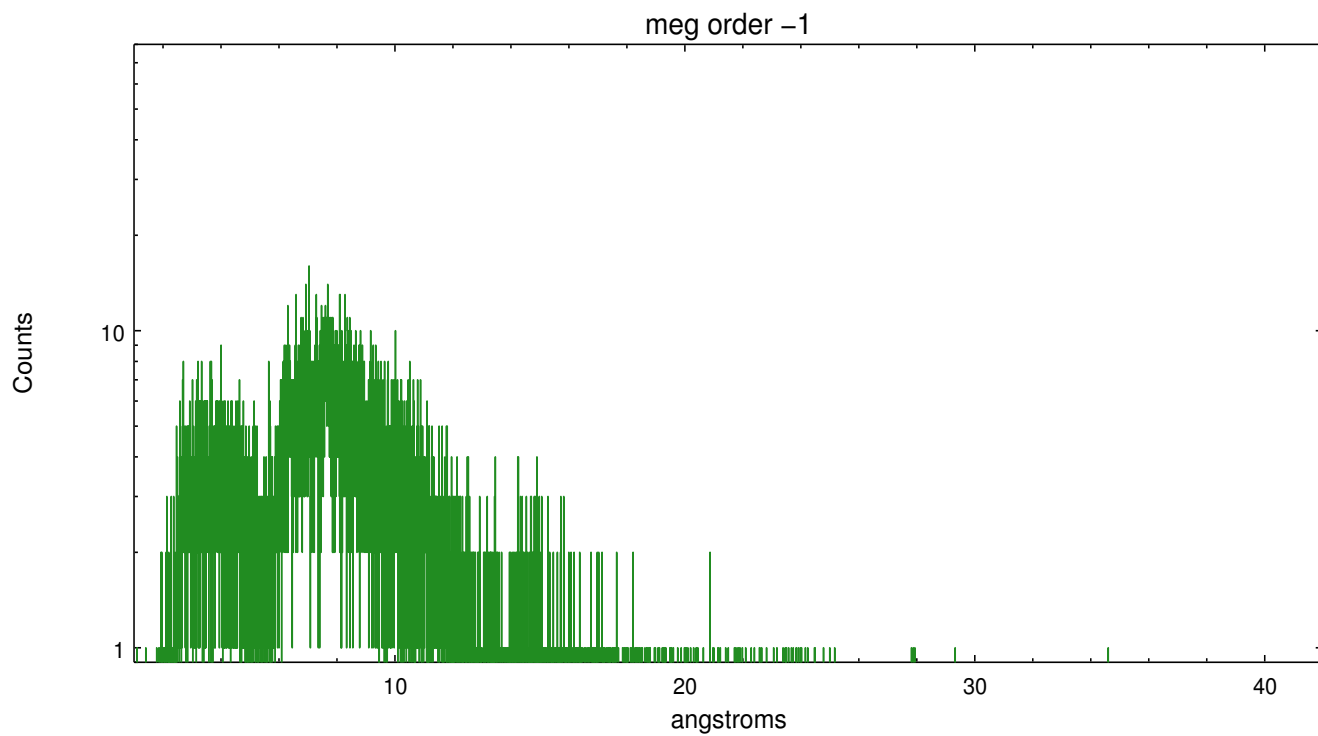
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	984	377	8406	8964	9190	388	813





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2016.01.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	27.2175

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.