

V&V Reference Report

L2 ASCDS Version : 10.5

Observation 18421 - L2 Version 1
Chandra X-Ray Center

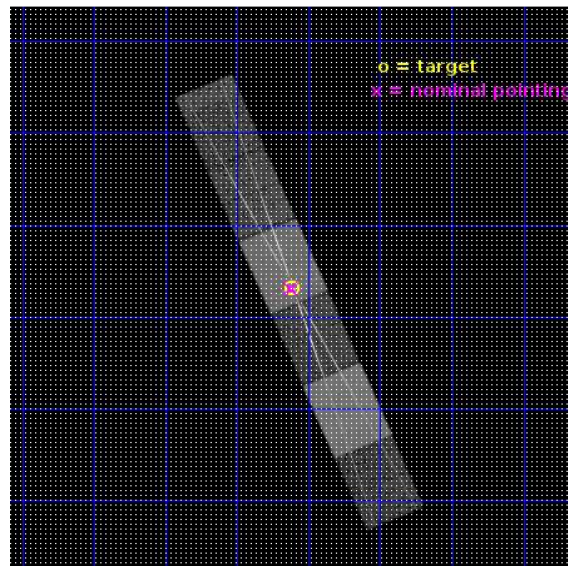
L2 Processing Date : Jun 28 2016

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

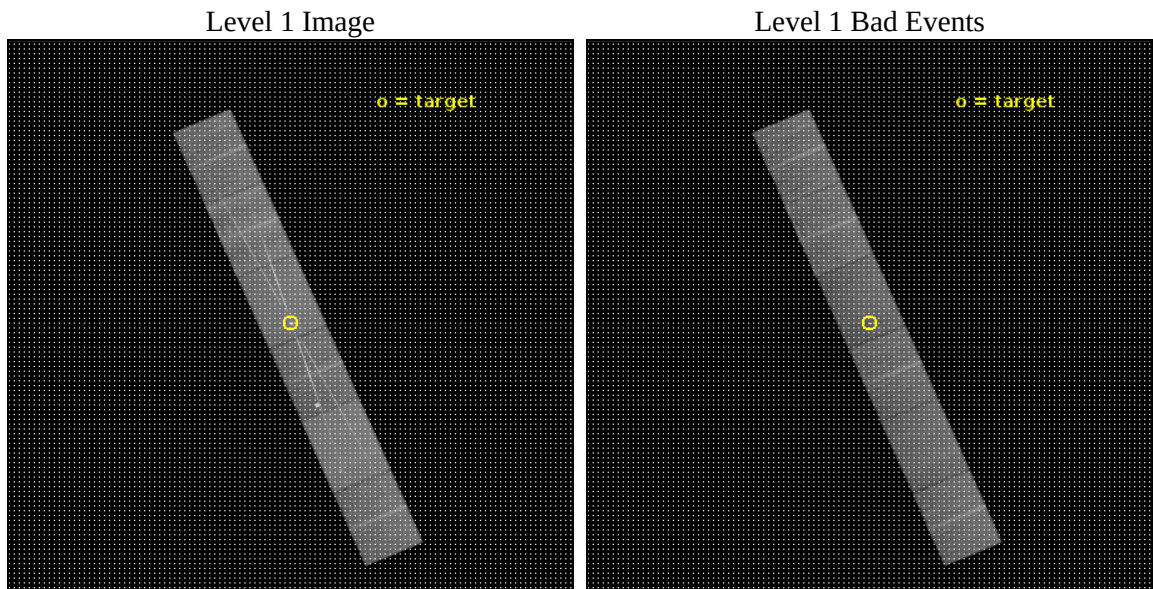
seq_num	790289	Sequence number
obs_id	18421	Observation id
title	AO-17 Cross-Calibration Observations of 3C273	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	3C273	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	187.277917	Observer's specified target RA [deg]
dec_targ	2.052389	Observer's specified target Dec [deg]
ra_nom	187.28005545775	Nominal RA [deg]
dec_nom	2.0511218773838	Nominal Dec [deg]
roll_nom	246.86043382503	Nominal Roll [deg]
revision	1	Processing version of data
ontime	30082.5	Sum of GTIs [s]
liveltime	29596.641532601	Livetime [s]
ontime4	30082.5	Sum of GTIs [s]
ontime5	30082.5	Sum of GTIs [s]
ontime6	30082.5	Sum of GTIs [s]
ontime7	30082.5	Sum of GTIs [s]
ontime8	30082.5	Sum of GTIs [s]
ontime9	30082.5	Sum of GTIs [s]
l2events	349957	Number of level 2 events



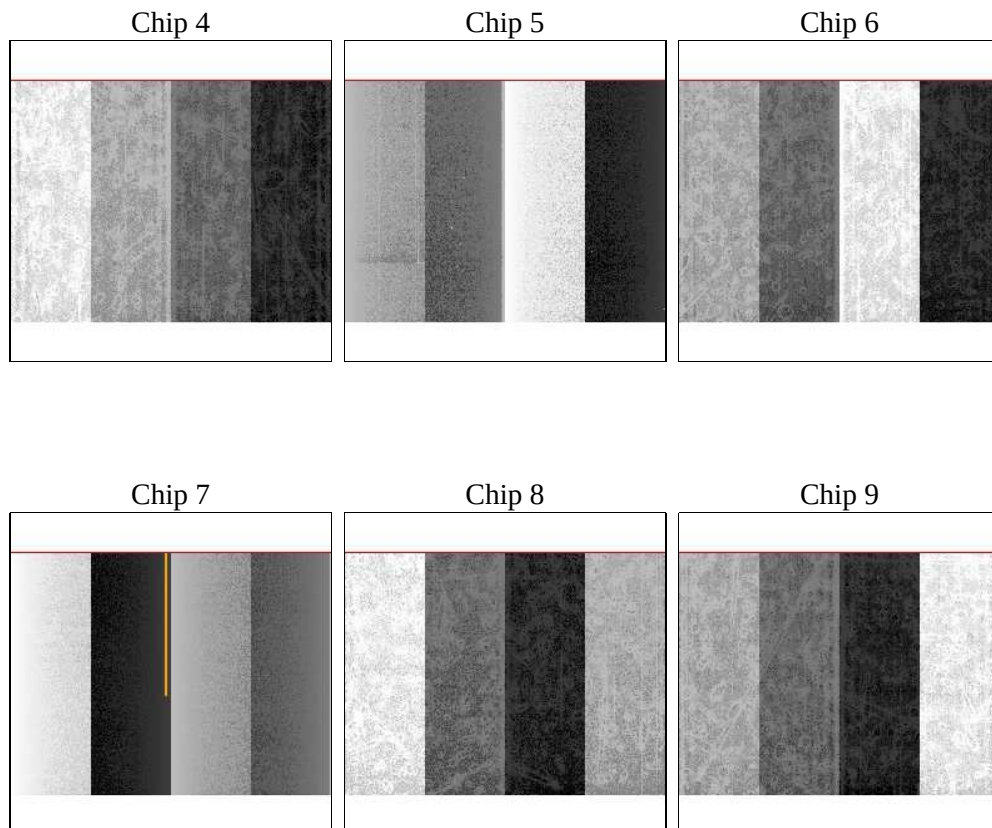
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.5	Processing system revision	ontime	30082.5	Sum of GTIs [s]
caldsver	4.7.2	 	ontime4	30082.5	Sum of GTIs [s]
date	2016-06-28T05:23:41	Date and time of file creation	ontime5	30082.5	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	30082.5	Sum of GTIs [s]
			ontime7	30082.5	Sum of GTIs [s]
			ontime8	30082.5	Sum of GTIs [s]
			ontime9	30082.5	Sum of GTIs [s]
			l1events	1187142	Number of level 1 events
			tgmeth	FINDZO	Method used to create src1a file
				64111.27	

2.1.4 Events

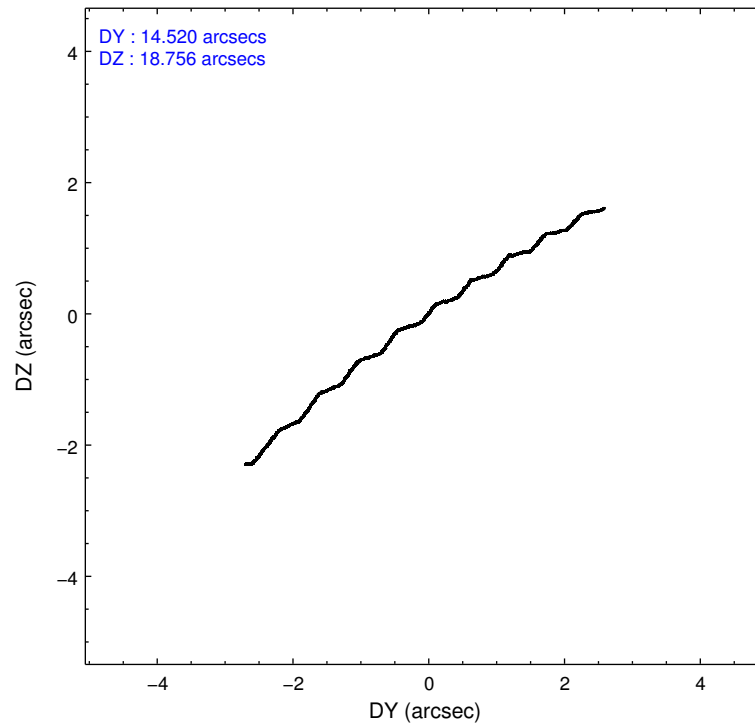
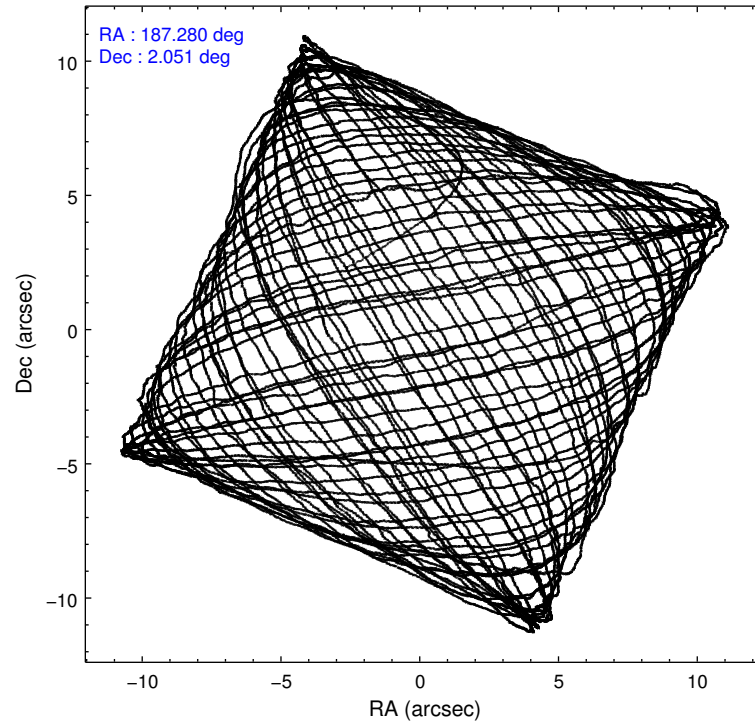
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	167137	233616	190099	235778	206704	153808	grade 0 events	8686	10184	45466	17169	26470	8404
rejected events	146638	117916	125034	109984	140779	133445		5%	4%	23%	7%	12%	5%
rejected %	87%	50%	65%	46%	68%	86%	grade 1 events	133	591	247	544	160	71
								0%	0%	0%	0%	0%	0%
							grade 2 events	4656	36428	8100	28171	13859	4183
								2%	15%	4%	11%	6%	2%
							grade 3 events	2129	4760	3114	11596	5636	1960
								1%	2%	1%	4%	2%	1%
							grade 4 events	1880	4432	3145	11320	5581	2026
								1%	1%	1%	4%	2%	1%
							grade 5 events	7306	17165	7186	20311	10372	7698
								4%	7%	3%	8%	5%	5%
							grade 6 events	3151	59917	5255	57557	14385	3791
								1%	25%	2%	24%	6%	2%
							grade 7 events	139196	100139	117586	89110	130241	125675
								83%	42%	61%	37%	63%	81%

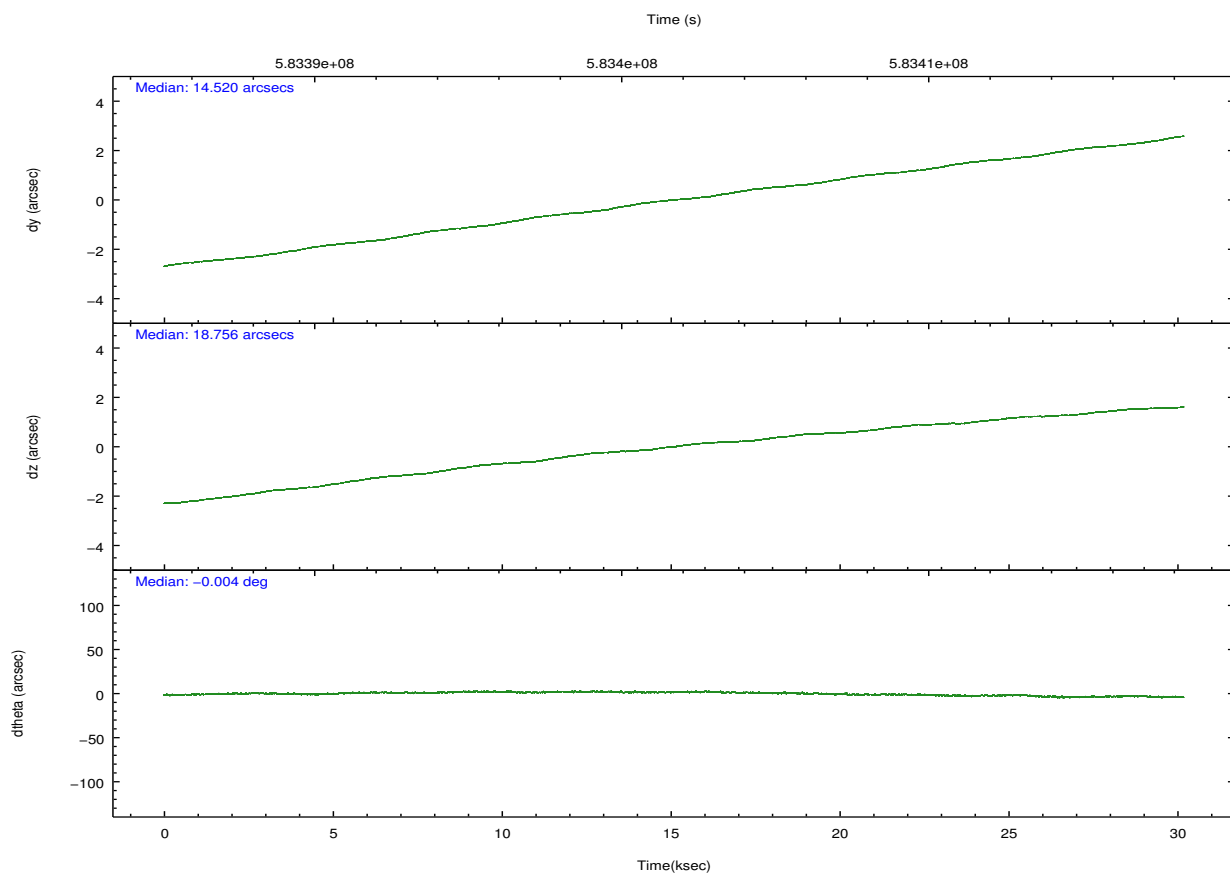
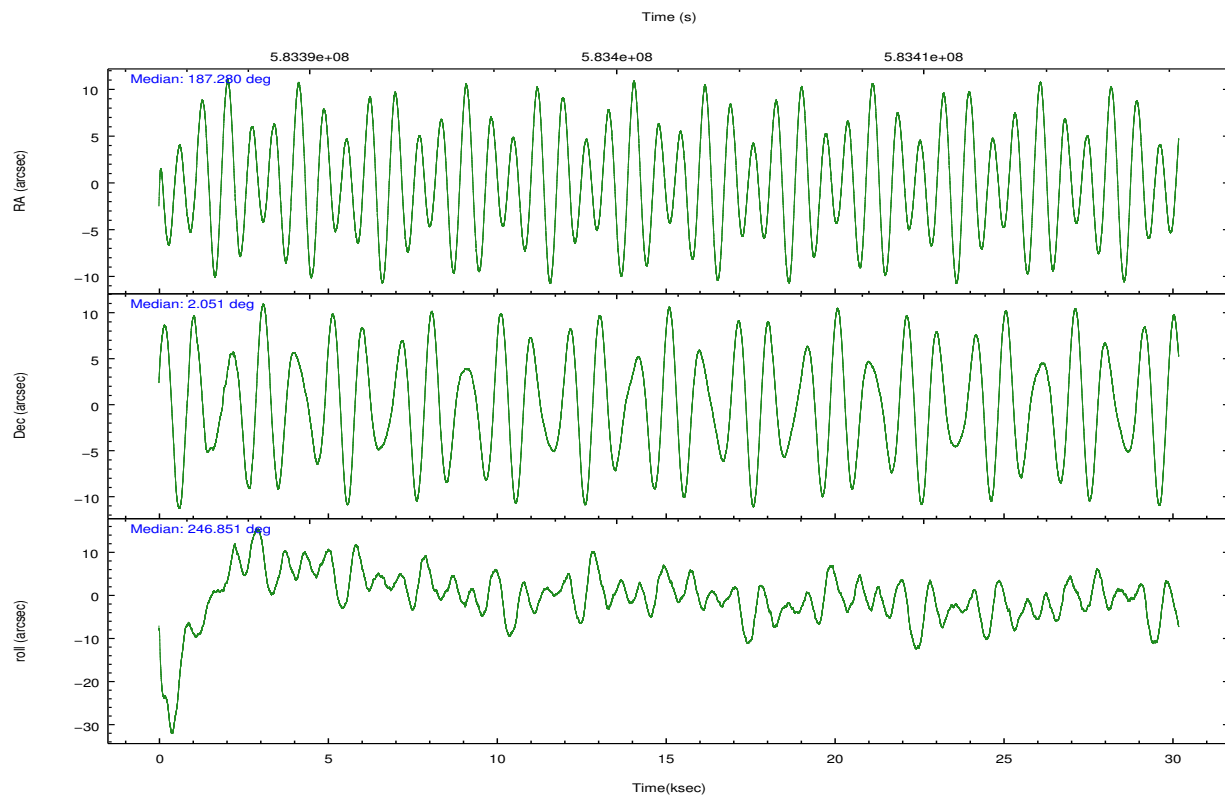
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	187.276428	187.2800554577531
[deg] Pointing Dec	2.078304	2.051121877383756
[deg] Pointing Roll	246.703934	246.8604338250305
[s] Window start time (MET)	581126468.184000	581126468.184000
[s] Window stop time (MET)	586310468.184000	586310468.184000
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1425803651734
[mm] SIM translation stage offset	0	0.01005778216563158
[s] Observation start time (MET)	583386794.184000	583385484.6661299
Observation start date	2016-06-27T03:52:06	2016-06-27T03:31:24
[s] Observation end time (MET)	583416794.184000	583417417.51796
Observation end date	2016-06-27T12:12:06	2016-06-27T12:23:37
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	N	N
CCD I3 on	N	N
CCD S0 on	O1	Y
CCD S1 on	Y	Y
CCD S2 on	Y	Y
CCD S3 on	Y	Y
CCD S4 on	Y	Y
CCD S5 on	O2	Y
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	CUSTOM
Subarray start row	125	125
Subarray row count	774	774
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	2.5

2.3 Aspect



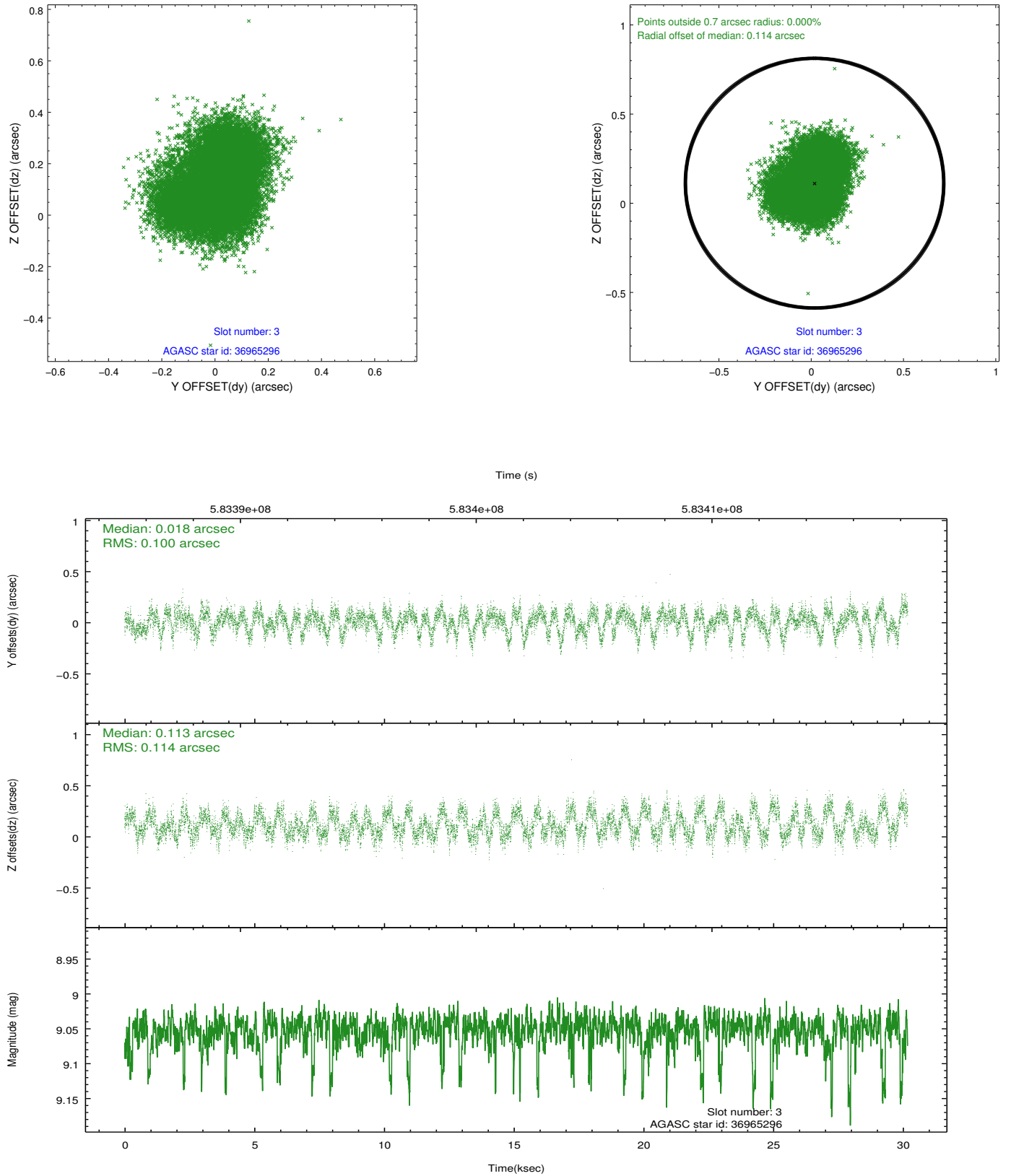


Slot Statistics

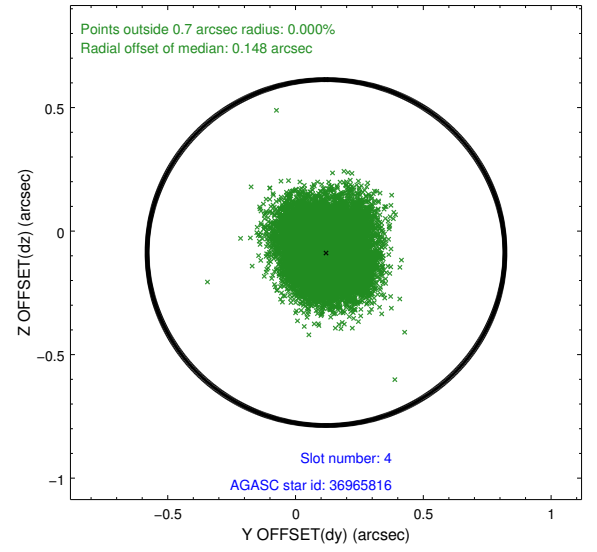
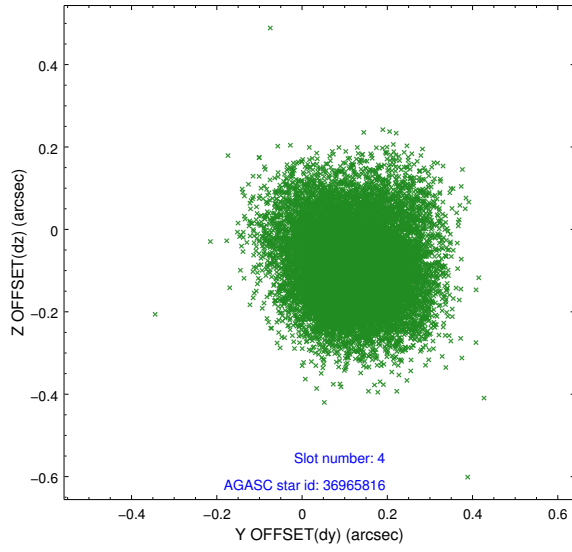
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.11	7363	-0.174	-0.114	0.055	0.069	0.000000	0.000000	-767.58	-1740.17
1	FID		ACIS-S-4	7.22	7362	0.451	0.119	0.039	0.101	0.000000	0.000000	2146.25	168.48
2	FID		ACIS-S-5	7.22	7363	-0.295	0.009	0.032	0.051	0.000000	0.000000	-1820.48	162.10
3	GUIDE	used	36965296	9.05	14708	0.018	0.113	0.165	0.247	186.926292	1.837429	1295.17	-814.26
4	GUIDE	used	36965816	9.24	14674	0.119	-0.087	0.136	0.221	186.823353	1.771455	1659.97	-1060.41
5	GUIDE	used	36965896	9.65	14709	-0.169	-0.096	0.202	0.306	187.153754	1.617178	1699.63	251.24
6	GUIDE	used	37356352	7.72	14719	-0.178	-0.095	0.119	0.183	187.433784	2.618460	-2009.44	-249.65
7	GUIDE	used	37883040	9.94	14692	0.225	0.140	0.219	0.352	187.575516	1.280402	2213.07	2125.33

2.4 Star Slots

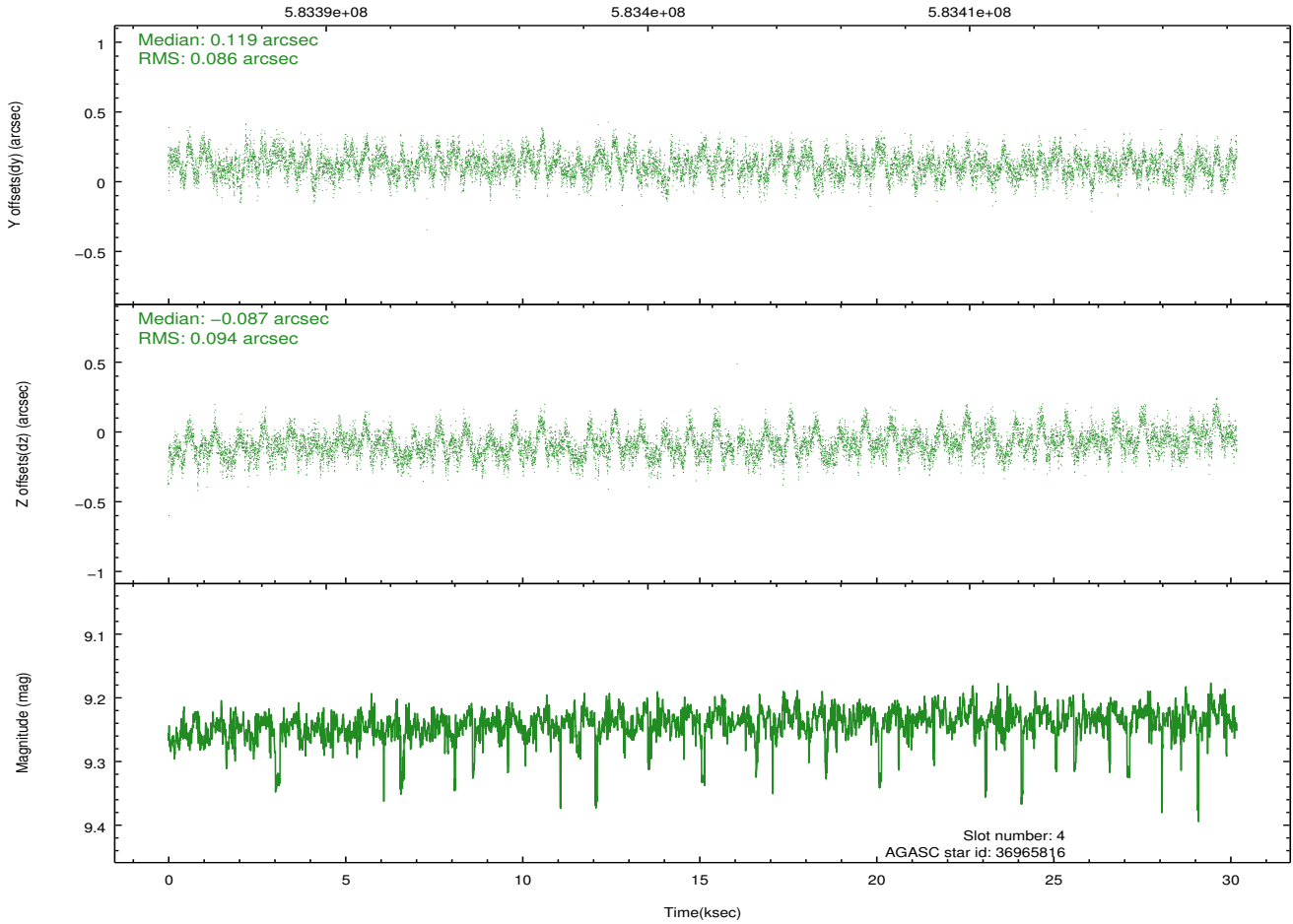
2.4.1 Slot 3



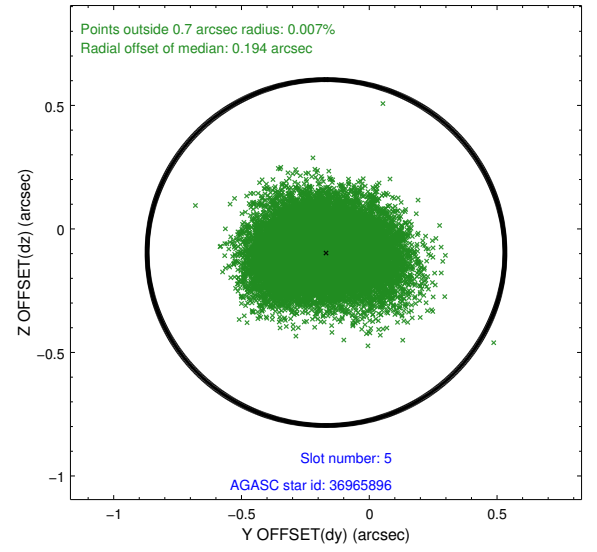
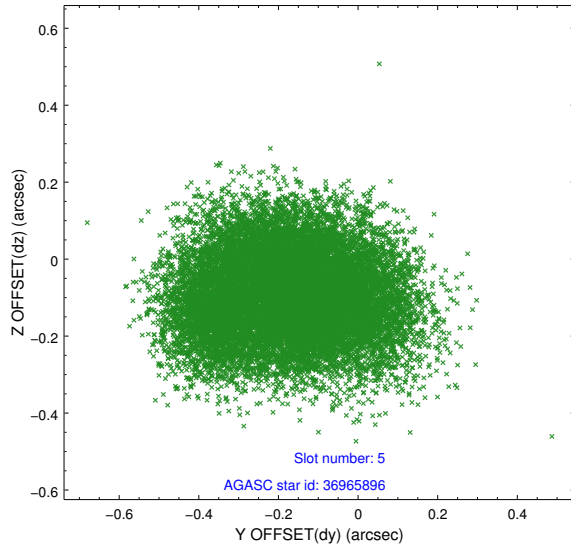
2.4.2 Slot 4



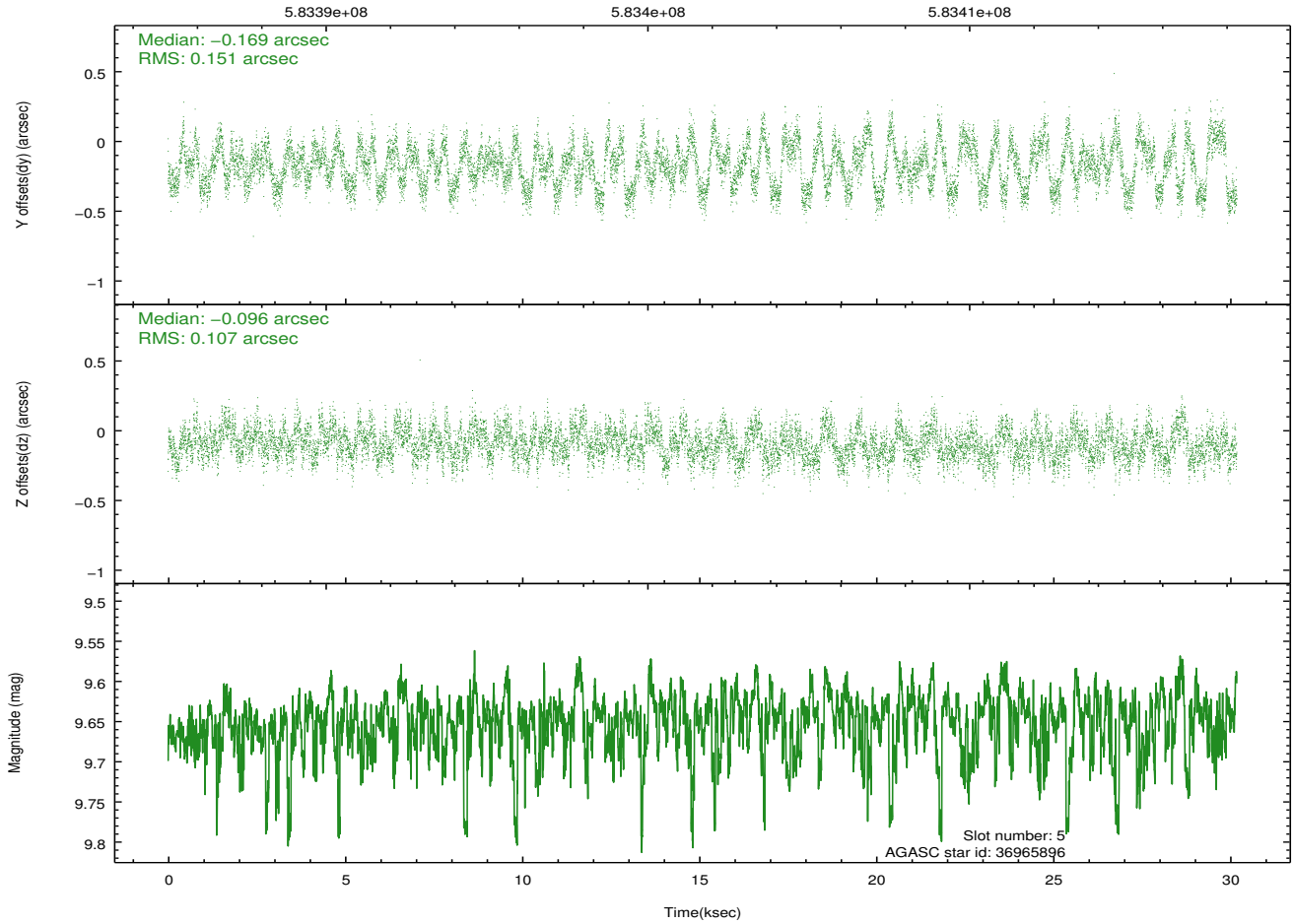
Time (s)



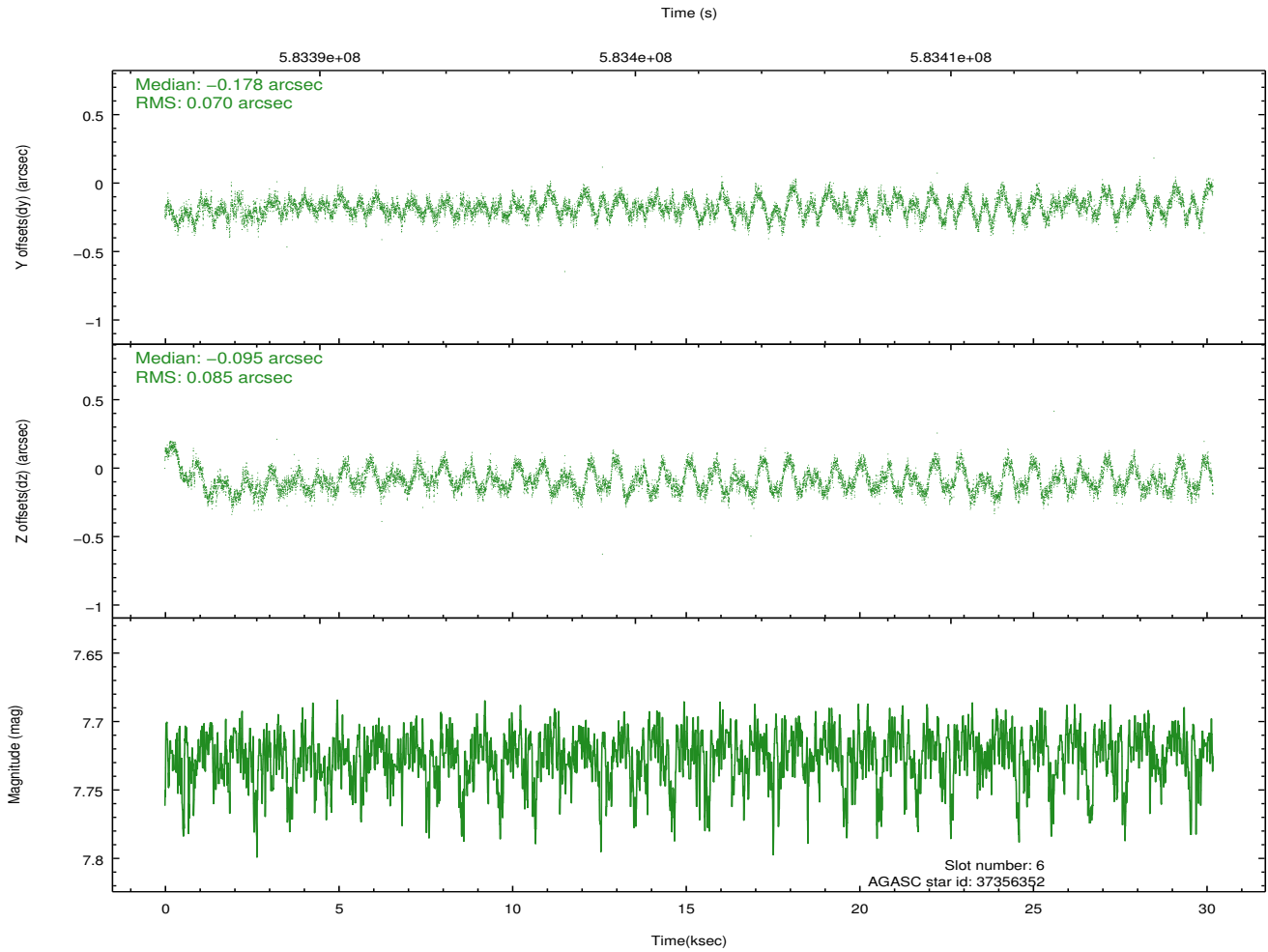
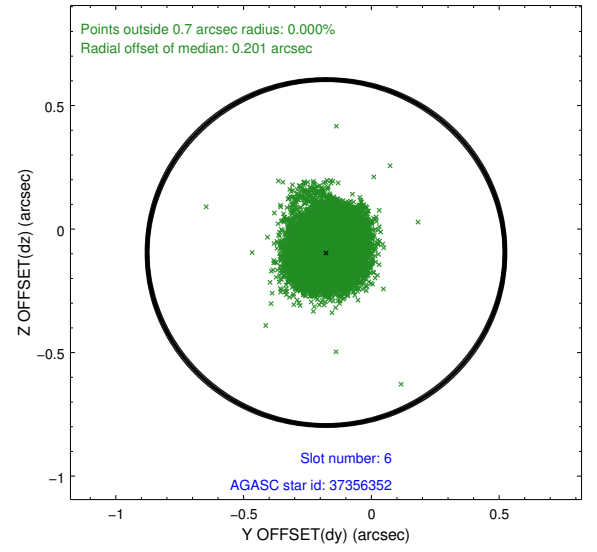
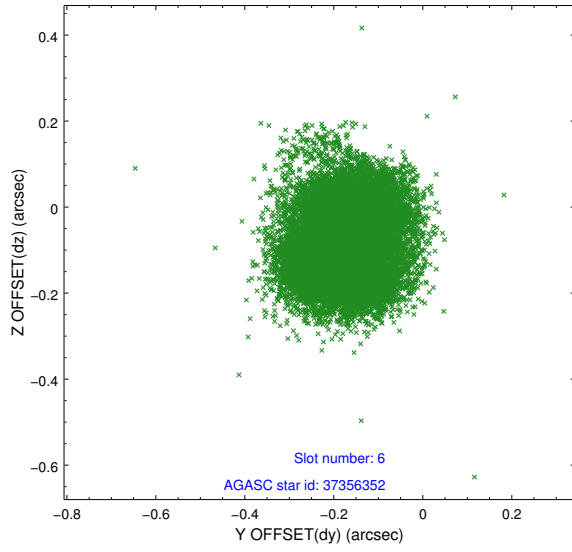
2.4.3 Slot 5



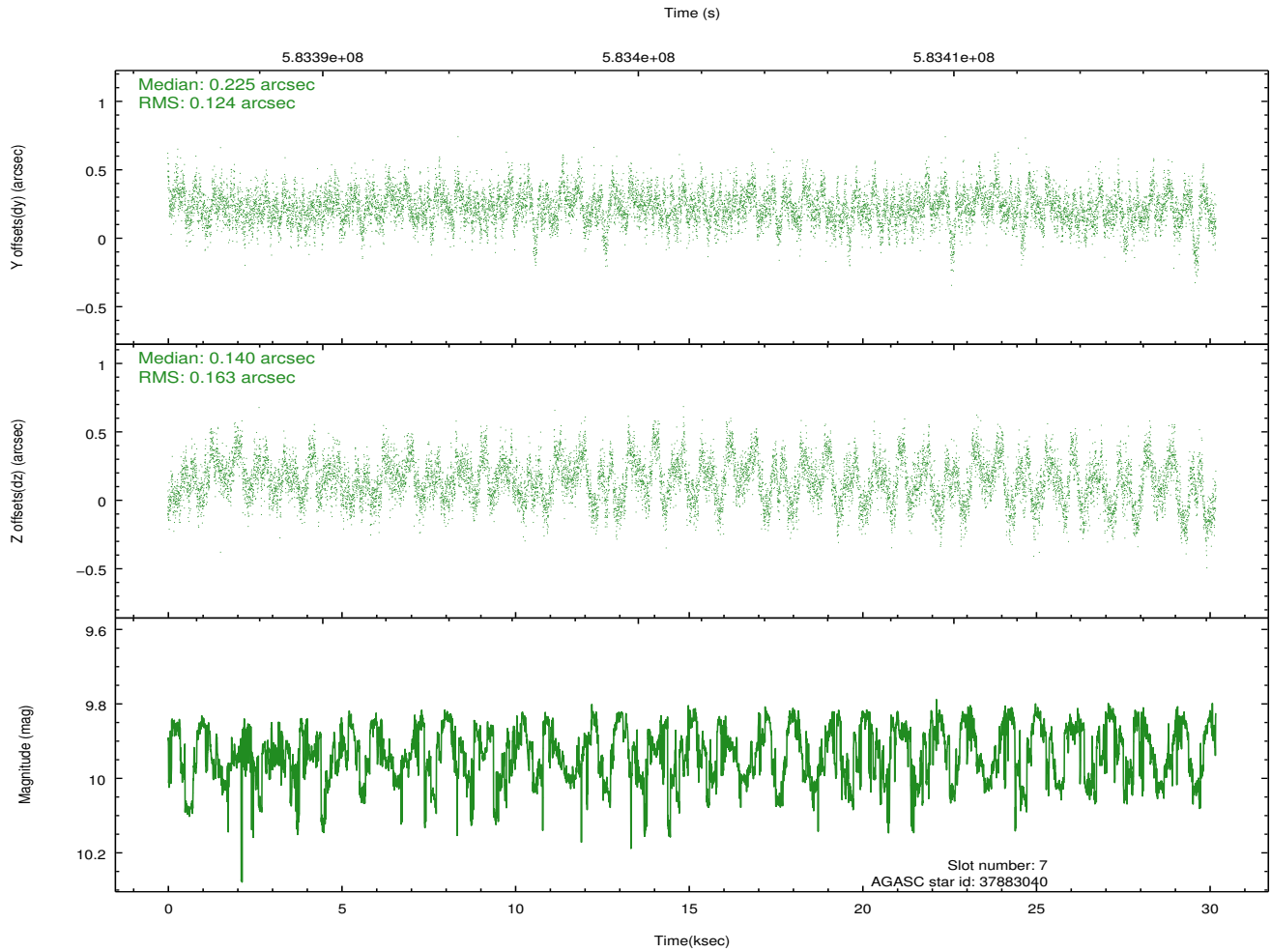
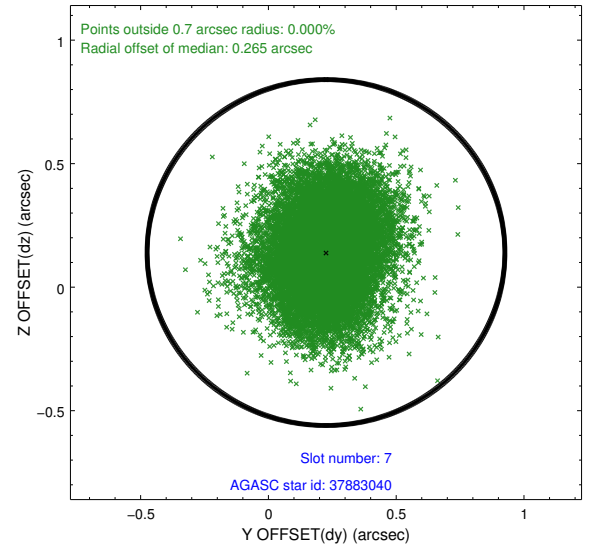
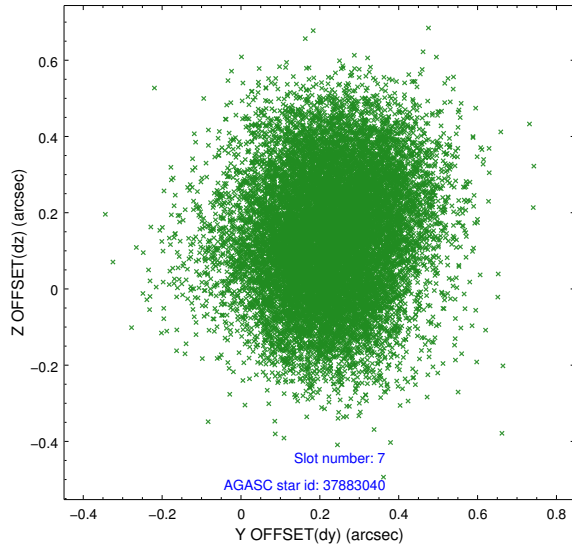
Time (s)



2.4.4 Slot 6

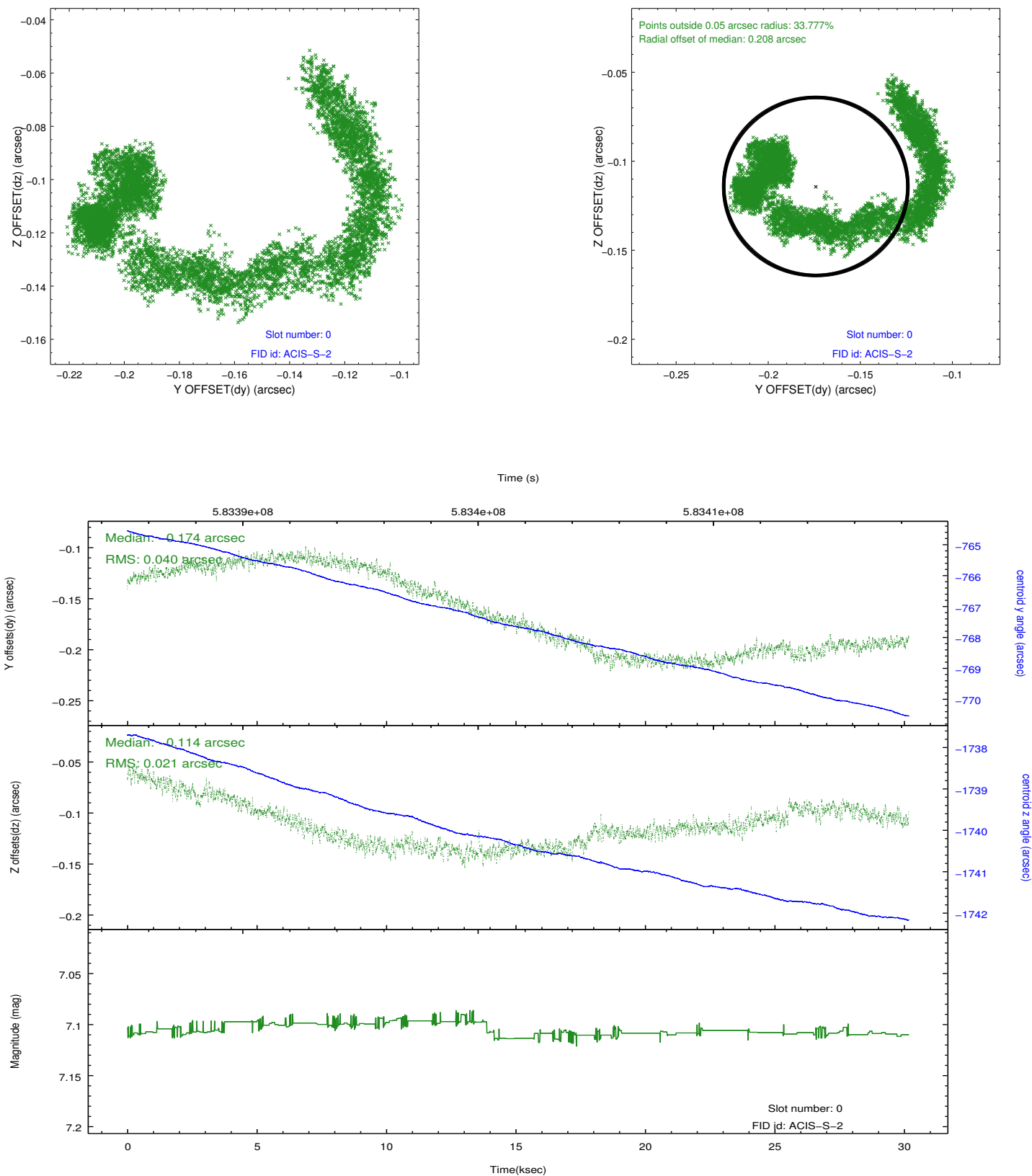


2.4.5 Slot 7

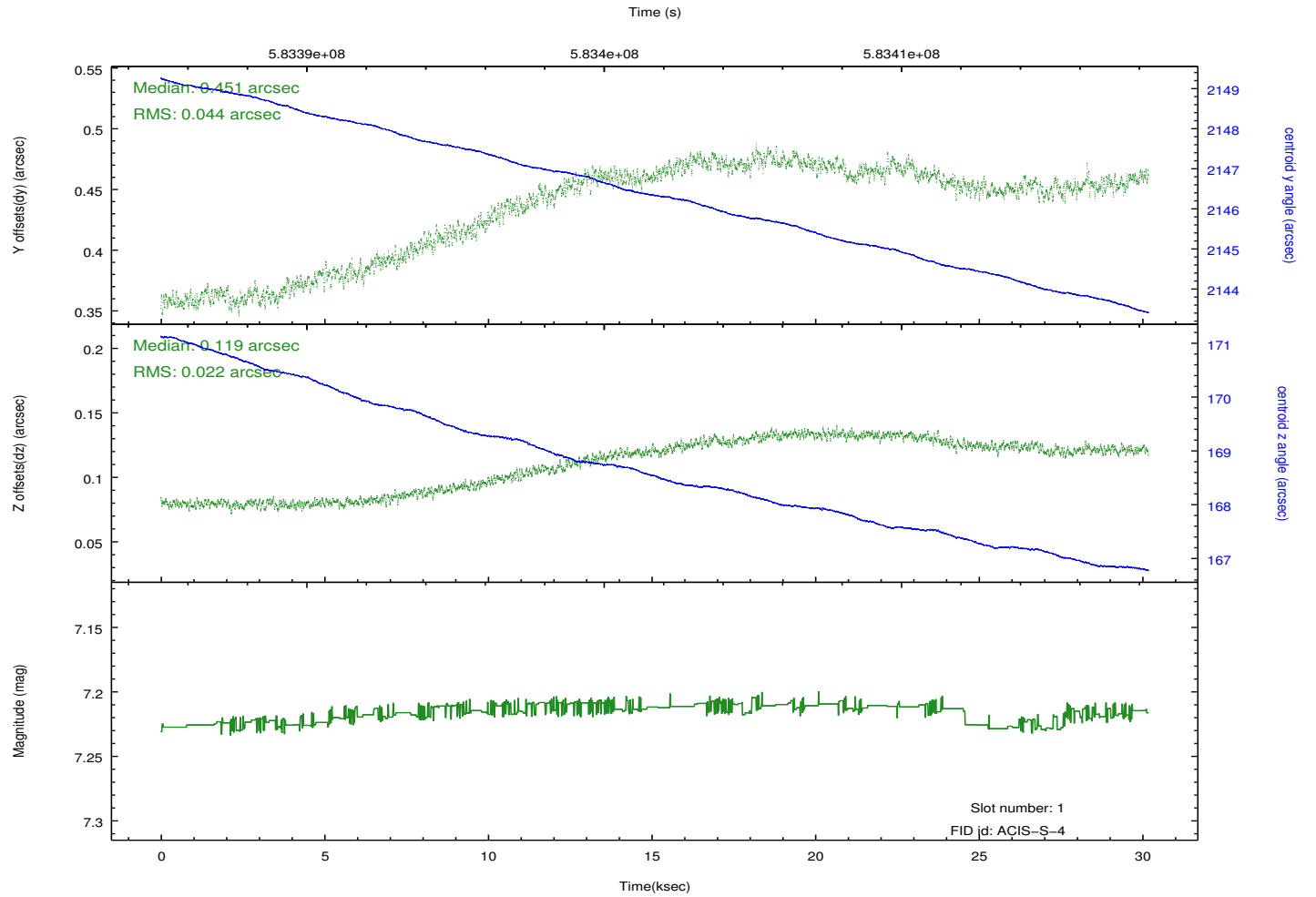
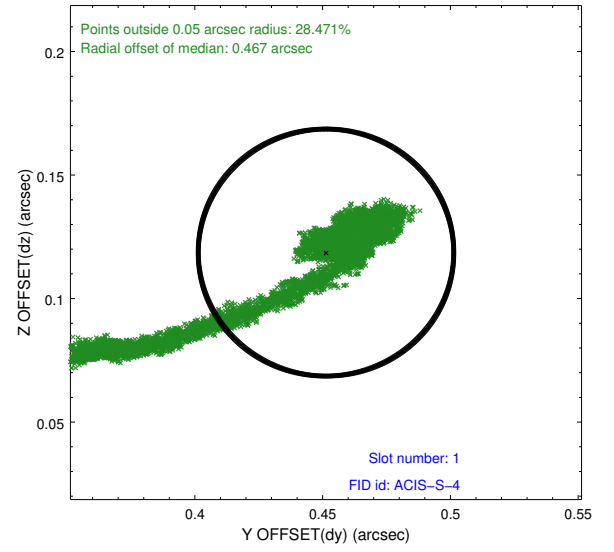
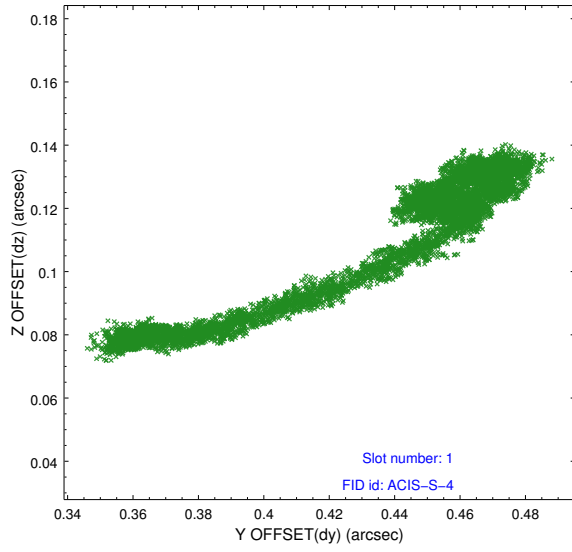


2.5 FID Slots

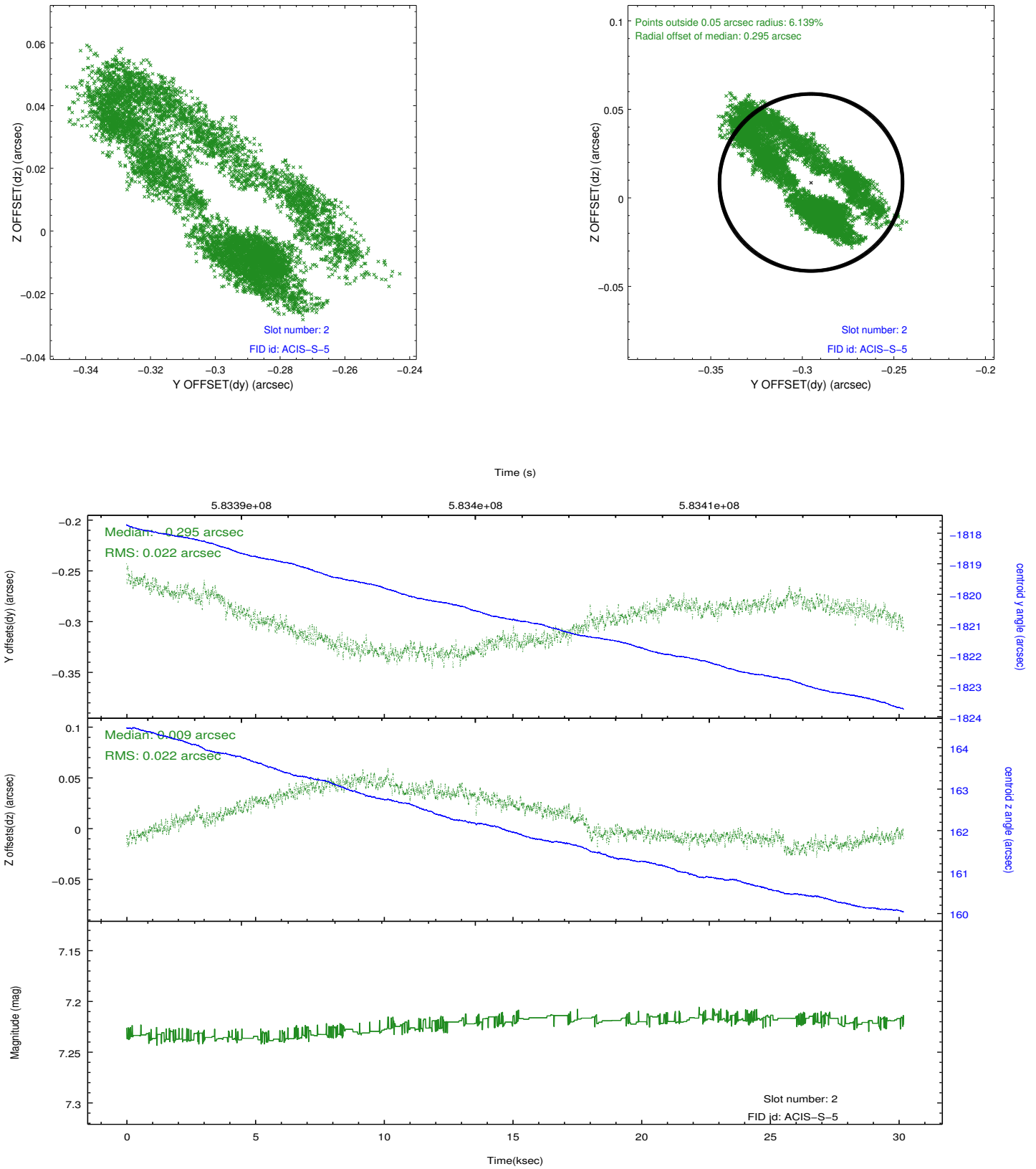
2.5.1 Slot 0



2.5.2 Slot 1

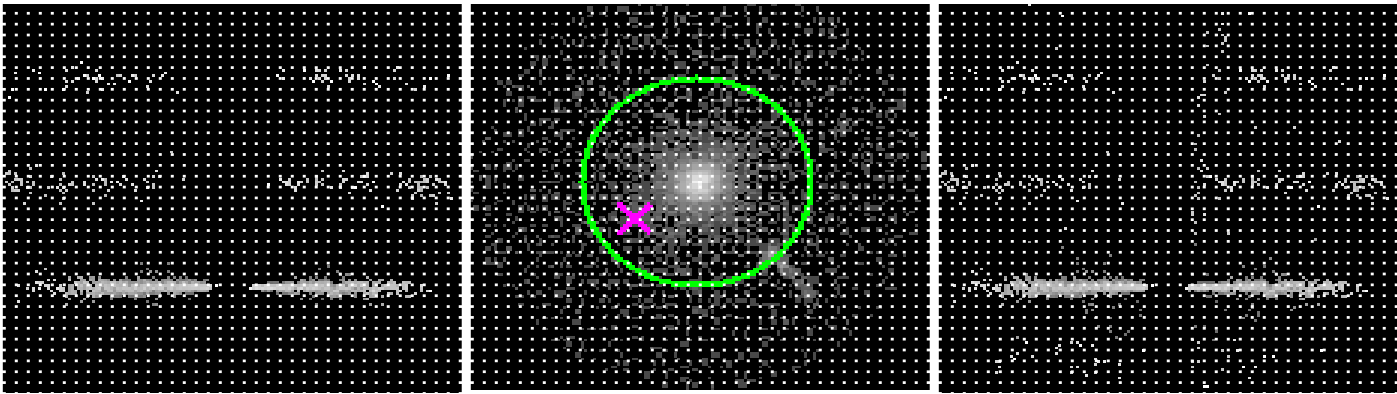


2.5.3 Slot 2



3 Gratings

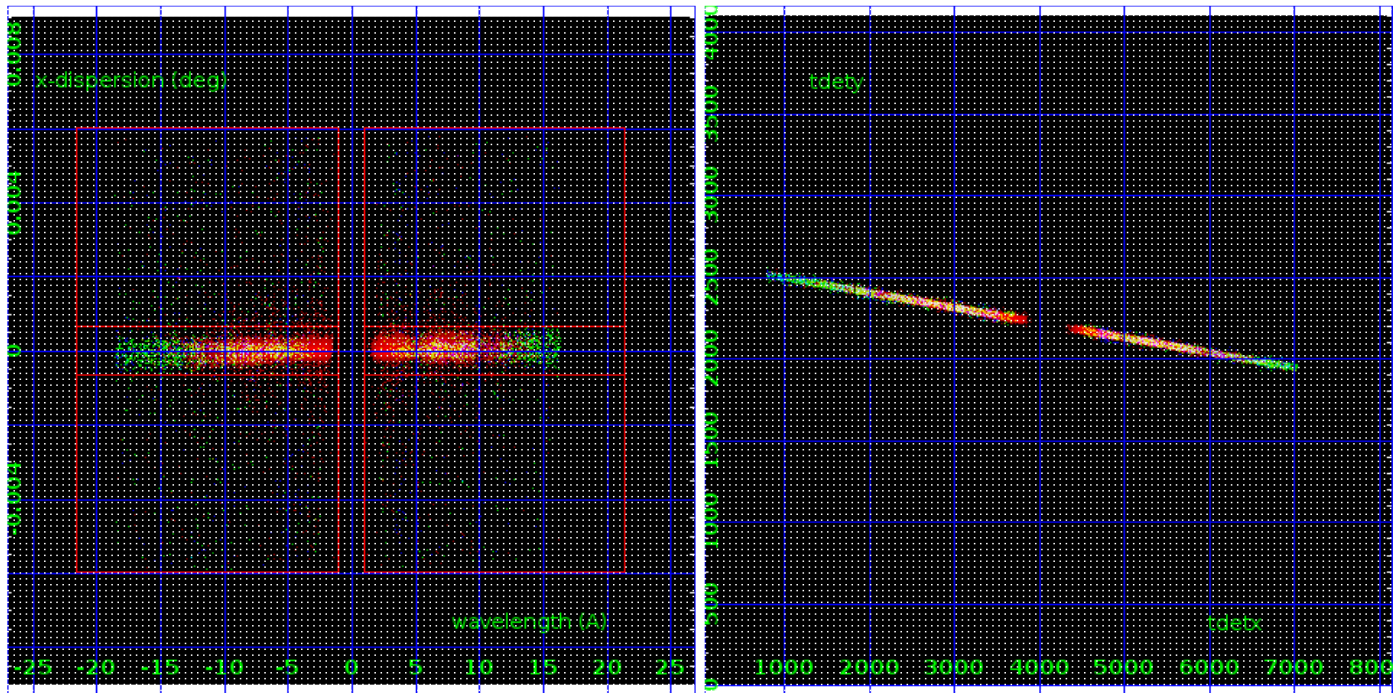
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

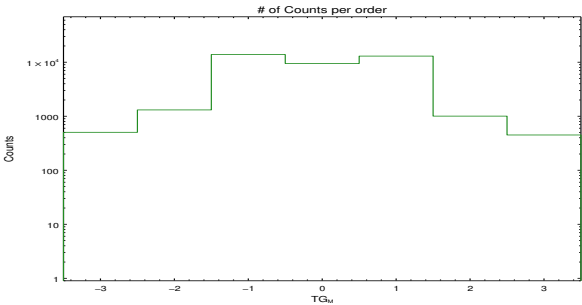
HEG Order Sort ALL

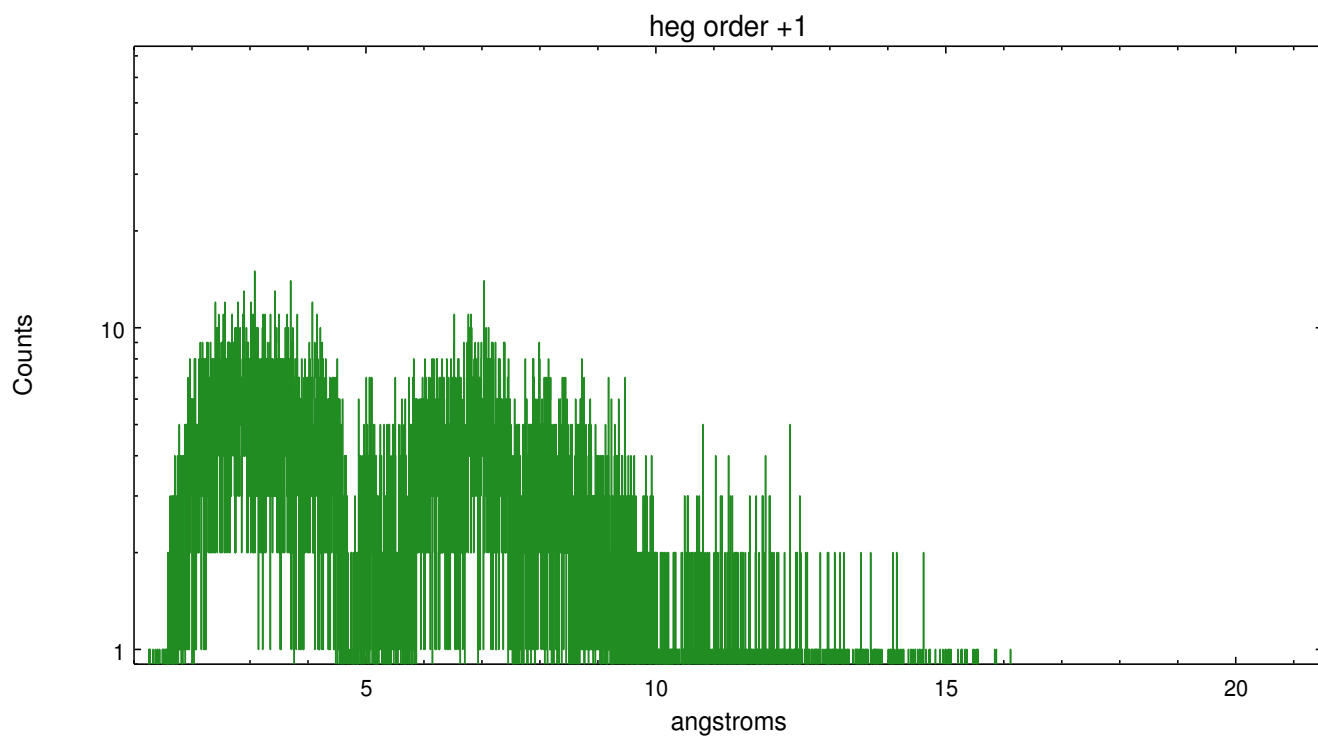
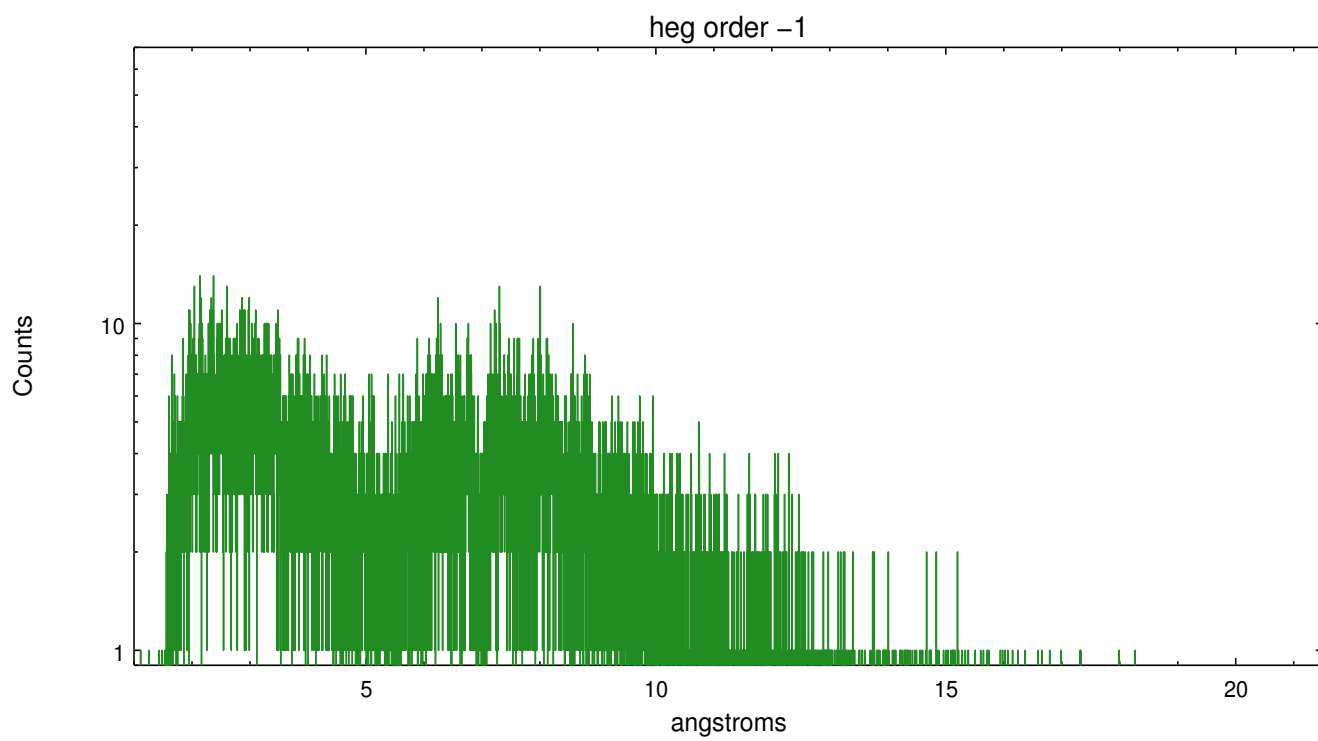


Spot Image HEG

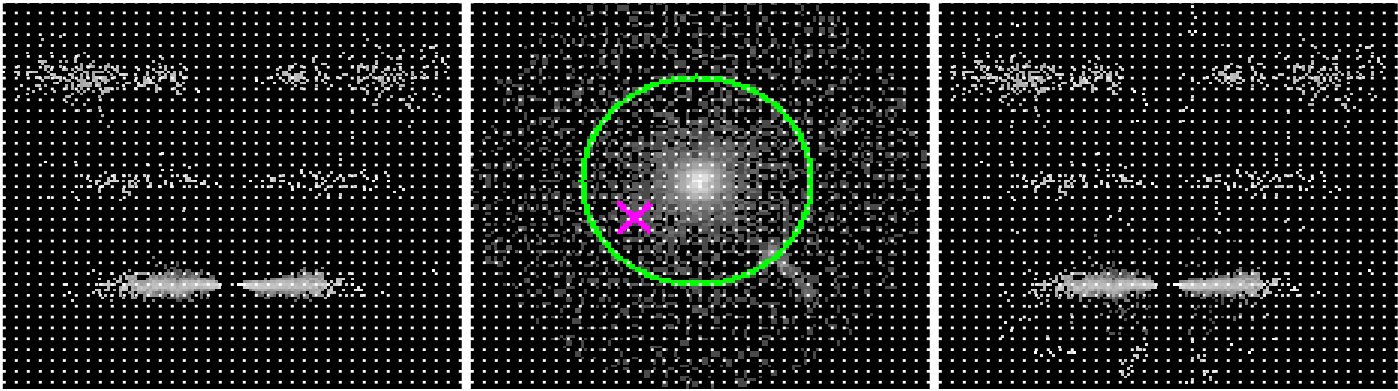
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	504	1310	13871	9465	12983	1005	450





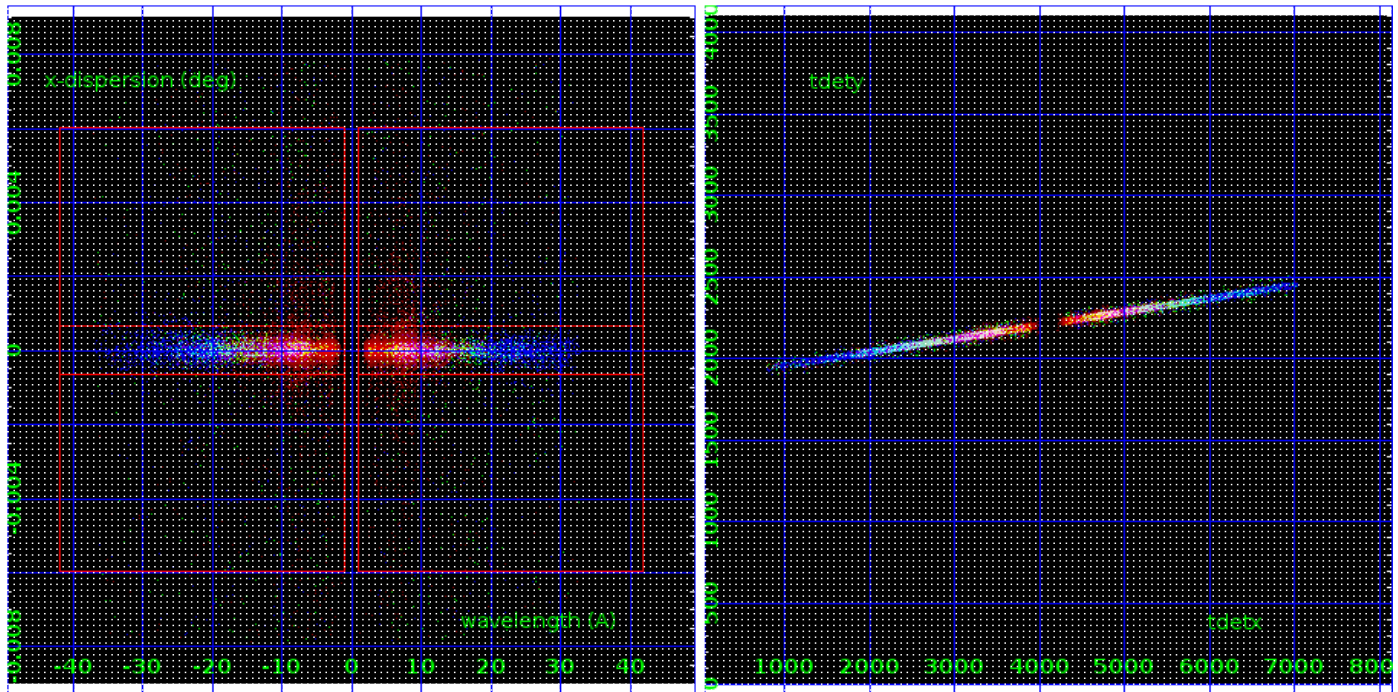
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

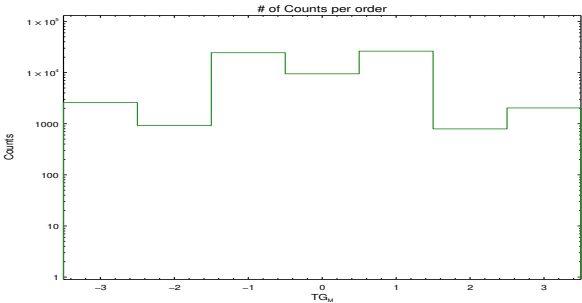
MEG Order Sort ALL

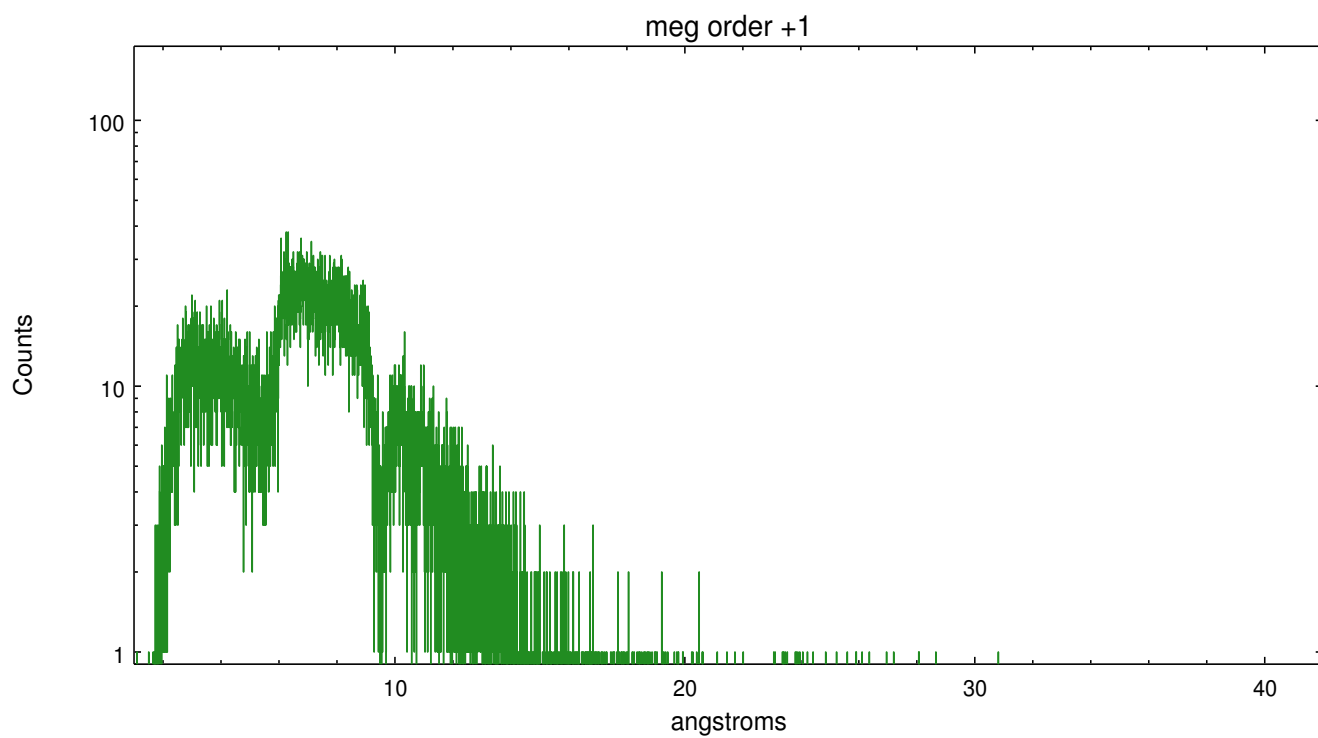
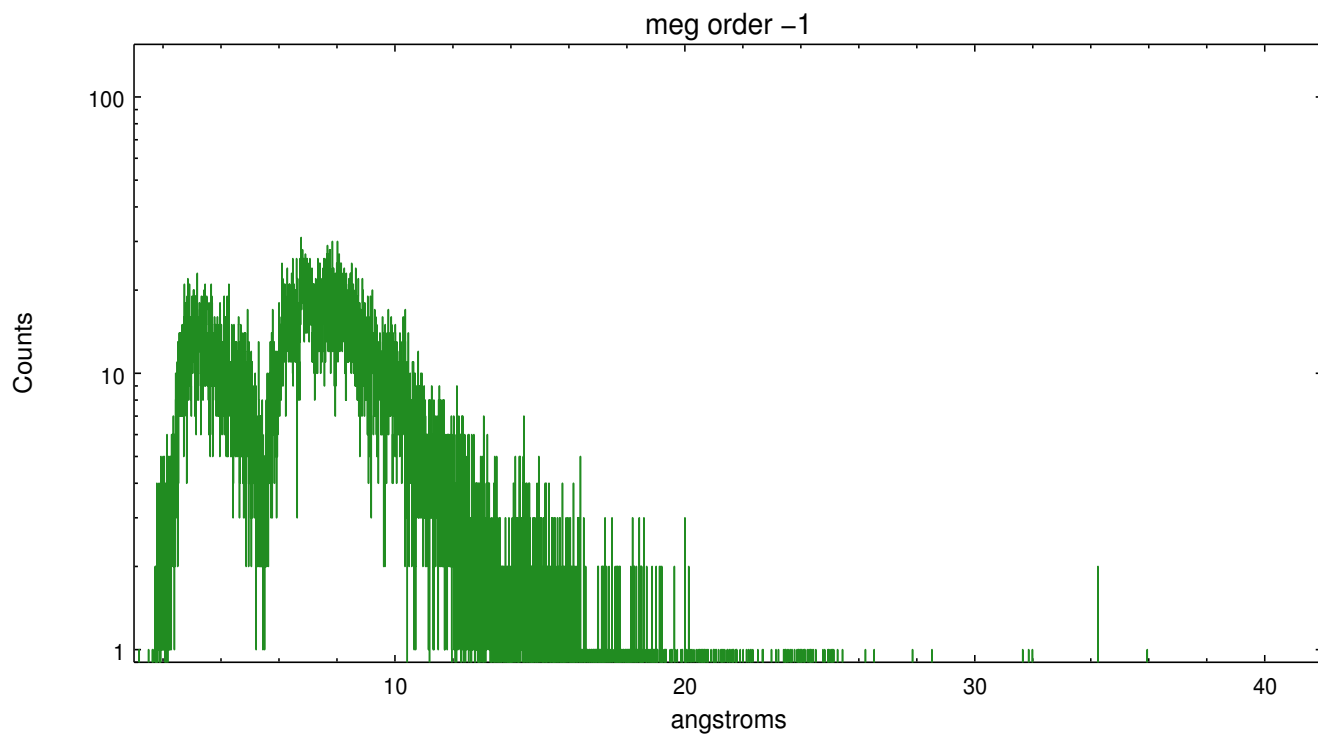


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2588	926	24466	9465	26248	792	2036





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2016.06.28
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.0825

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.