

V&V Reference Report

L2 ASCDS Version : 10.5.2

Observation 18849 - L2 Version 1
Chandra X-Ray Center

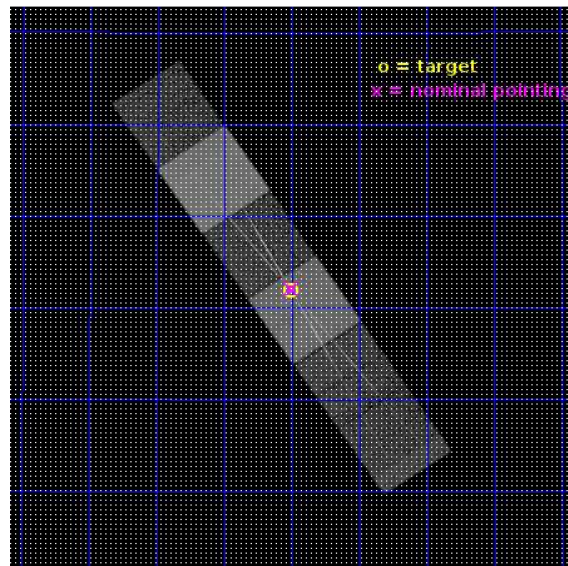
L2 Processing Date : Nov 10 2016

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1 Front

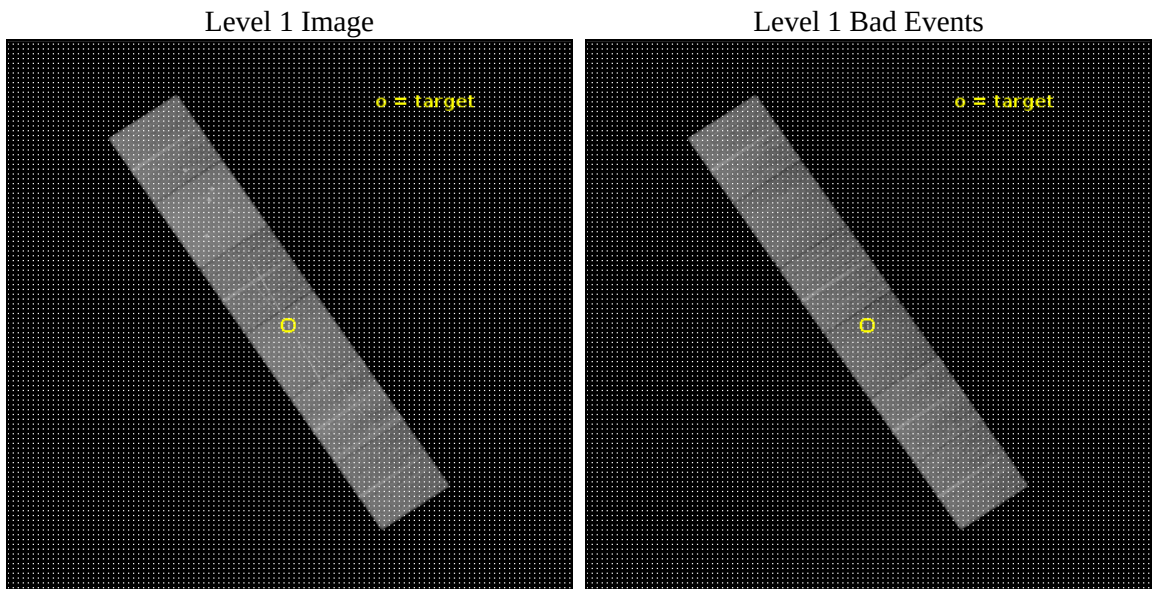
seq_num	703292	Sequence number
obs_id	18849	Observation id
title	Chandra-HETG Observations of NGC 3227	Proposal title
observer	Claude Canizares	Principal investigator
object	NGC 3227	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	155.8775	Observer's specified target RA [deg]
dec_targ	19.865056	Observer's specified target Dec [deg]
ra_nom	155.87587197933	Nominal RA [deg]
dec_nom	19.86792947795	Nominal Dec [deg]
roll_nom	56.157181450721	Nominal Roll [deg]
revision	1	Processing version of data
ontime	29929.176793814	Sum of GTIs [s]
livetime	29550.195536064	Livetime [s]
ontime4	29929.217833757	Sum of GTIs [s]
ontime5	29929.135753751	Sum of GTIs [s]
ontime6	29925.853713393	Sum of GTIs [s]
ontime7	29929.176793814	Sum of GTIs [s]
ontime8	29929.053673744	Sum of GTIs [s]
ontime9	29929.012633801	Sum of GTIs [s]
l2events	370464	Number of level 2 events



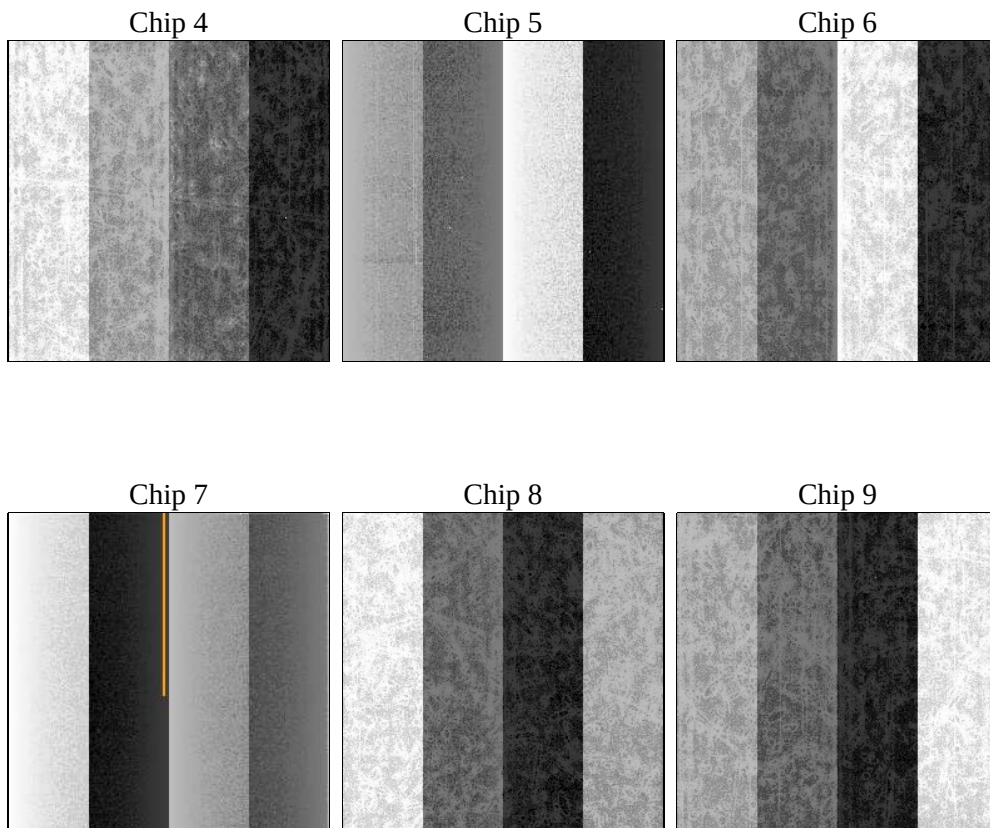
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	10.5.2	Processing system revision	ontime	29929.176793814	Sum of GTIs [s]
caldsver	4.7.2	 	ontime4	29929.217833757	Sum of GTIs [s]
date	2016-11-10T20:58:11	Date and time of file creation	ontime5	29929.135753751	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	29925.853713393	Sum of GTIs [s]
			ontime7	29929.176793814	Sum of GTIs [s]
			ontime8	29929.053673744	Sum of GTIs [s]
			ontime9	29929.012633801	Sum of GTIs [s]
			l1events	1558101	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			src1a_pos	(4086.16, 4075.24)	src1a sky pixel position

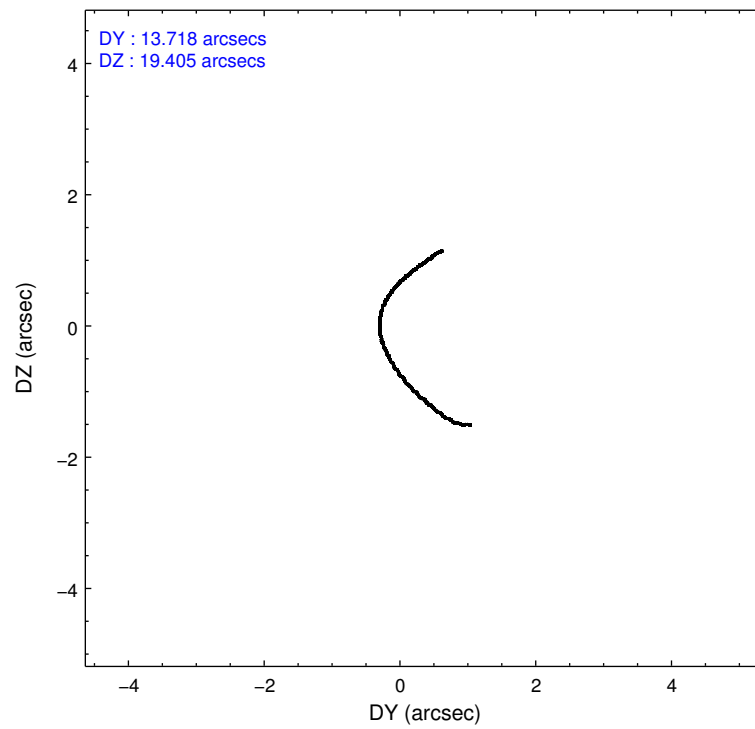
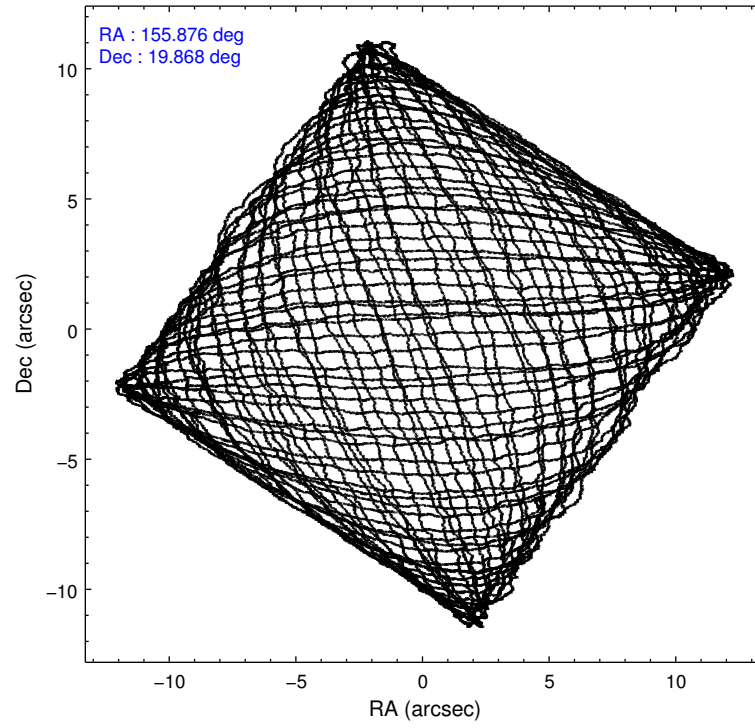
2.1.4 Events

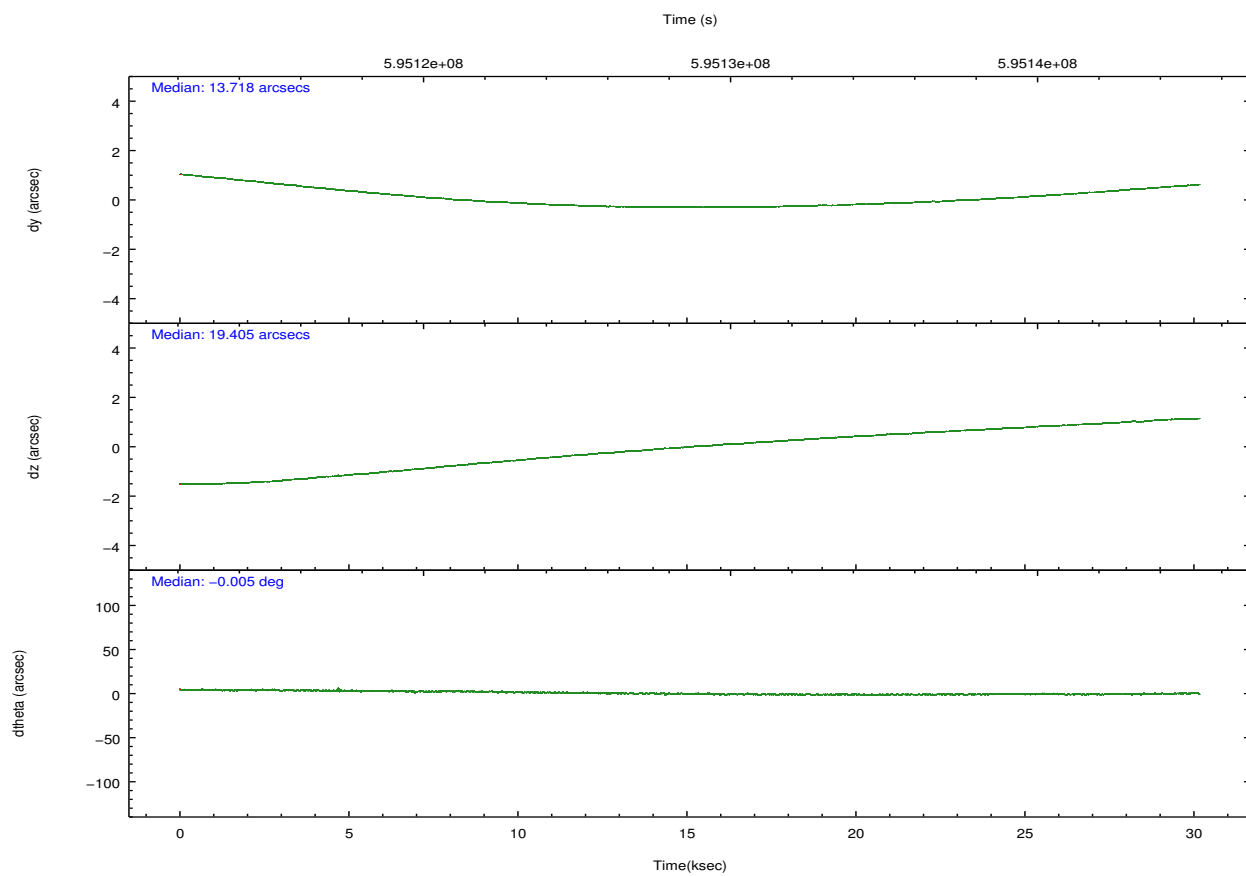
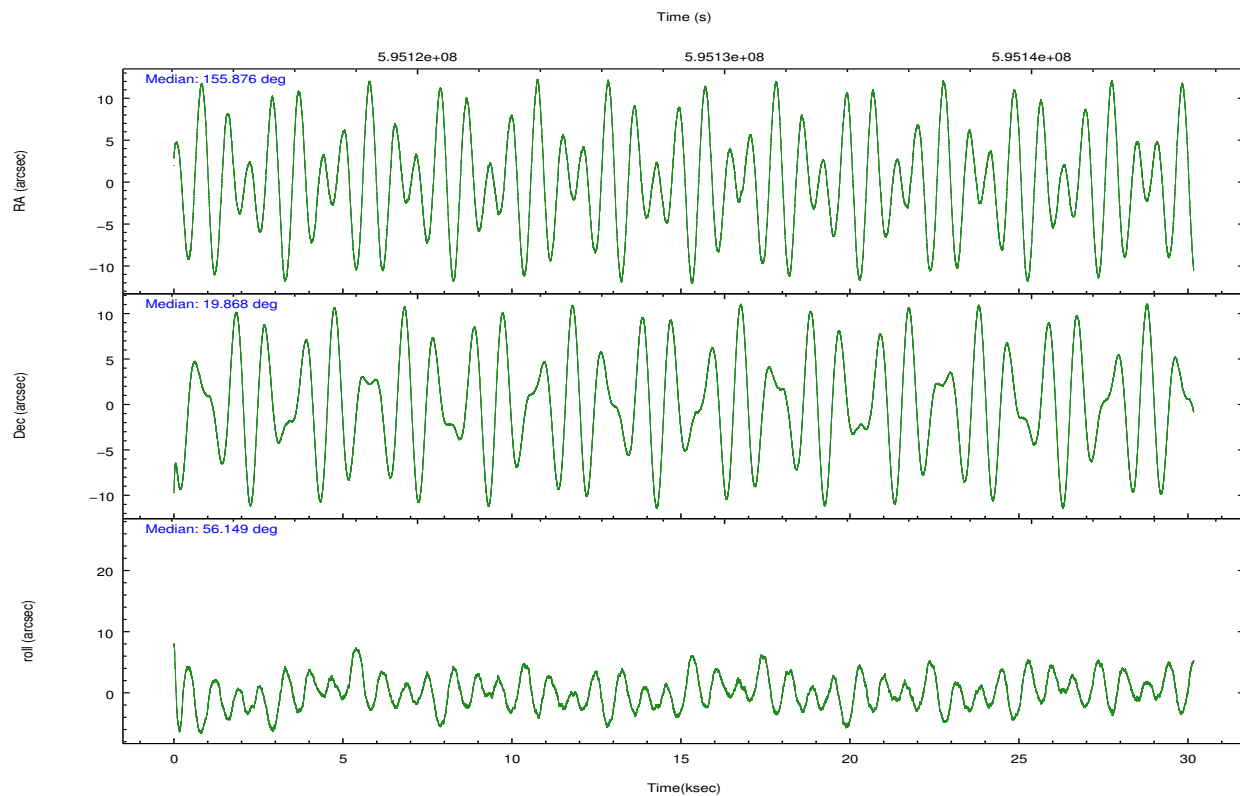
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	237379	328902	219324	281114	278926	212456	grade 0 events	10756	15653	14374	12659	22555	8757
rejected events	211131	167773	187369	151116	203699	187479		4%	4%	6%	4%	8%	4%
rejected %	88%	51%	85%	53%	73%	88%	grade 1 events	194	819	125	511	244	111
								0%	0%	0%	0%	0%	0%
							grade 2 events	5980	49439	6619	28198	18136	5681
								2%	15%	3%	10%	6%	2%
							grade 3 events	2675	4860	2566	10543	7628	2564
								1%	1%	1%	3%	2%	1%
							grade 4 events	2511	4636	2495	10193	6969	2454
								1%	1%	1%	3%	2%	1%
							grade 5 events	9828	22213	9269	26681	14456	10800
								4%	6%	4%	9%	5%	5%
							grade 6 events	4331	86574	5908	68431	19946	5528
								1%	26%	2%	24%	7%	2%
							grade 7 events	201104	144708	177968	123898	188992	176561
								84%	43%	81%	44%	67%	83%

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	155.874295	155.8758719793287	CCD I2 on	N	N
[deg] Pointing Dec	19.840532	19.86792947795037	CCD I3 on	N	N
[deg] Pointing Roll	56.001091	56.15718145072117	CCD S0 on	O1	Y
[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	-190.132523	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	Y	Y
[s] Observation start time (MET)	595113746.184000	595112519.56568	CCD S5 on	O2	Y
Observation start date	2016-11-09T21:21:18	2016-11-09T21:01:59	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	595143746.184000	595144412.44252	On-chip summing requested	N	N
Observation end date	2016-11-10T05:41:18	2016-11-10T05:53:32	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect



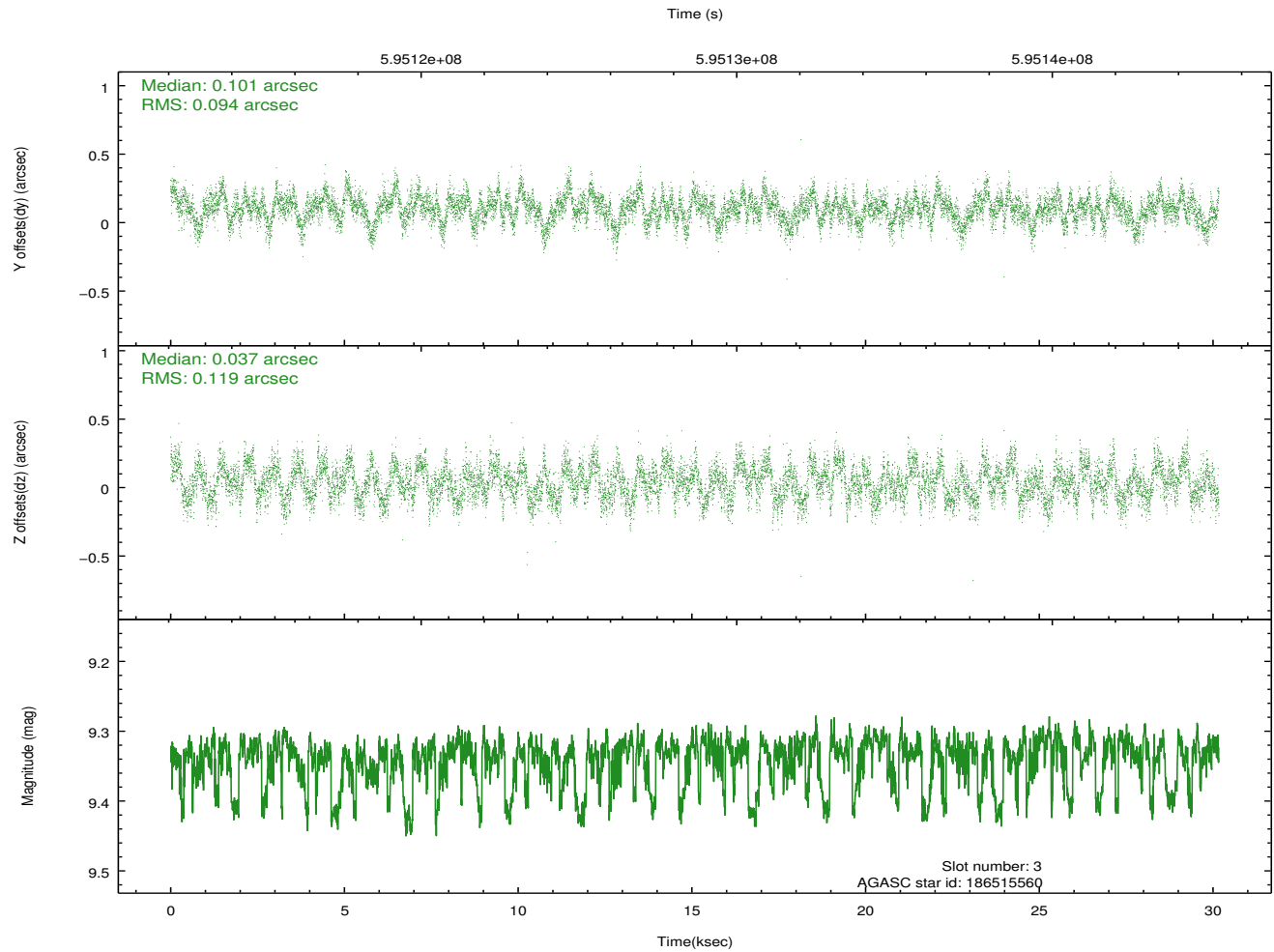
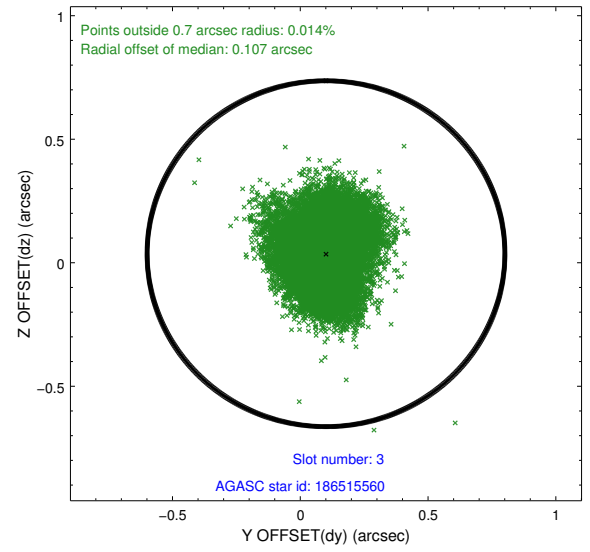
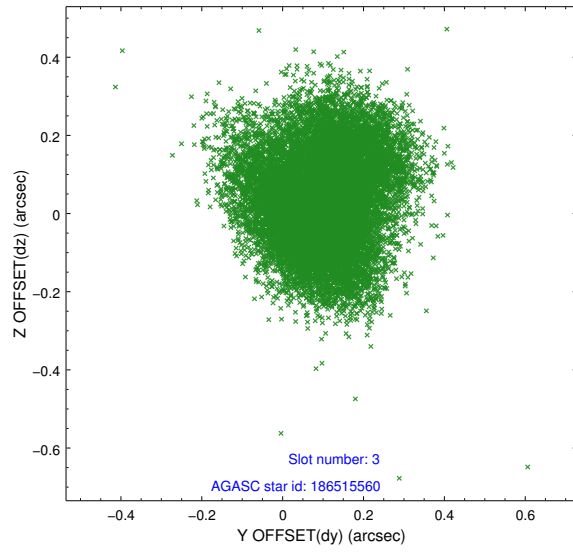


Slot Statistics

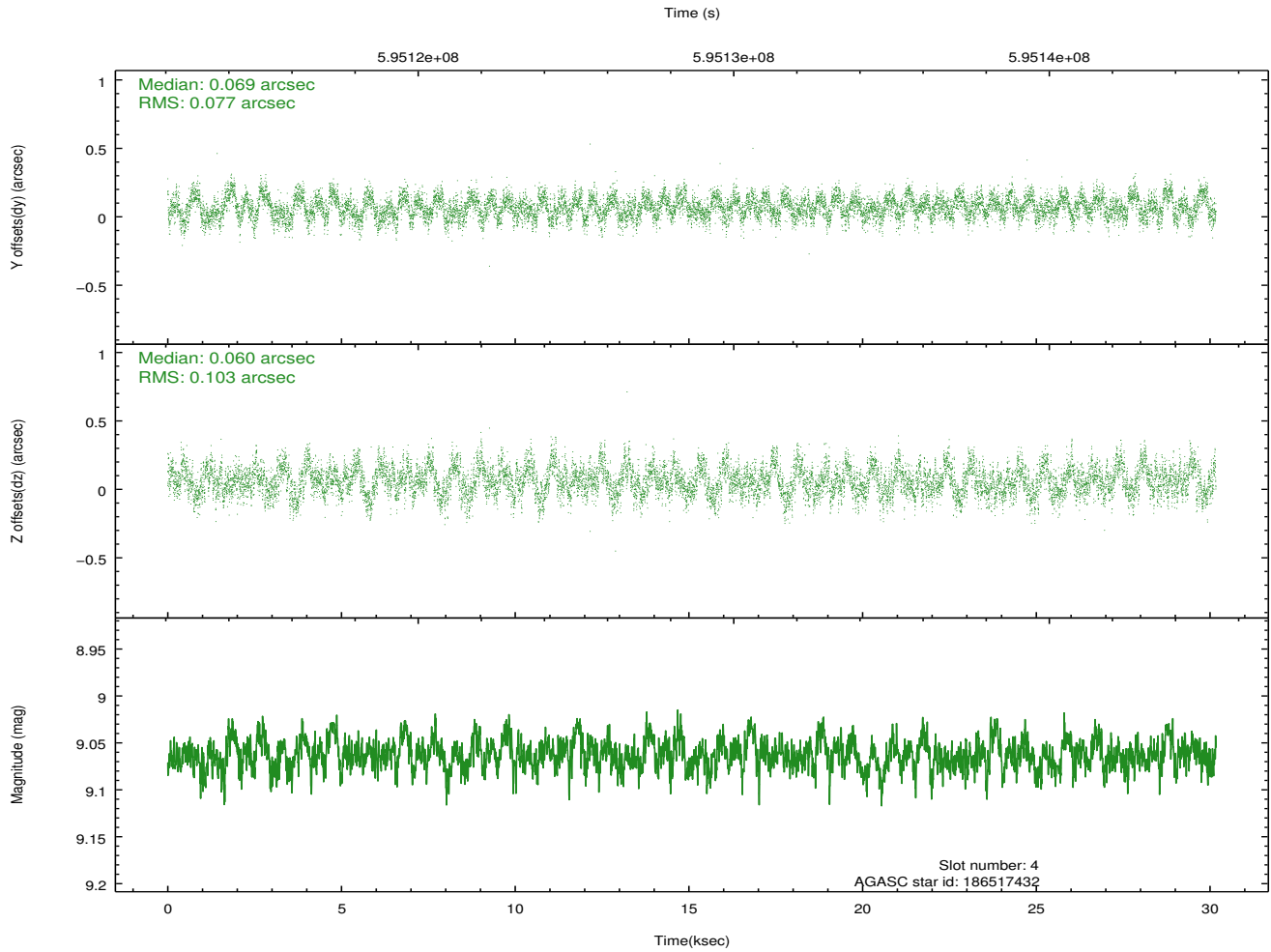
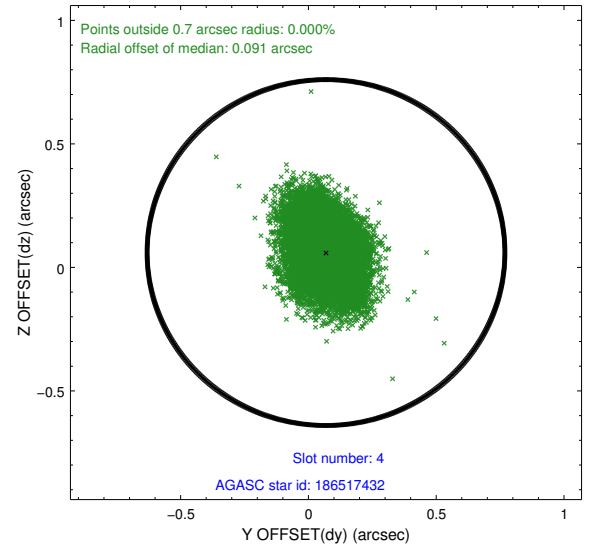
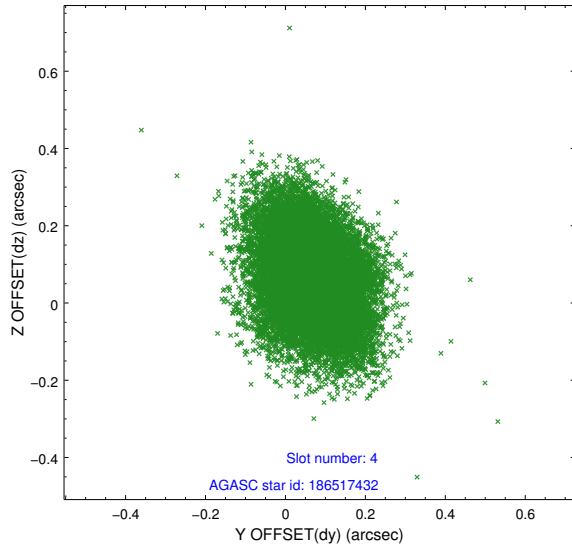
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.07	7359	-0.169	-0.101	0.036	0.046	0.000000	0.000000	-766.92	-1740.84
1	FID		ACIS-S-4	7.19	7359	0.451	0.110	0.012	0.020	0.000000	0.000000	2146.94	167.79
2	FID		ACIS-S-5	7.19	7359	-0.312	0.005	0.027	0.045	0.000000	0.000000	-1819.82	161.42
3	GUIDE	used	186515560	9.34	14701	0.101	0.037	0.164	0.255	155.836391	19.698002	-497.10	-180.06
4	GUIDE	used	186517432	9.06	14700	0.069	0.060	0.136	0.223	155.977538	19.585156	-566.50	-803.46
5	GUIDE	used	186517504	8.27	14713	0.078	-0.225	0.104	0.175	155.199091	19.538995	-2177.47	1294.90
6	GUIDE	used	186915152	8.60	14713	-0.286	-0.266	0.121	0.186	155.481319	20.053598	-106.34	1531.63
7	GUIDE	used	186519112	7.00	14714	0.042	0.389	0.095	0.154	155.746796	19.130951	-2359.80	-1068.12

2.4 Star Slots

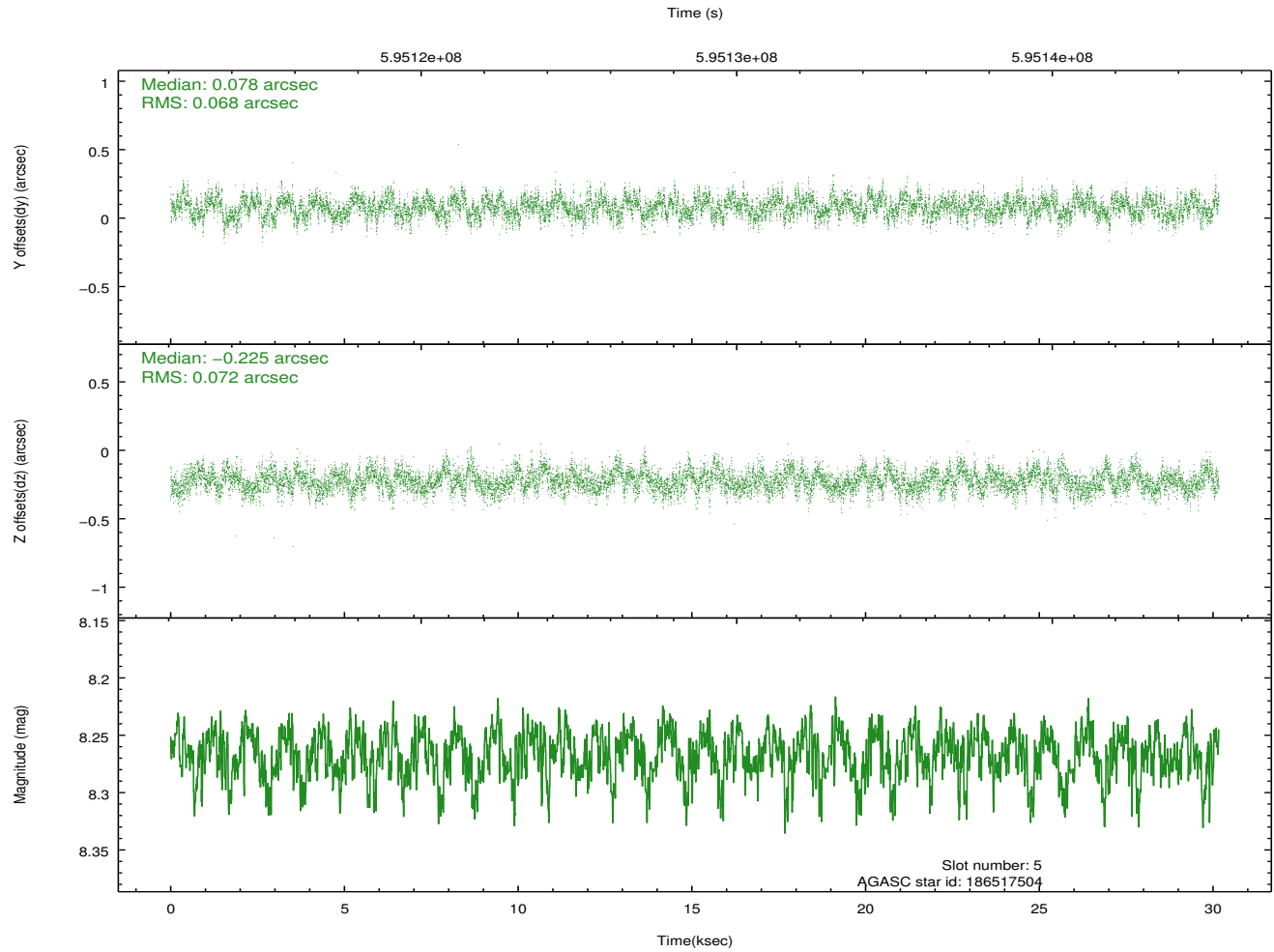
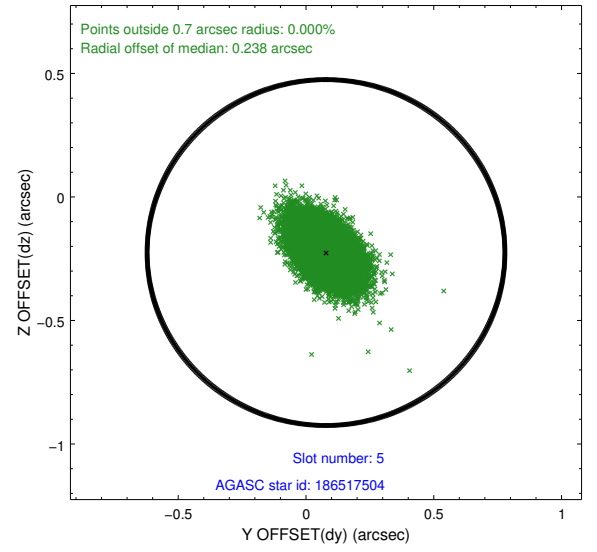
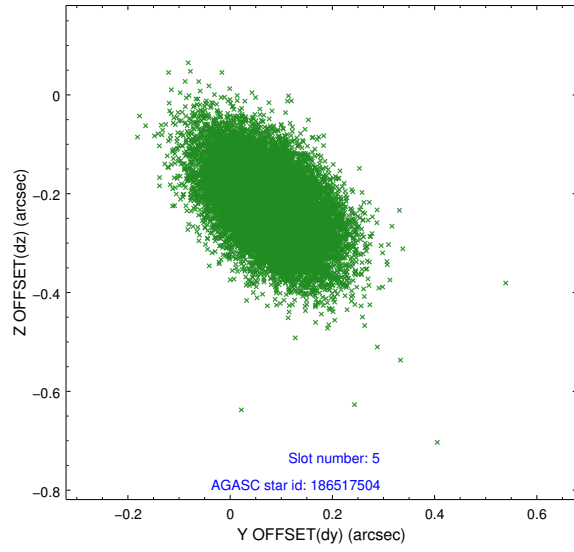
2.4.1 Slot 3



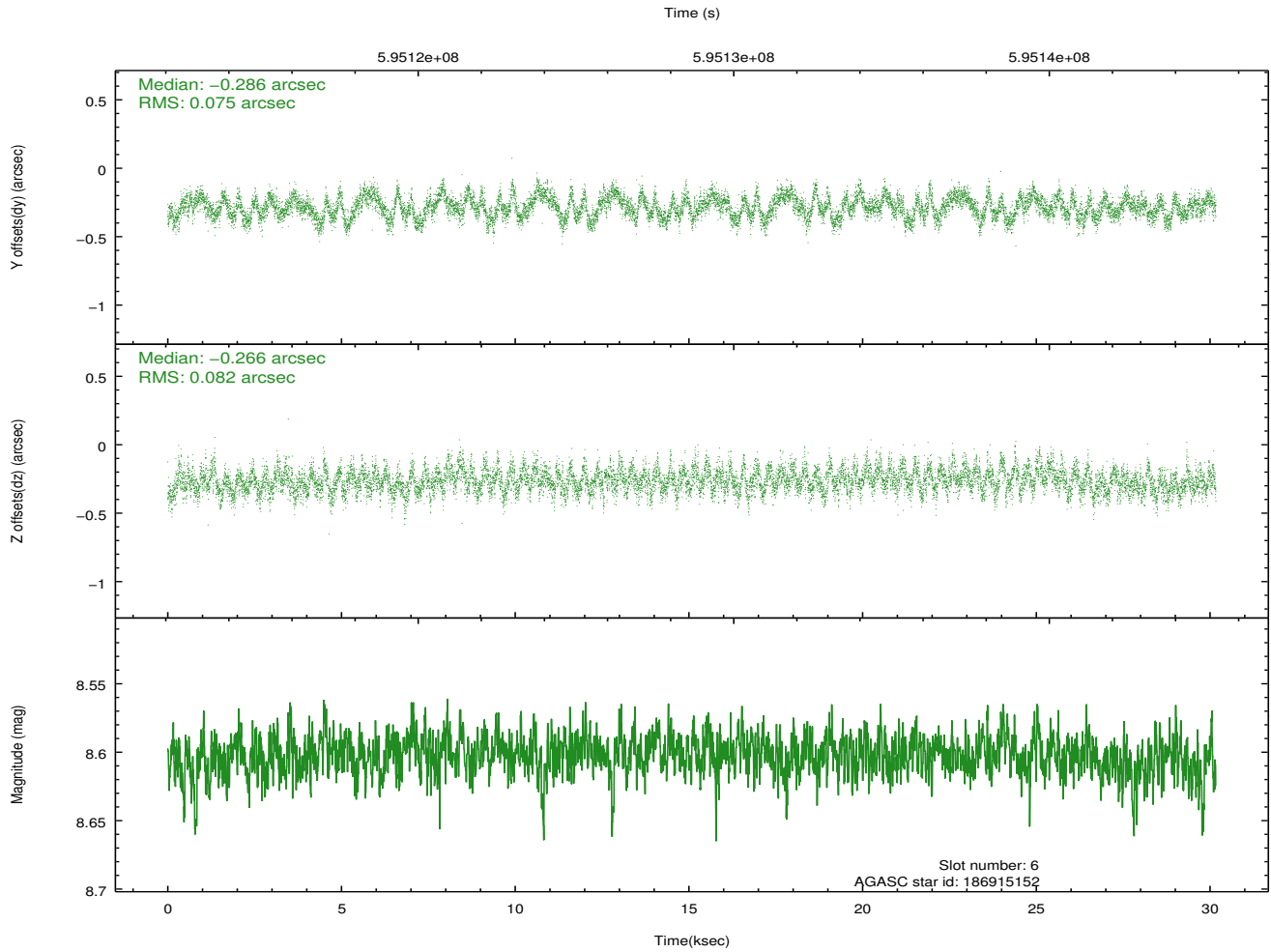
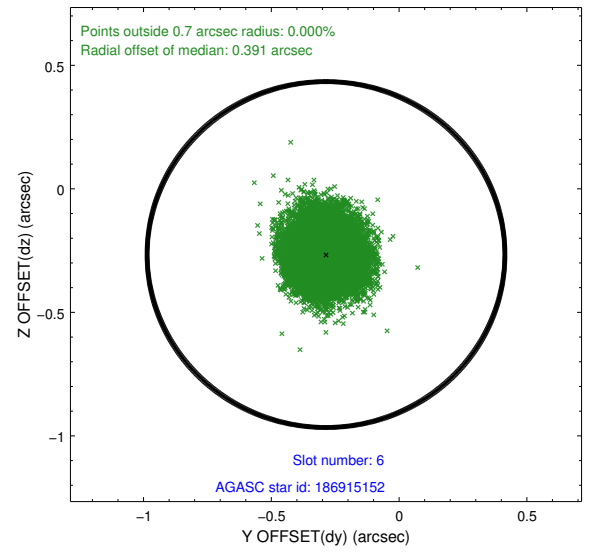
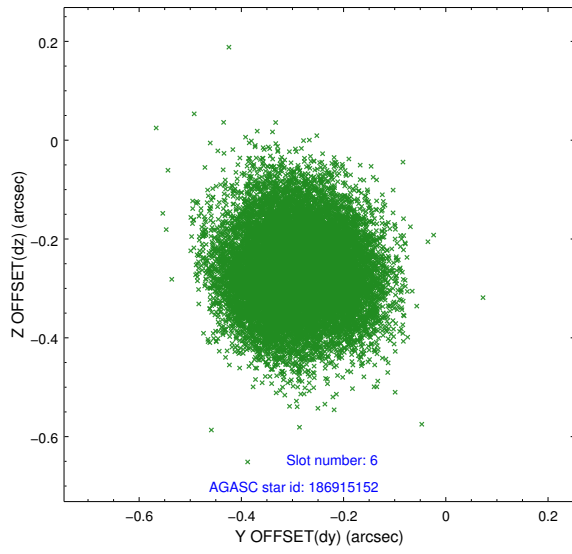
2.4.2 Slot 4



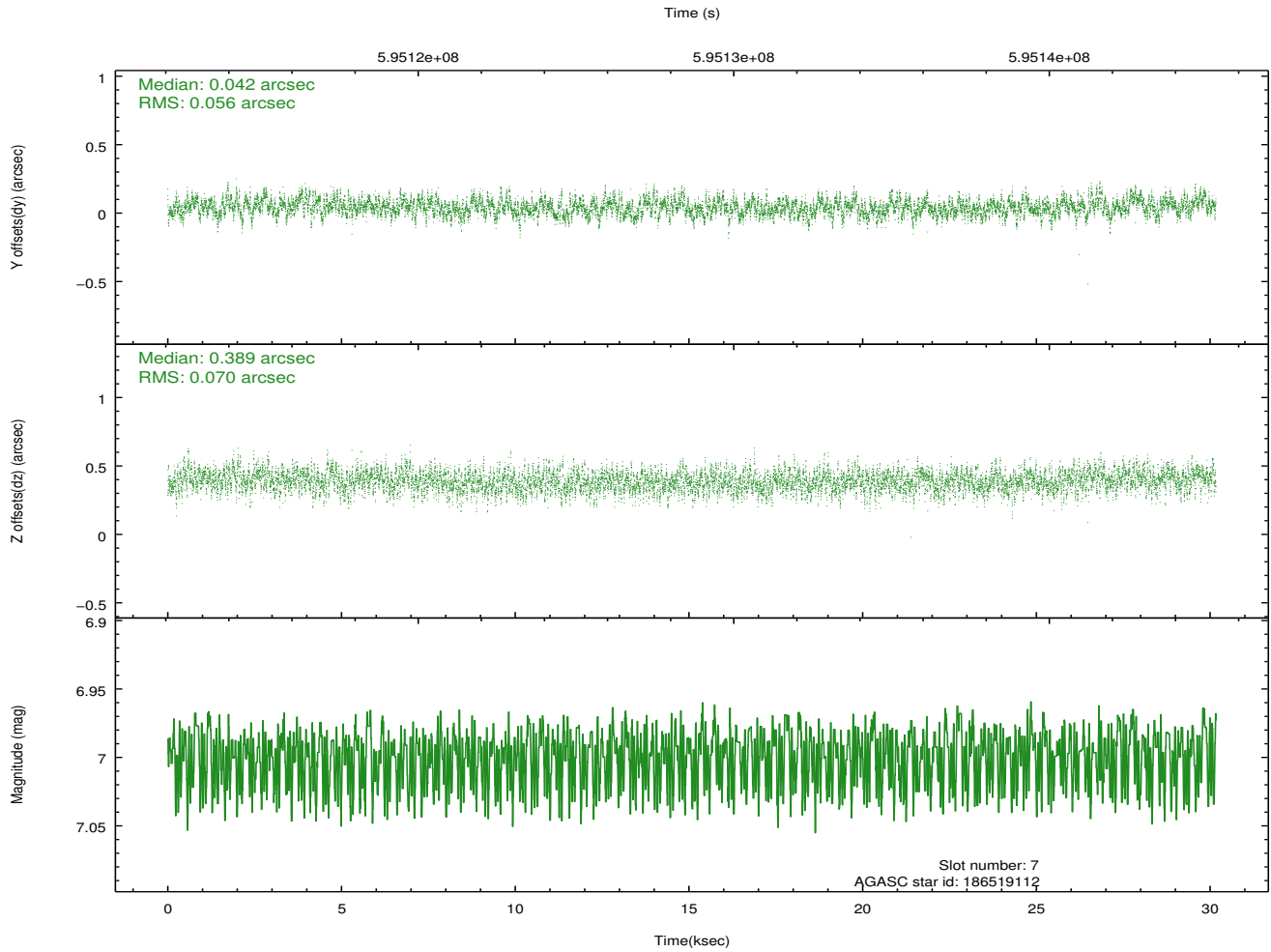
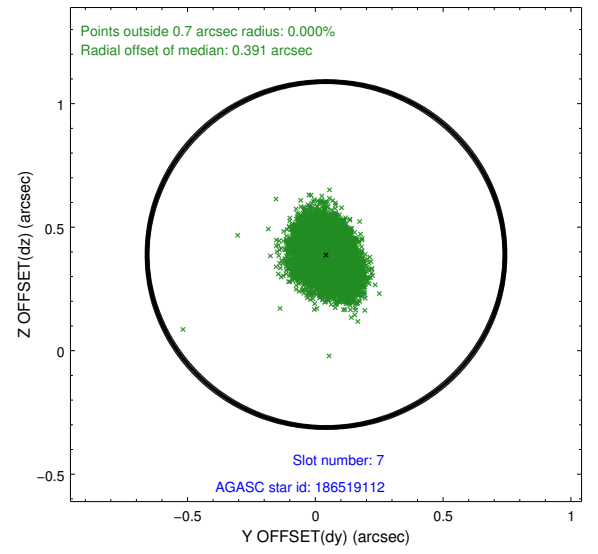
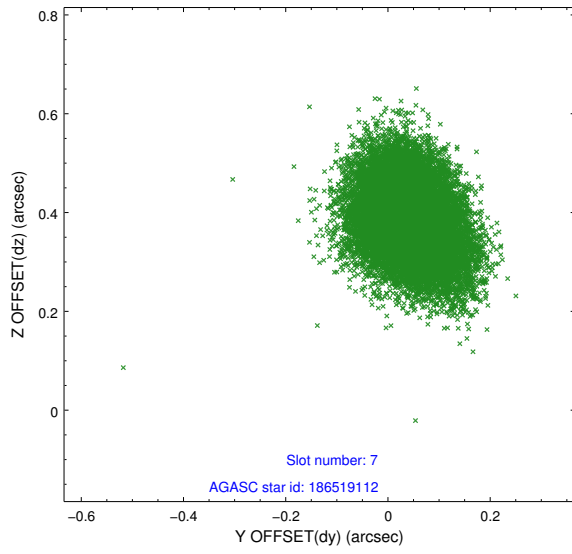
2.4.3 Slot 5



2.4.4 Slot 6

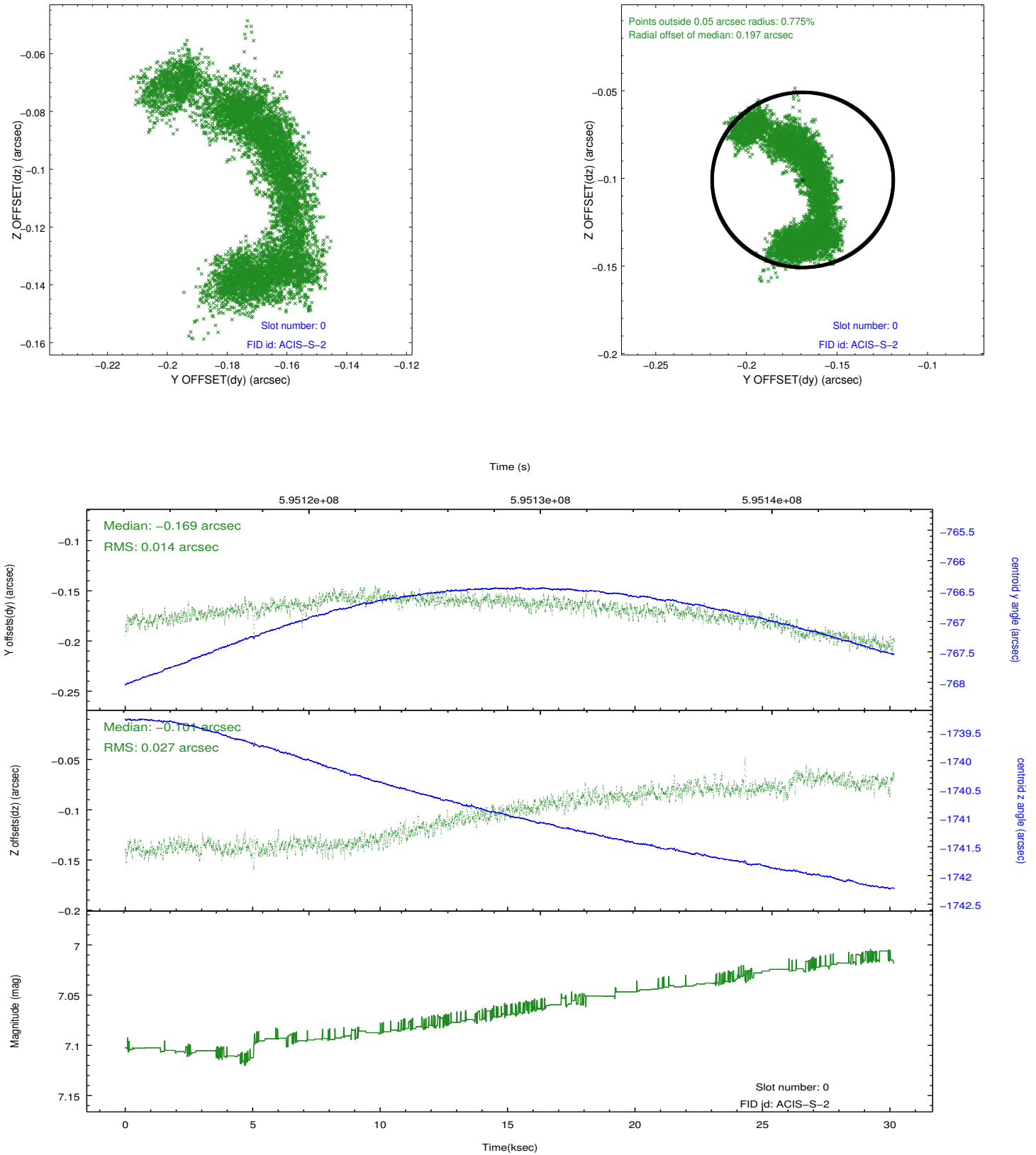


2.4.5 Slot 7

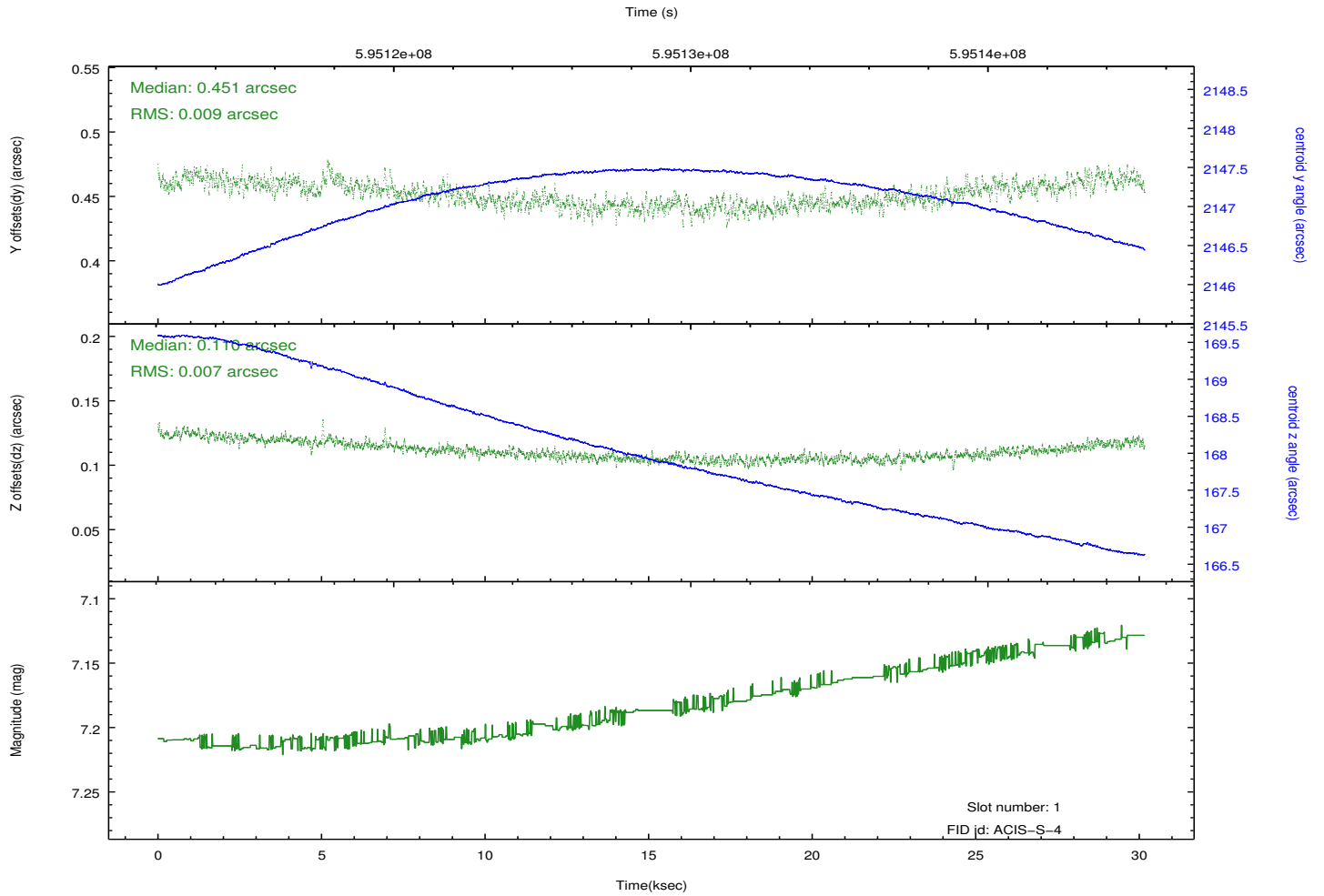
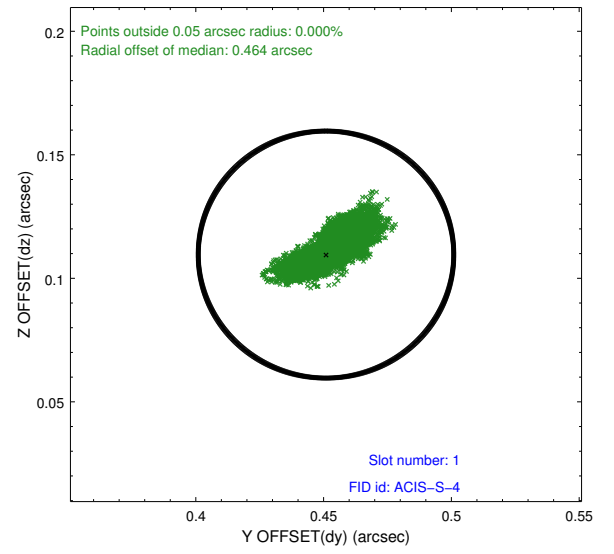
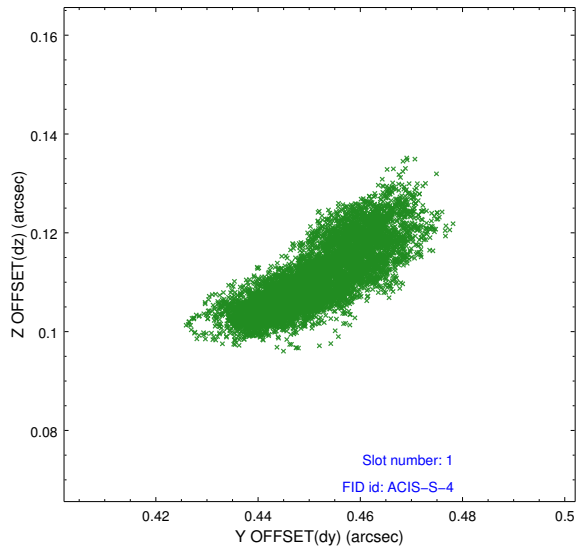


2.5 FID Slots

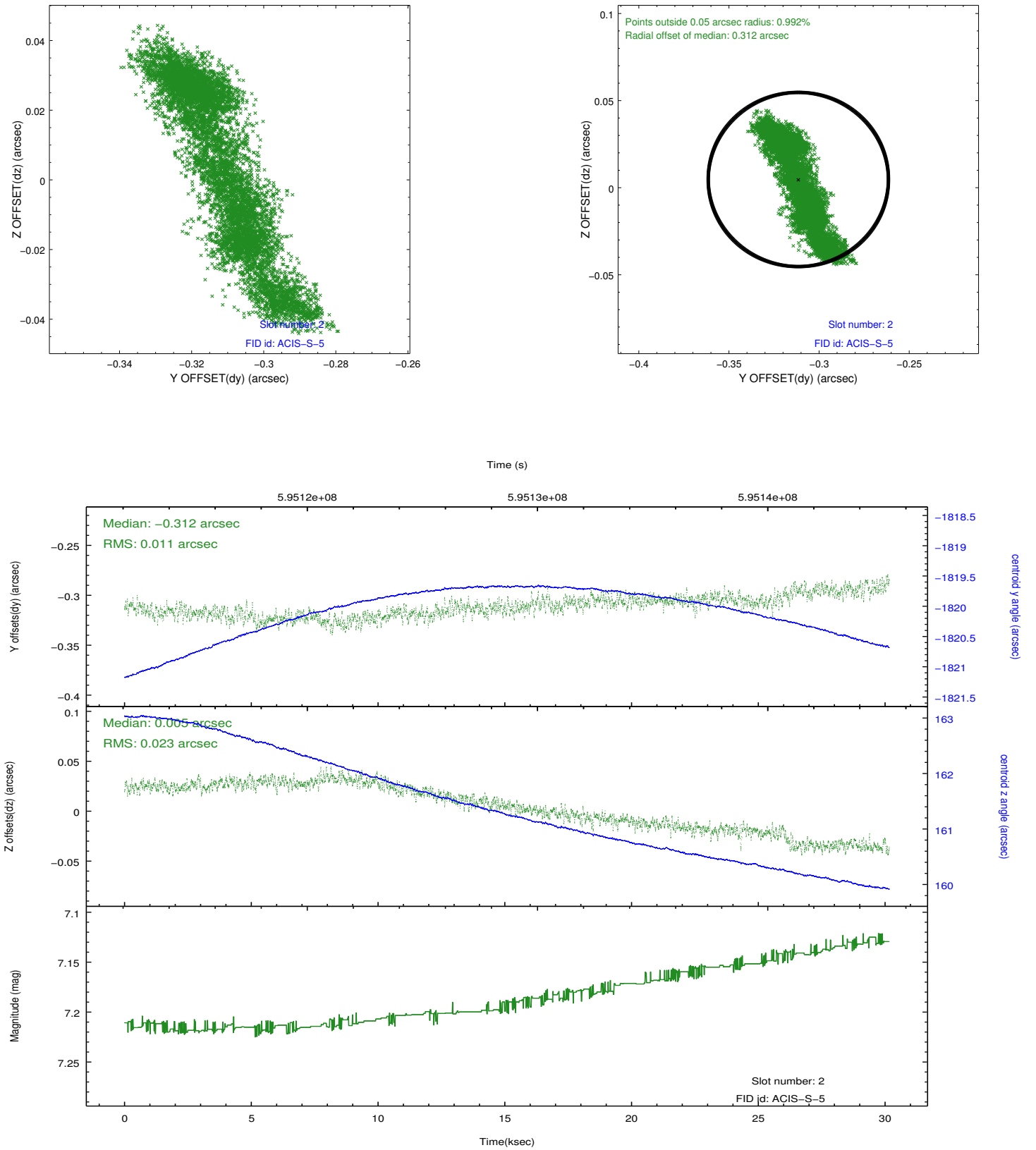
2.5.1 Slot 0



2.5.2 Slot 1

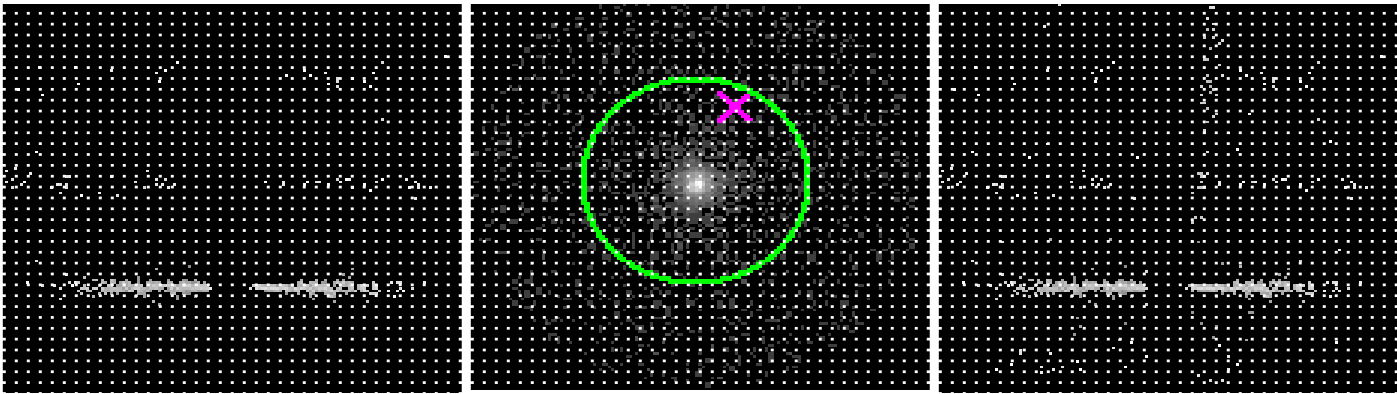


2.5.3 Slot 2



3 Gratings

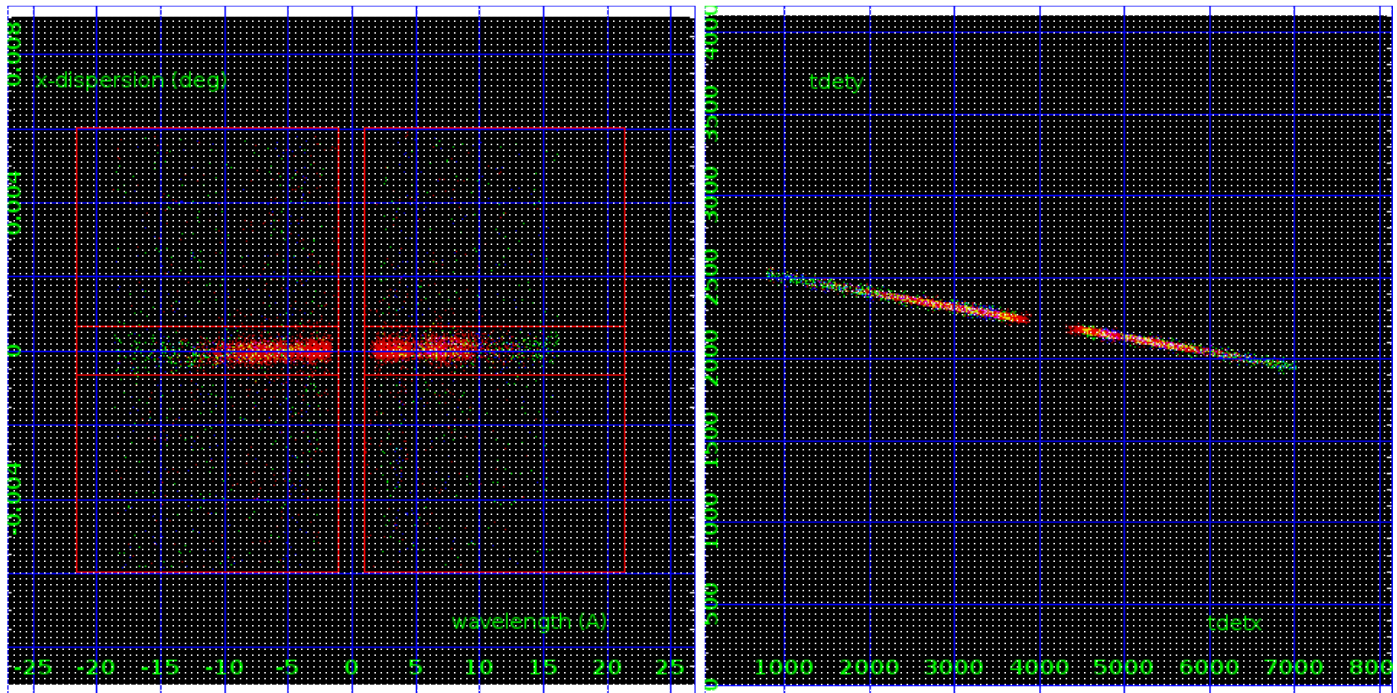
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

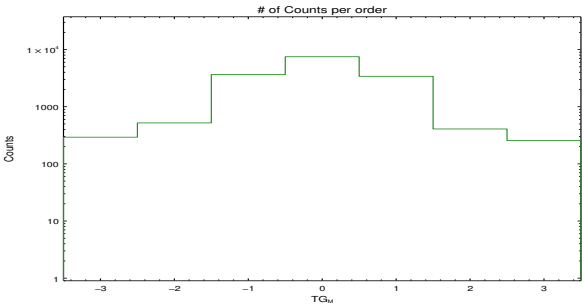
HEG Order Sort ALL

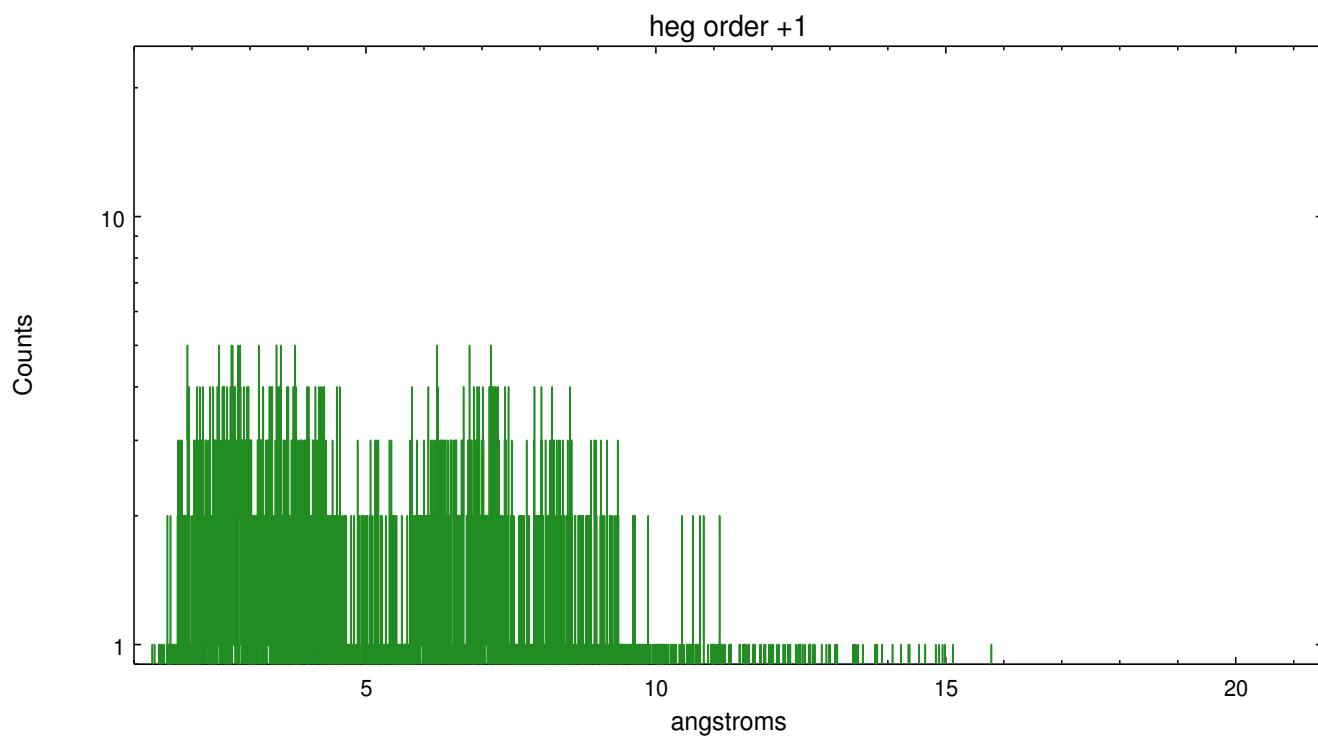
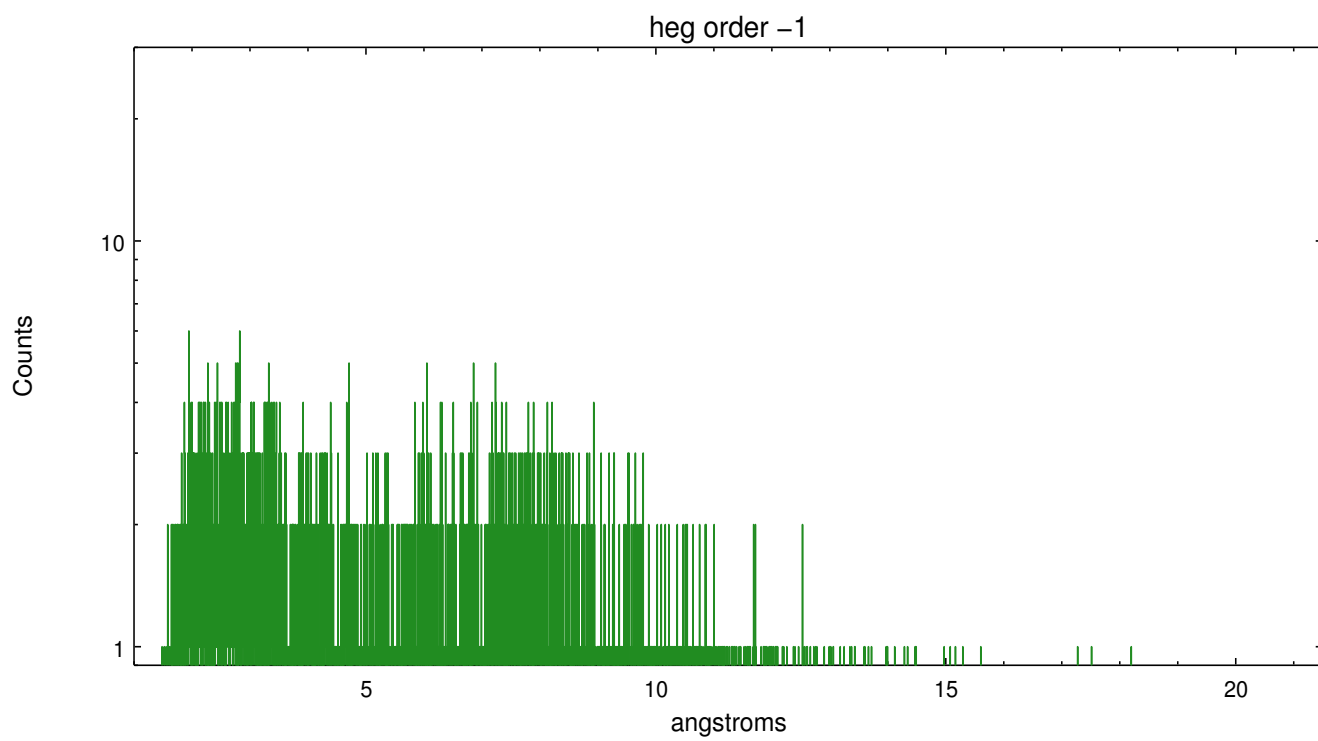


Spot Image HEG

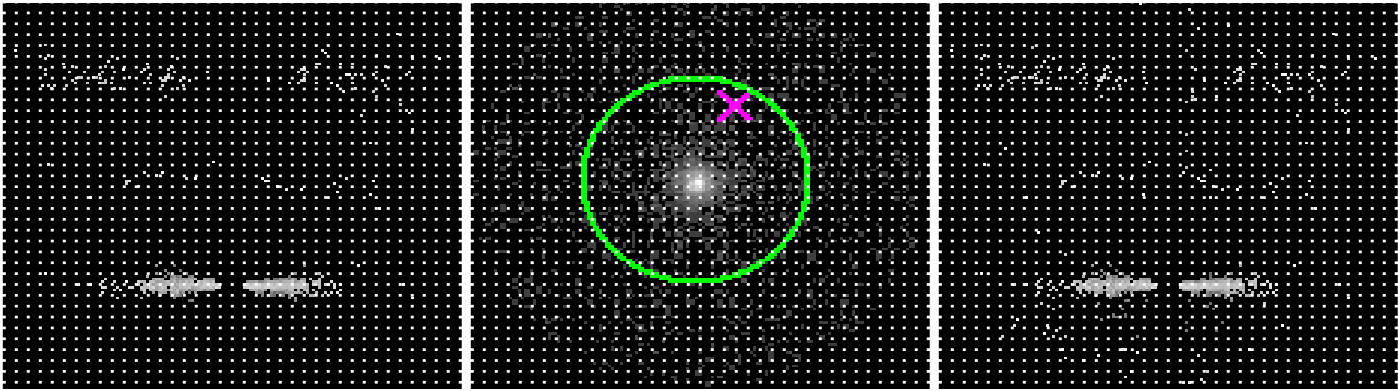
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	293	521	3656	7492	3404	408	257





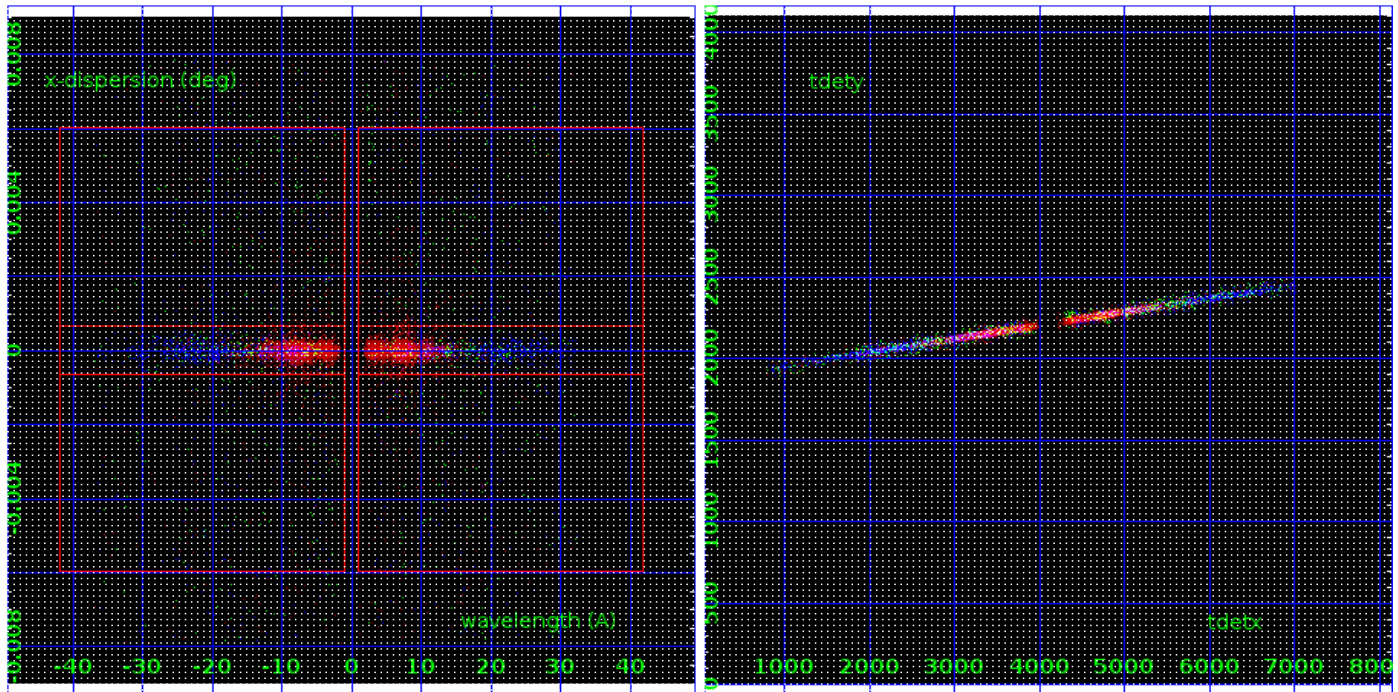
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

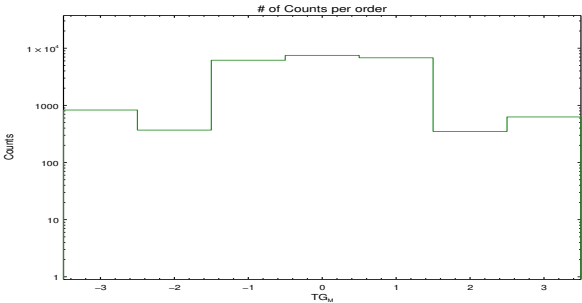
MEG Order Sort ALL

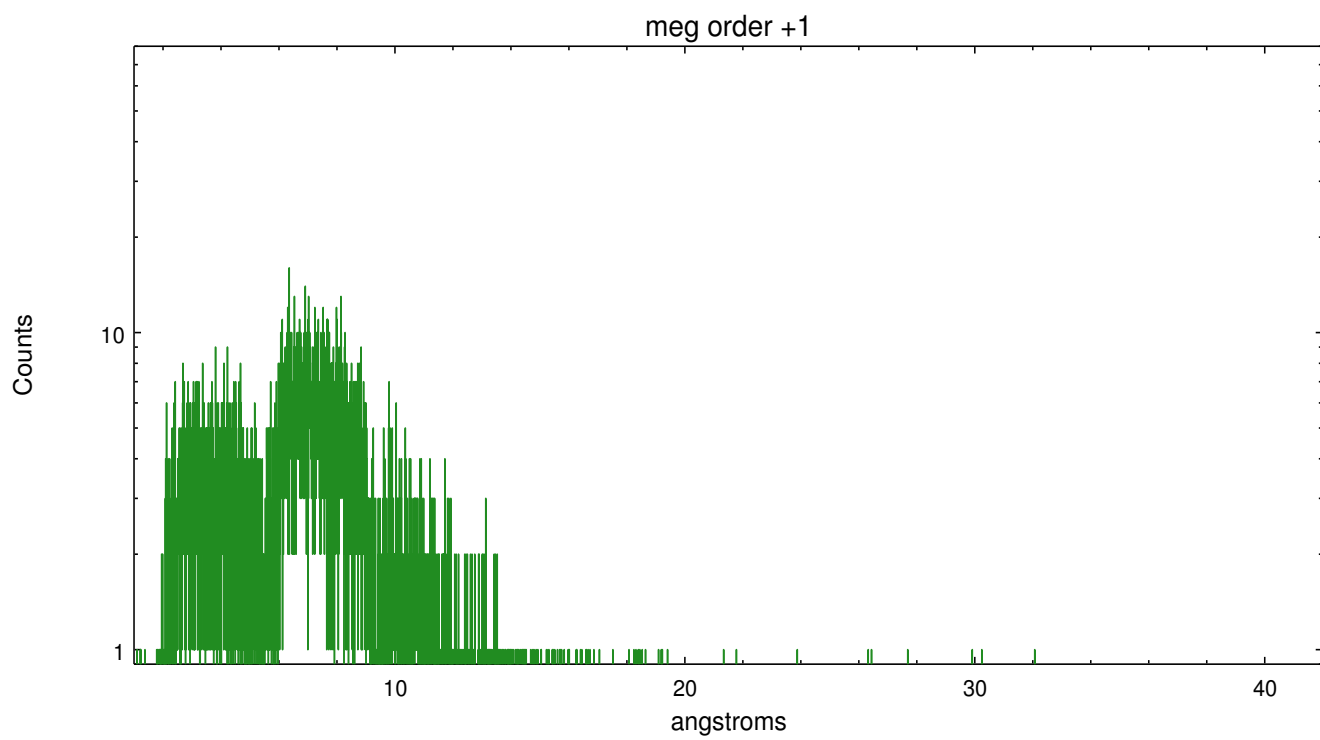
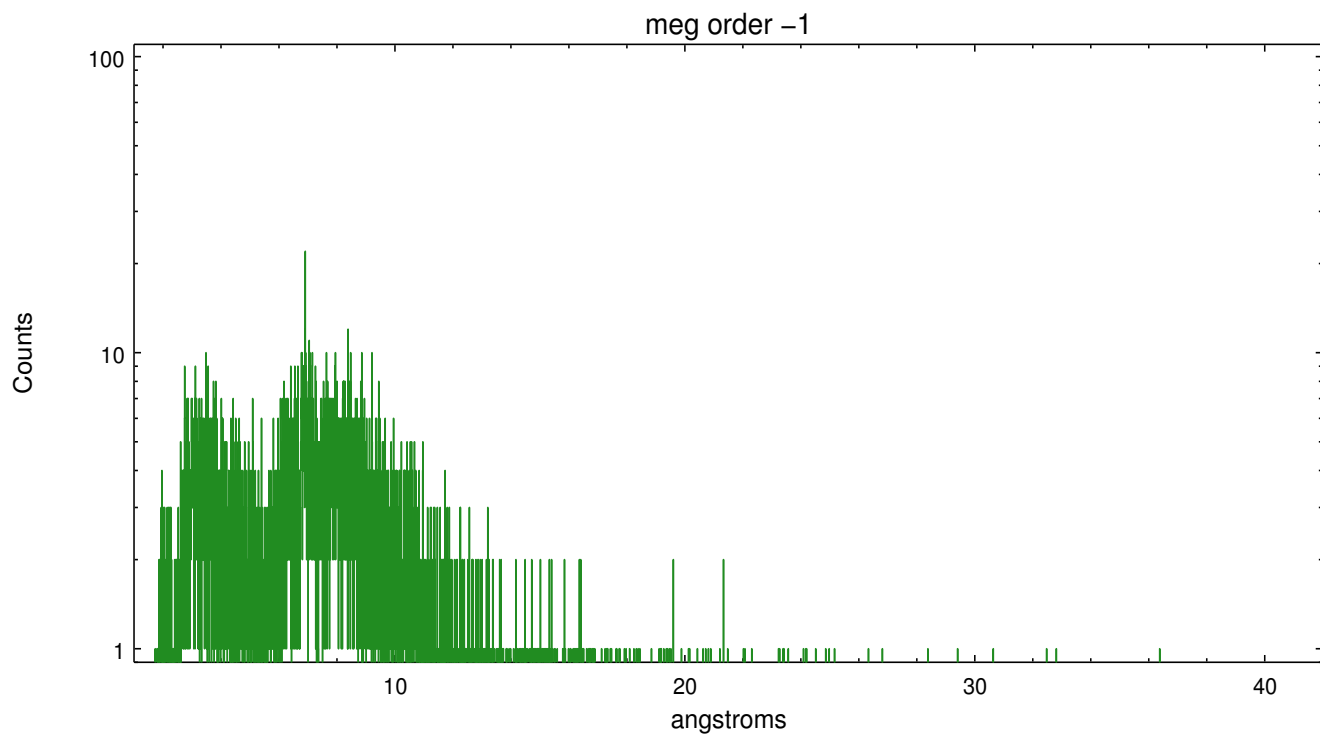


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	829	369	6160	7492	6796	350	627





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2016.11.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.929176793814

A.2 Comments

Source is moderately piled up and has a faint extended halo. Standard software processing technique using the tool `tgdetect` did not give an accurate position for the zeroth order. Zeroth order position for this observation has instead been determined using the known angle between the readout streak and the meg spectral arm with an ISIS tool called `findzero`. The newly determined zeroth order coordinates (x=4130.8, y=4104.1) have been manually placed in the `*src1a.fits` file, replacing the coordinates determined by `tgdetect`. Please note that rerunning `tgdetect` for analysis purposes will not give the same zeroth order position as that used in this processing.