

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 21049 - L2 Version 1
Chandra X-Ray Center

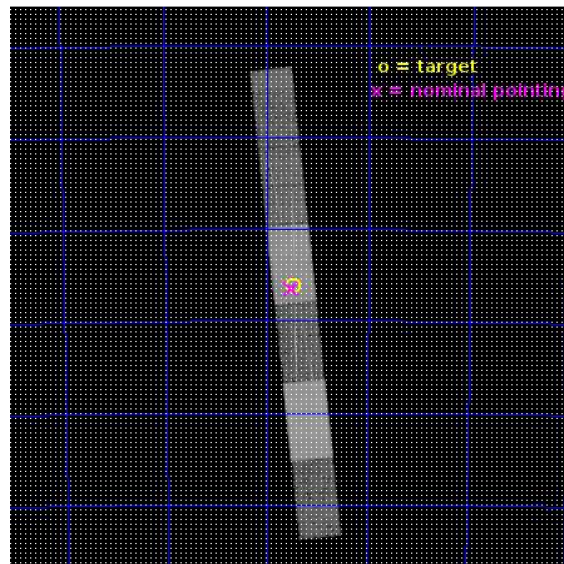
L2 Processing Date : Mar 29 2018

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1 Front

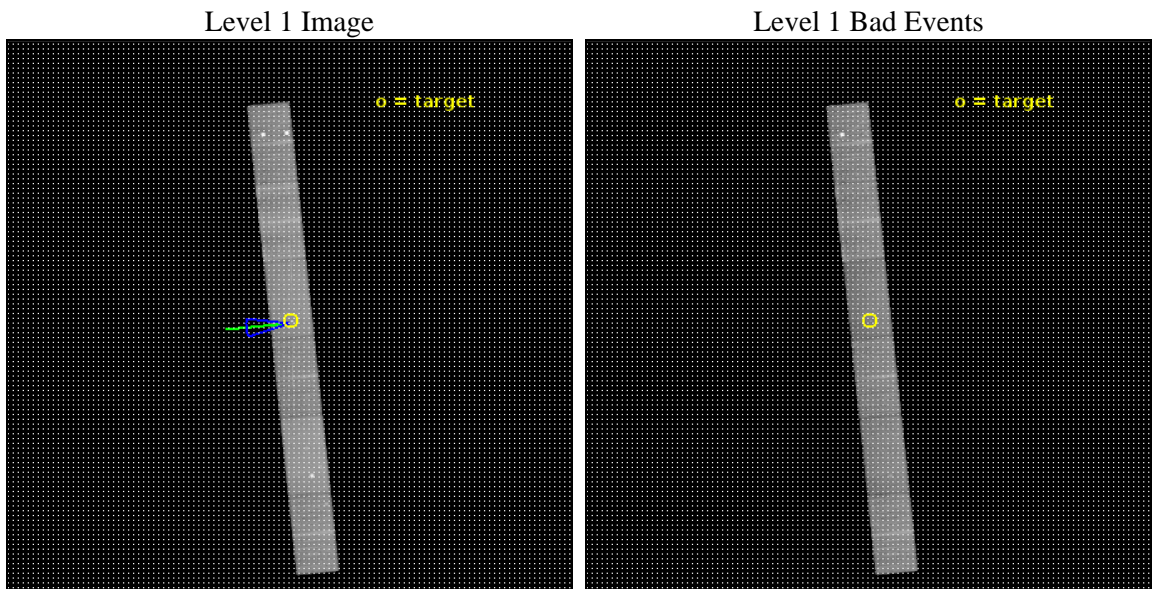
seq_num	503016	Sequence number
obs_id	21049	Observation id
title	High Resolution Spectroscopy of SN 1987A	Proposal title
observer	SANGWOOK PARK	Principal investigator
object	SN 1987A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.878619513239	Nominal RA [deg]
dec_nom	-69.274761144352	Nominal Dec [deg]
roll_nom	264.16781112787	Nominal Roll [deg]
revision	1	Processing version of data
ontime	31643.800887585	Sum of GTIs [s]
livetime	30897.88948496	Livetime [s]
ontime4	31643.800887585	Sum of GTIs [s]
ontime5	31643.800887585	Sum of GTIs [s]
ontime6	31643.800887585	Sum of GTIs [s]
ontime7	31643.800887585	Sum of GTIs [s]
ontime8	31643.800887585	Sum of GTIs [s]
ontime9	31643.760945559	Sum of GTIs [s]
l2events	220146	Number of level 2 events



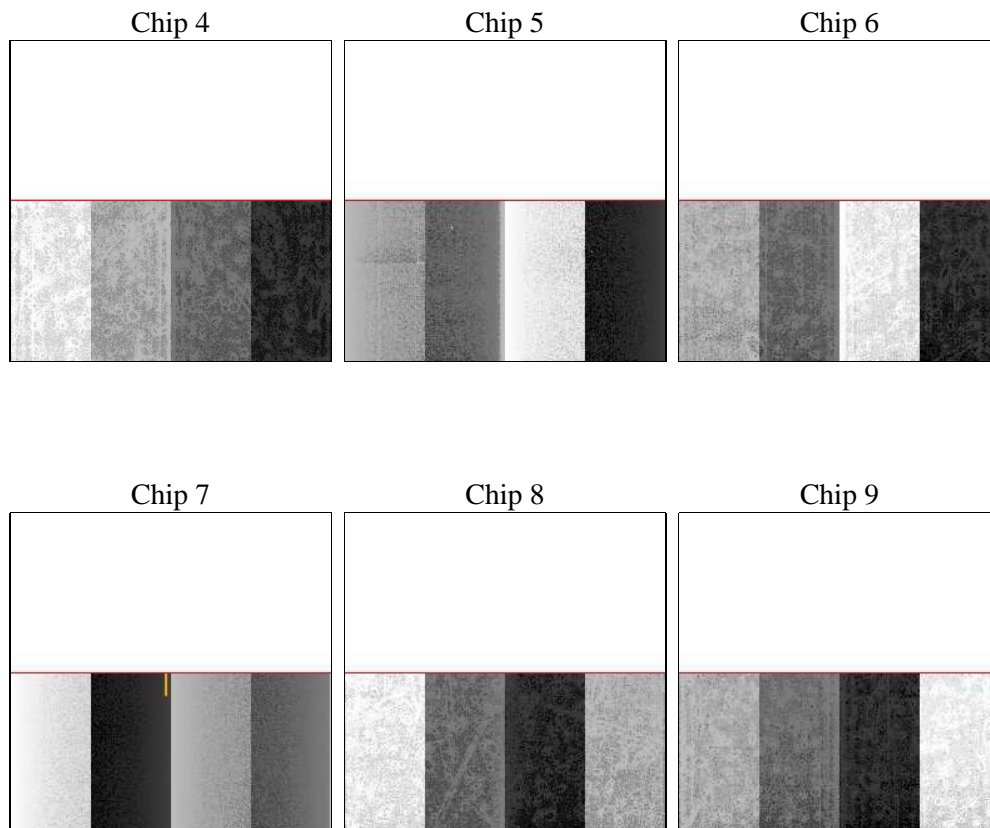
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	31600.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	31643.800887585	Sum of GTIs [s]
caldsver	4.7.8	 	ontime4	31643.800887585	Sum of GTIs [s]
date	2018-03-29T13:58:51	Date and time of file creation	ontime5	31643.800887585	Sum of GTIs [s]
revision	1	Processing version of data	ontime6	31643.800887585	Sum of GTIs [s]
			ontime7	31643.800887585	Sum of GTIs [s]
			ontime8	31643.800887585	Sum of GTIs [s]
			ontime9	31643.760945559	Sum of GTIs [s]
			l1events	945267	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			z0_pos	(4128.41 4132.68)	src1a sky central position

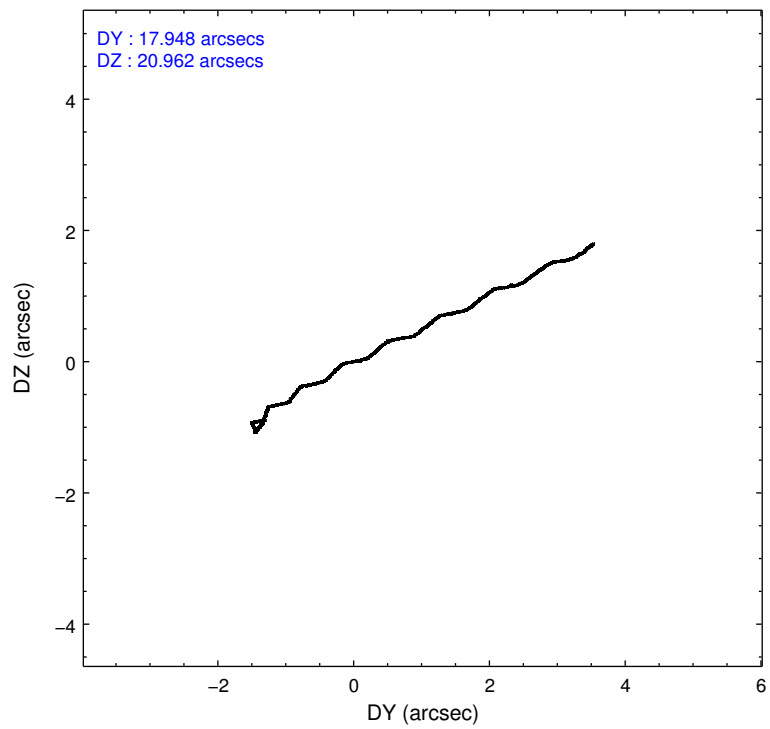
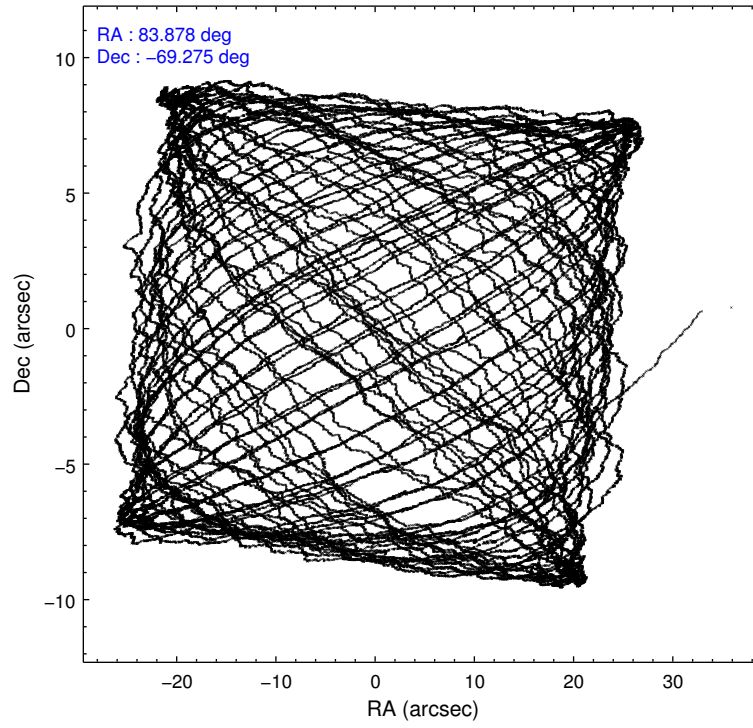
2.1.4 Events

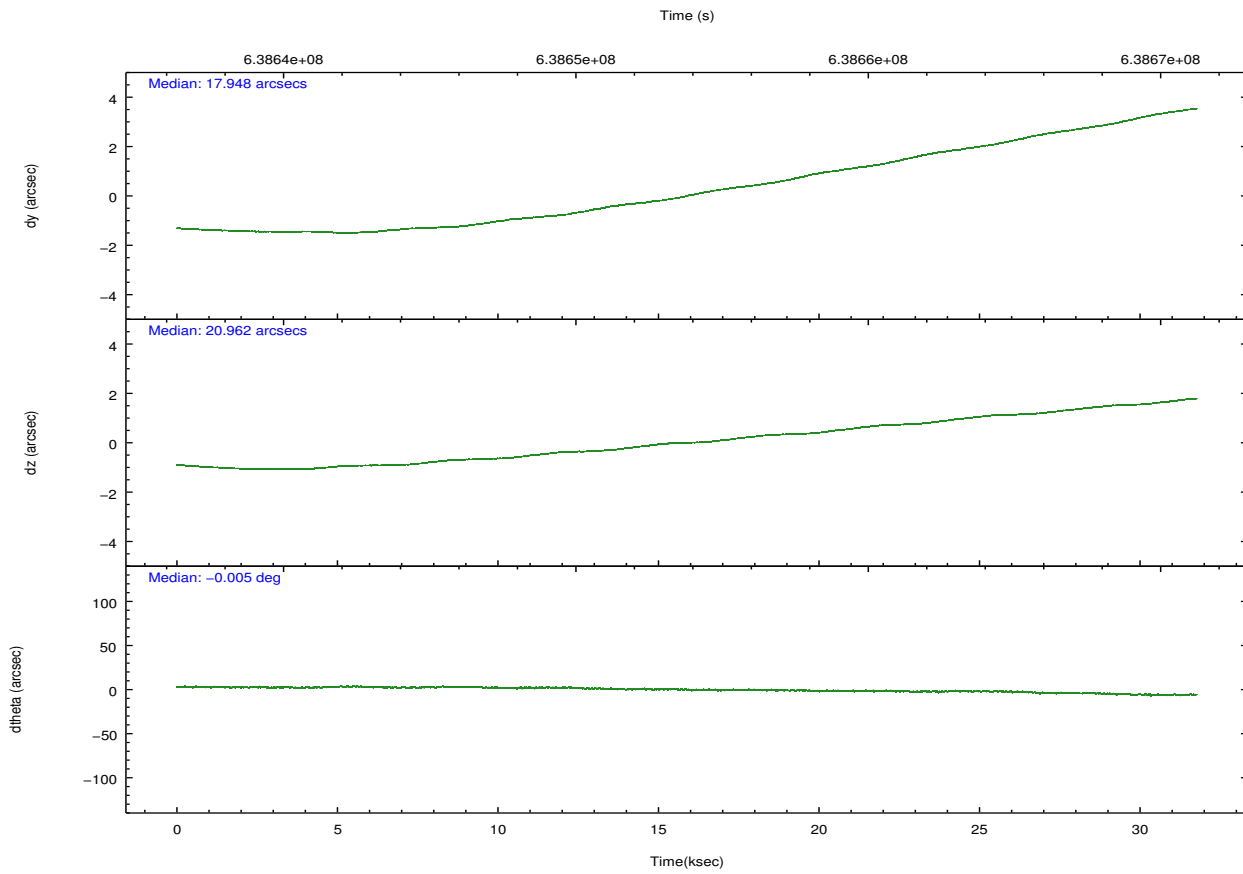
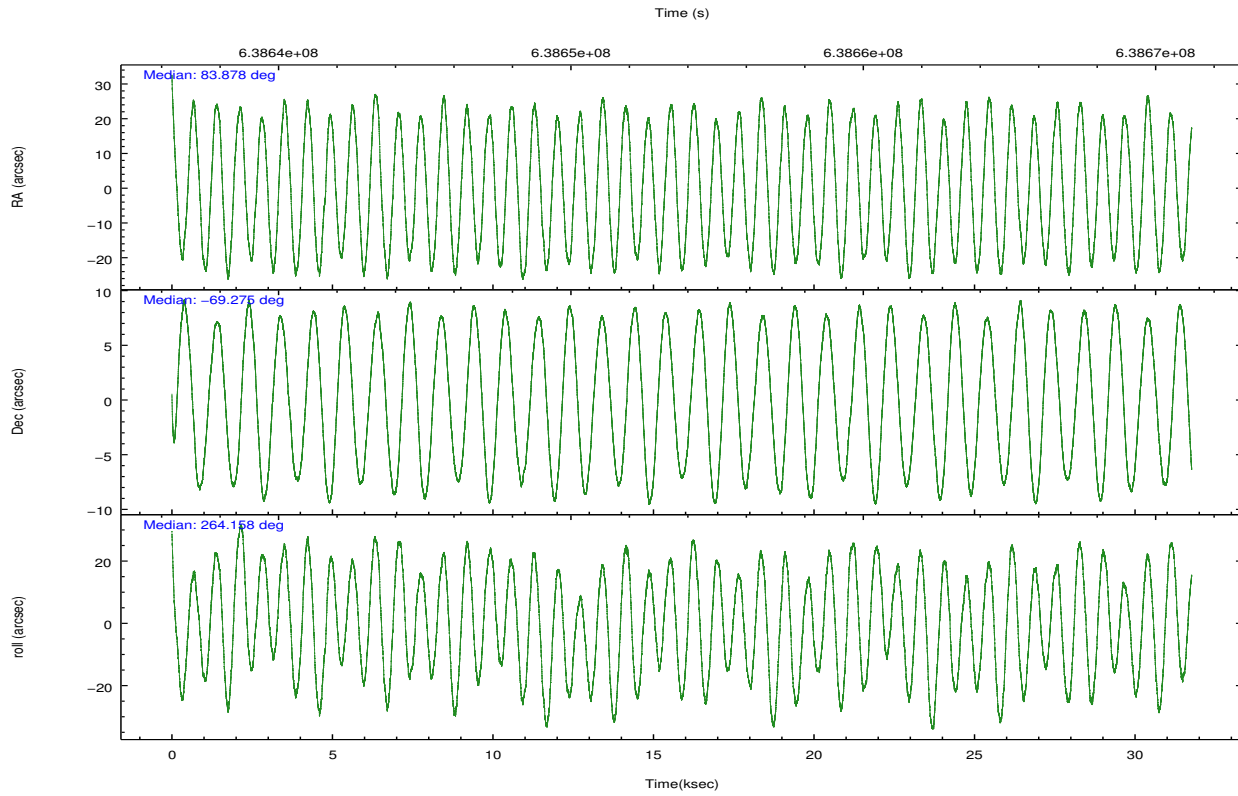
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	141753	197548	121092	156176	167120	161578	grade 0 events	7665	15538	6896	7378	14845	5484
rejected events	123359	95174	103969	82109	118084	123098		5%	7%	5%	4%	8%	3%
rejected %	87%	48%	85%	52%	70%	76%	grade 1 events	108	703	64	230	119	17806
								0%	0%	0%	0%	0%	11%
							grade 2 events	4219	29485	3542	15918	11106	26225
								2%	14%	2%	10%	6%	16%
							grade 3 events	1837	4799	1773	6944	5063	1801
								1%	2%	1%	4%	3%	1%
							grade 4 events	1712	4566	1737	6913	4798	1699
								1%	2%	1%	4%	2%	1%
							grade 5 events	5368	15468	5276	15203	8016	6004
								3%	7%	4%	9%	4%	3%
							grade 6 events	2963	47997	3175	36921	13226	3275
								2%	24%	2%	23%	7%	2%
							grade 7 events	117881	78992	98629	66669	109947	99284
								83%	39%	81%	42%	65%	61%

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	83.845985	83.87861951323903	CCD I2 on	N	N
[deg] Pointing Dec	-69.249895	-69.27476114435174	CCD I3 on	N	N
[deg] Pointing Roll	263.980660	264.1678111278711	CCD S0 on	O1	Y
[deg] Roll angle	264.000000	264.000000	CCD S1 on	Y	Y
[deg] Roll tolerance	12.000000	12.000000	CCD S2 on	Y	Y
Roll constraint allows 180D rotation	N	N	CCD S3 on	Y	Y
[s] Window start time (MET)	636940869.184000	636940869.184000	CCD S4 on	Y	Y
[s] Window stop time (MET)	639014469.184000	639014469.184000	CCD S5 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Number of optional ACIS chips dropped	0	0
[mm] SIM defocus	0	0.001444936568705701	On-chip summing requested	N	N
[mm] SIM translation stage pos	-183.992523	-183.985022191653	Subarray requested	CUSTOM	1/2
[mm] SIM translation stage offset	-6.14	-6.147500391354811	Subarray start row	1	1
[s] Observation start time (MET)	638638075.184000	638637030.4804699	Subarray row count	512	512
Observation start date	2018-03-28T15:26:46	2018-03-28T15:10:30	Alternating exposures requested	N	N
[s] Observation end time (MET)	638669675.184000	638670689.94496	[s] Primary exposure time	0.000000	1.7
Observation end date	2018-03-29T00:13:26	2018-03-29T00:31:29			
Read mode	TIMED	TIMED			

2.3 Aspect





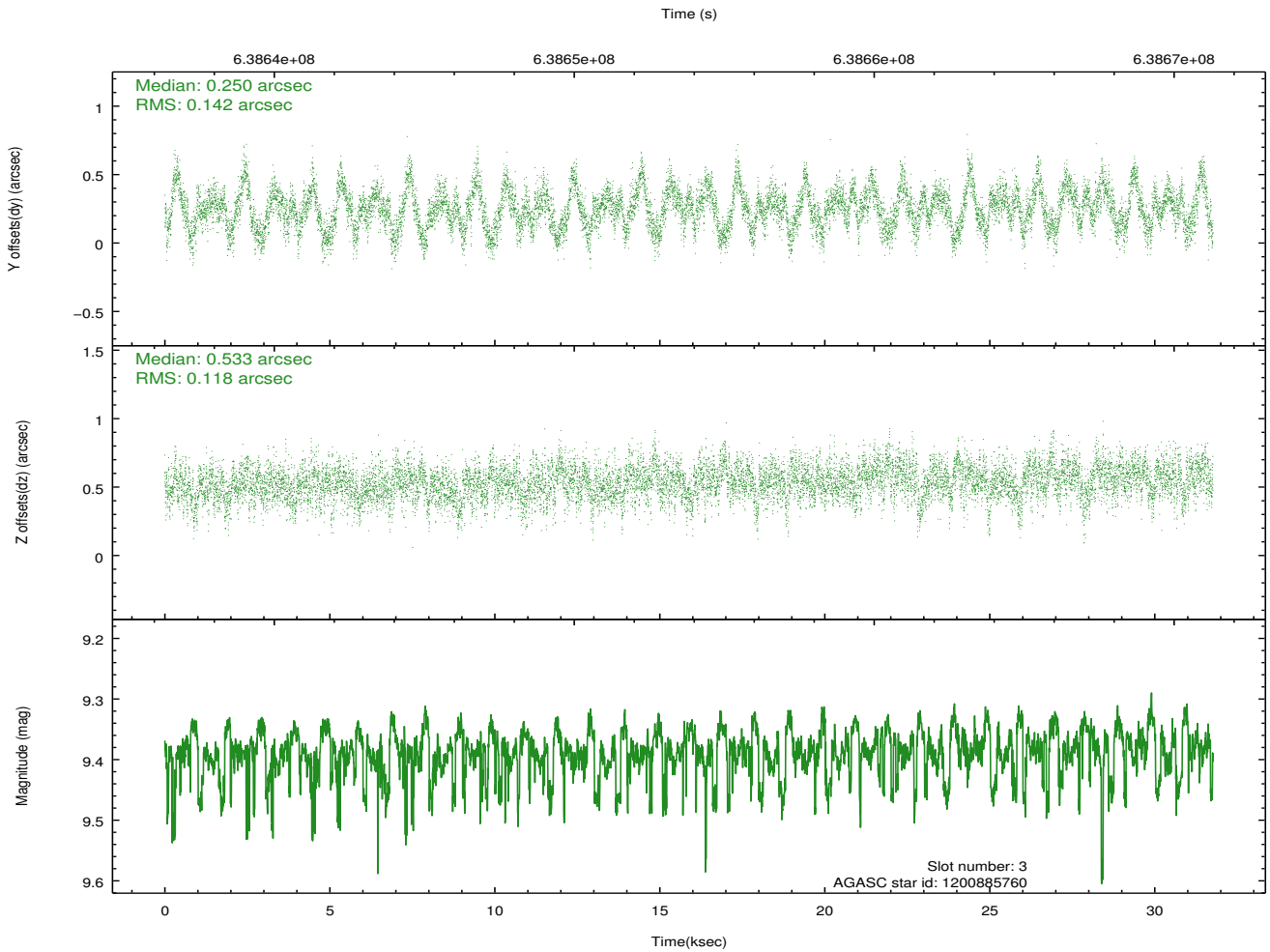
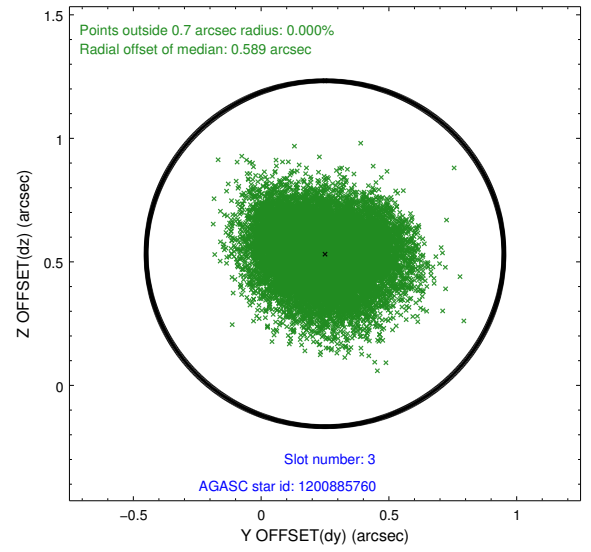
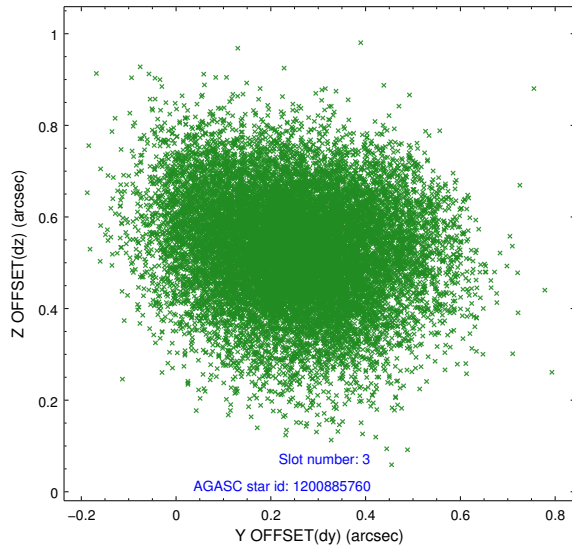
Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.93	7747	-0.220	-0.134	0.047	0.100	0.000000	0.000000	-771.13	-1869.44
1	FID		ACIS-S-4	7.05	7746	0.470	0.146	0.051	0.095	0.000000	0.000000	2142.82	39.25
2	FID		ACIS-S-5	7.06	7748	-0.293	0.007	0.052	0.093	0.000000	0.000000	-1823.97	32.79
3	GUIDE	used	1200885760	9.39	15481	0.250	0.533	0.199	0.315	83.723637	-68.777667	-1672.93	-335.91
4	GUIDE	used	1201019672	6.80	15495	-0.136	-0.108	0.140	0.257	85.312192	-68.770187	-1895.36	1722.03
5	GUIDE	used	1201020040	8.55	15487	0.106	-0.286	0.137	0.245	85.379163	-68.879396	-1510.28	1840.50
6	GUIDE	used	1201540776	9.51	15476	-0.207	-0.235	0.279	0.437	85.107945	-69.858480	2030.61	1787.81
7	GUIDE	used	1201410616	9.30	15468	-0.005	0.125	0.255	0.440	82.516808	-69.784406	2105.58	-1439.62

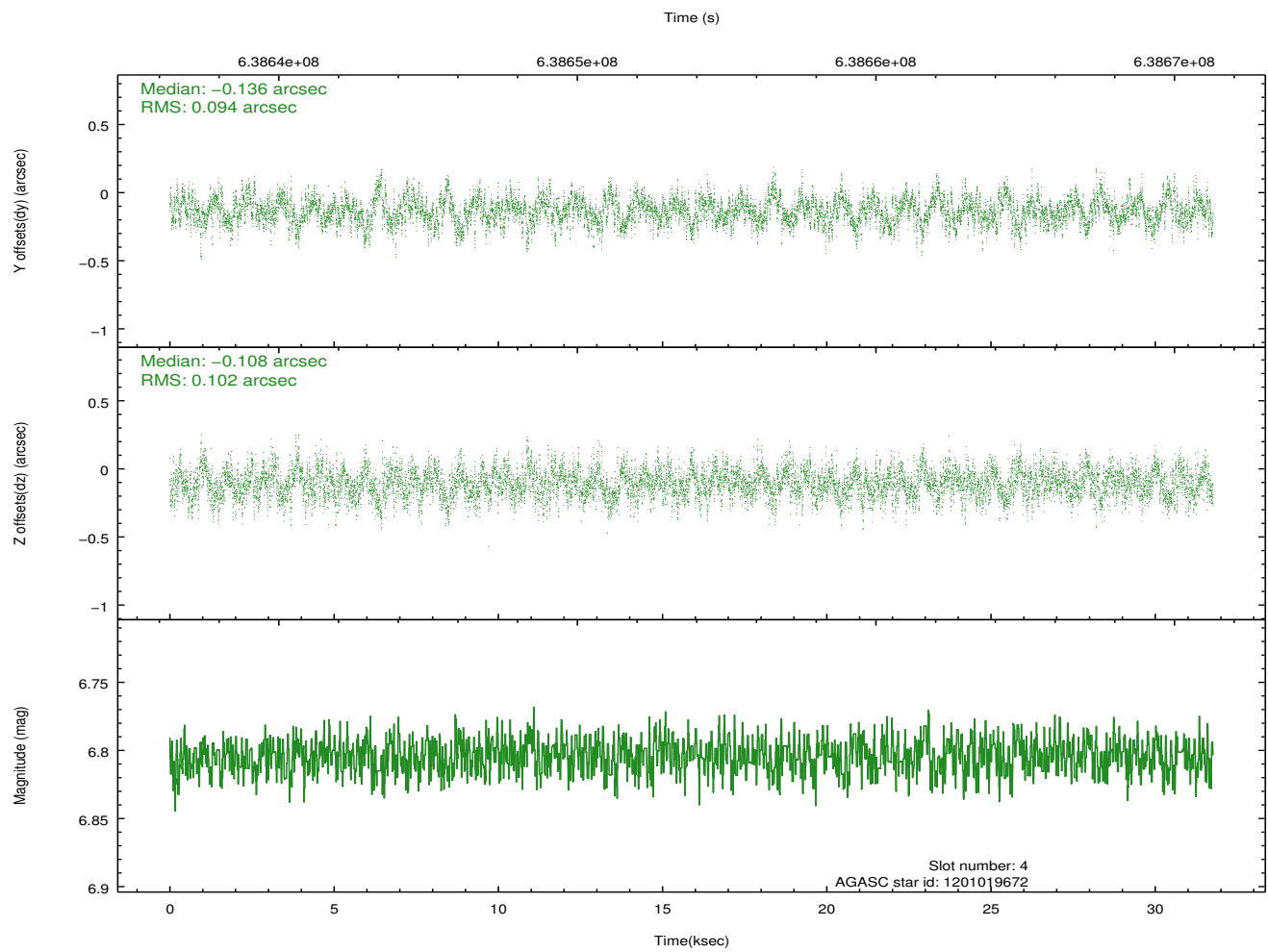
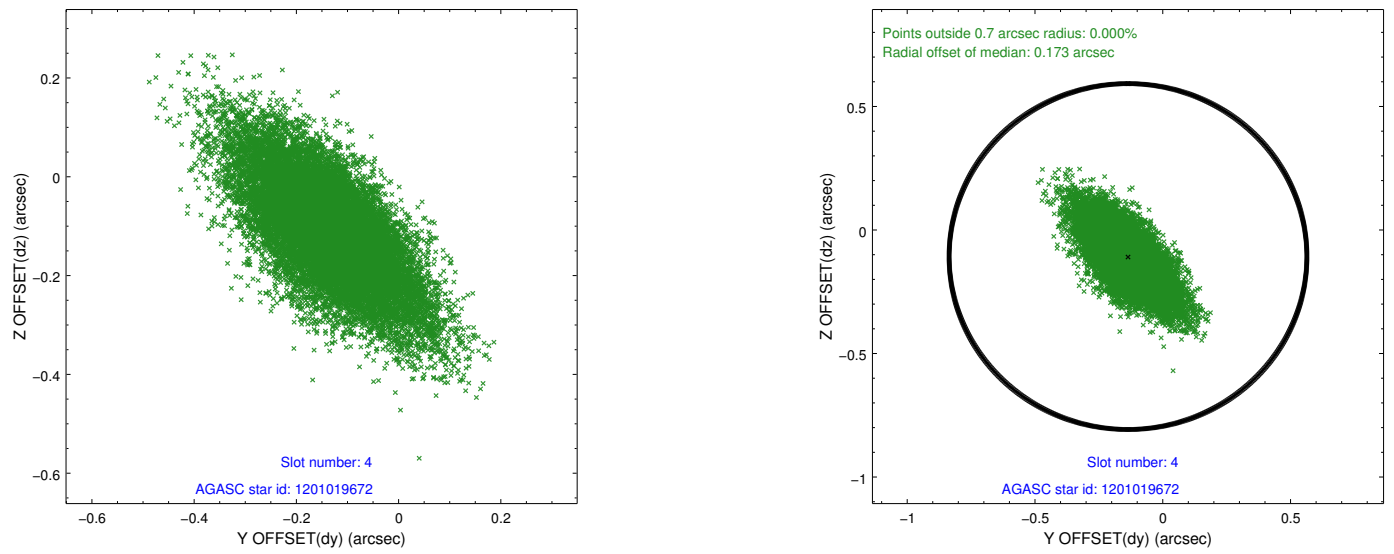
∞

2.4 Star Slots

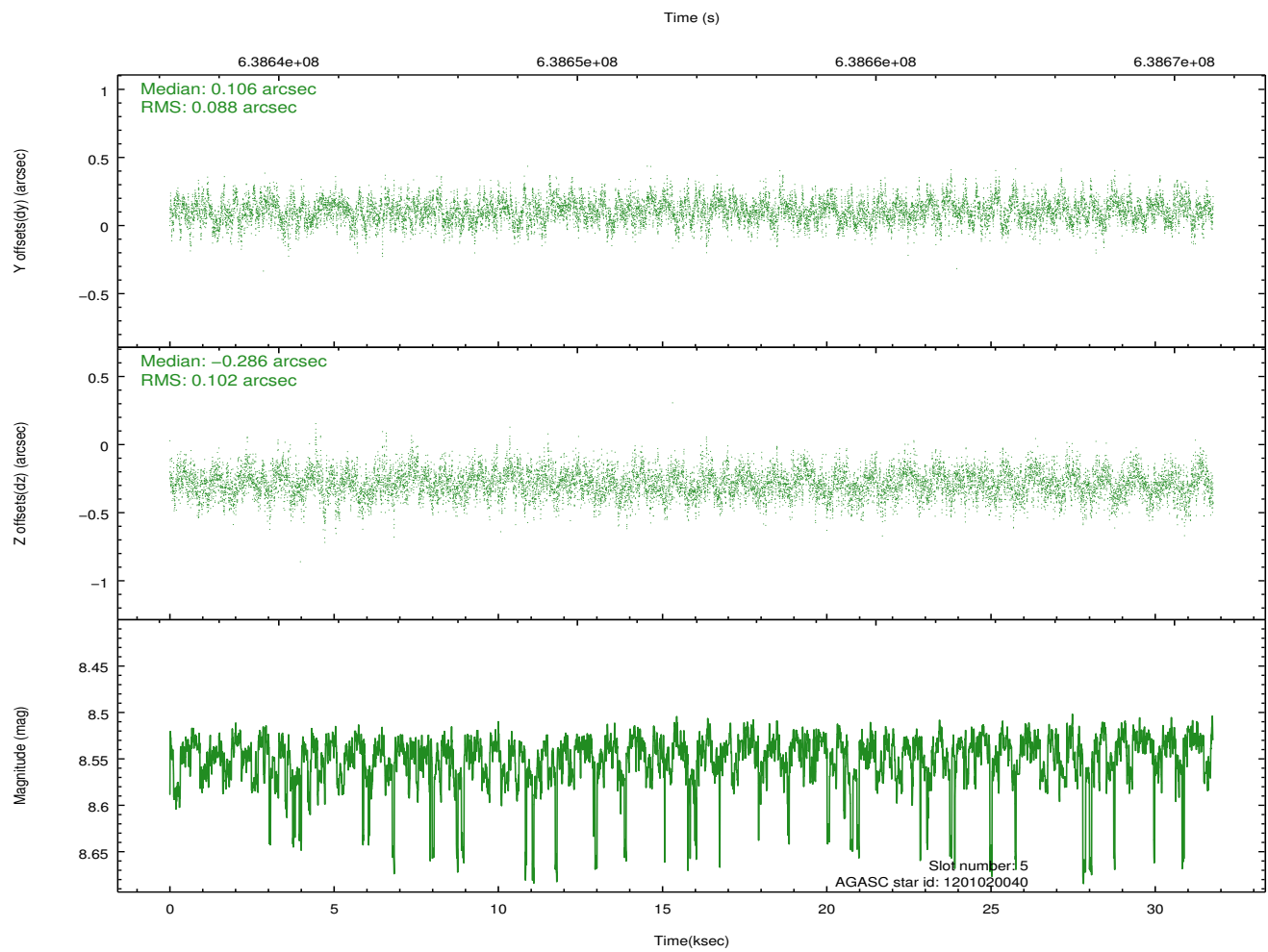
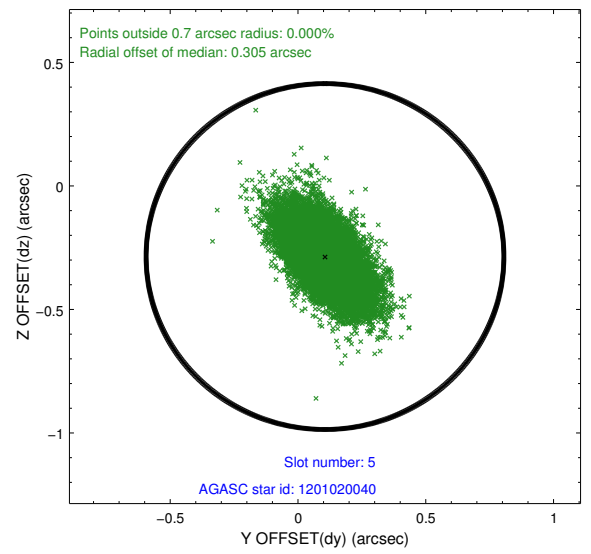
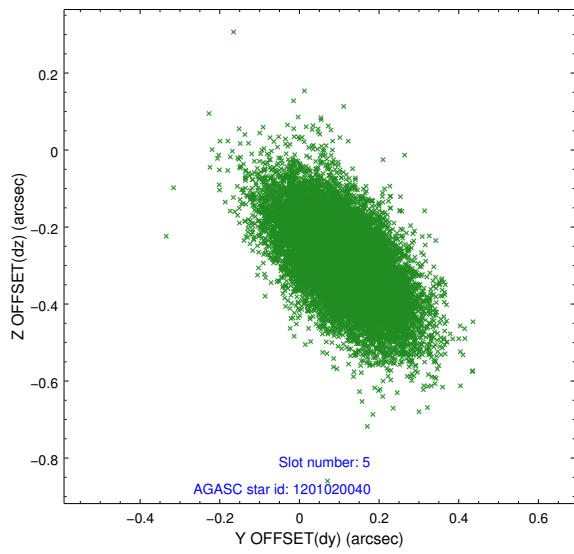
2.4.1 Slot 3



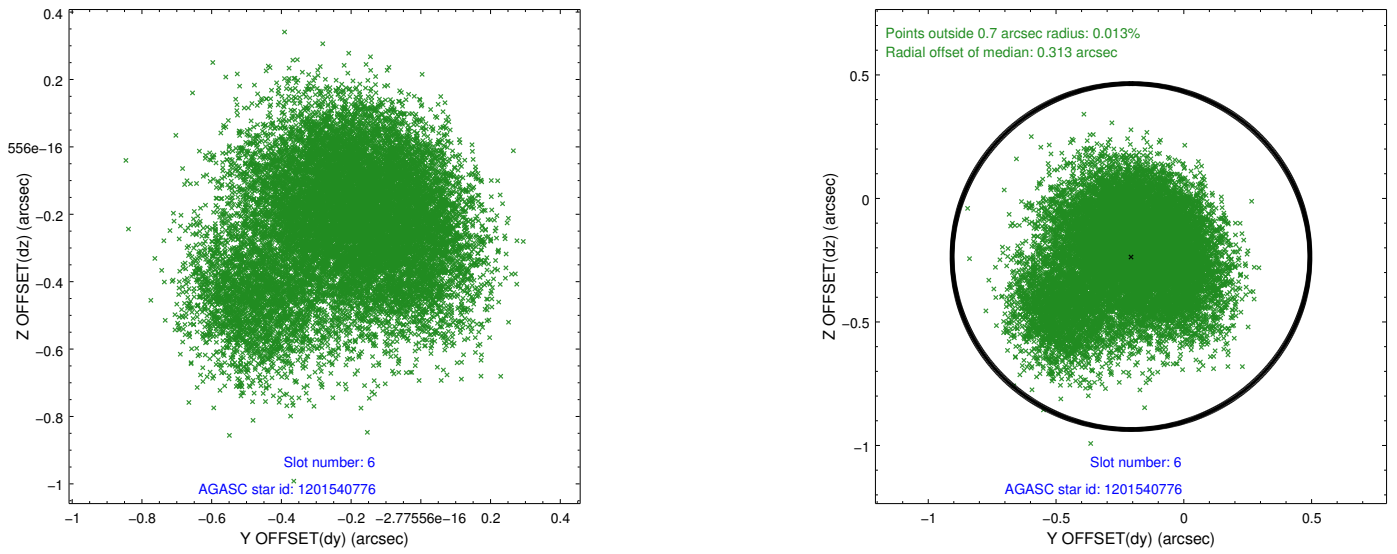
2.4.2 Slot 4



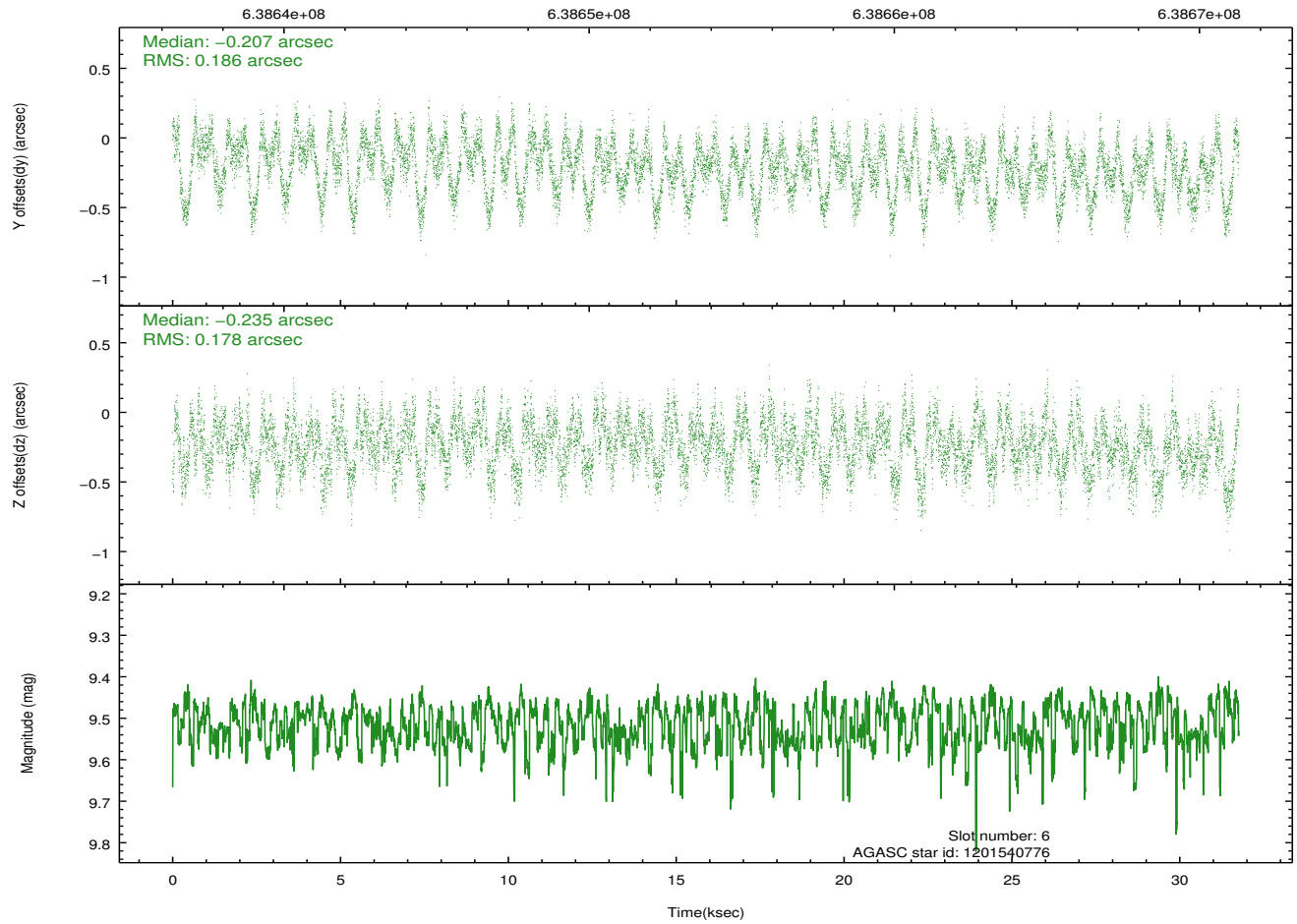
2.4.3 Slot 5



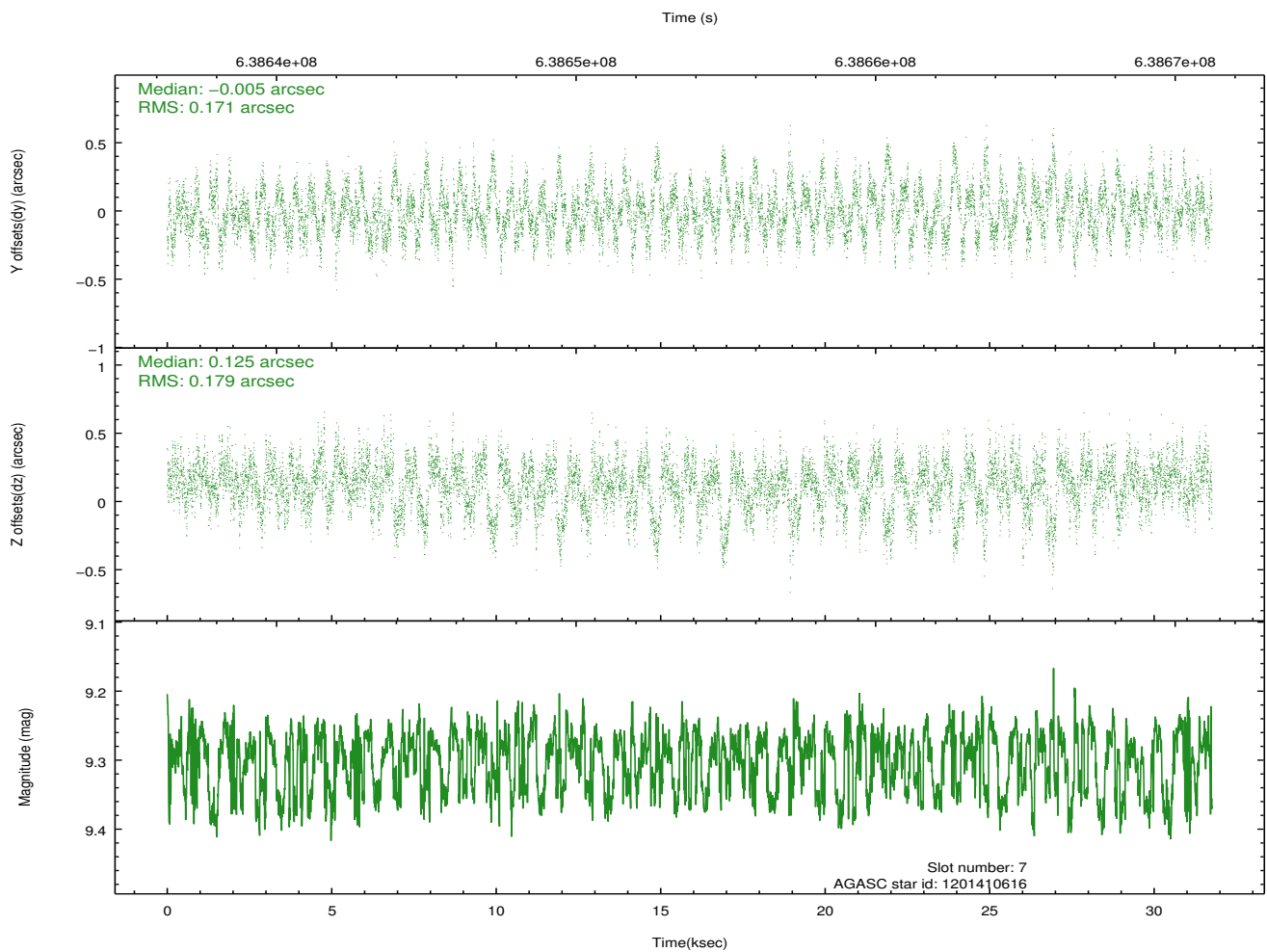
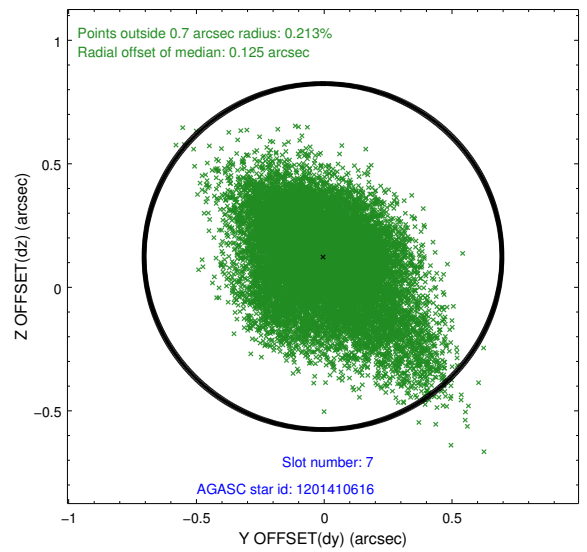
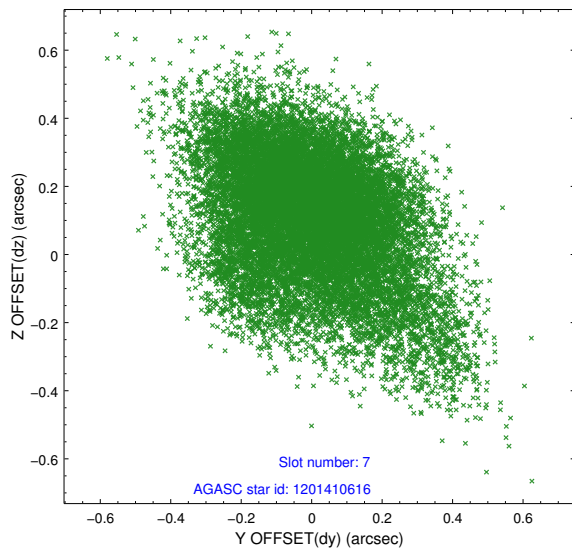
2.4.4 Slot 6



Time (s)

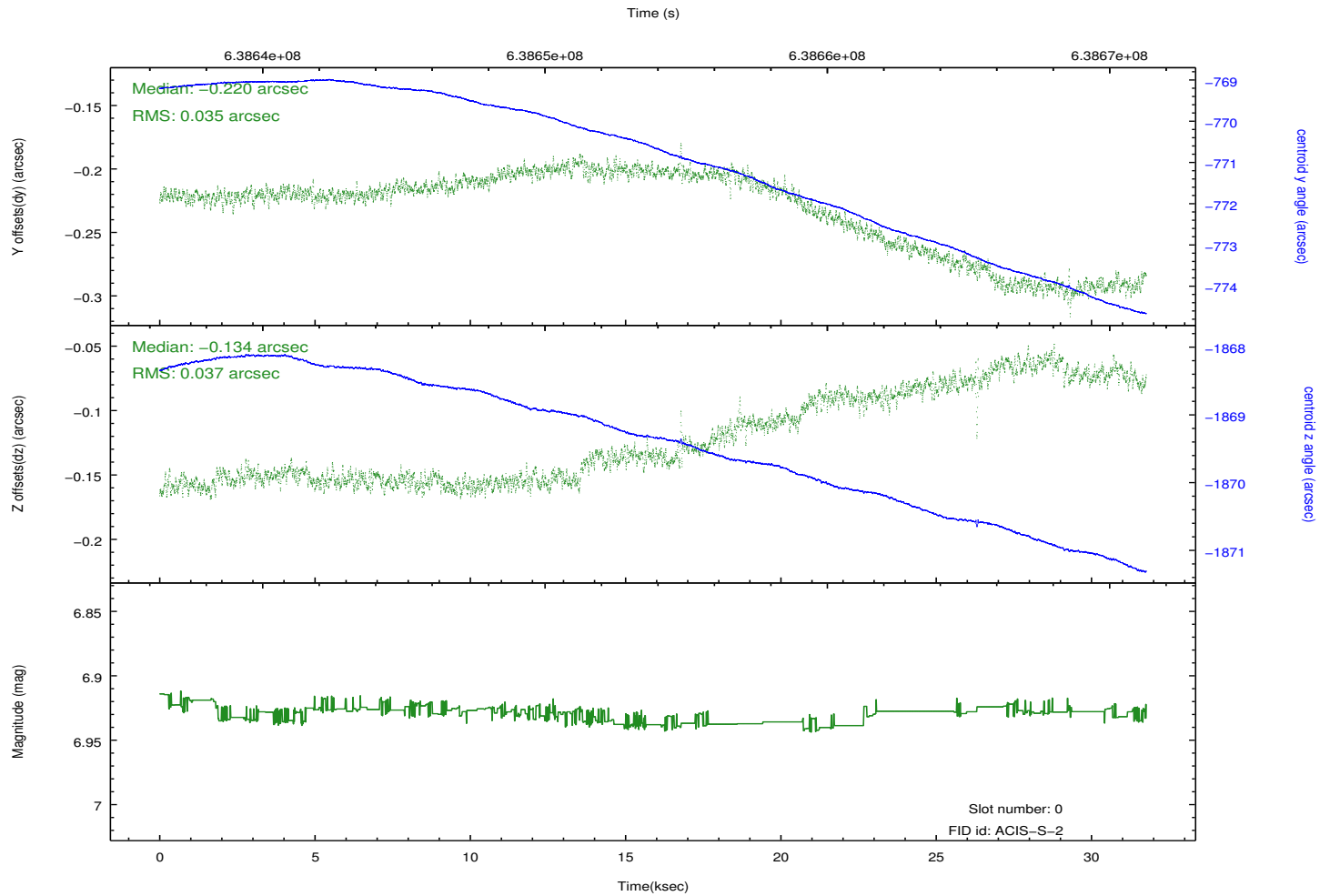
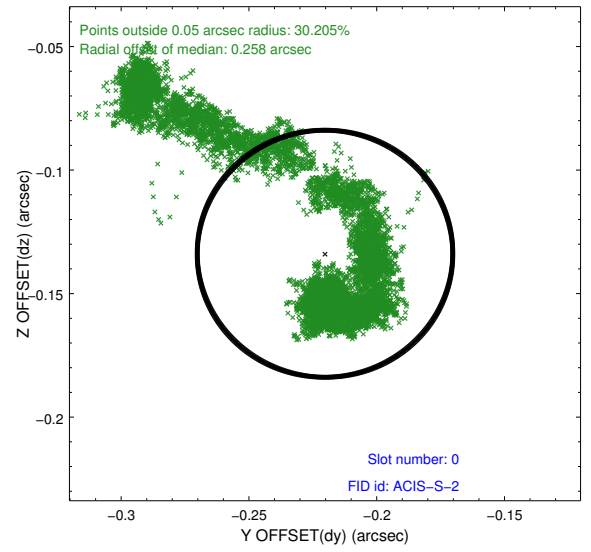
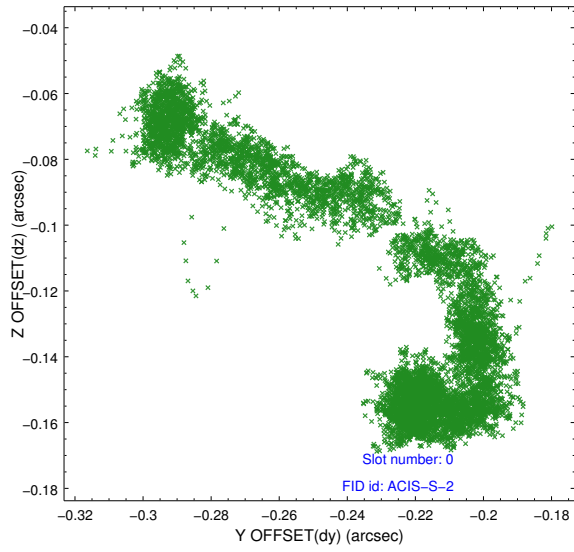


2.4.5 Slot 7

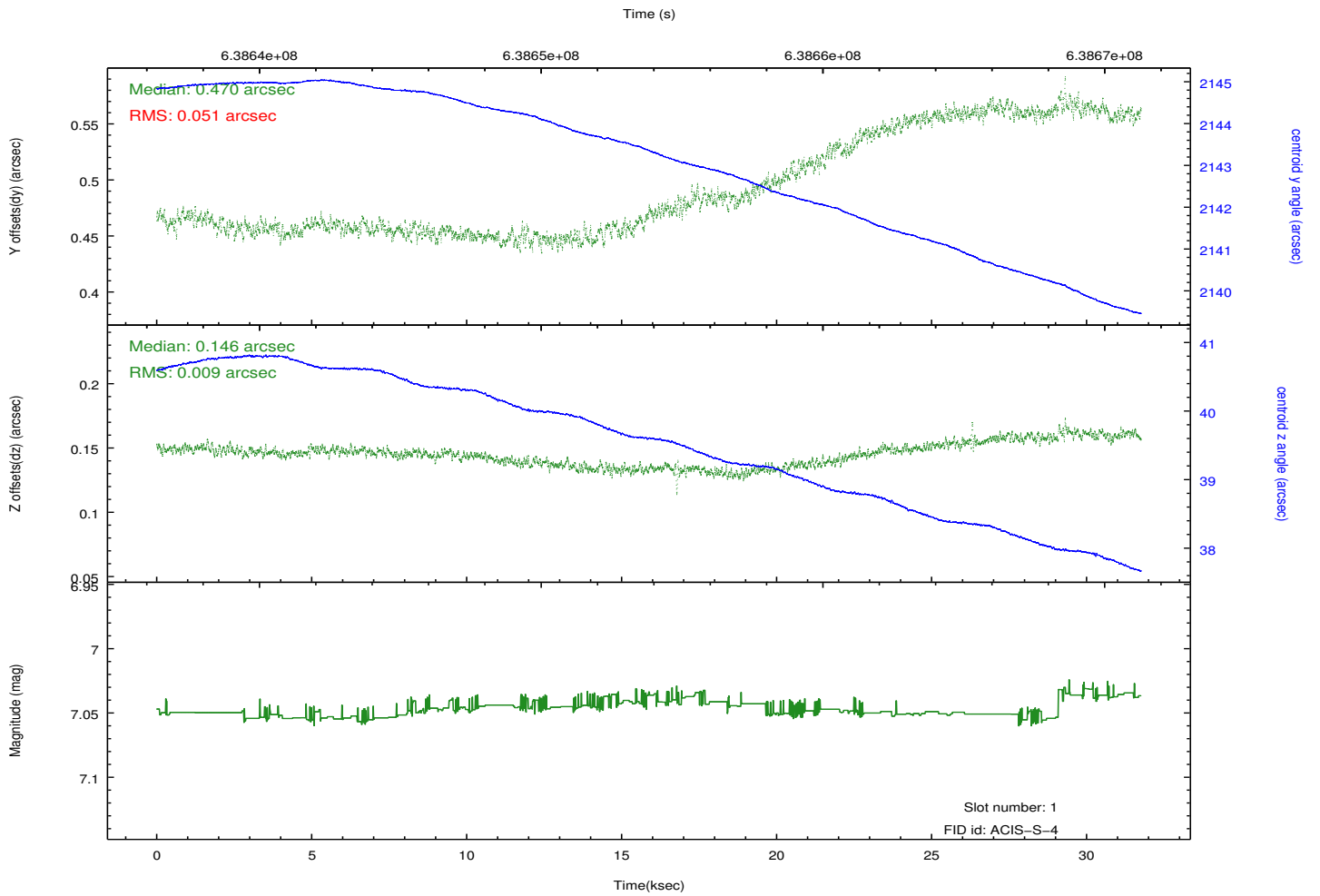
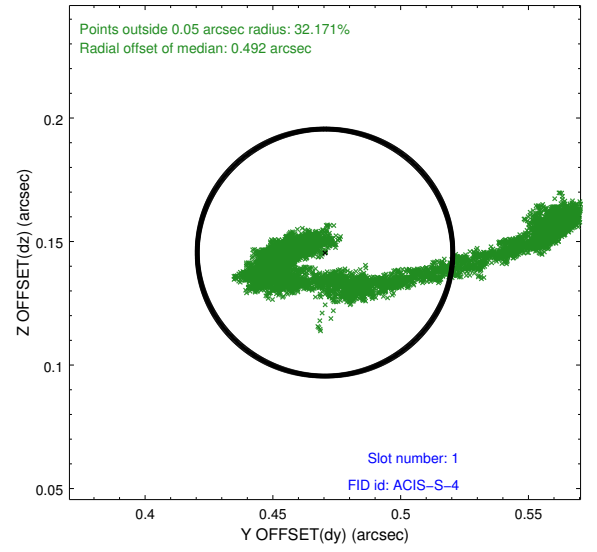
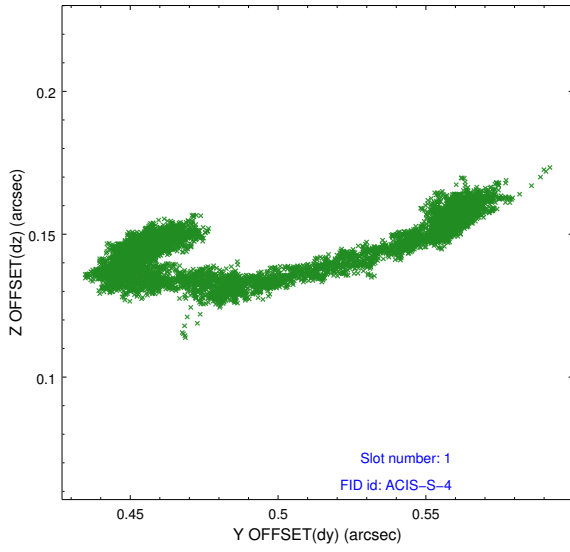


2.5 FID Slots

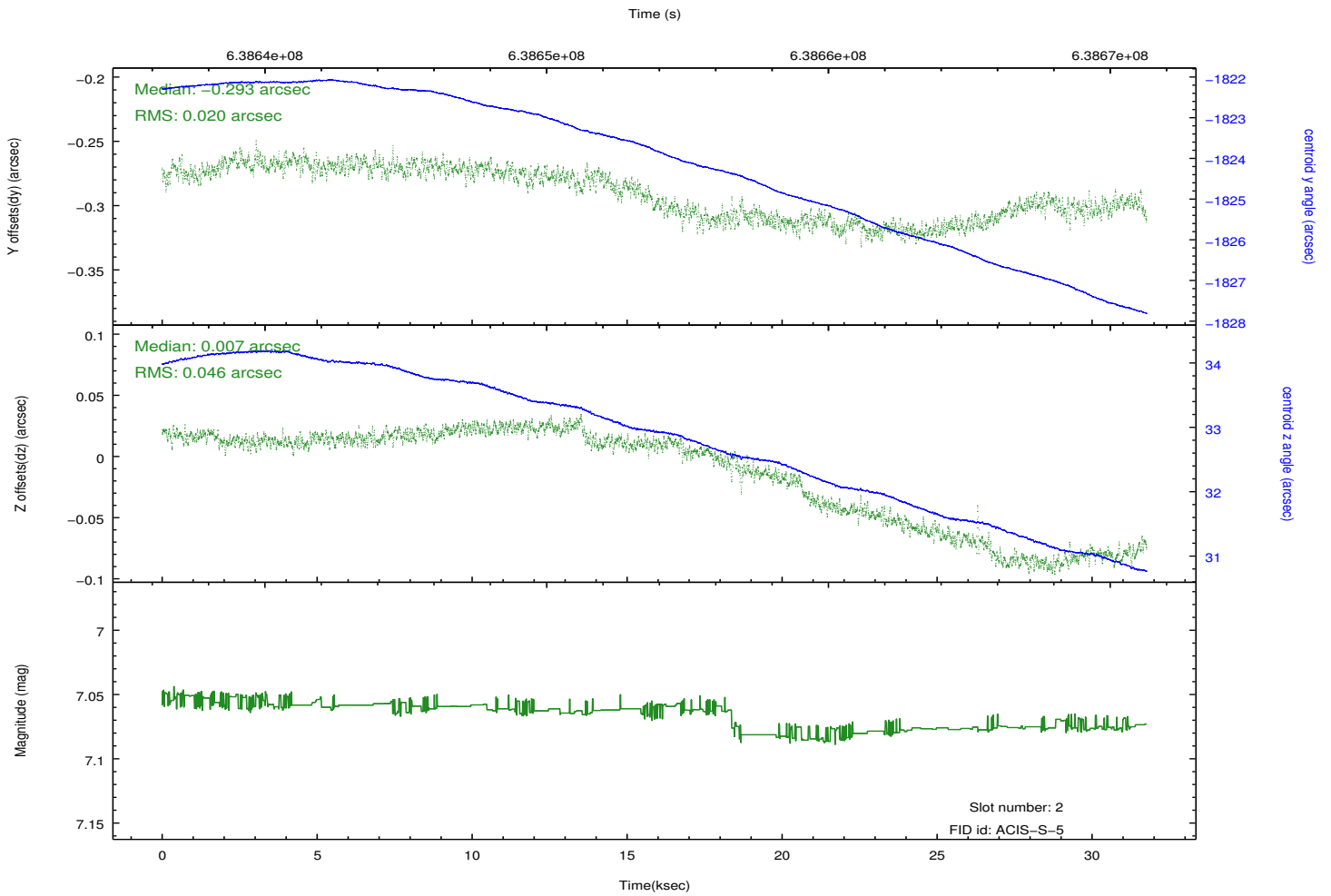
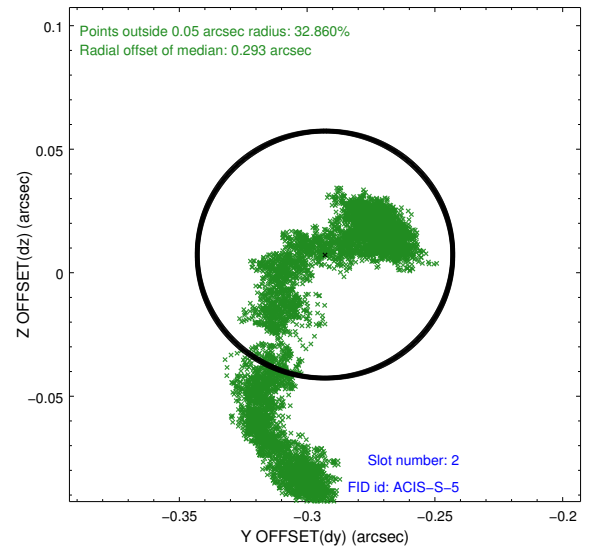
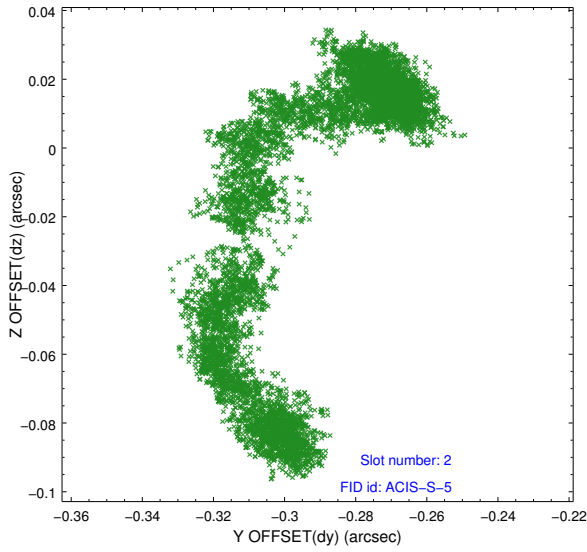
2.5.1 Slot 0



2.5.2 Slot 1

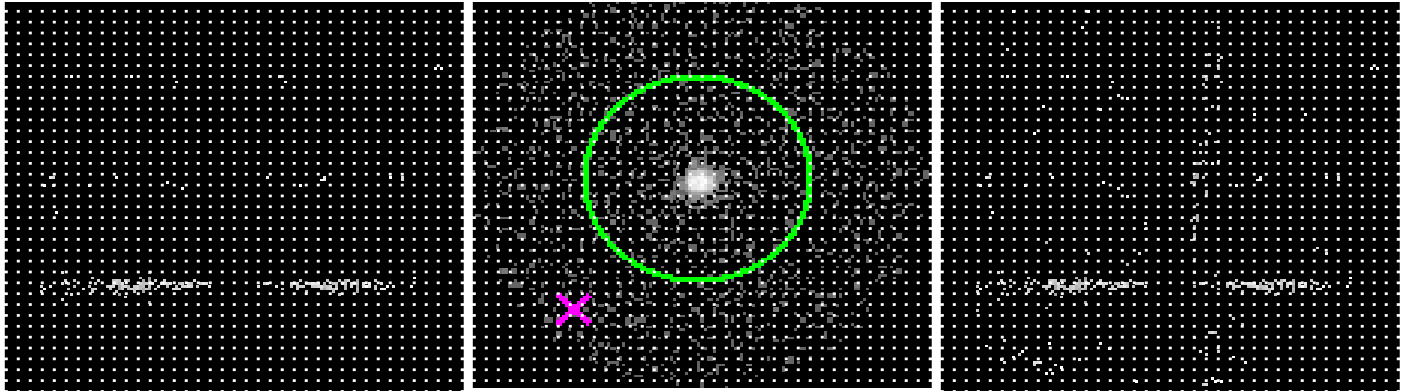


2.5.3 Slot 2



3 Gratings

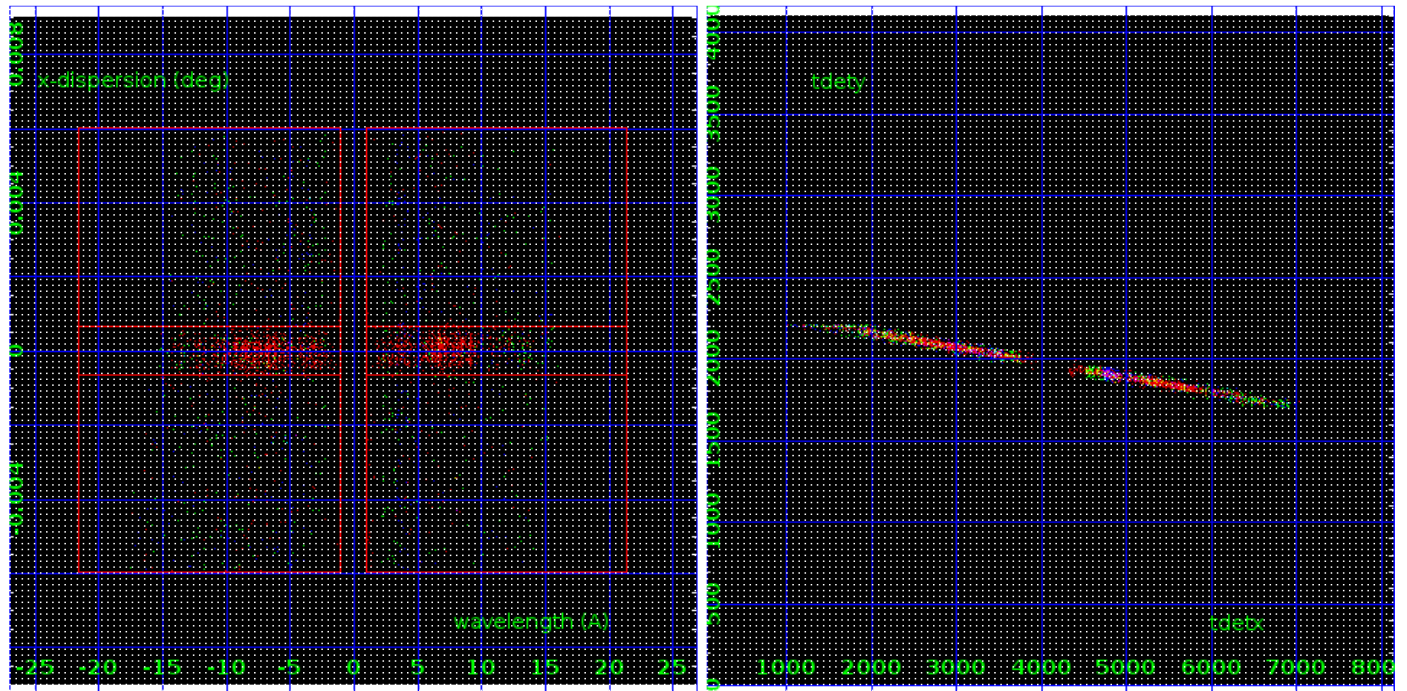
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

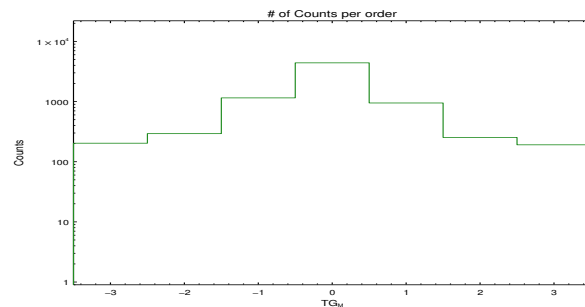
HEG Order Sort ALL

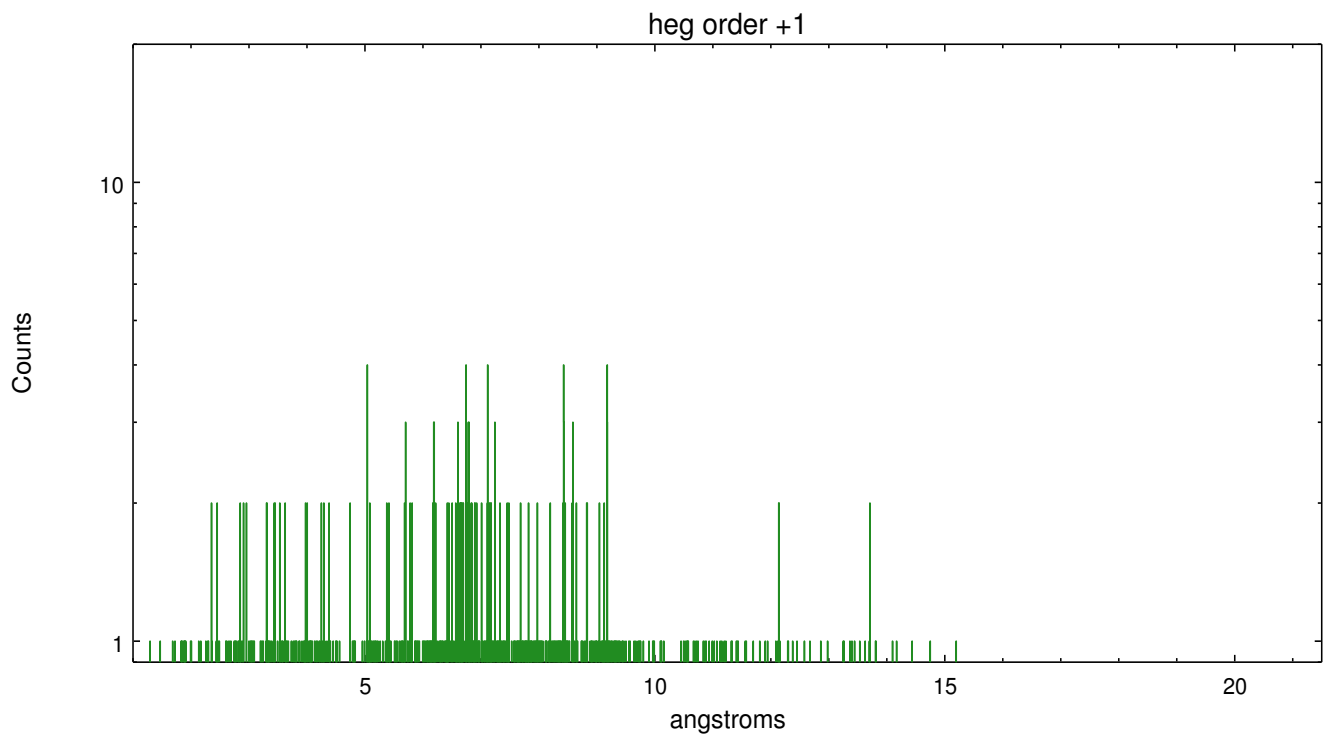
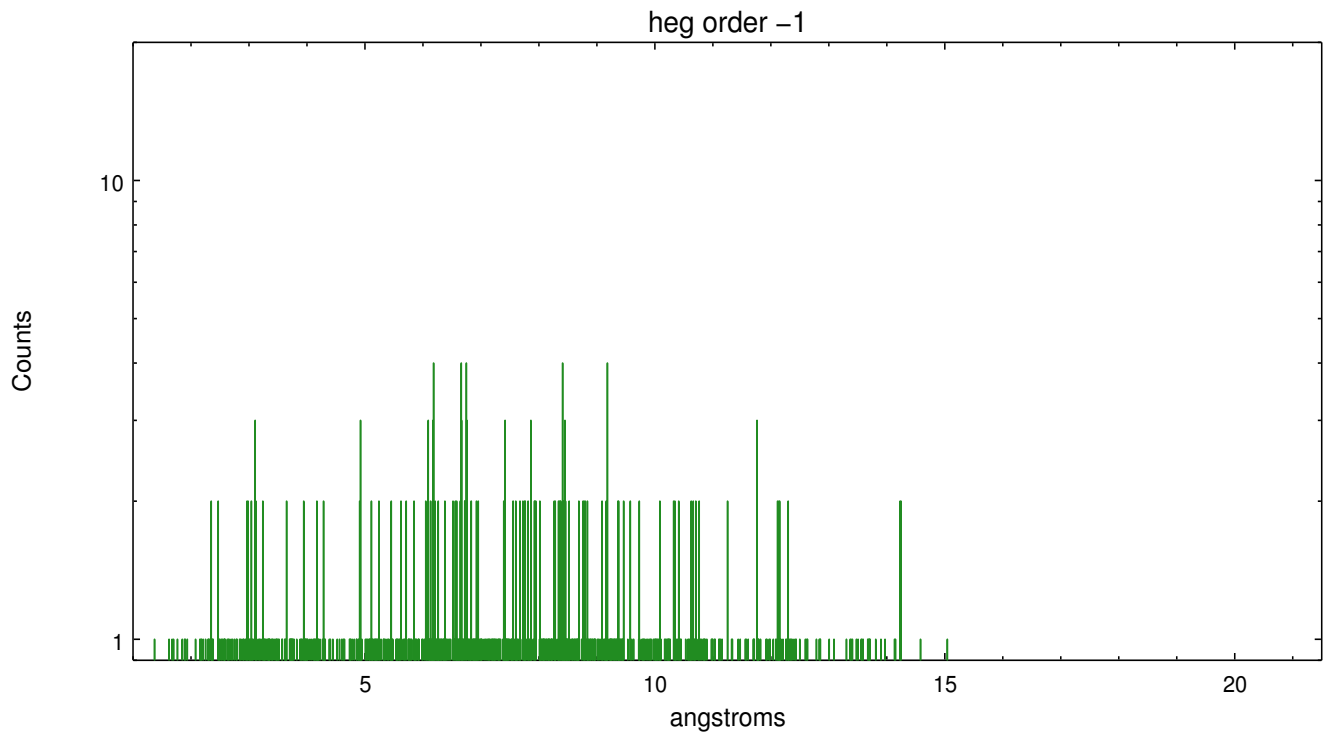


Spot Image HEG

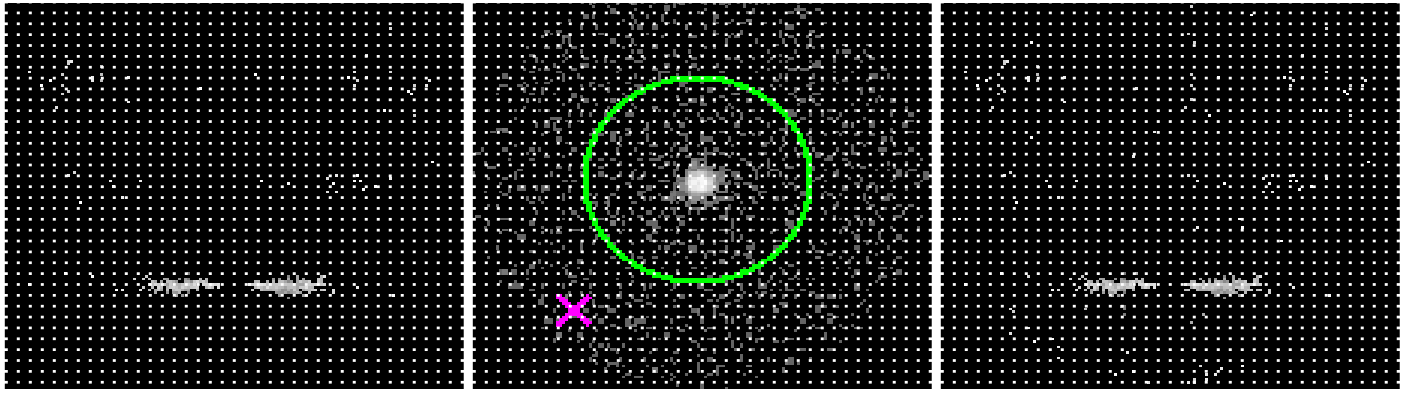
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	203	293	1151	4401	947	253	191





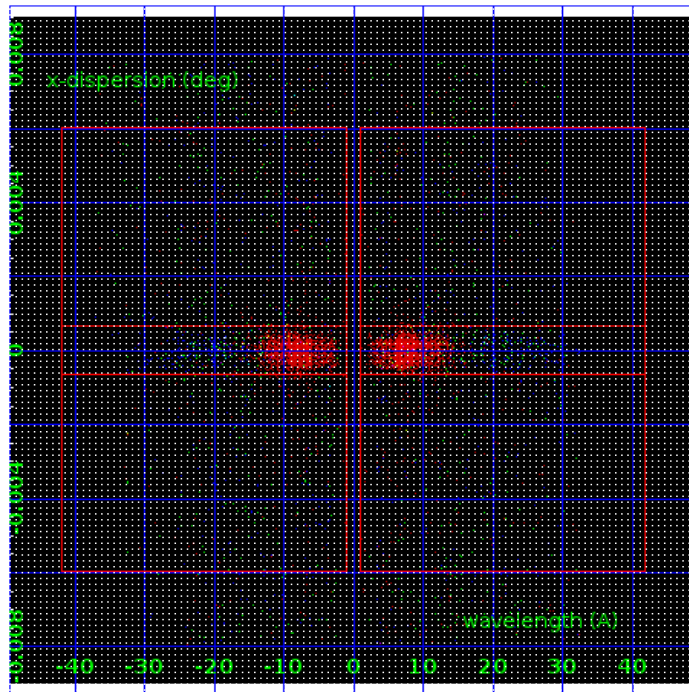
3.2 MEG Arm



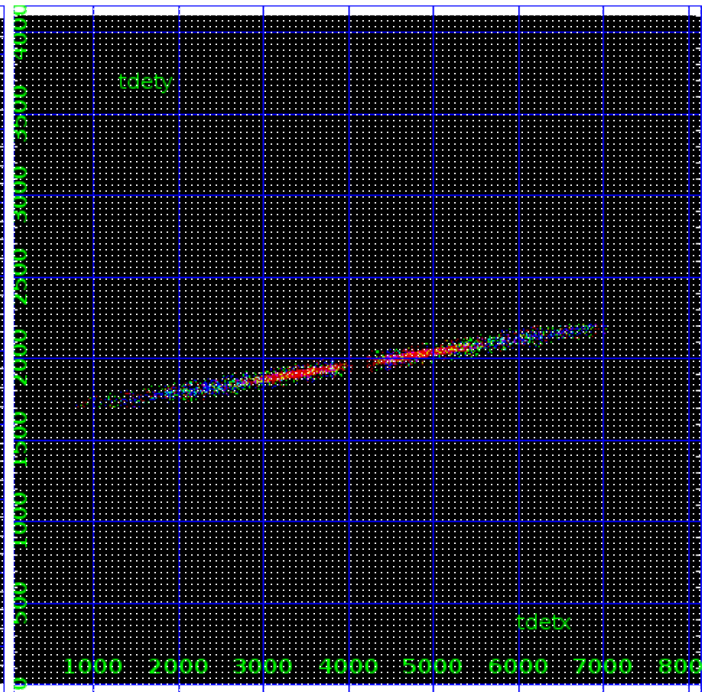
MEG Order Sort 123

MEG Zero Order

MEG Order Sort ALL

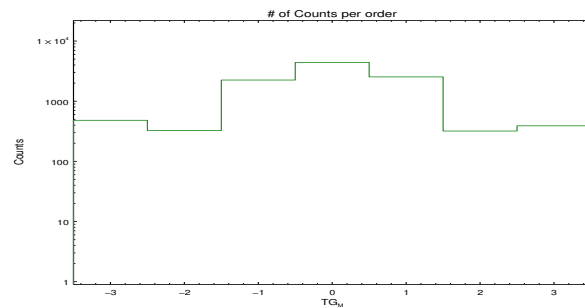


Spot Image MEG

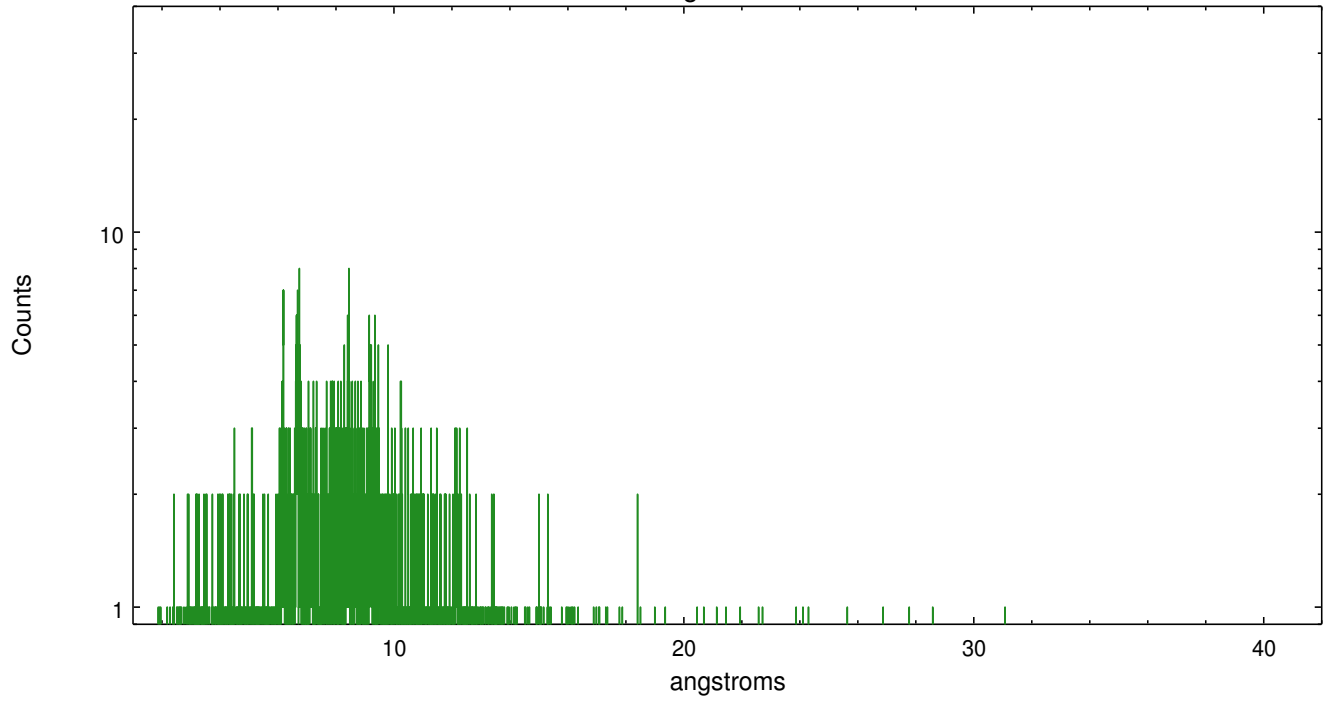


Full Detector MEG

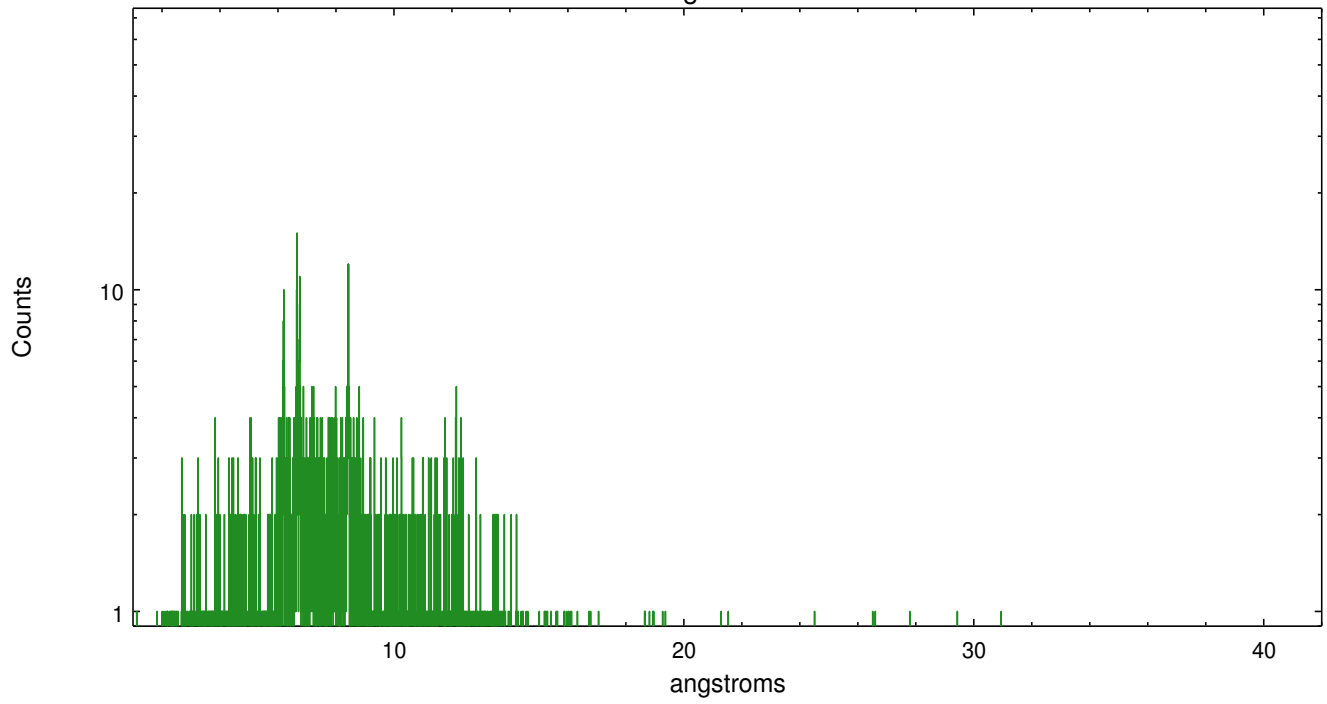
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	481	326	2247	4401	2536	319	390



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2018.03.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	31.643800887585

A.2 Comments

Roll constraint met.

==WARNING: there are no standard ciao tools for analysis of grating spectra from extended sources. The shape of an emission line will be the shape of the zero order spatial structure convolved with the instrumental LSF. Grating extractions can be used, but need to be combined with custom spatial-spectral analysis, since wavelength is multi-valued at any particular diffraction angle. ===WARNING::Zeroth order selected by pipeline tools is well-centered in the supernova remnant but is not at the position(s) of brightest emission. The user may want to select a region or source of interest, then use software tools such as CIAO to specify the coordinates of the zeroth order source of interest before running the tools to resolve the dispersed events.