

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 11044 - L2 Version 3
Chandra X-Ray Center

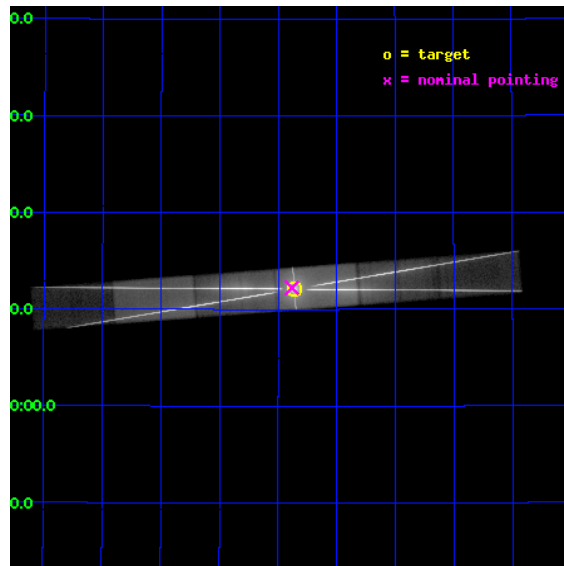
L2 Processing Date : Jun 21 2012

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1 Front

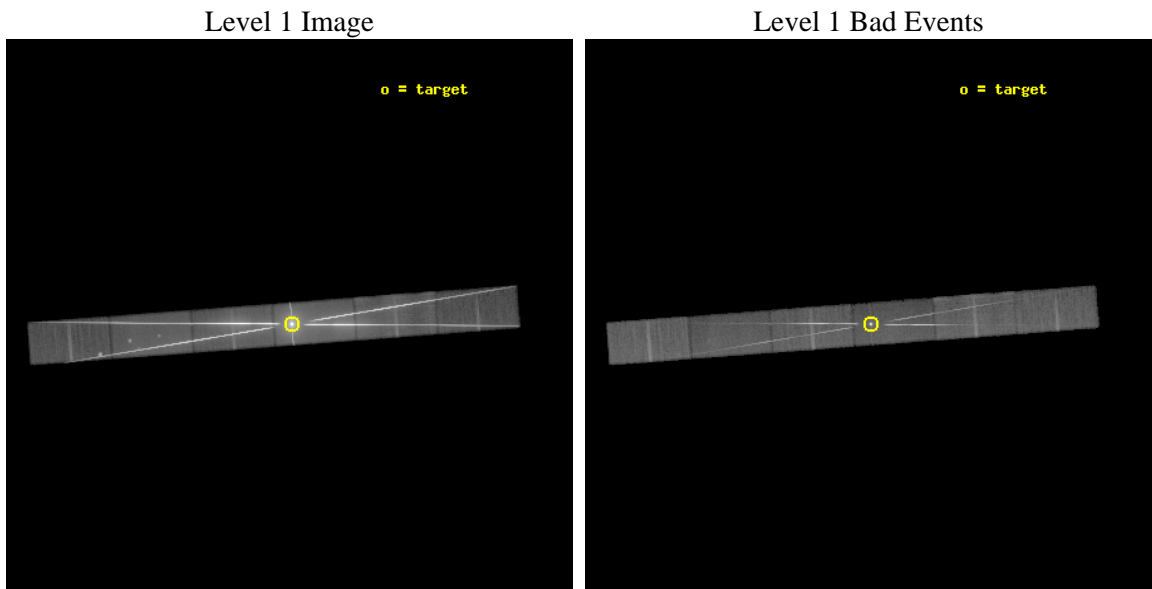
seq_num	401079	Sequence number
obs_id	11044	Observation id
title	Cygnus X-1 Viewed Outside of its Secondary's Wind	Proposal title
observer	Dr. Michael Nowak	Principal investigator
object	Cyg X-1	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	299.590417	Observer's specified target RA [deg]
dec_targ	35.201611	Observer's specified target Dec [deg]
ra_nom	299.5956973062	Nominal RA [deg]
dec_nom	35.203825772804	Nominal Dec [deg]
roll_nom	355.66257925324	Nominal Roll [deg]
revision	3	Processing version of data
ontime	30135.899788737	Sum of GTIs [s]
livetime	29425.532808467	Livetime [s]
ontime4	30135.899788737	Sum of GTIs [s]
ontime5	30135.899788737	Sum of GTIs [s]
ontime6	30135.899788737	Sum of GTIs [s]
ontime7	30135.899788737	Sum of GTIs [s]
ontime8	30135.899788737	Sum of GTIs [s]
ontime9	30135.899788737	Sum of GTIs [s]
l2events	4516713	Number of level 2 events



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	30135.899788737	Sum of GTIs [s]
caldbver	4.4.10	 	ontime4	30135.899788737	Sum of GTIs [s]
date	2012-06-20T00:51:34	Date and time of file creation	ontime5	30135.899788737	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	30135.899788737	Sum of GTIs [s]
			ontime7	30135.899788737	Sum of GTIs [s]
			ontime8	30135.899788737	Sum of GTIs [s]
			ontime9	30135.899788737	Sum of GTIs [s]
			l1events	5767083	Number of level 1 events

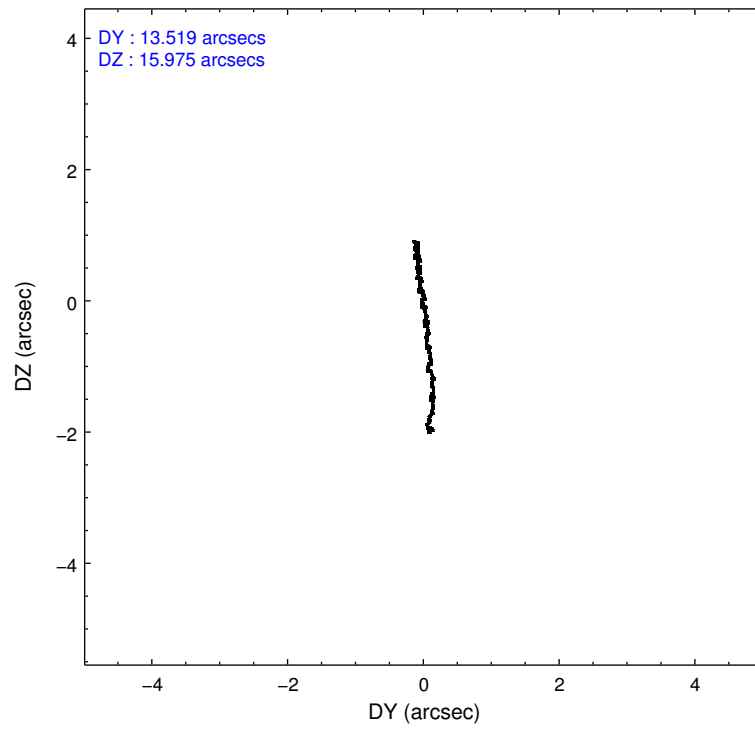
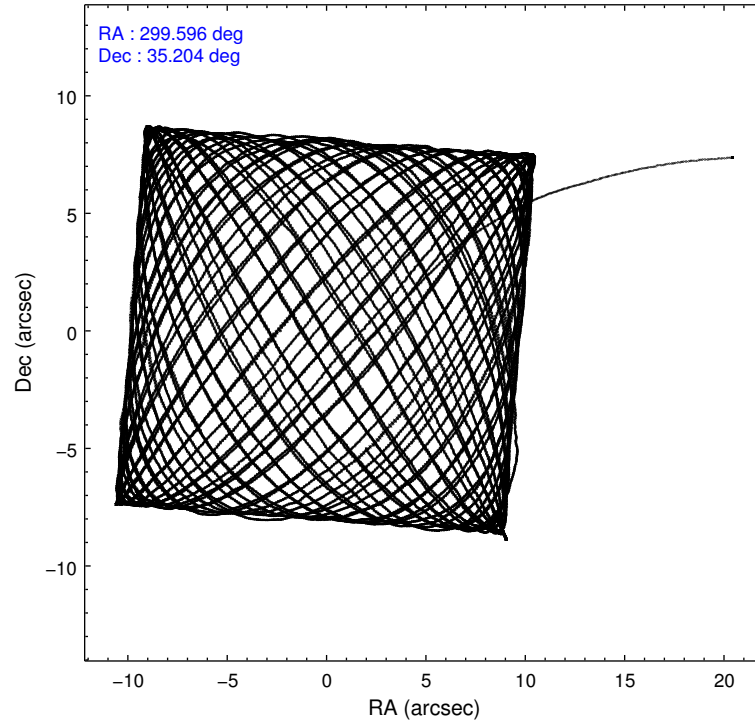
2.1.3 Events

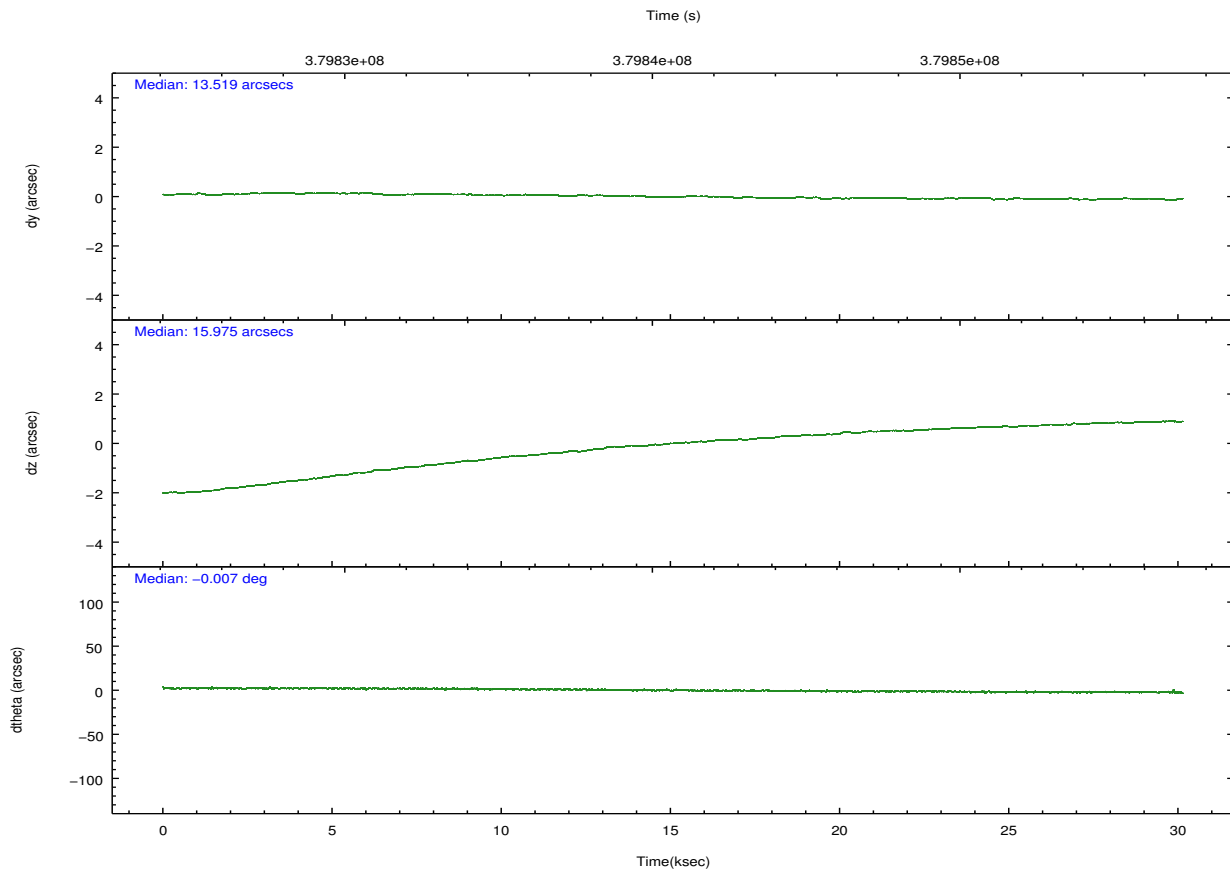
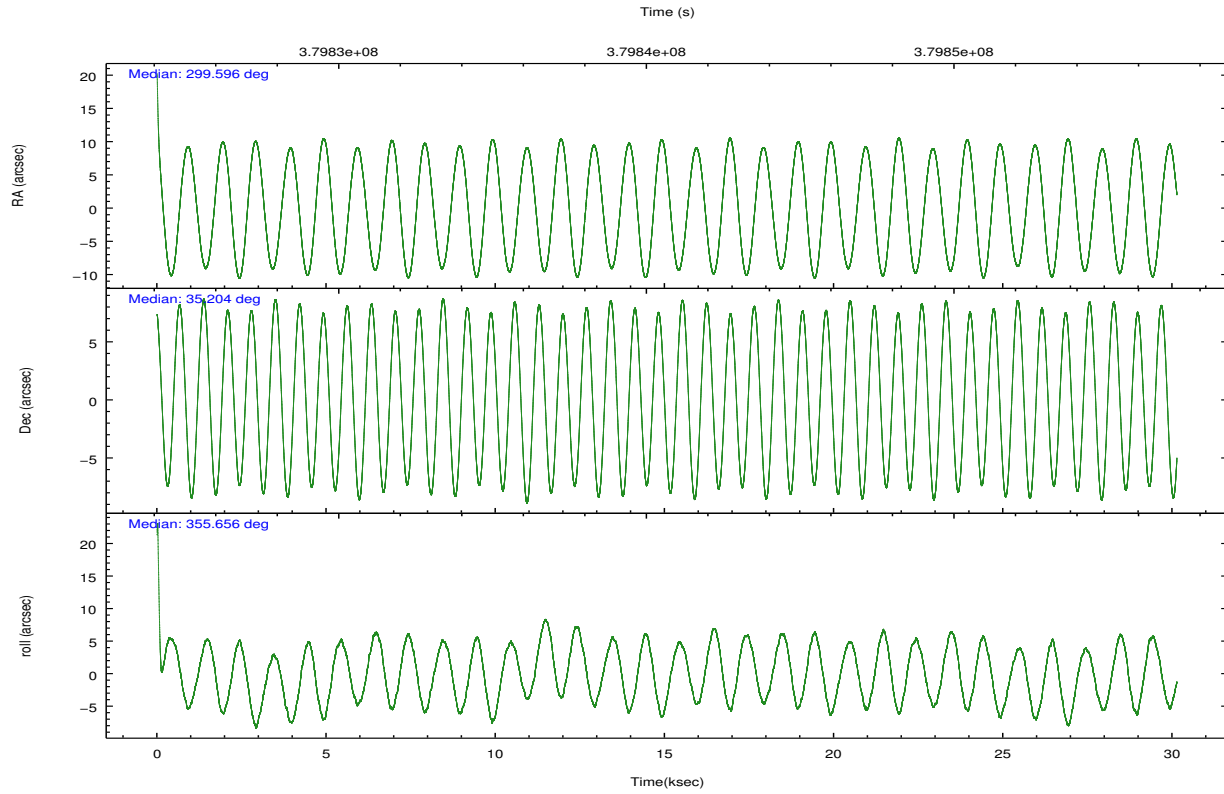
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	231088	585649	1785438	1997197	896724	270987	grade 0 events	65017	120249	1154866	314420	575196	113237
rejected events	143317	114865	219065	251642	158870	120796		28%	20%	64%	15%	64%	41%
rejected %	62%	19%	12%	12%	17%	44%	grade 1 events	278	1183	37195	11338	8311	455
								0%	0%	2%	0%	0%	0%
							grade 2 events	11715	167064	207949	477815	83890	19382
								5%	28%	11%	23%	9%	7%
							grade 3 events	3672	33256	71294	169968	28914	6252
								1%	5%	3%	8%	3%	2%
							grade 4 events	3559	33099	69586	169684	27767	6008
								1%	5%	3%	8%	3%	2%
							grade 5 events	4742	16587	30553	65667	11915	5760
								2%	2%	1%	3%	1%	2%
							grade 6 events	4441	120374	71676	624194	27371	6287
								1%	20%	4%	31%	3%	2%
							grade 7 events	137664	93837	142319	164111	133360	113606
								59%	16%	7%	8%	14%	41%

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	GRADED	GRADED	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	299.565727	299.5956973062001	CCD I2 on	N	N
[deg] Pointing Dec	35.191656	35.20382577280408	CCD I3 on	N	N
[deg] Pointing Roll	355.523209	355.6625792532408	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	-183.992523	-183.9875365069546	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-6.14	-6.144986076053243	CCD S4 on	Y	Y
Phase constraints	Y	Y	CCD S5 on	Y	Y
[d] Phase period	5.599829	5.599829	Number of optional ACIS chips dropped	0	0
[d] Phase epoch (MJD)	55162.619500	55162.619500	On-chip summing requested	N	N
Phase start	0.450000	0.450000	Subarray requested	CUSTOM	1/2
Phase end	0.500000	0.500000	Subarray start row	1	1
Phase start error	0.100000	0.100000	Subarray row count	512	512
Phase end error	0.100000	0.100000	Alternating exposures requested	N	N
[s] Observation start time (MET)	379825747.184000	379824568.91901	[s] Primary exposure time	0.000000	1.7
Observation start date	2010-01-14T03:08:01	2010-01-14T02:49:28			
[s] Observation end time (MET)	379855747.184000	379857181.34566			
Observation end date	2010-01-14T11:28:01	2010-01-14T11:53:01			
Read mode	TIMED	TIMED			

2.3 Aspect





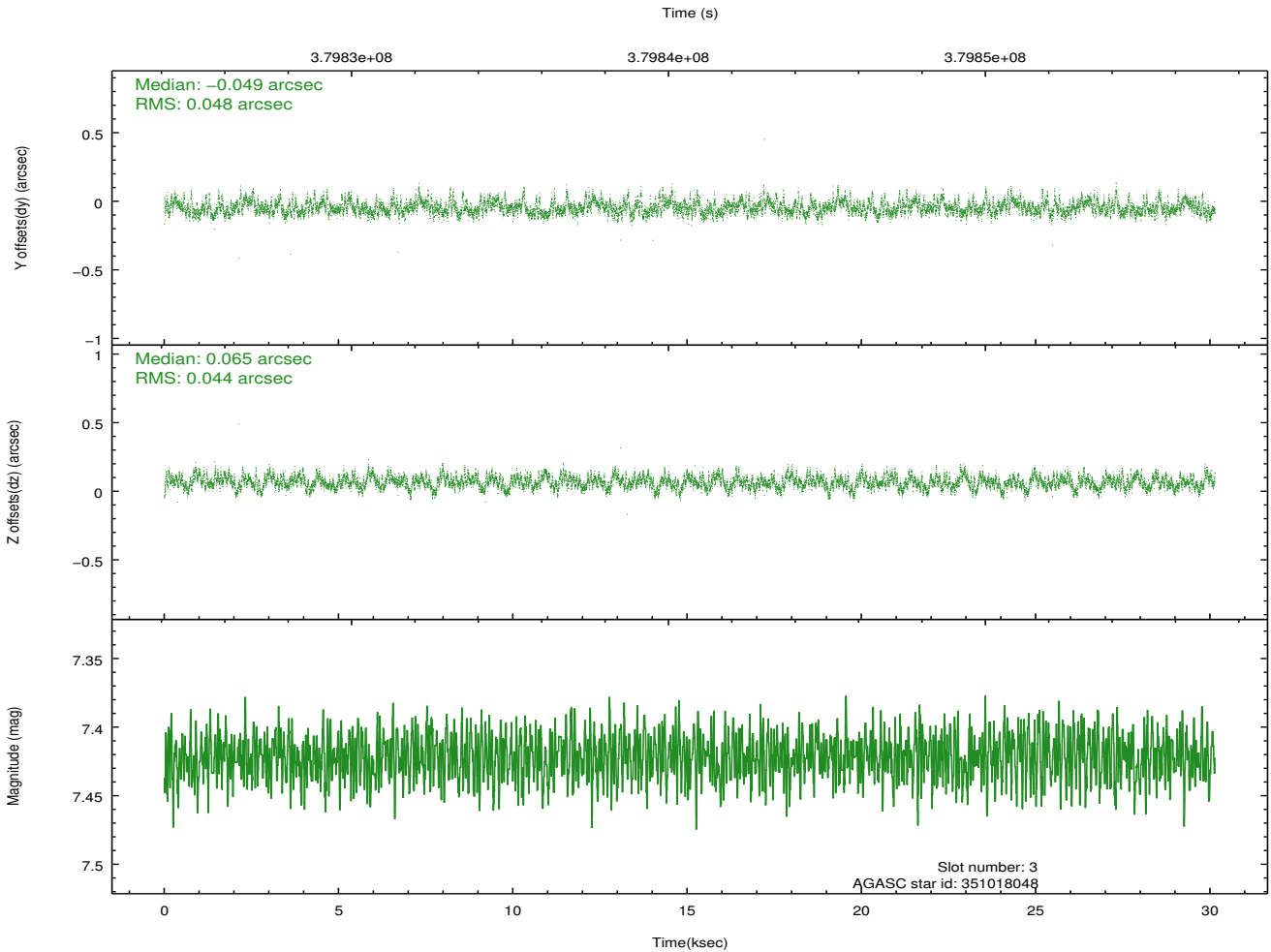
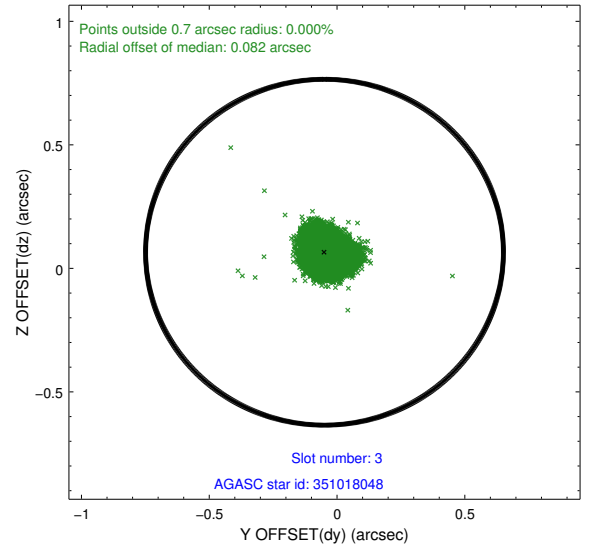
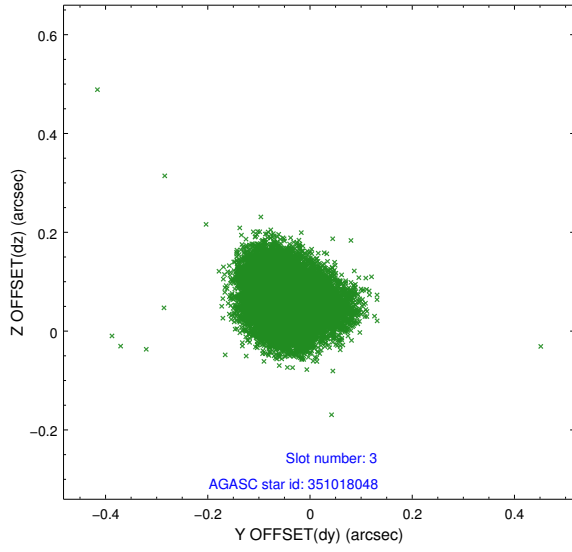
Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	6.98	7351	0.069	0.061	0.023	0.056	0.000000	0.000000	930.14	-1859.36
1	FID	ACIS-S-5	7.03	7349	-0.135	0.066	0.014	0.022	0.000000	0.000000	-1819.07	38.04
2	FID	ACIS-S-6	7.17	7351	0.045	-0.110	0.017	0.049	0.000000	0.000000	395.53	681.97
3	GUIDE	351018048	7.42	14701	-0.049	0.065	0.069	0.109	299.715174	35.497760	351.00	1133.39
4	GUIDE	351018080	8.33	14700	0.046	-0.005	0.071	0.110	299.327312	34.581247	-532.45	-2245.05
5	GUIDE	351023656	8.16	14691	-0.074	0.108	0.084	0.134	299.727900	34.661972	627.97	-1863.11
6	GUIDE	351406096	8.89	14678	-0.006	-0.041	0.084	0.138	299.076637	35.711249	-1571.52	1756.46
7	GUIDE	351016136	8.57	14697	0.081	-0.126	0.080	0.131	300.302636	34.786391	2285.80	-1276.17

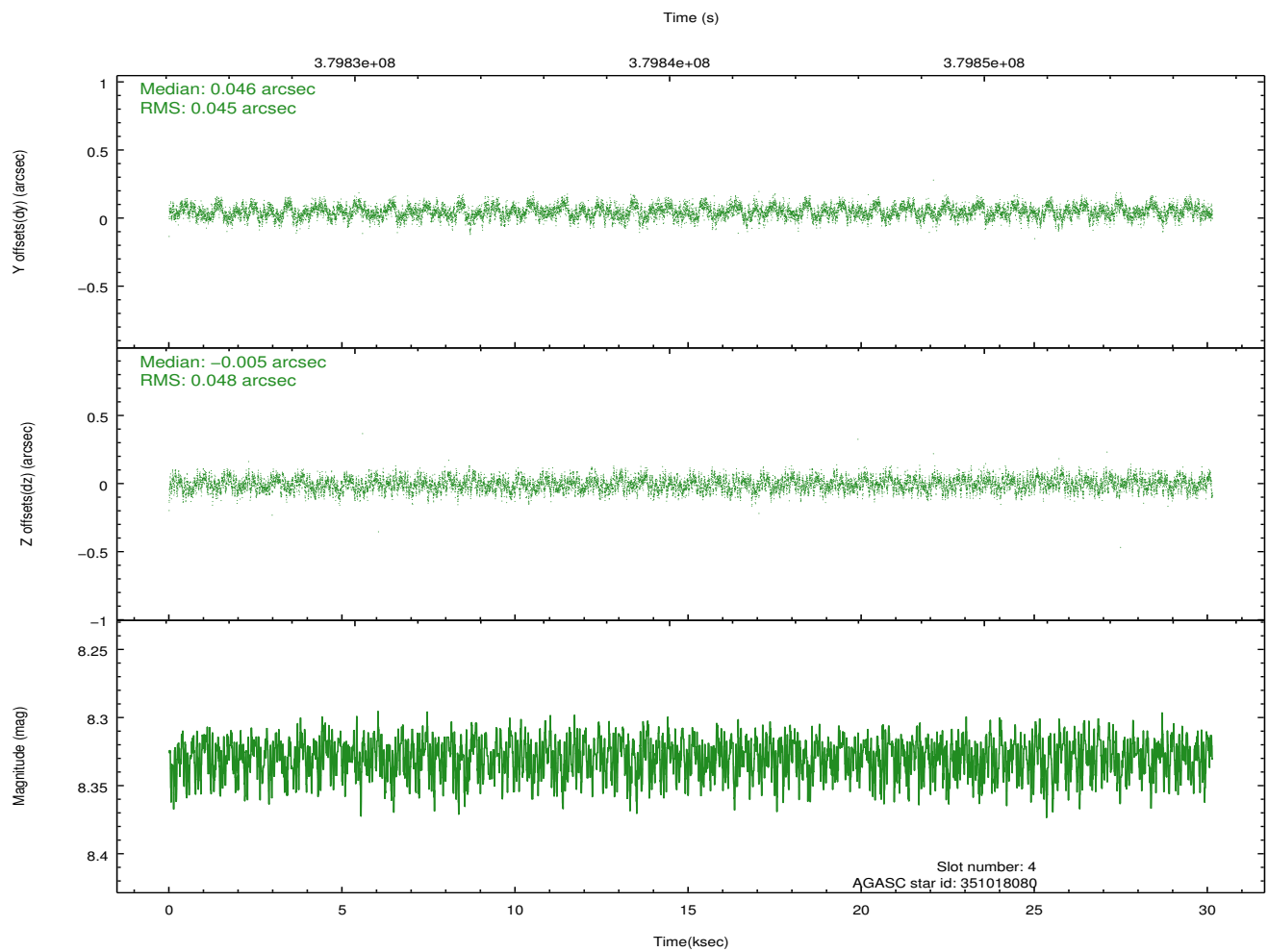
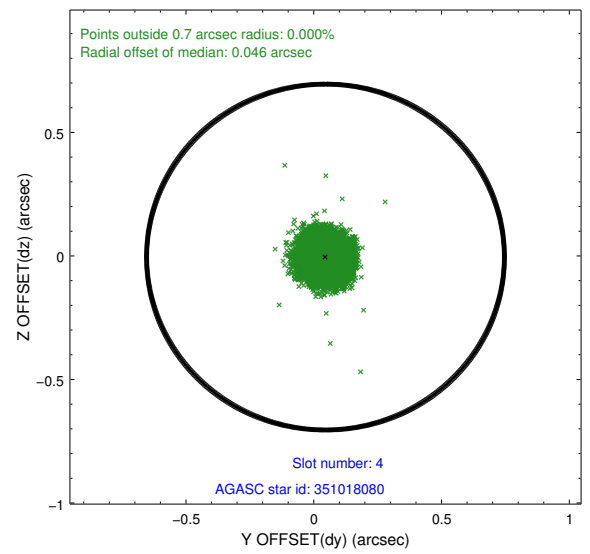
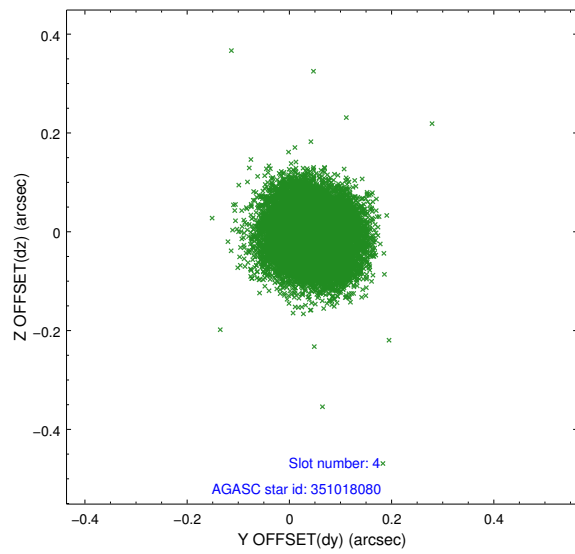
∞

2.4 Star Slots

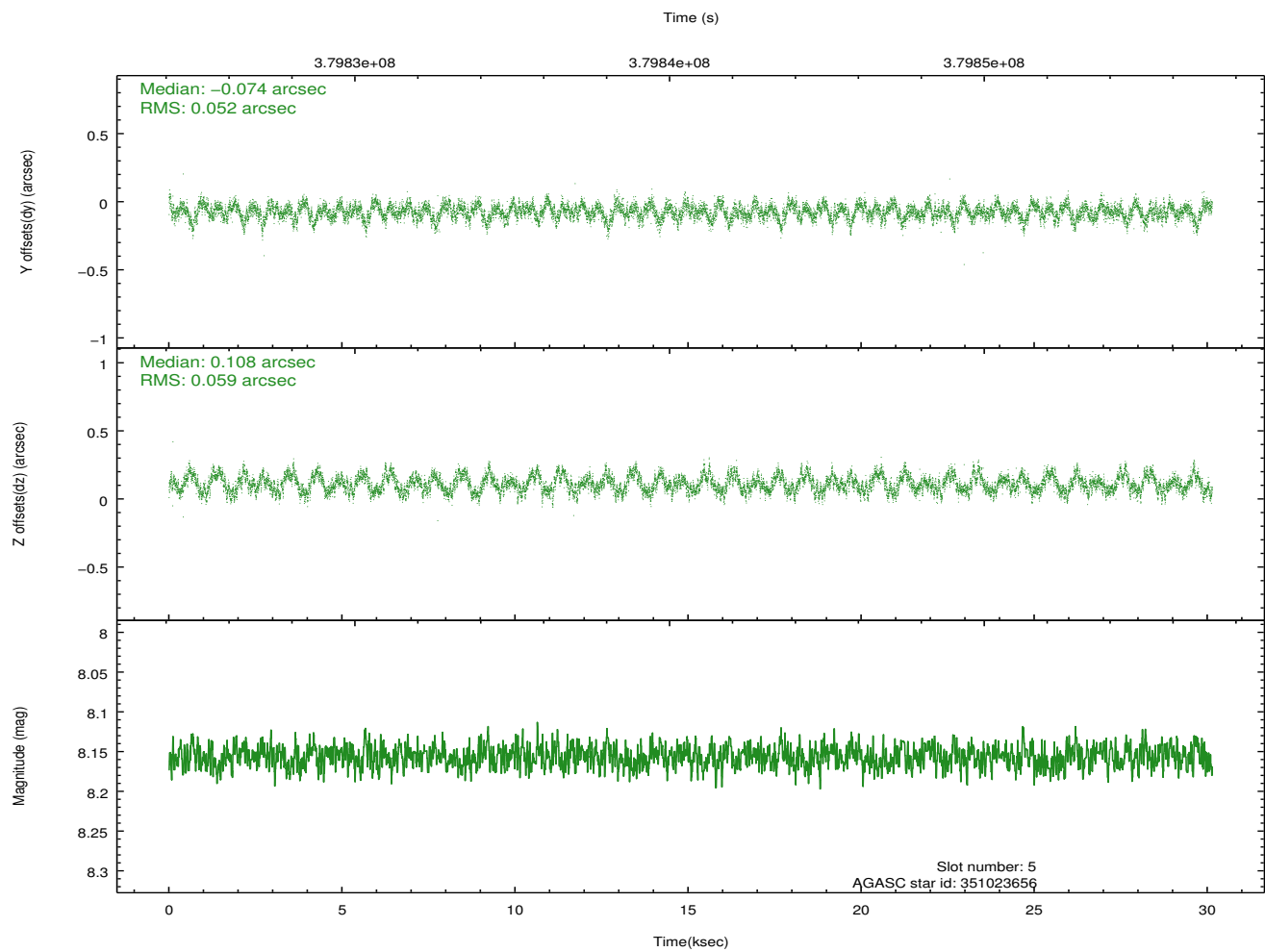
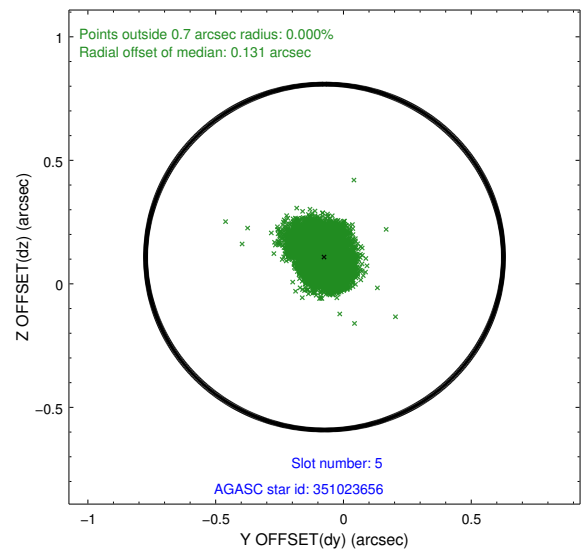
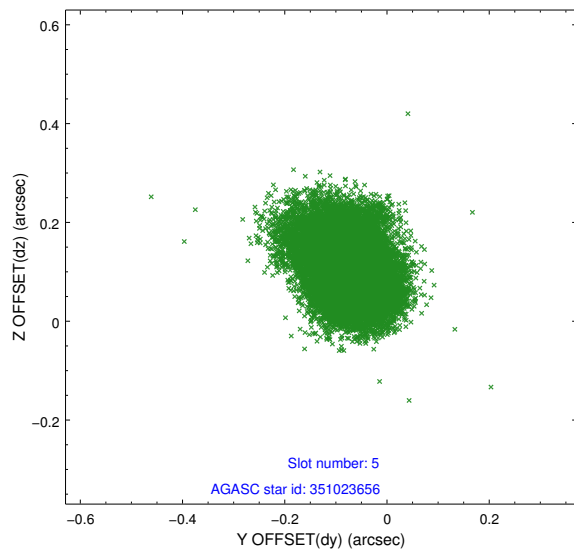
2.4.1 Slot 3



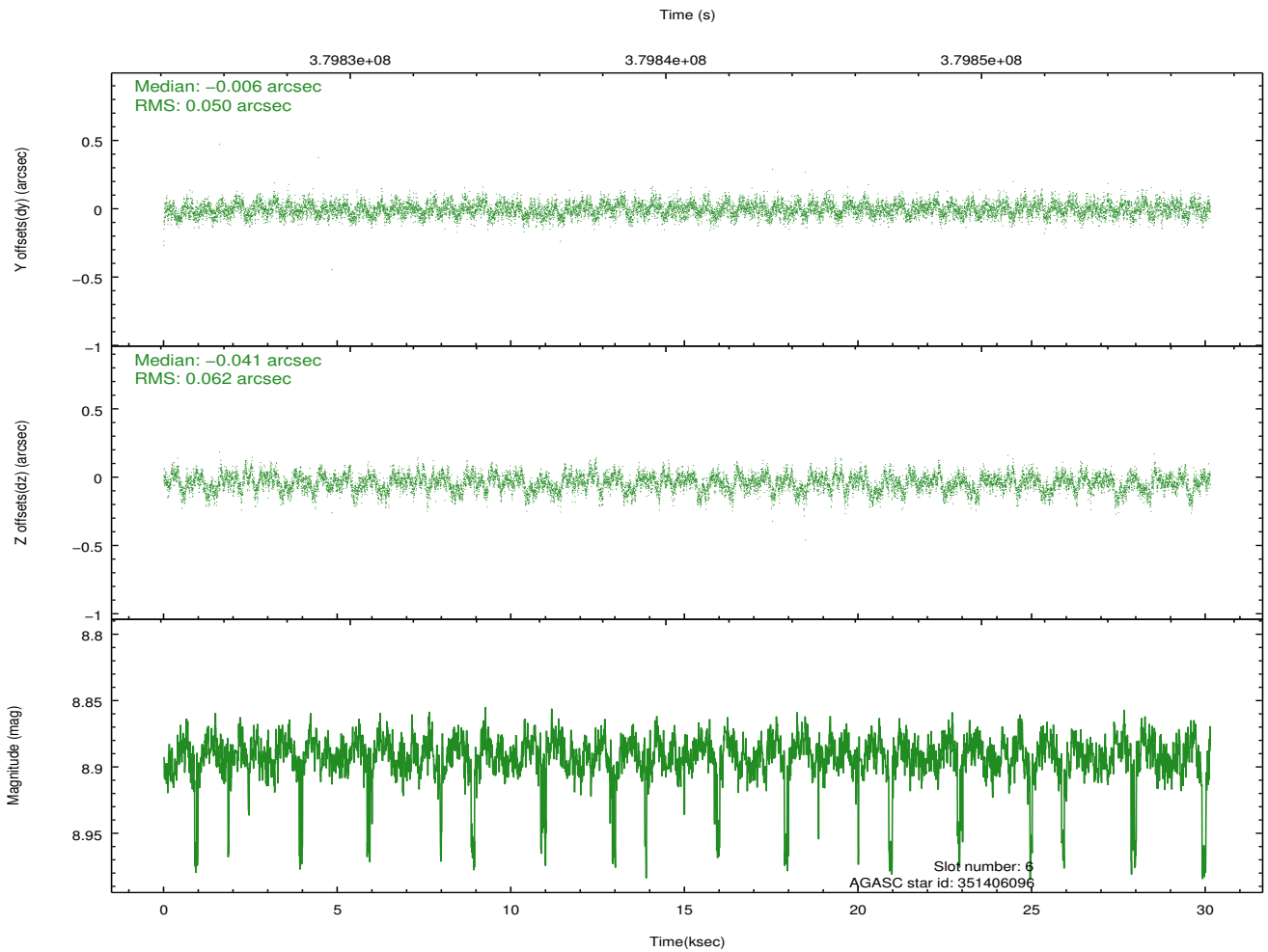
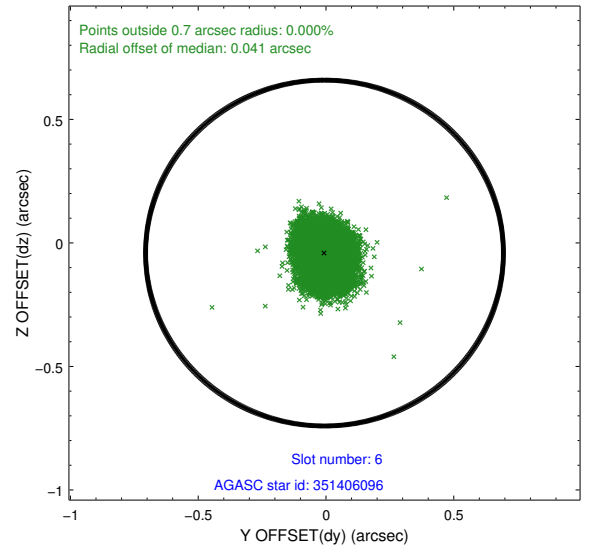
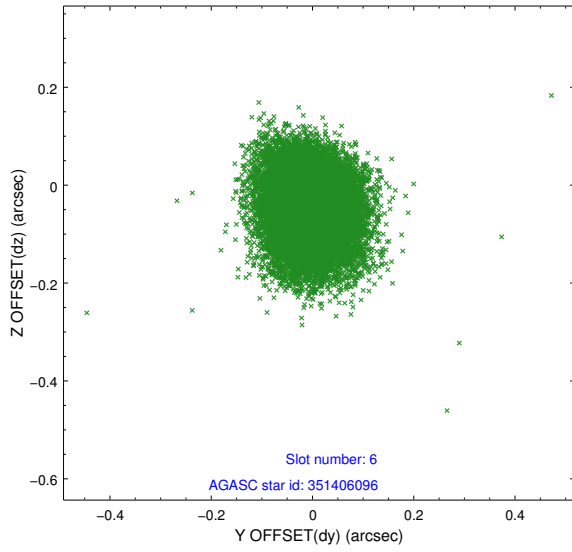
2.4.2 Slot 4



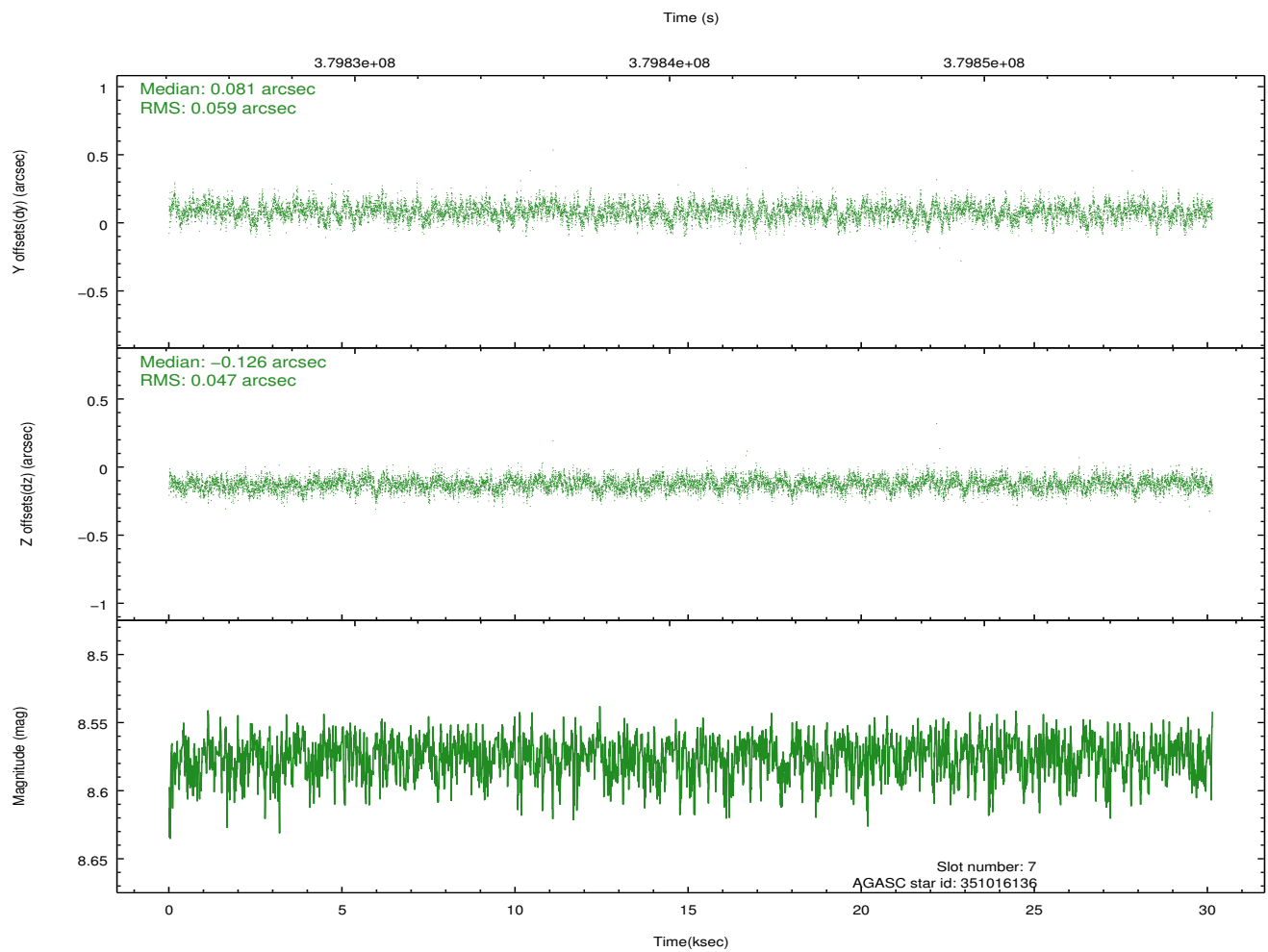
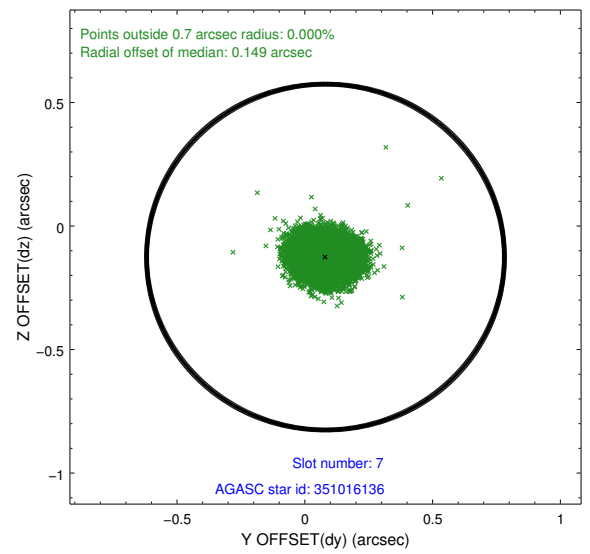
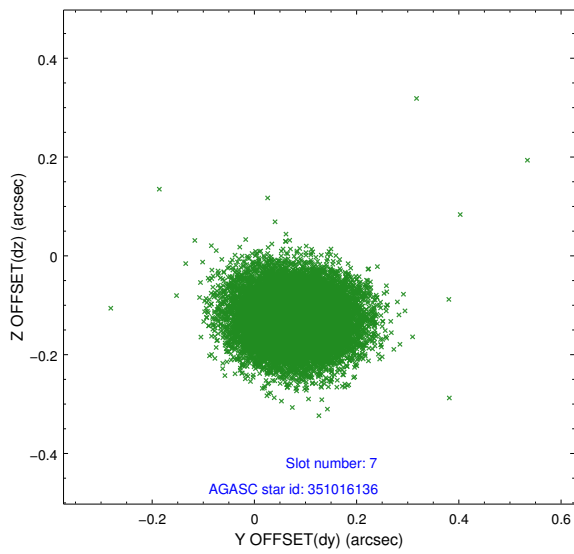
2.4.3 Slot 5



2.4.4 Slot 6

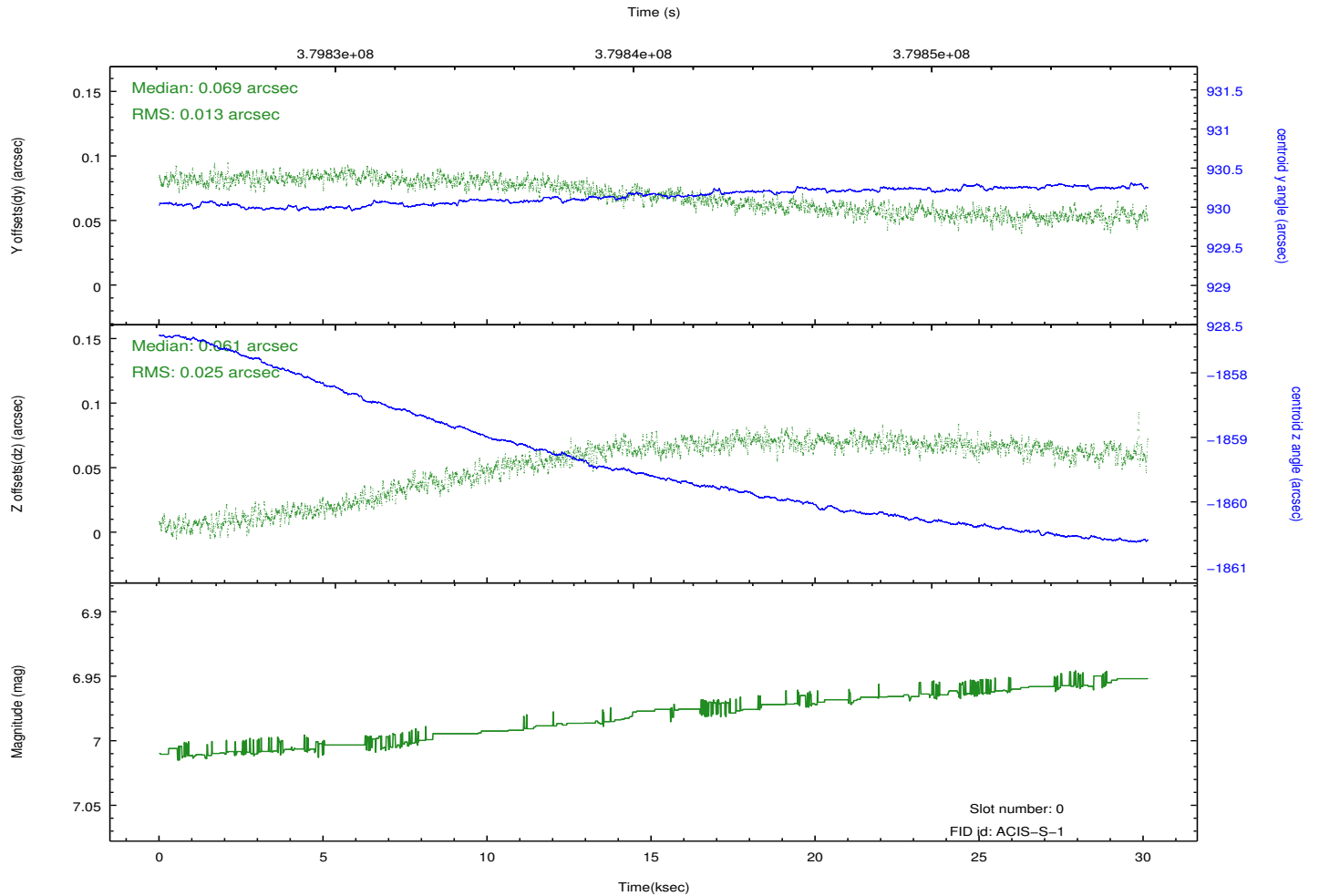
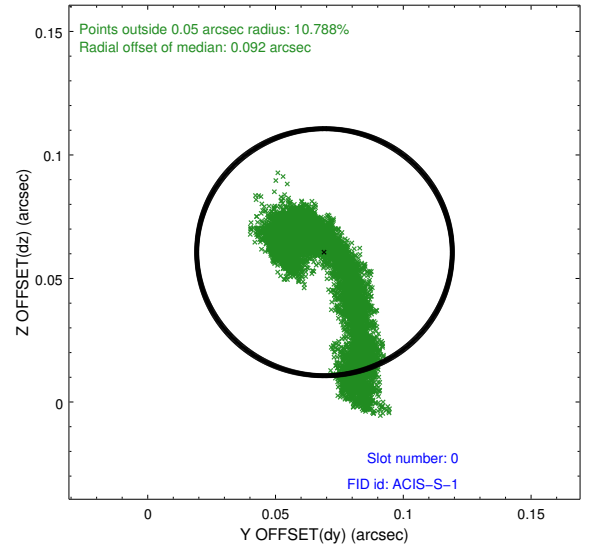
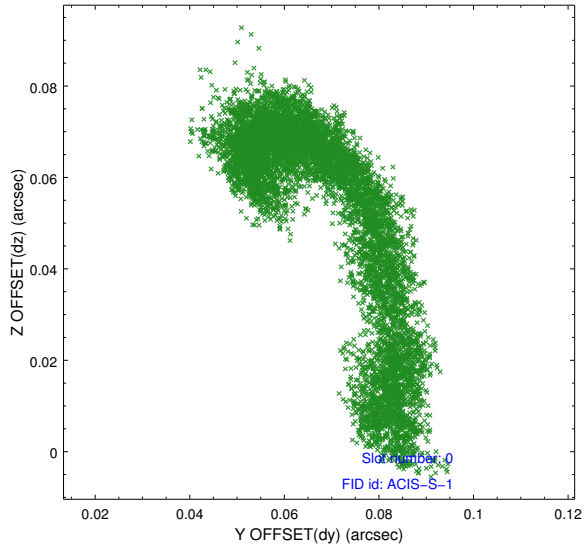


2.4.5 Slot 7

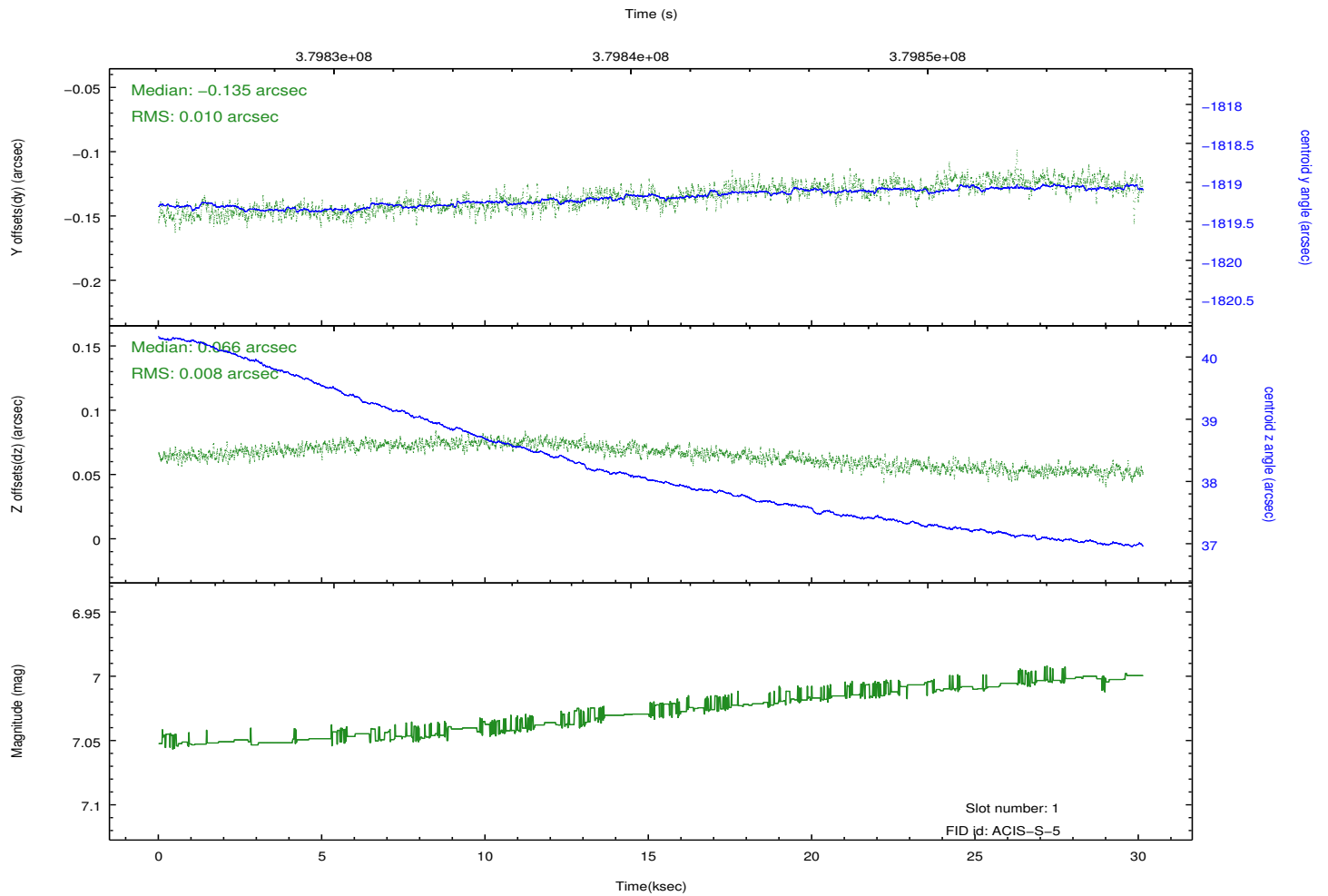
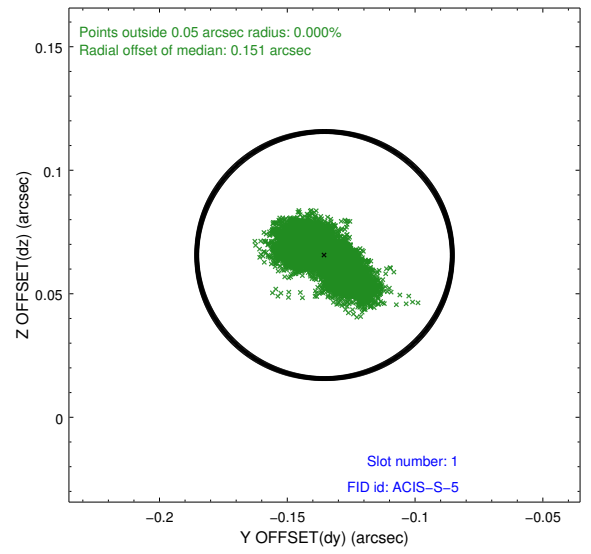
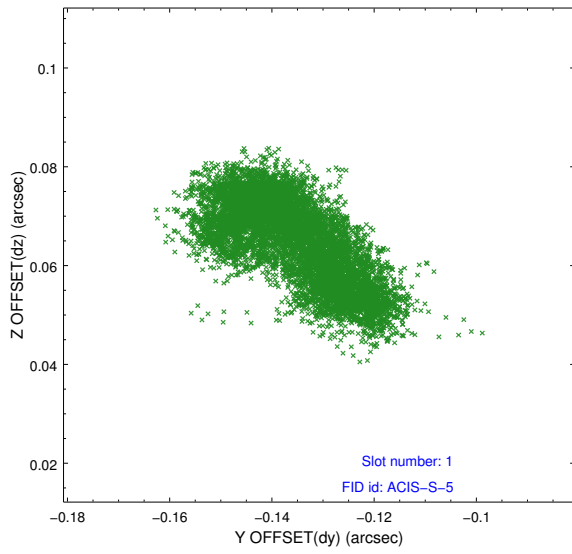


2.5 FID Slots

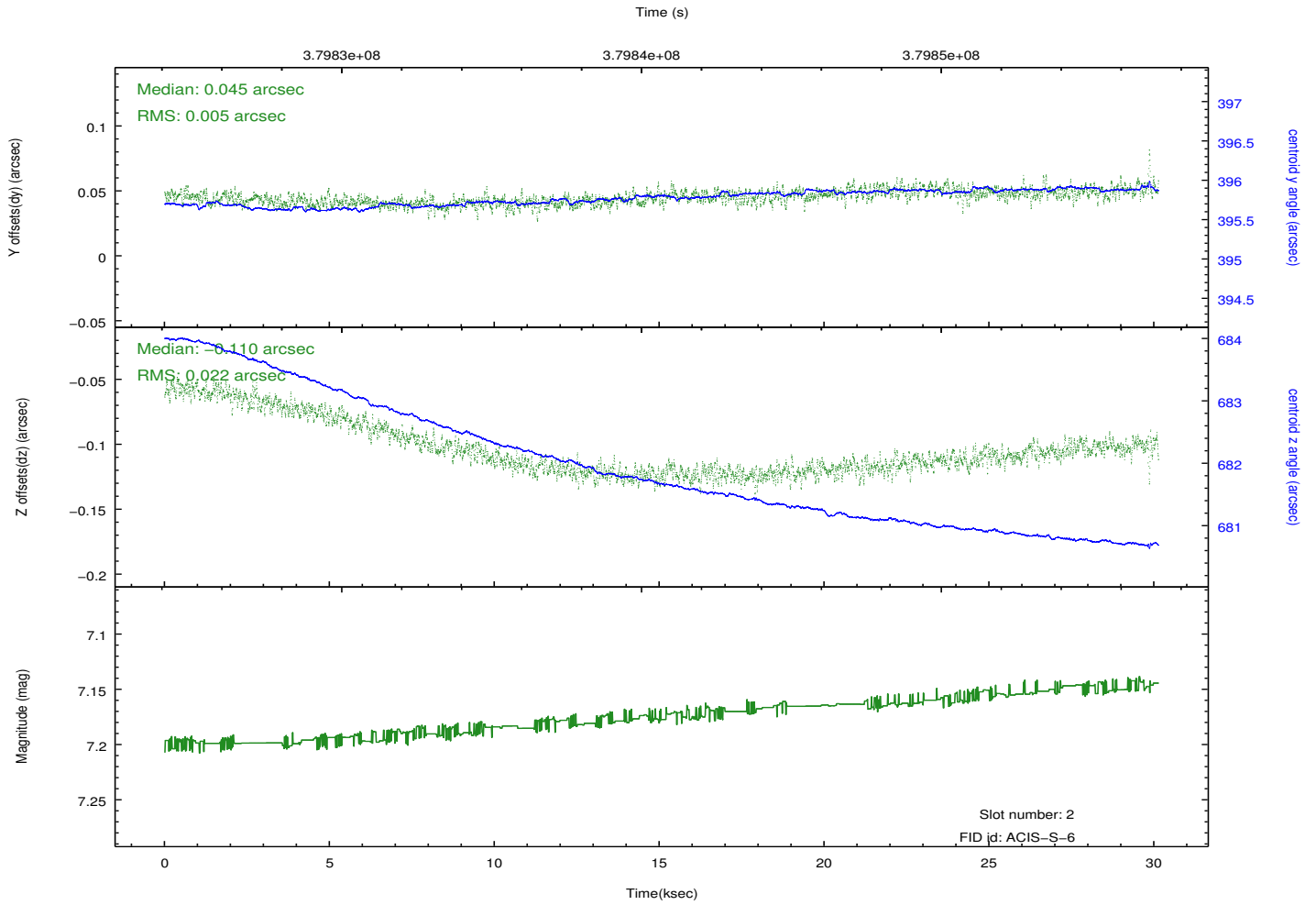
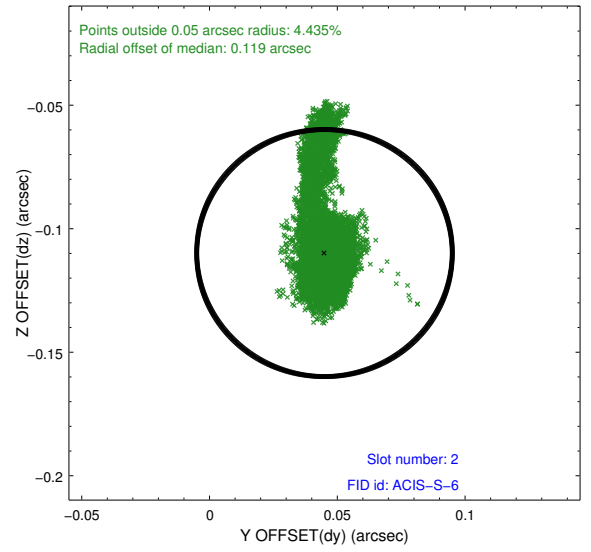
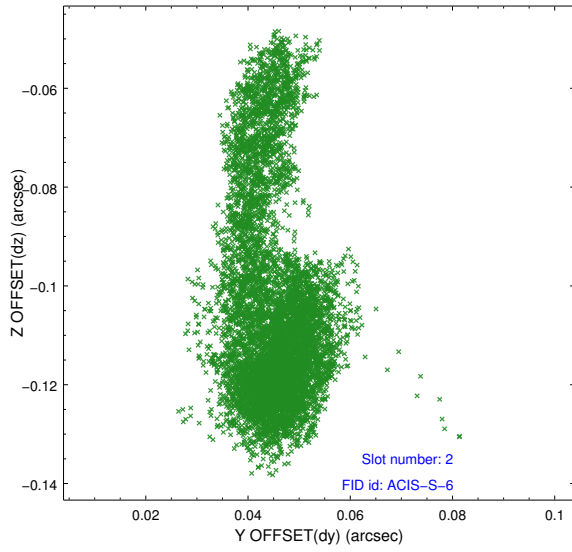
2.5.1 Slot 0



2.5.2 Slot 1

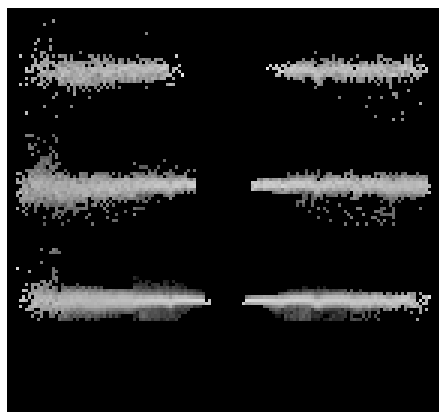


2.5.3 Slot 2

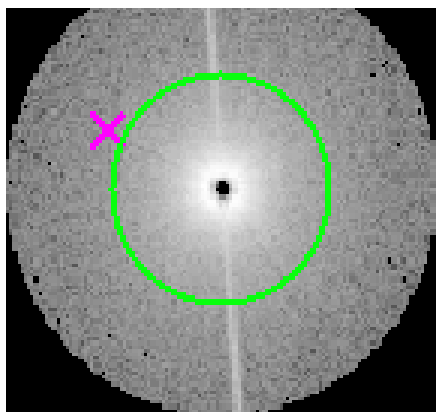


3 Gratings

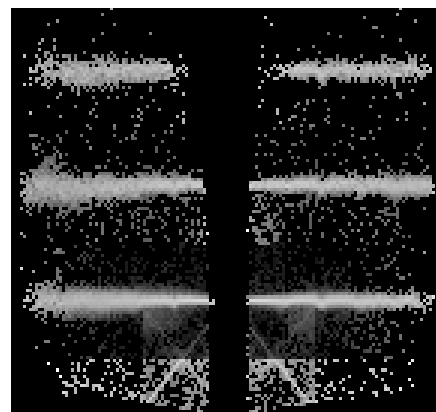
3.1 HEG Arm



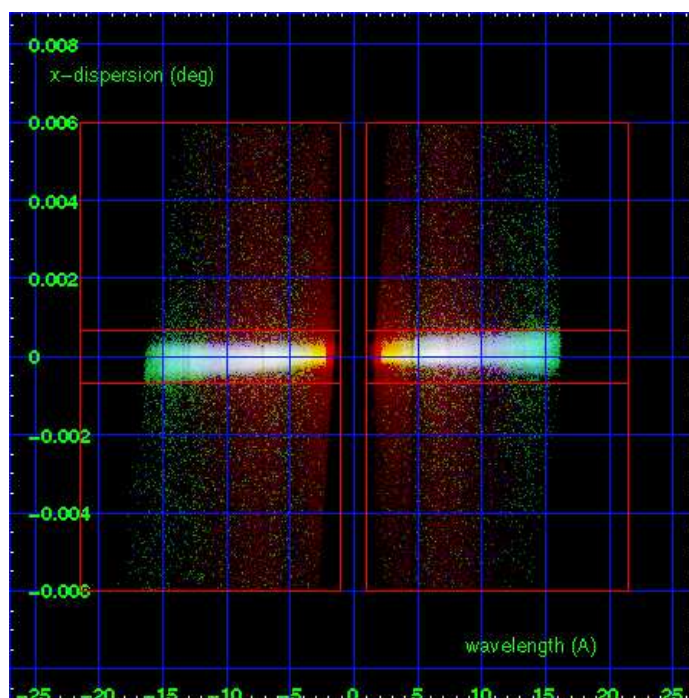
HEG Order Sort 123



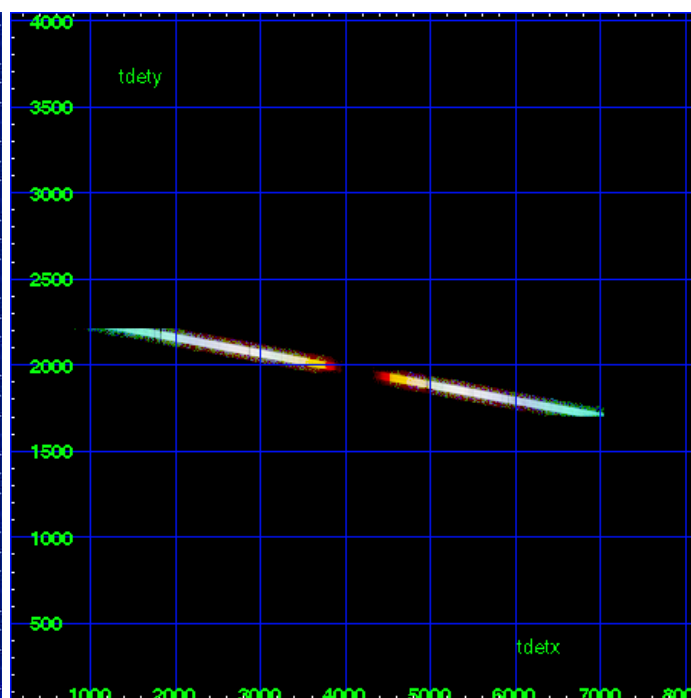
HEG Zero Order



HEG Order Sort ALL

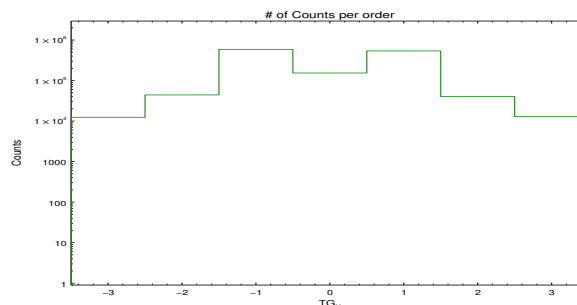


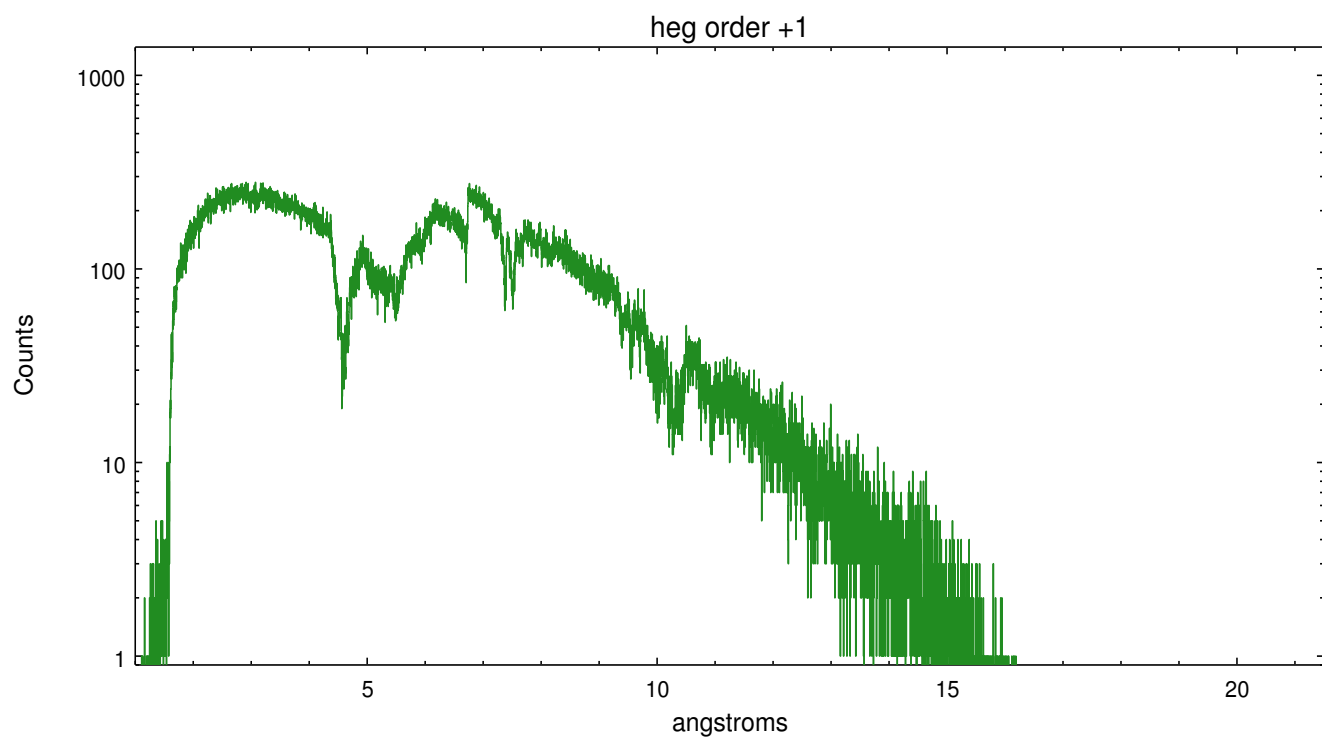
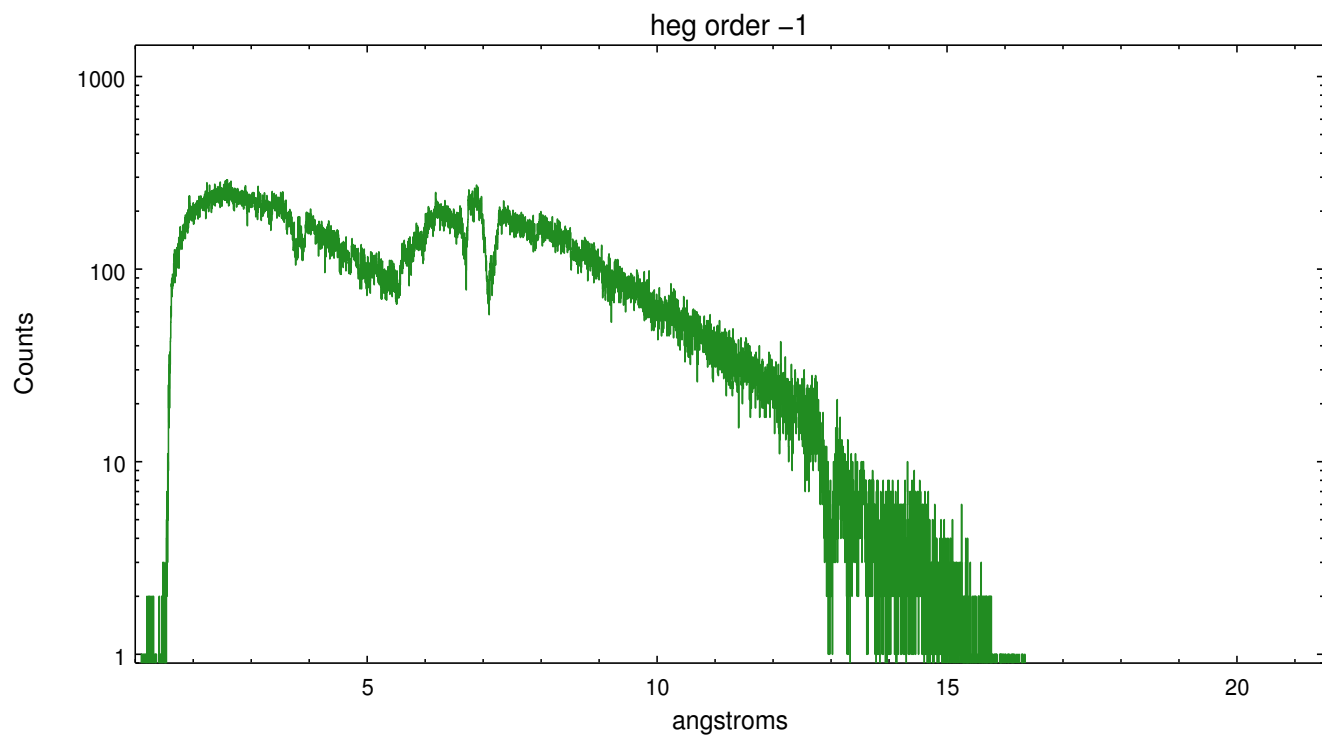
Spot Image HEG



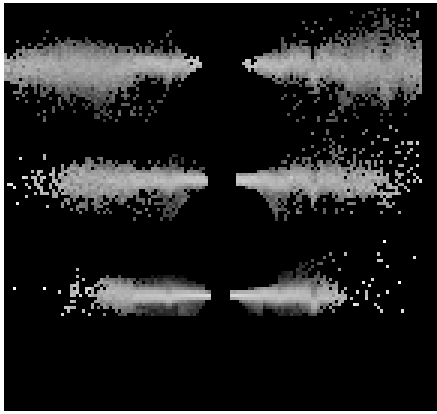
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	12387	44177	587913	153461	538140	40311	12899

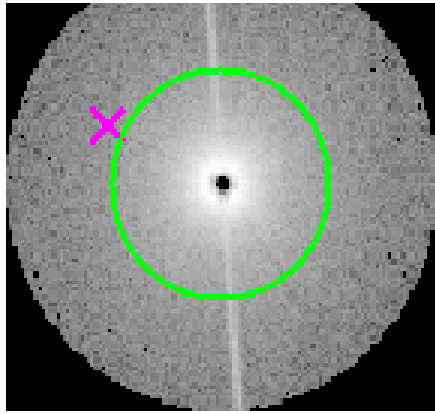




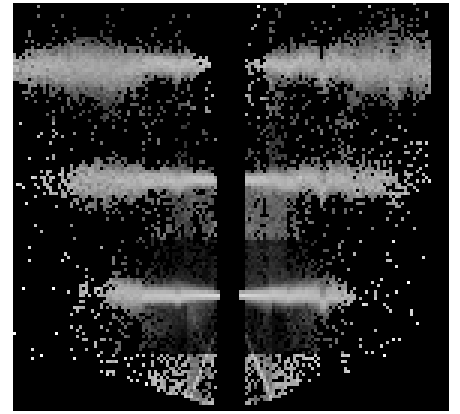
3.2 MEG Arm



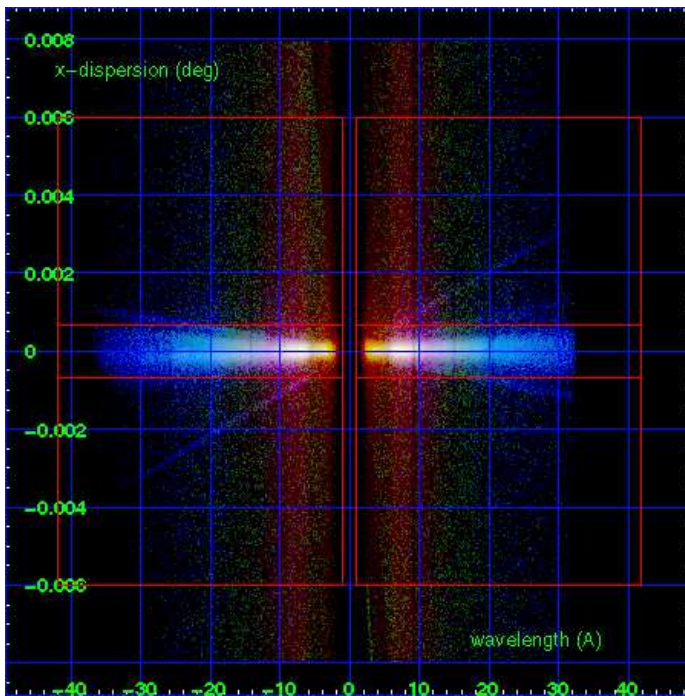
MEG Order Sort 123



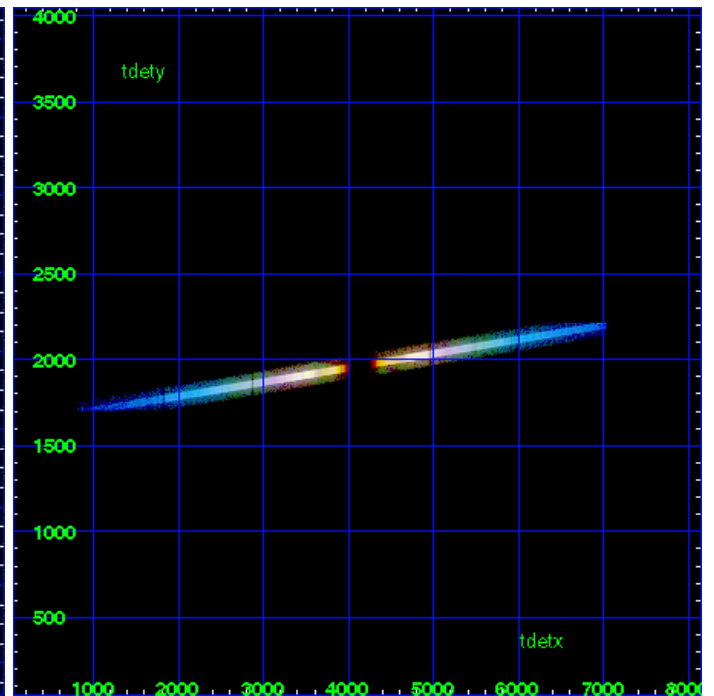
MEG Zero Order



MEG Order Sort ALL

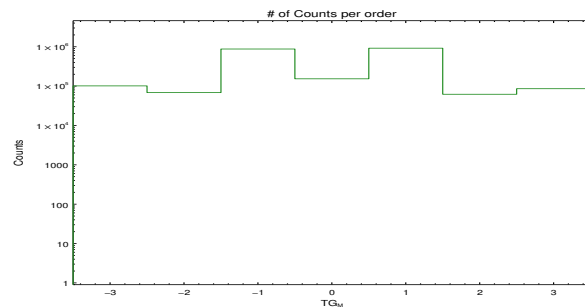


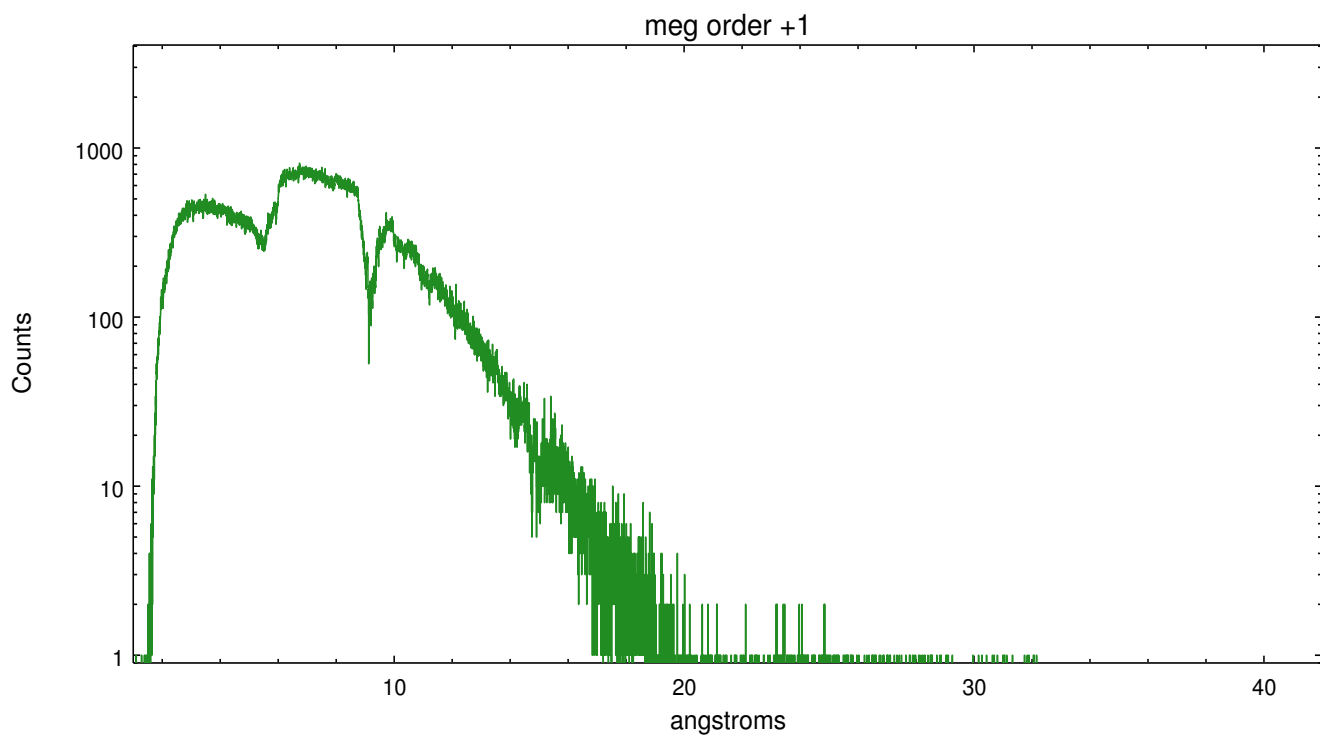
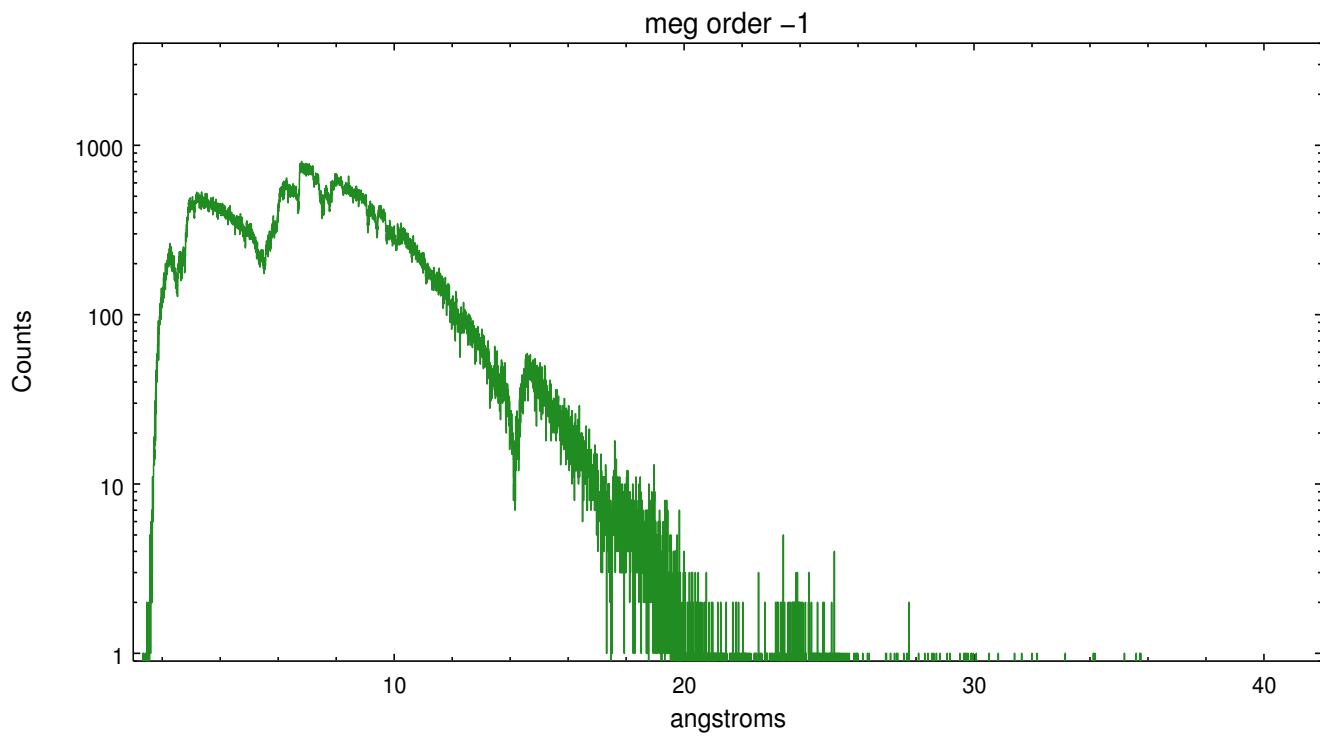
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	101401	68436	876774	153461	919866	62056	86021





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.25
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.135899788737

A.2 Comments

Zeroth order piled up. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates (x=4128.3, y=4080.59) into the *src1a.fits file table. These corrected coordinates were determined using a software tool developed by CXC called findzero, which is expected to be released in CIAO (currently in ISIS). The tool calculates the point of intersection of the readout streak and the meg arm (preferred position), or the readout streak and the heg arm. The zeroth order source position determined by the standard pipeline processing using the tool tgdetect was not used in this processing. The newly determined zeroth order coordinates have been placed in the *src1a.fits file, replacing the coordinates determined by tgdetect. Note that these corrected coordinates of the zeroth order cannot be reproduced by running tgdetect on the data.
===Phase constraint met.