

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 12540 - L2 Version 2  
Chandra X-Ray Center

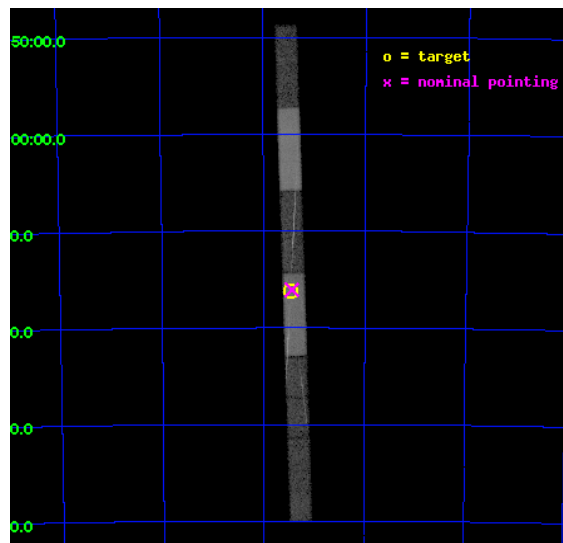
L2 Processing Date : Feb 23 2012

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# 1 Front

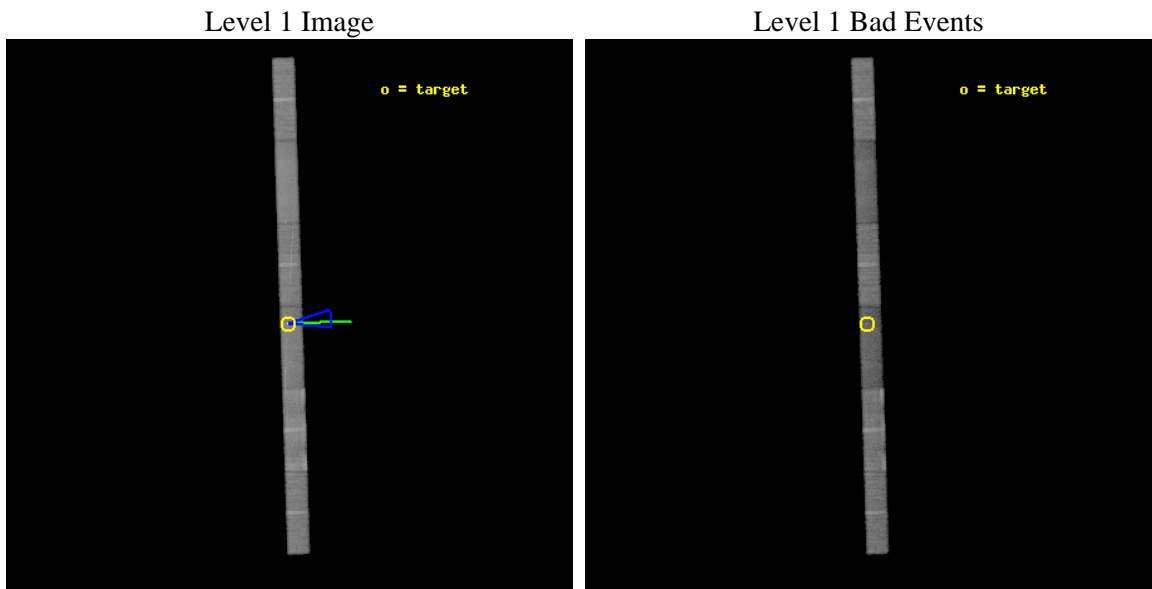
seq_num	501373	Sequence number
obs_id	12540	Observation id
title	Chandra Cycle 12 Spatial and Spectral Monitoring of SNR 1987A	Prop
observer	Prof. David Burrows	Principal investigator
object	SNR 1987A	Source name
dtycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.859642640109	Nominal RA [deg]
dec_nom	-69.268059132486	Nominal Dec [deg]
roll_nom	88.150050329179	Nominal Roll [deg]
revision	2	Processing version of data
ontime	39068.896947265	Sum of GTIs [s]
livetime	37528.718346331	Livetime [s]
ontime4	39068.937987268	Sum of GTIs [s]
ontime5	39068.855907261	Sum of GTIs [s]
ontime6	39068.814867258	Sum of GTIs [s]
ontime7	39068.896947265	Sum of GTIs [s]
ontime8	39068.773827255	Sum of GTIs [s]
ontime9	39068.732787251	Sum of GTIs [s]
l2events	111241	Number of level 2 events



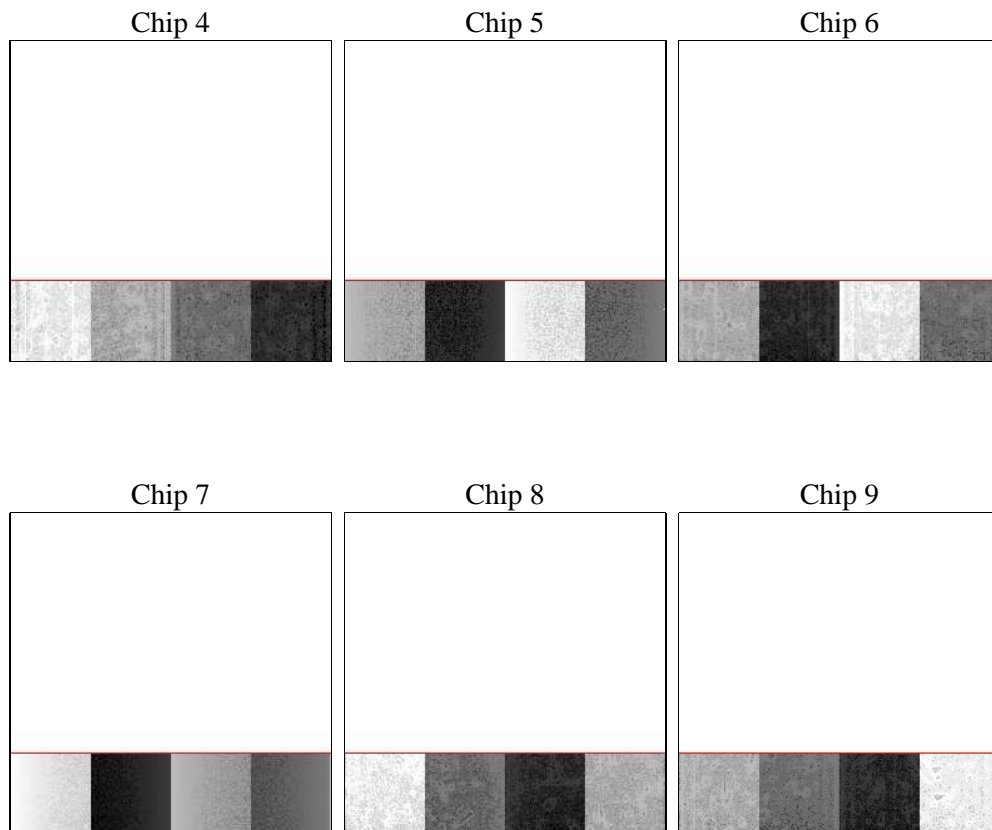
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	39000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	39068.896947265	Sum of GTIs [s]
caldbver	4.4.8	&#160	ontime4	39068.937987268	Sum of GTIs [s]
date	2012-02-23T15:21:31	Date and time of file creation	ontime5	39068.855907261	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	39068.814867258	Sum of GTIs [s]
			ontime7	39068.896947265	Sum of GTIs [s]
			ontime8	39068.773827255	Sum of GTIs [s]
			ontime9	39068.732787251	Sum of GTIs [s]
			l1events	454626	Number of level 1 events

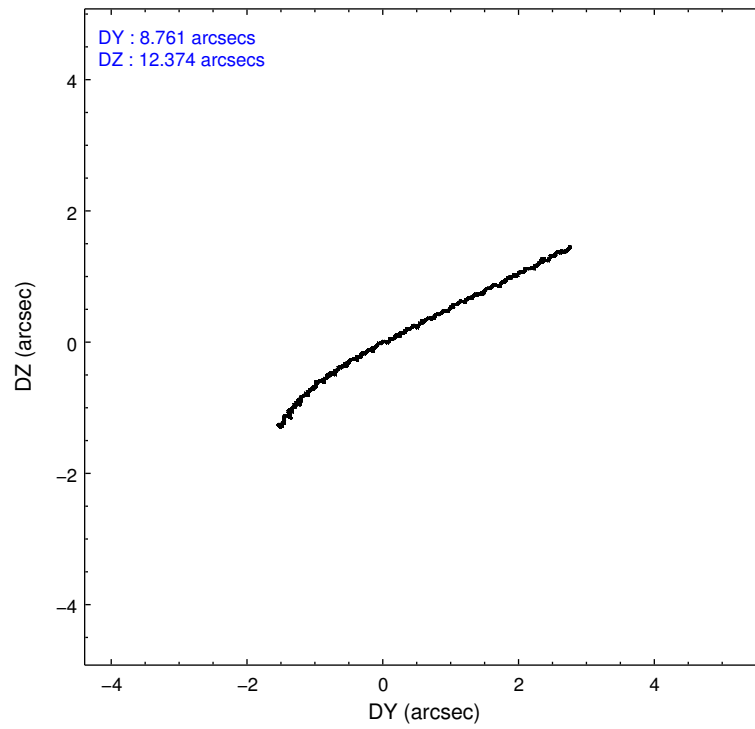
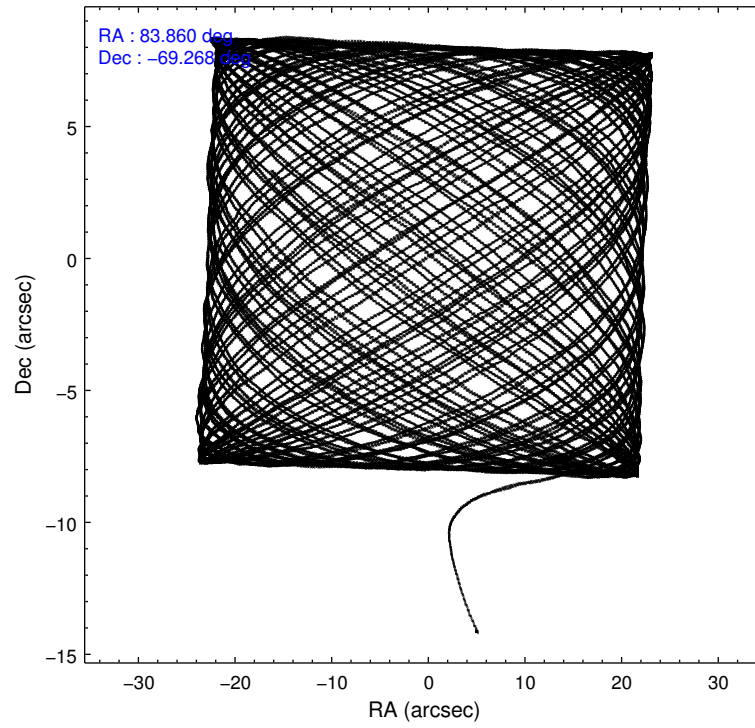
### 2.1.4 Events

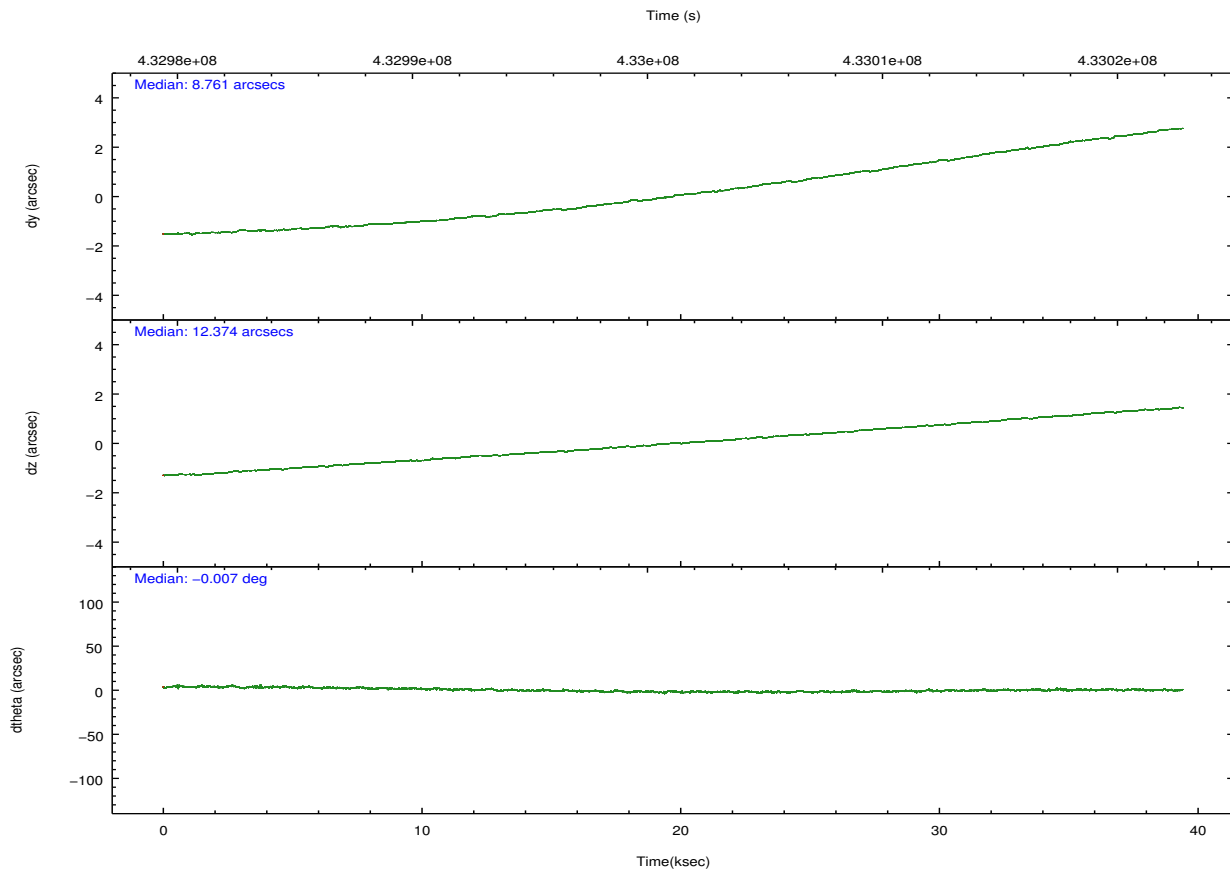
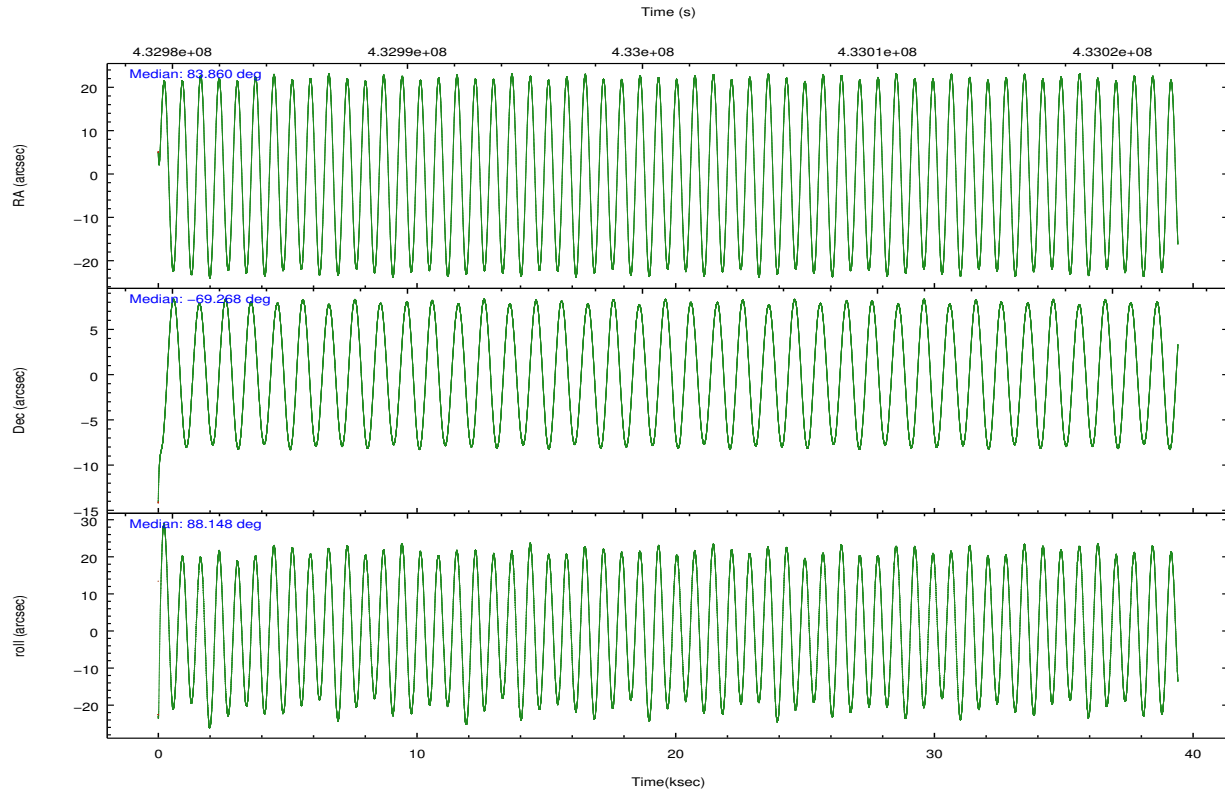
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	77167	82480	70218	70013	92587	62161	grade 0 events	2572	4368	5097	5039	7185	2353
rejected events	68915	37760	59237	30496	67450	54512		3%	5%	7%	7%	7%	3%
rejected %	89%	45%	84%	43%	72%	87%	grade 1 events	34	211	26	97	59	19
								0%	0%	0%	0%	0%	0%
							grade 2 events	2019	12300	1927	8859	5345	1569
								2%	14%	2%	12%	5%	2%
							grade 3 events	1177	3475	1226	4510	2997	1152
								1%	4%	1%	6%	3%	1%
							grade 4 events	1016	3307	1192	4334	2826	1122
								1%	4%	1%	6%	3%	1%
							grade 5 events	2041	7392	2089	6427	3432	2257
								2%	8%	2%	9%	3%	3%
							grade 6 events	1468	21270	1540	16778	6784	1453
								1%	25%	2%	23%	7%	2%
							grade 7 events	66840	30157	57121	23969	63959	52236
								86%	36%	81%	34%	69%	84%

## 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	83.897011	83.85964264010863	CCD I2 on	N	N
[deg] Pointing Dec	-69.291967	-69.26805913248643	CCD I3 on	N	N
[deg] Pointing Roll	88.028388	88.15005032917938	CCD S0 on	O1	Y
[deg] Roll angle	84.000000	84.000000	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)	432086466.184000	432086466.184000	CCD S4 on	Y	Y
[s] Window stop time (MET)	434160066.184000	434160066.184000	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	-181.712523	-181.7120811590428	Subarray requested	CUSTOM	1/4
[mm] SIM translation stage offset	-8.42	-8.420441423965059	Subarray start row	1	1
[s] Observation start time (MET)	432981791.184000	432980546.99623	Subarray row count	256	256
Observation start date	2011-09-21T08:42:05	2011-09-21T08:22:26	Alternating exposures requested	N	N
[s] Observation end time (MET)	433020791.184000	433021551.61088	[s] Primary exposure time	0.000000	1
Observation end date	2011-09-21T19:32:05	2011-09-21T19:45:51			
Read mode	TIMED	TIMED			

## 2.3 Aspect



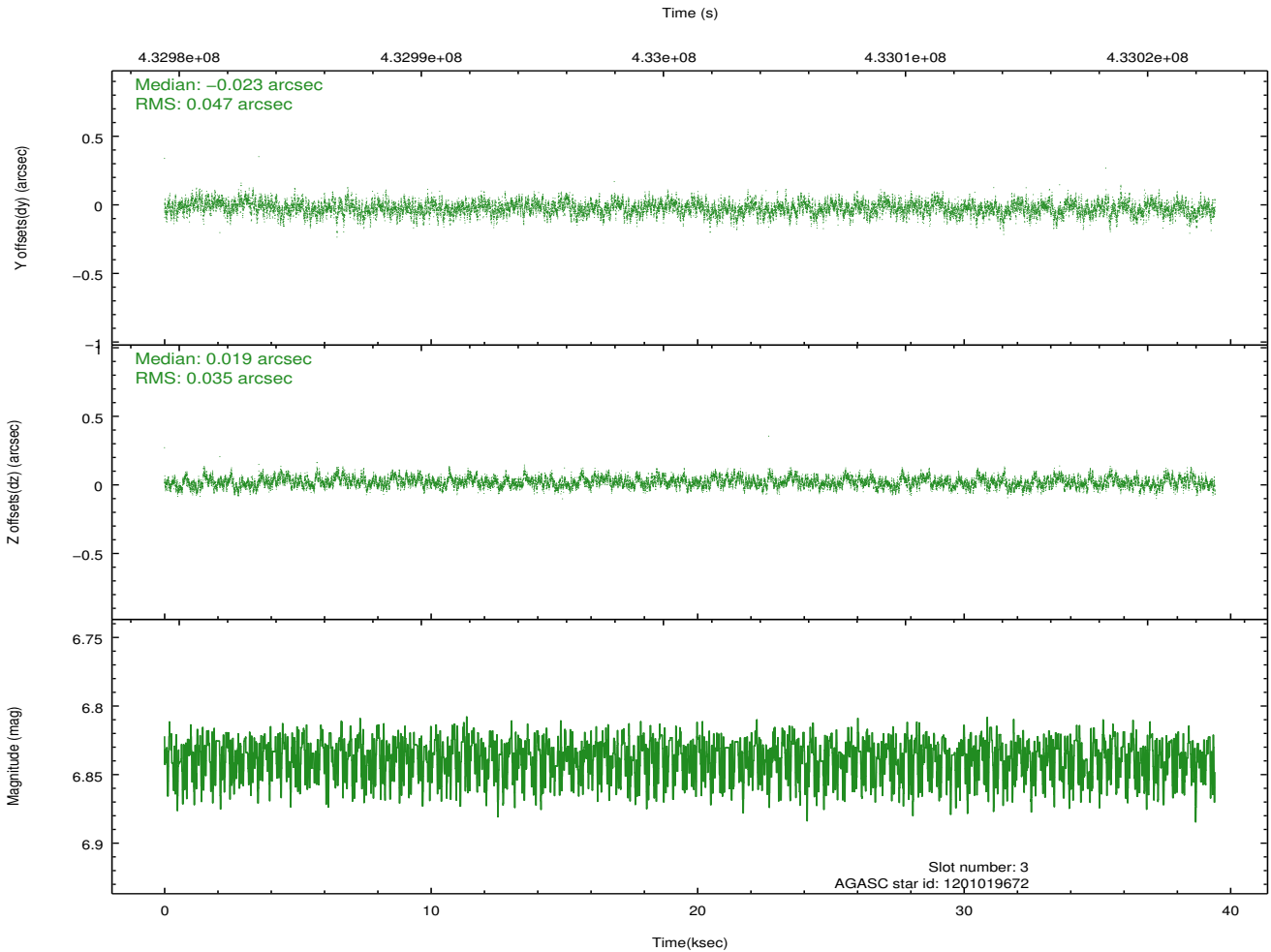
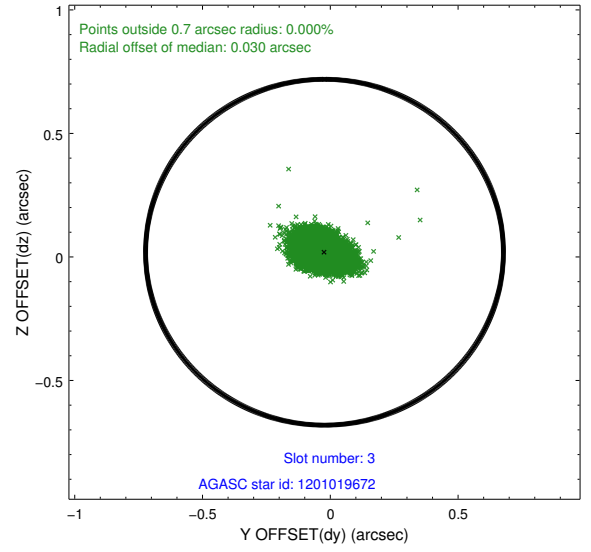
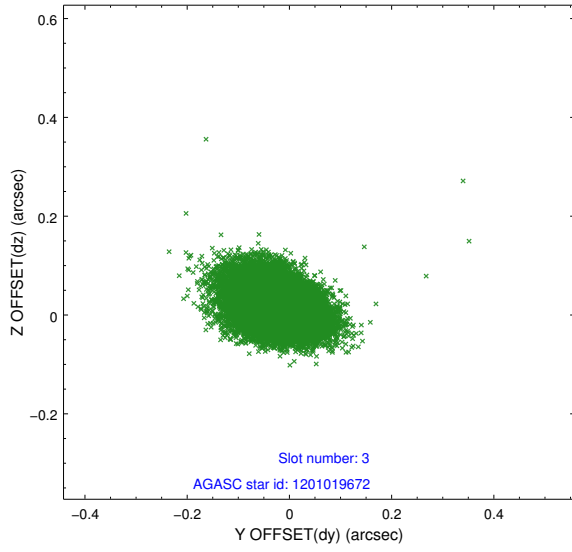


### Slot Statistics

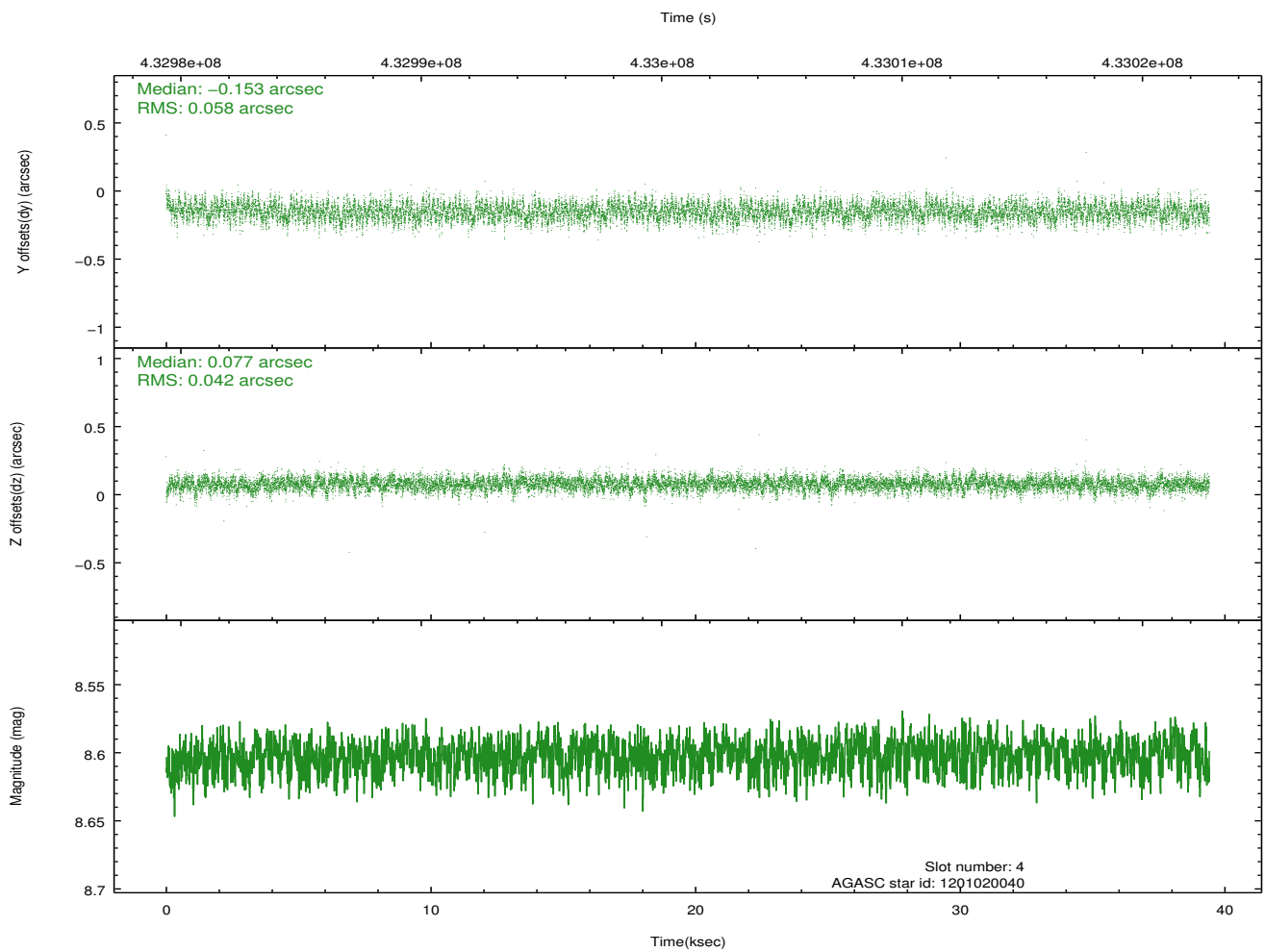
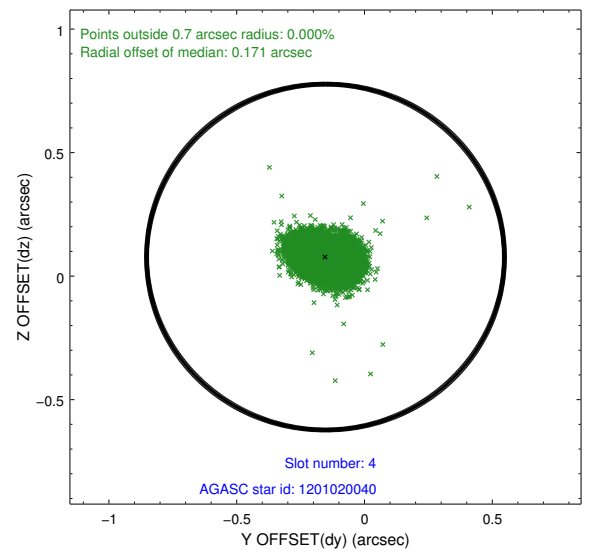
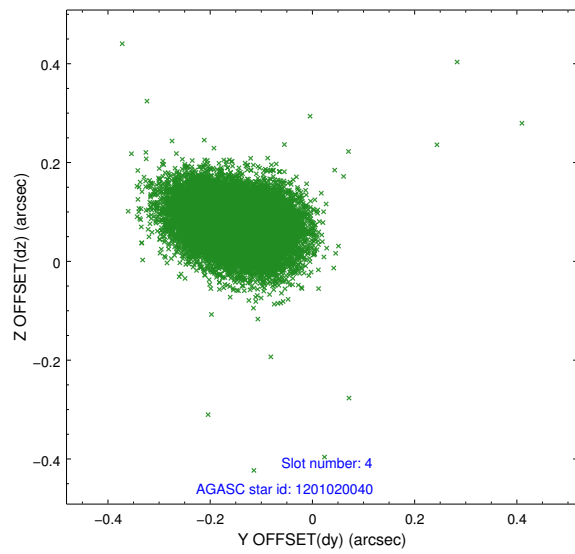
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.01	9614	0.088	0.112	0.033	0.064	0.000000	0.000000	934.99	-1902.63
1	FID	ACIS-S-2	6.92	9615	-0.174	-0.113	0.046	0.062	0.000000	0.000000	-761.17	-1907.51
2	FID	ACIS-S-6	7.22	9615	0.065	-0.006	0.028	0.036	0.000000	0.000000	400.56	638.51
3	GUIDE	1201019672	6.84	19230	-0.023	0.019	0.061	0.103	85.312192	-68.770187	1919.98	-1779.22
4	GUIDE	1201020040	8.60	19226	-0.153	0.077	0.074	0.125	85.379163	-68.879396	1527.75	-1870.59
5	GUIDE	1201410616	9.31	19174	0.086	-0.120	0.147	0.223	82.516808	-69.784406	-1849.70	1654.35
6	GUIDE	1201542672	8.16	19224	0.004	0.017	0.079	0.124	84.492488	-69.957531	-2370.59	-817.01
7	GUIDE	1201540776	9.56	19203	0.085	0.001	0.132	0.216	85.107945	-69.858480	-2001.06	-1570.57

## 2.4 Star Slots

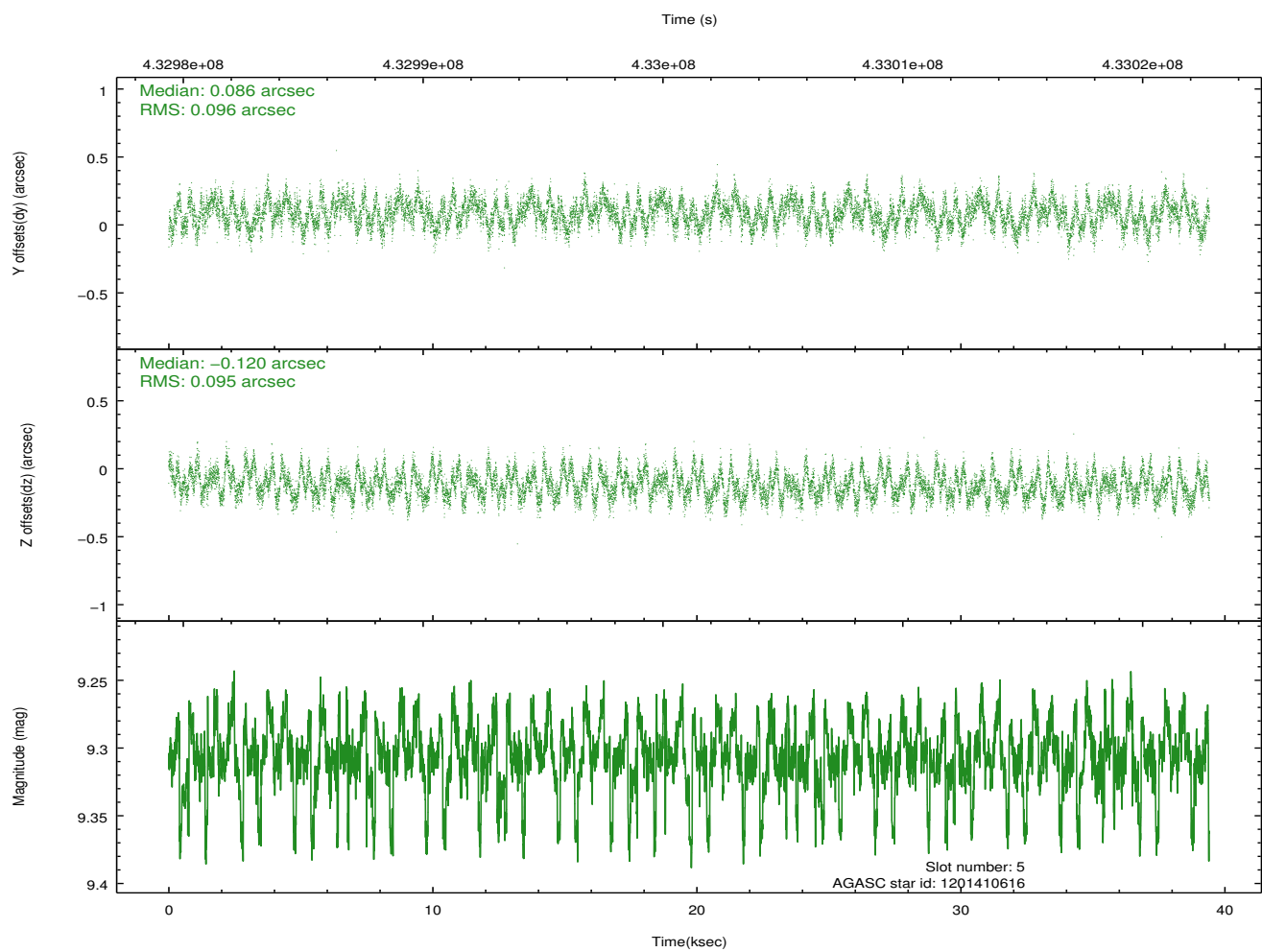
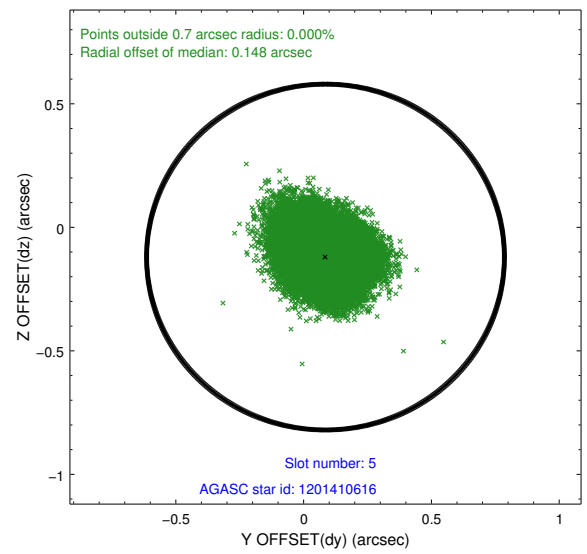
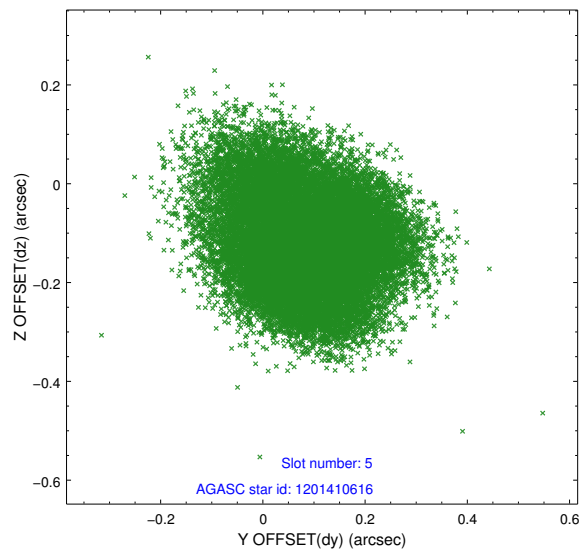
### 2.4.1 Slot 3



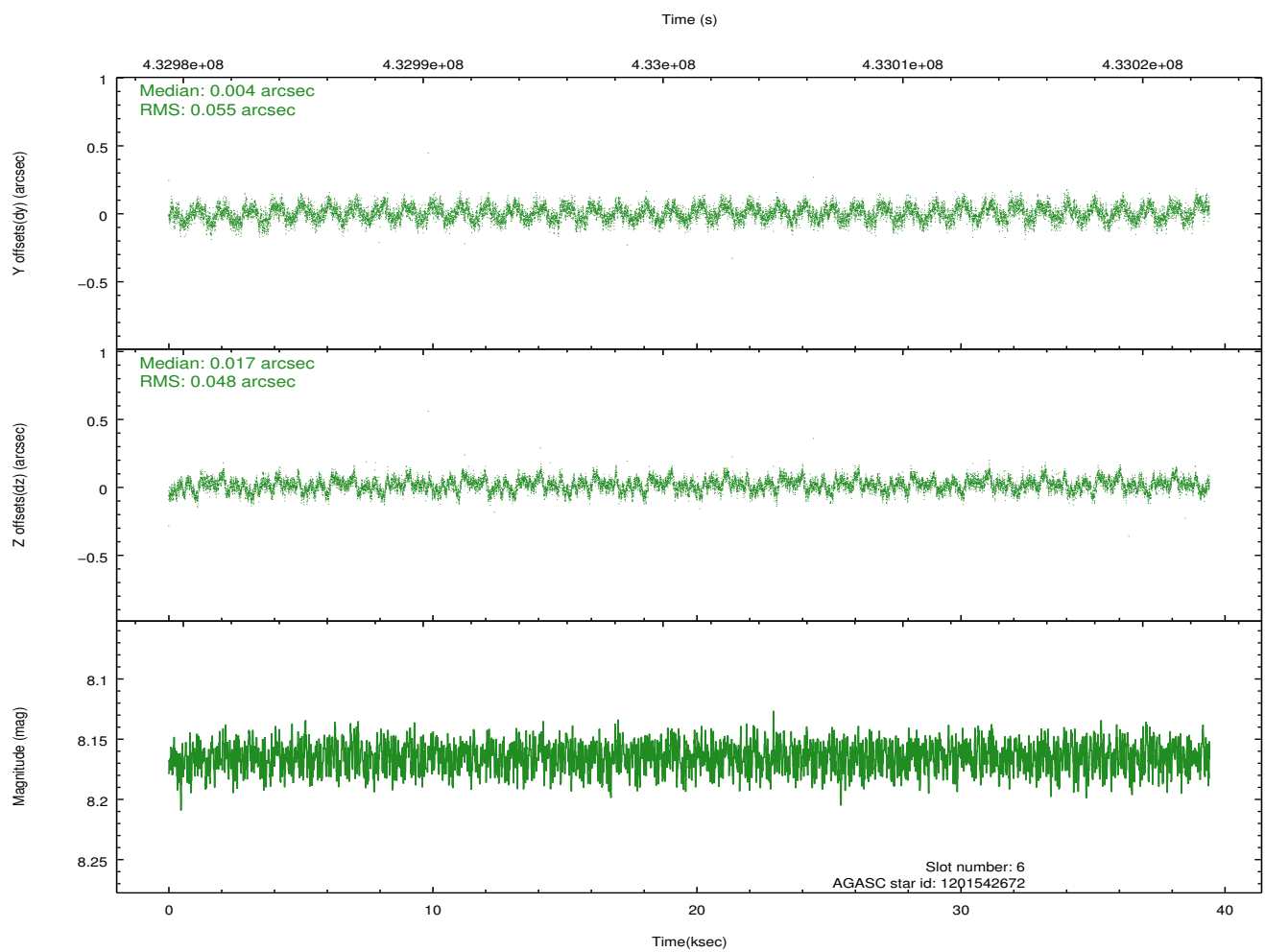
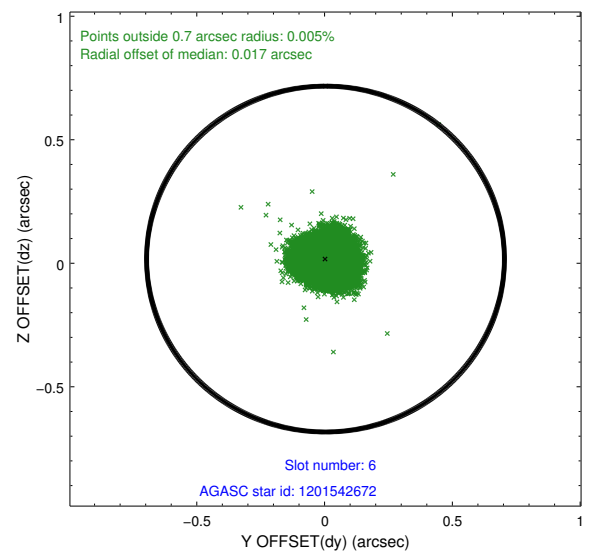
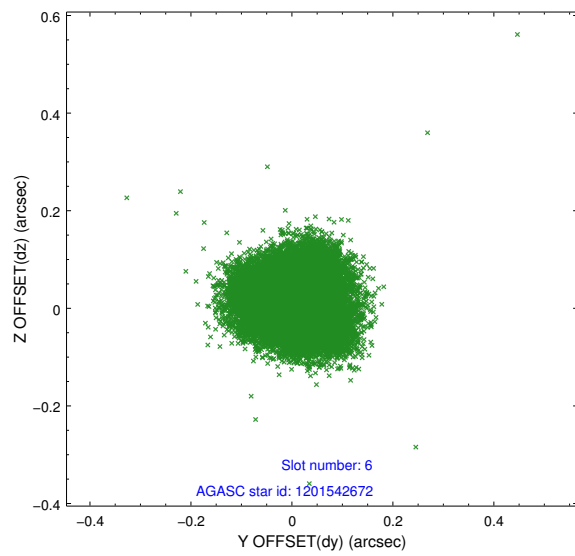
## 2.4.2 Slot 4



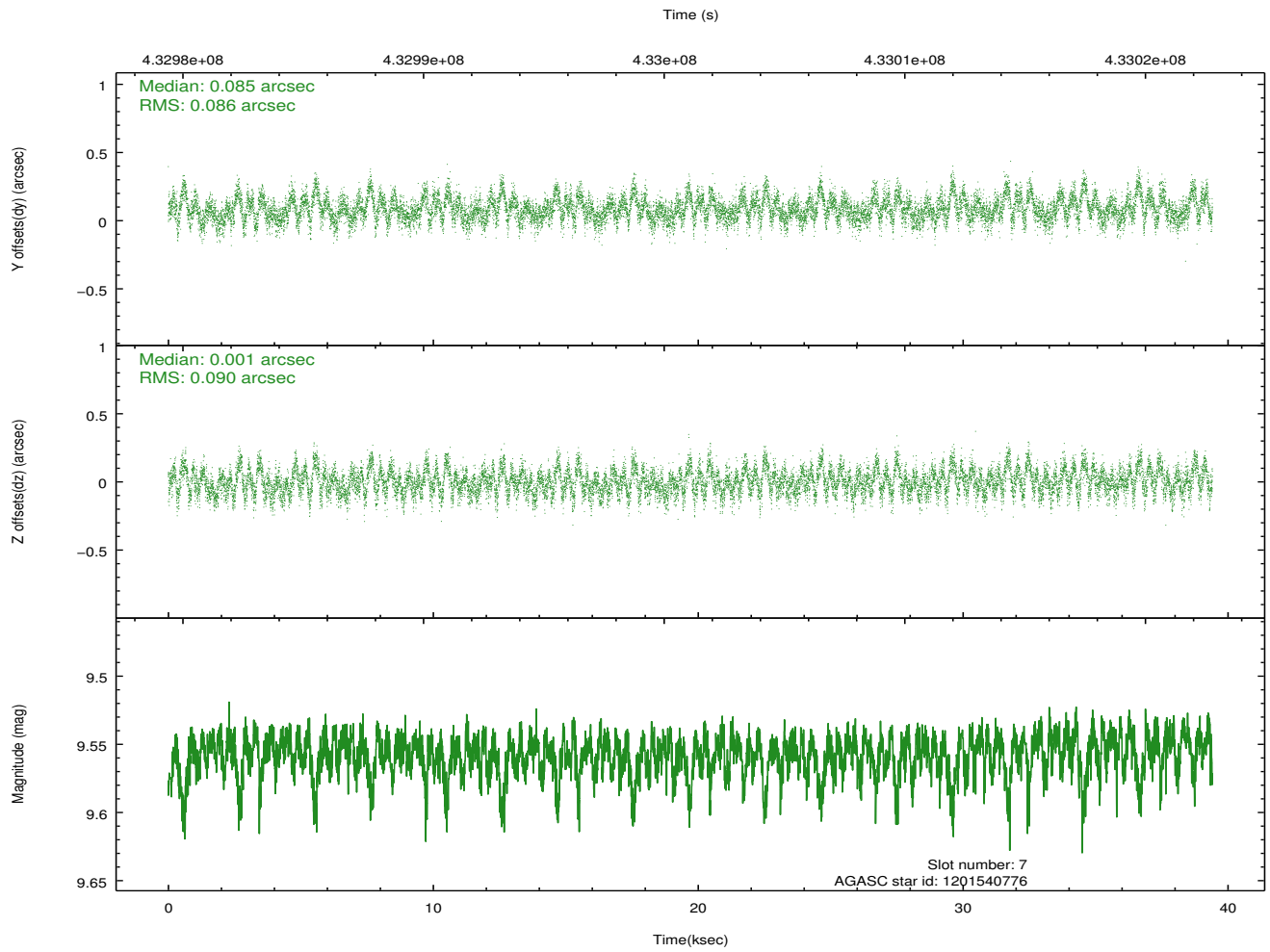
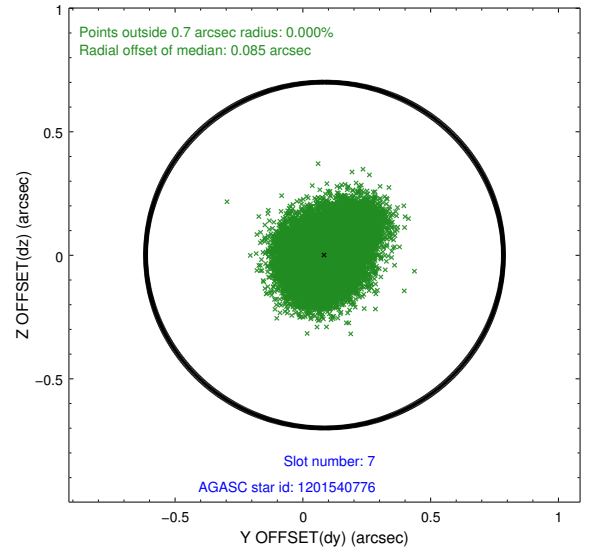
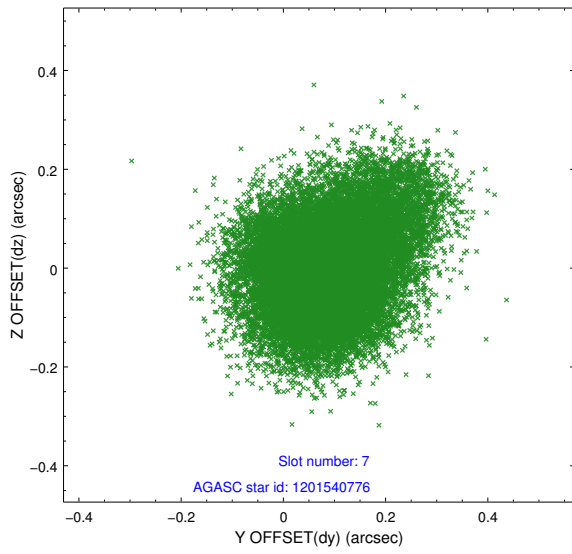
### 2.4.3 Slot 5



## 2.4.4 Slot 6

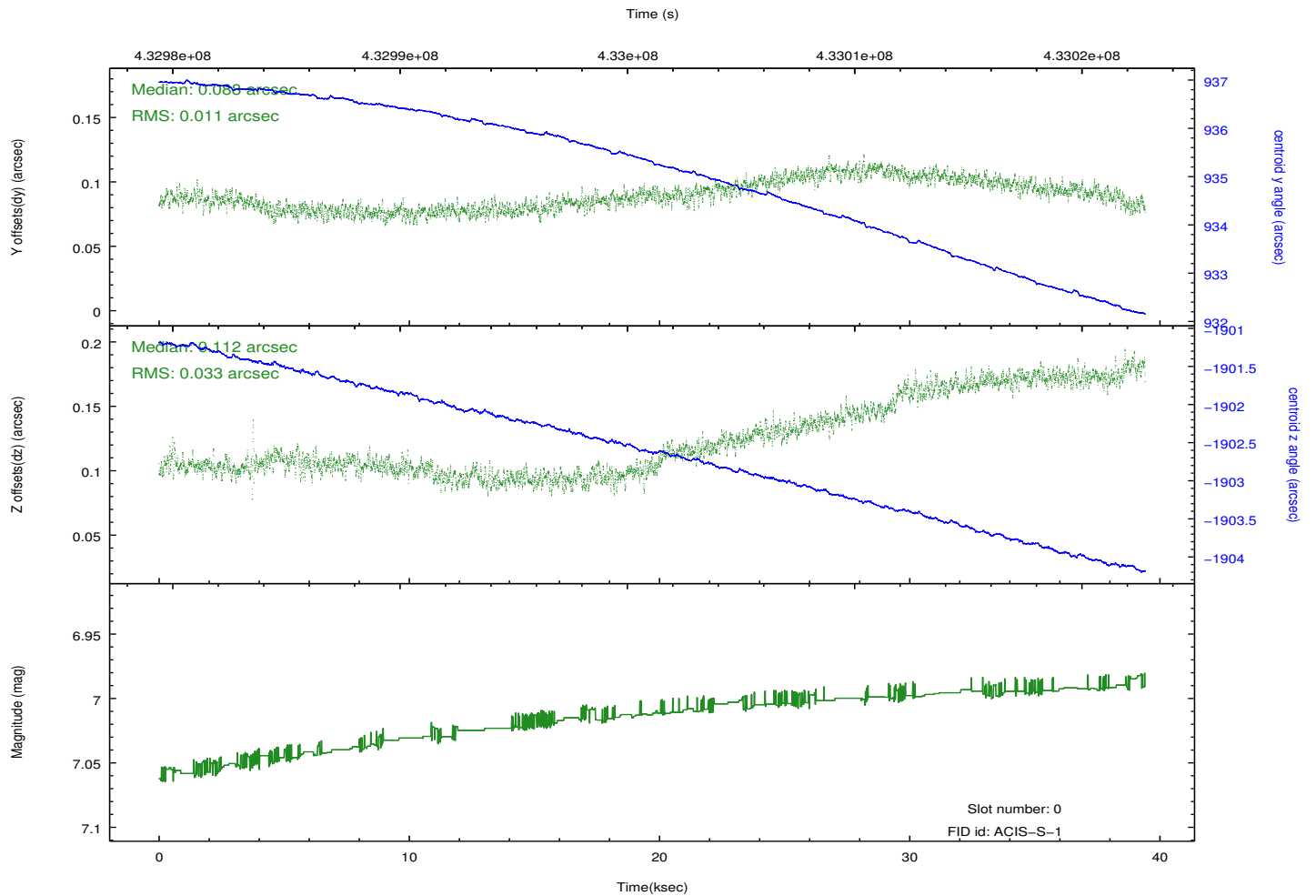
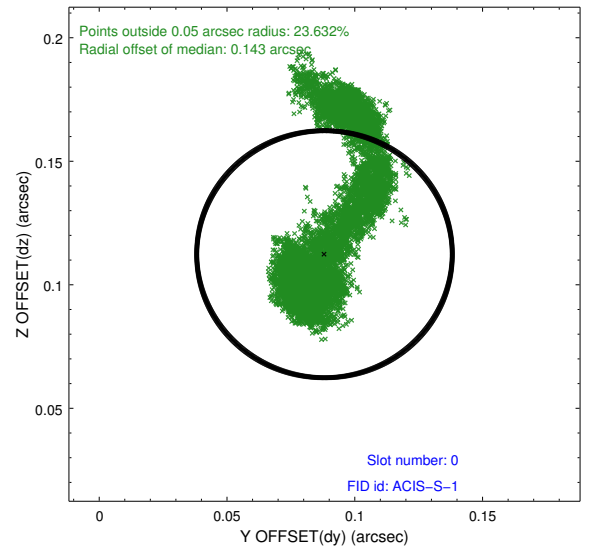
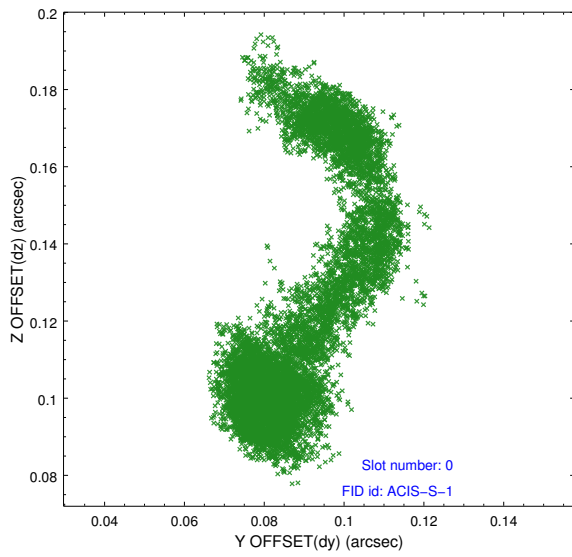


### 2.4.5 Slot 7

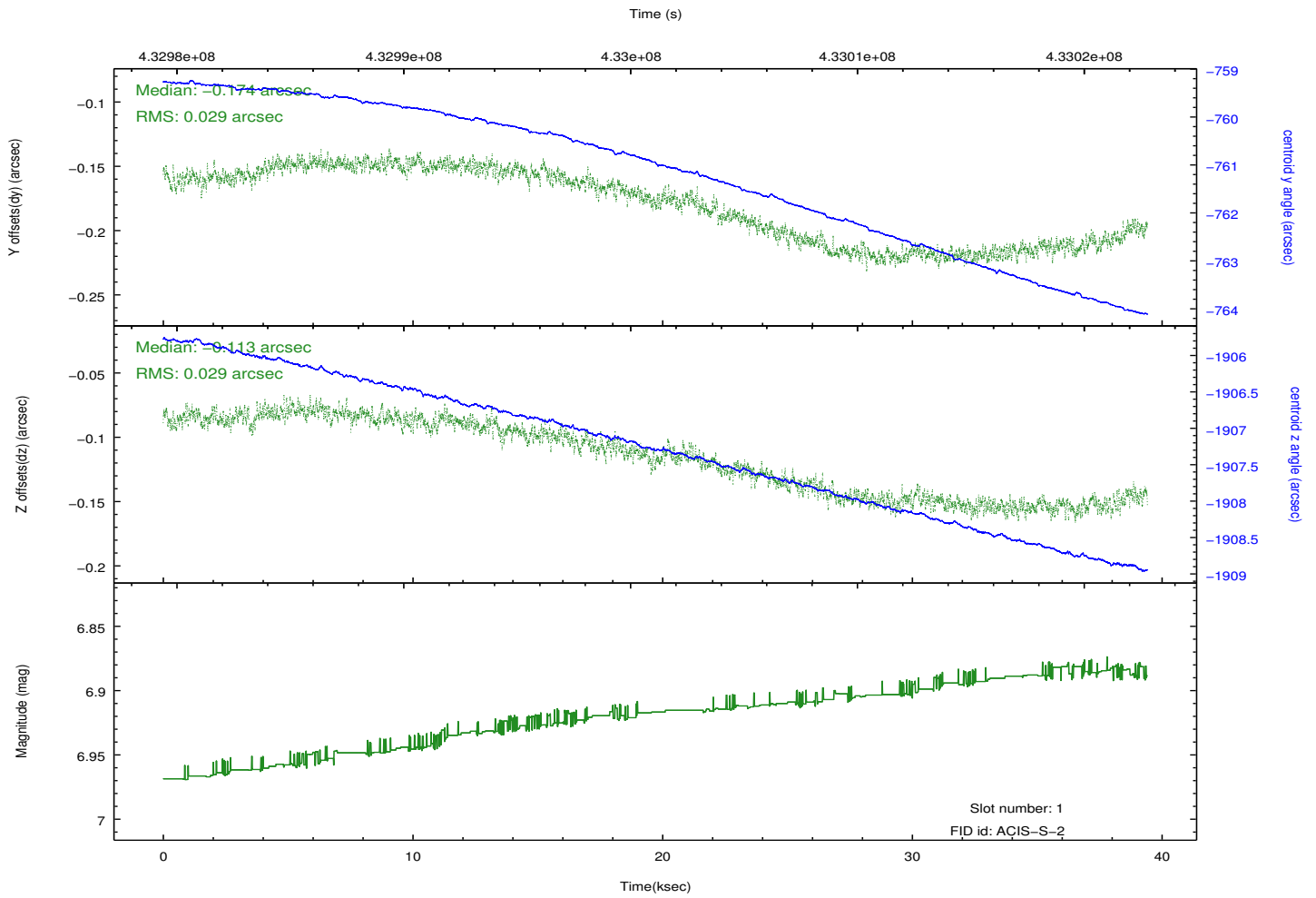
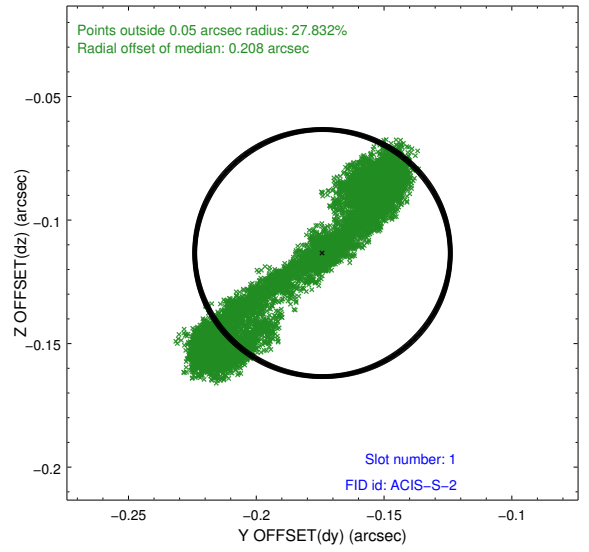
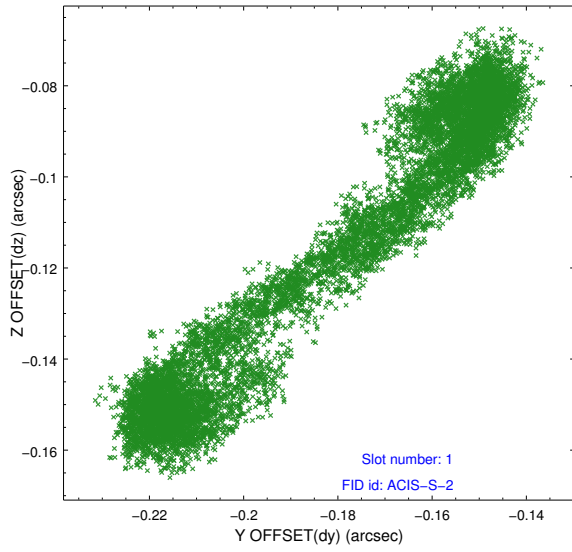


## 2.5 FID Slots

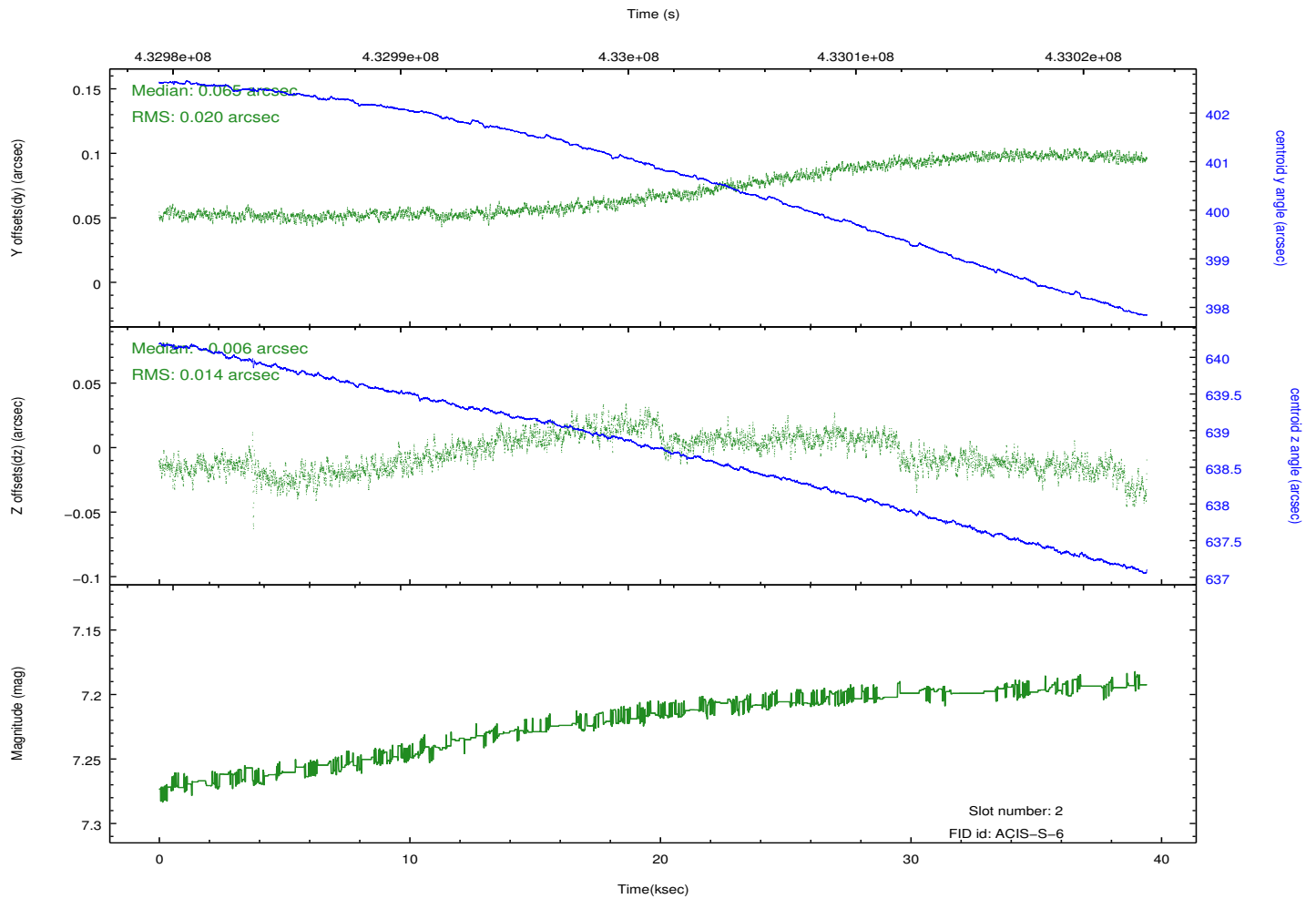
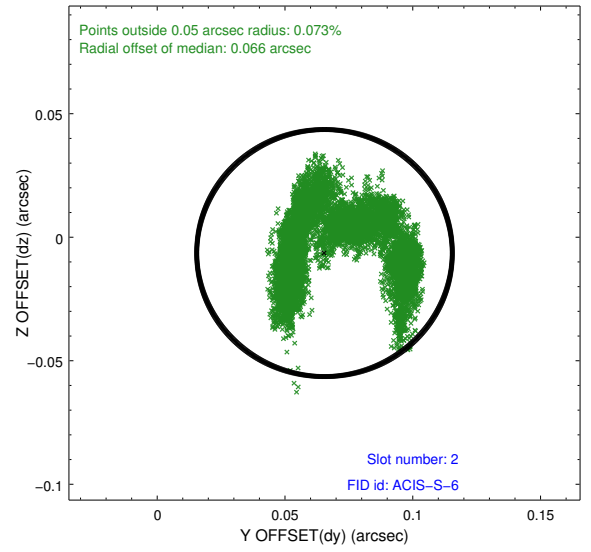
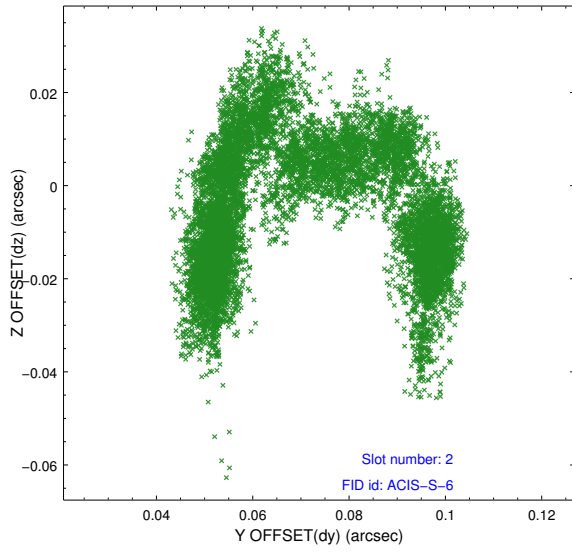
### 2.5.1 Slot 0



## 2.5.2 Slot 1

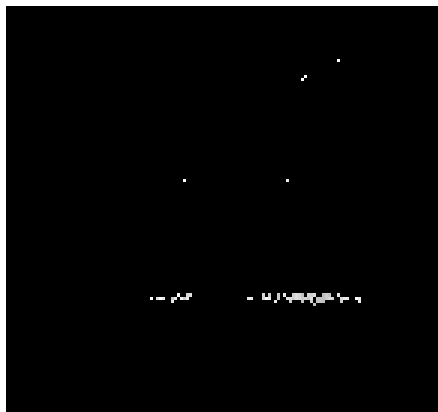


### 2.5.3 Slot 2

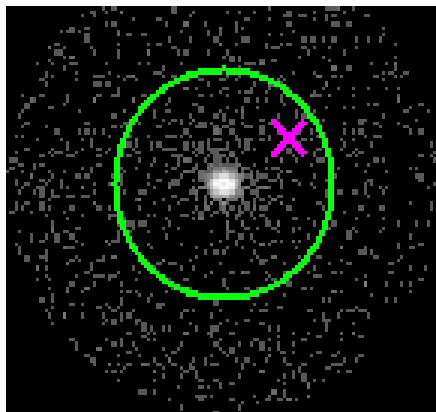


### 3 Gratings

#### 3.1 HEG Arm



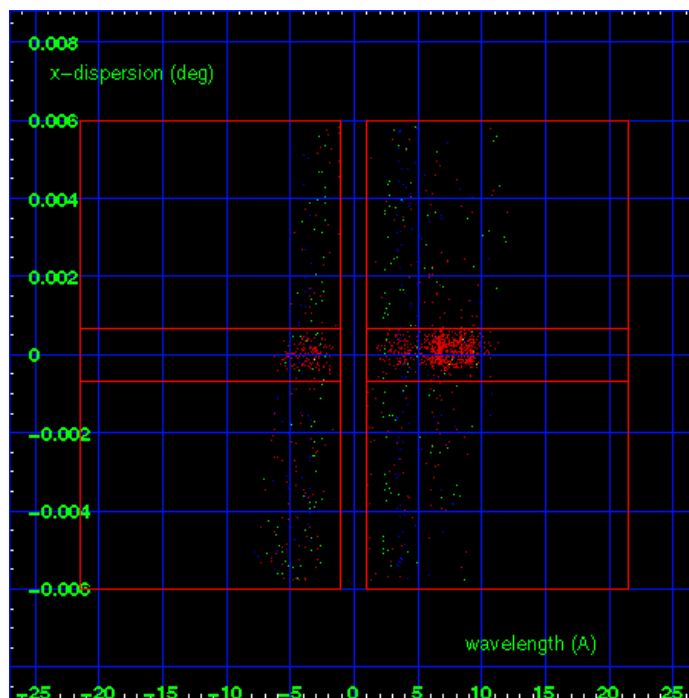
HEG Order Sort 123



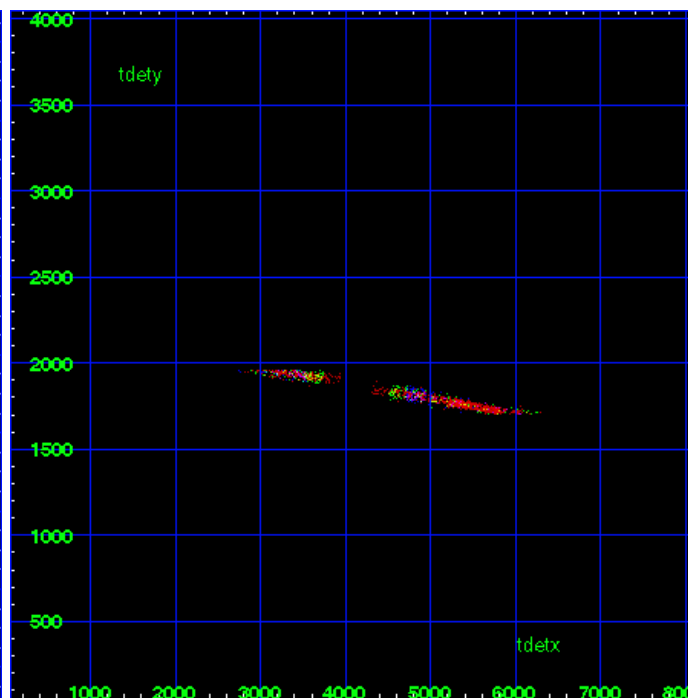
HEG Zero Order



HEG Order Sort ALL

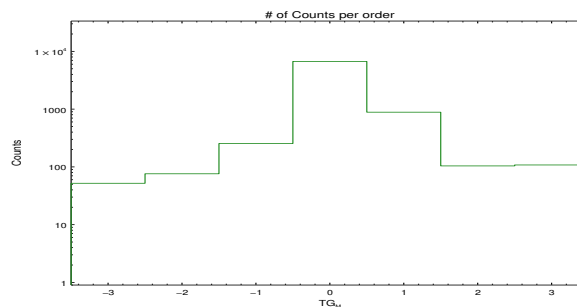


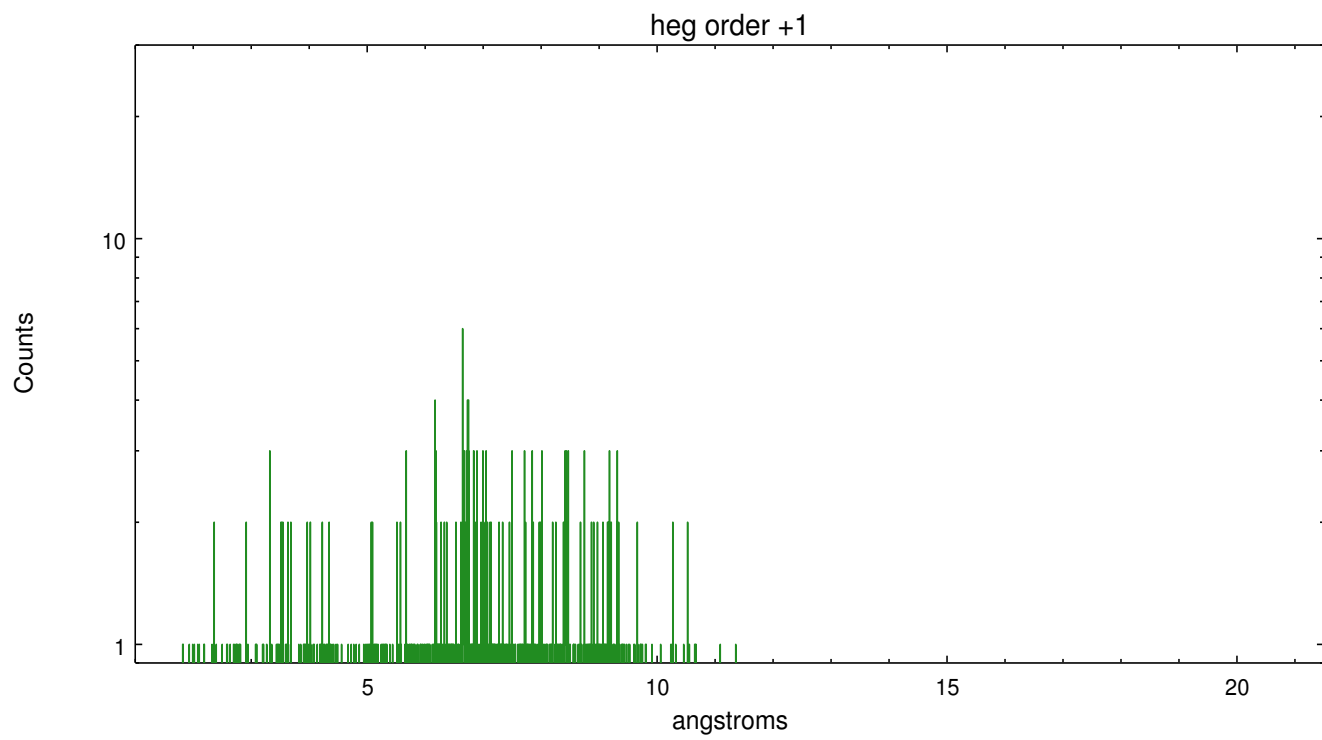
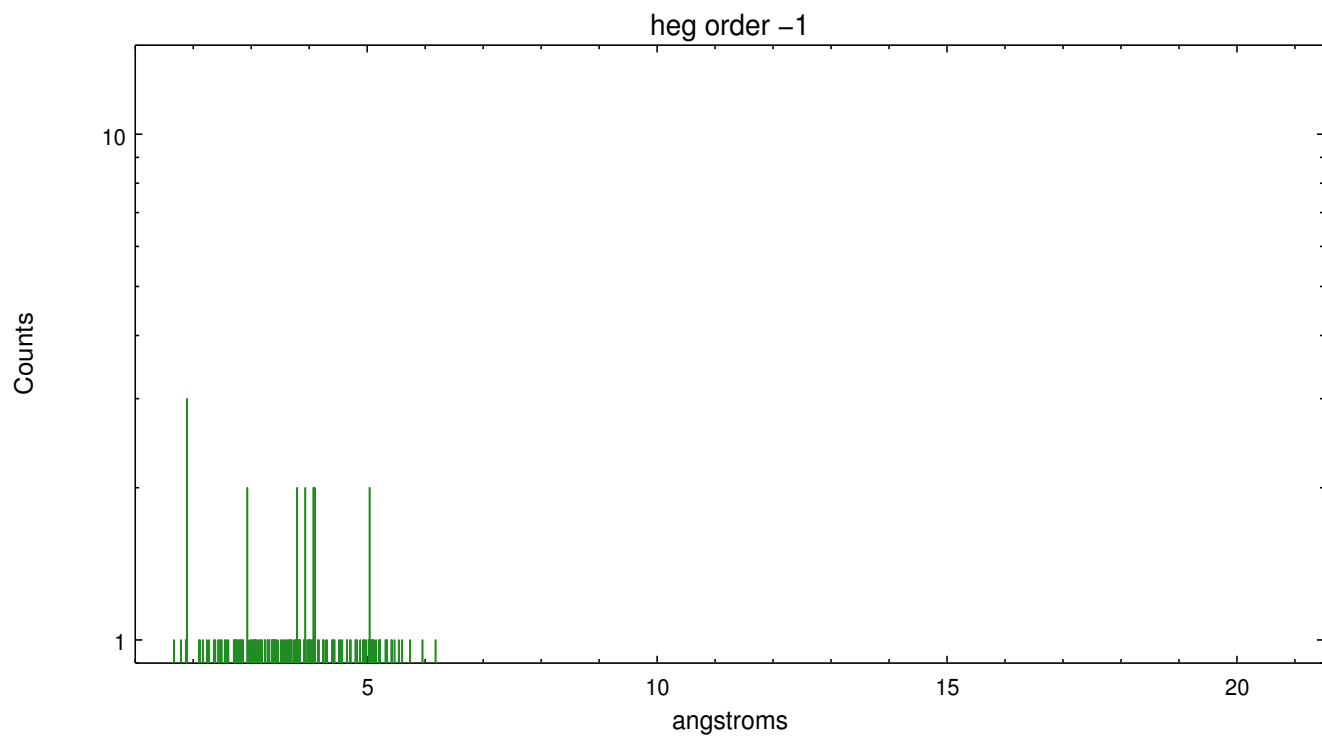
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	52	76	254	6702	885	104	108

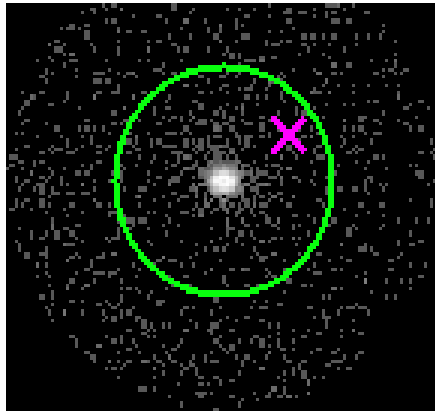




### 3.2 MEG Arm



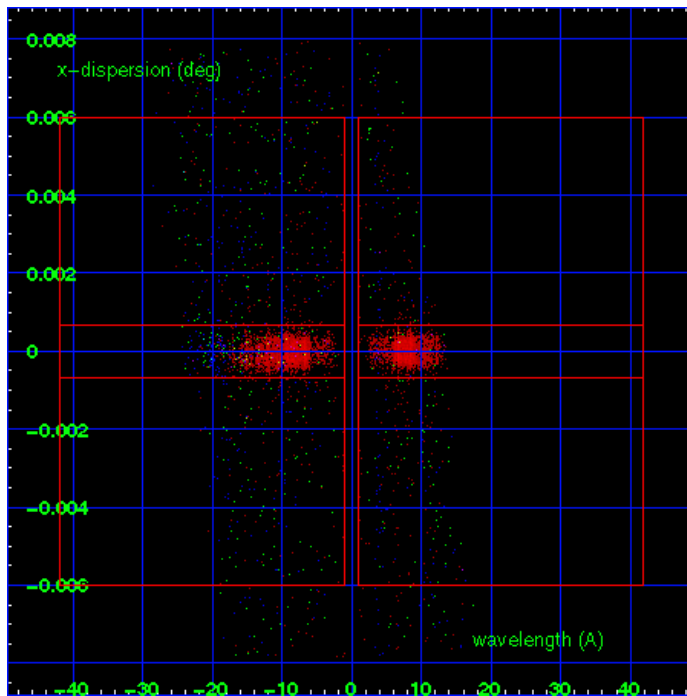
MEG Order Sort 123



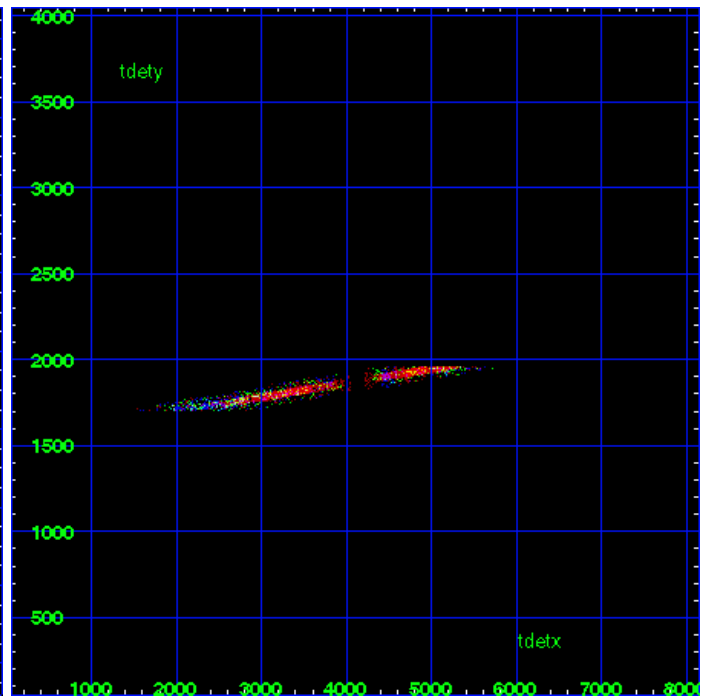
MEG Zero Order



MEG Order Sort ALL

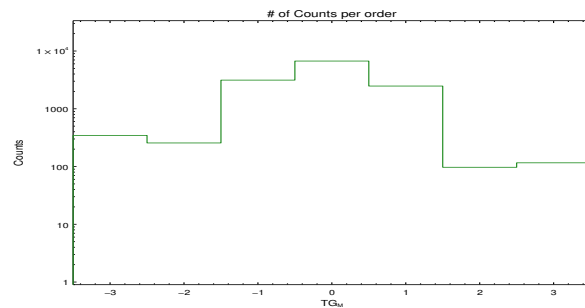


Spot Image MEG

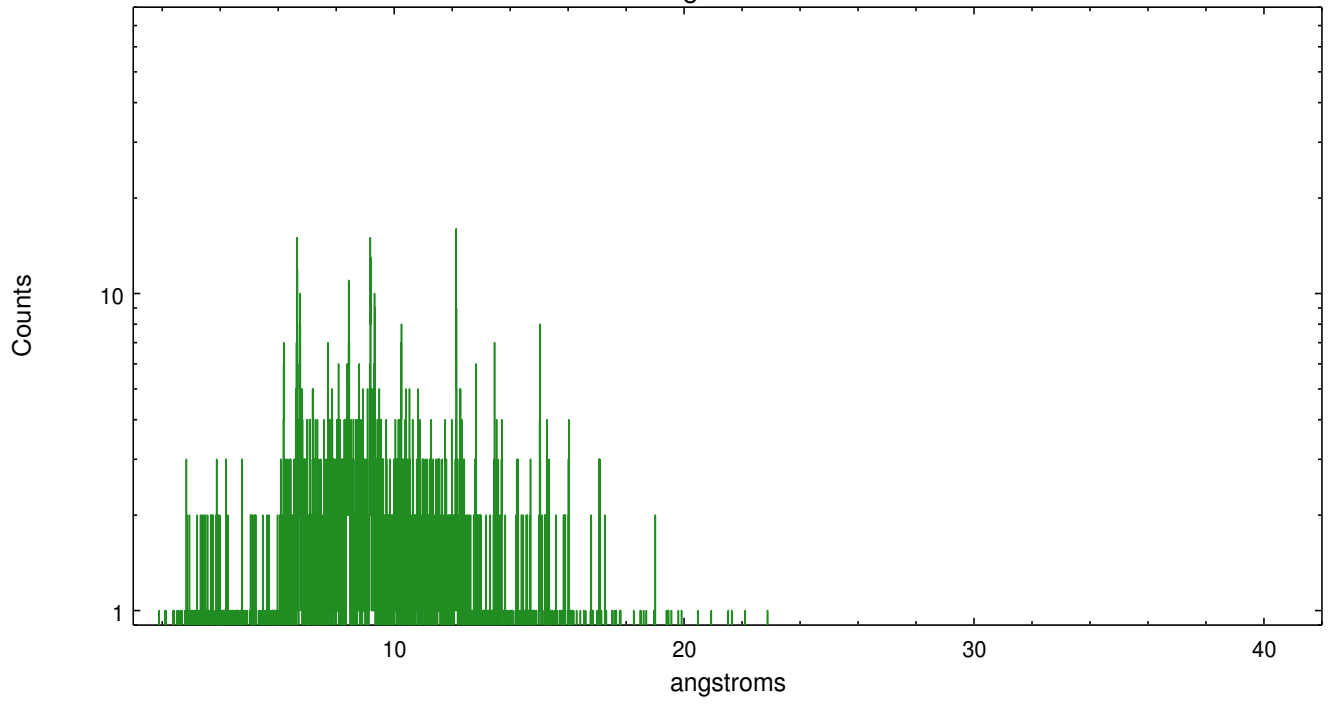


Full Detector MEG

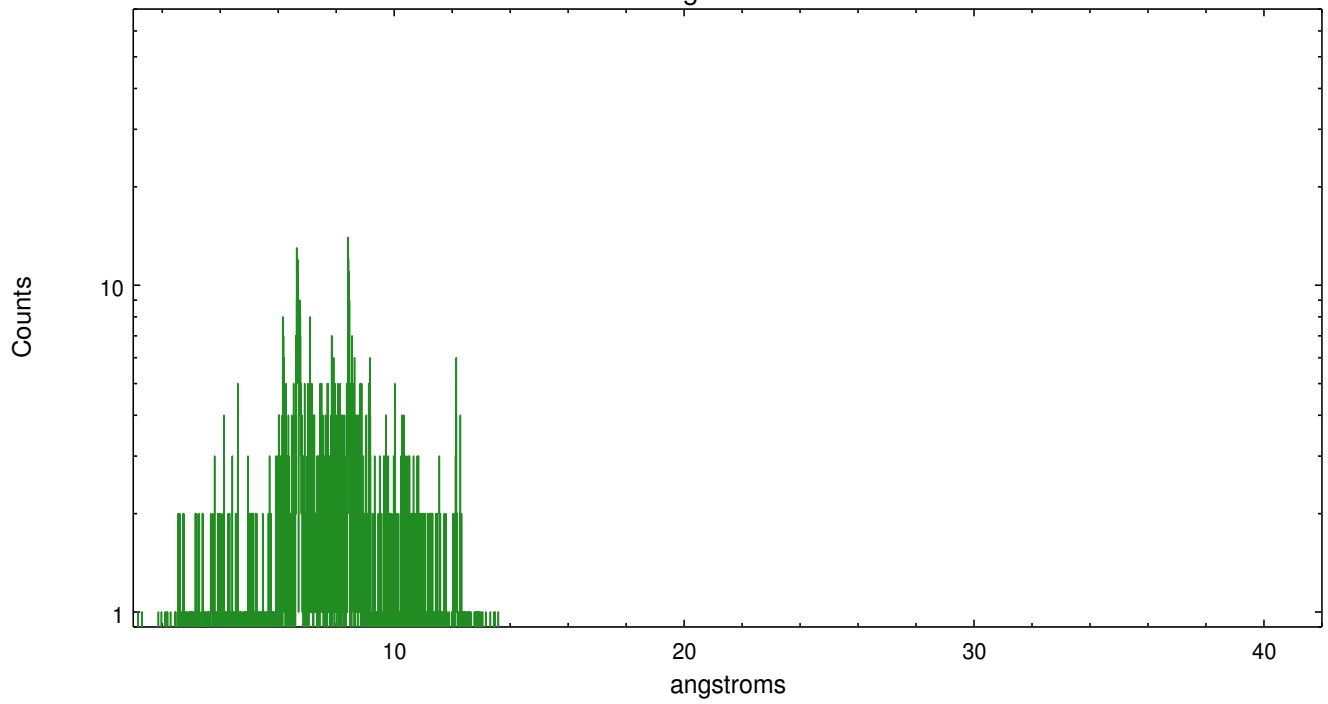
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	346	256	3134	6702	2474	97	116



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.02.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	39.068896943748

## A.2 Comments

Offset in aim point is intended to put the aimpoint at row 162 in order to get the HET/MEG spectra centered in the bottom 1/4 subarray of the ACIS-S array with the OVIII line in the MEG minus spectrum onto the subarray.

===

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 SNR but is not necessarily at the position 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.