

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 675 - L2 Version 5  
Chandra X-Ray Center

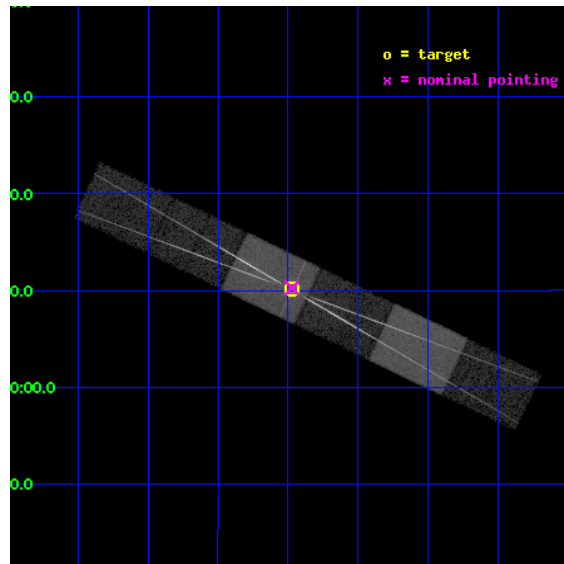
L2 Processing Date : Sep 10 2012

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# 1 Front

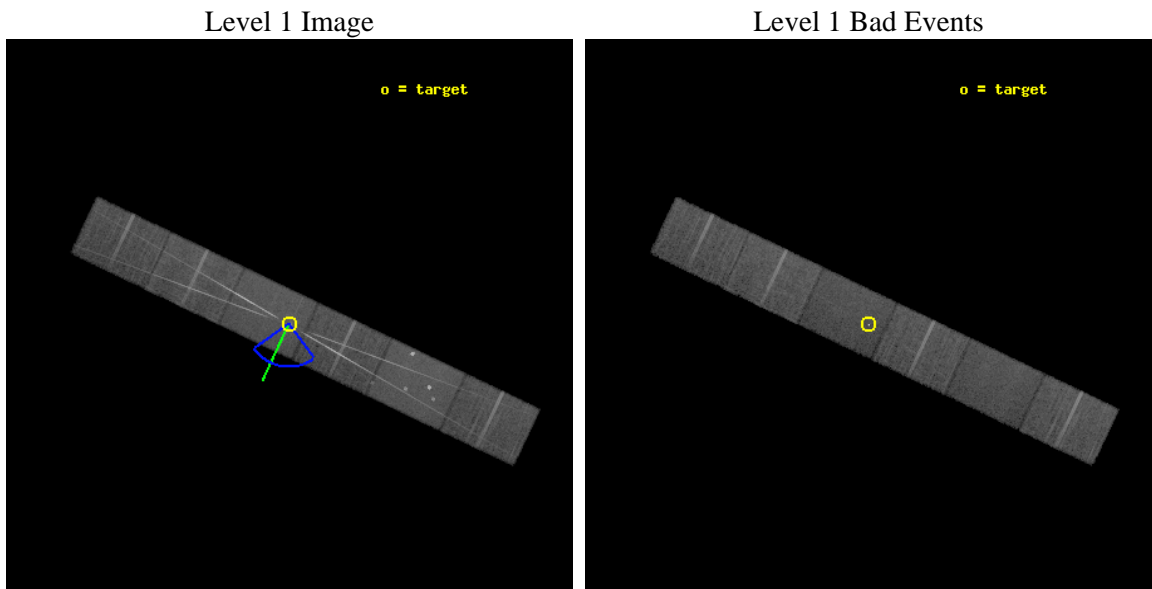
seq_num	400042	Sequence number
obs_id	675	Observation id
title	SOFT X-RAY DIAGNOSTICS OF A POSSIBLE ADC IN X2127+119	Proposal tit
observer	Dr Nicholas White	Principal investigator
object	X2127+119	Source name
dtycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	322.492917	Observer's specified target RA [deg]
dec_targ	12.169167	Observer's specified target Dec [deg]
ra_nom	322.49330392246	Nominal RA [deg]
dec_nom	12.171292113468	Nominal Dec [deg]
roll_nom	205.37226163368	Nominal Roll [deg]
revision	5	Processing version of data
ontime	20130.0	Sum of GTIs [s]
lvetime	19804.883040015	Livetime [s]
ontime4	20130.0	Sum of GTIs [s]
ontime5	20130.0	Sum of GTIs [s]
ontime6	20130.0	Sum of GTIs [s]
ontime7	20130.0	Sum of GTIs [s]
ontime8	20130.0	Sum of GTIs [s]
ontime9	20127.459009841	Sum of GTIs [s]
l2events	264032	Number of level 2 events



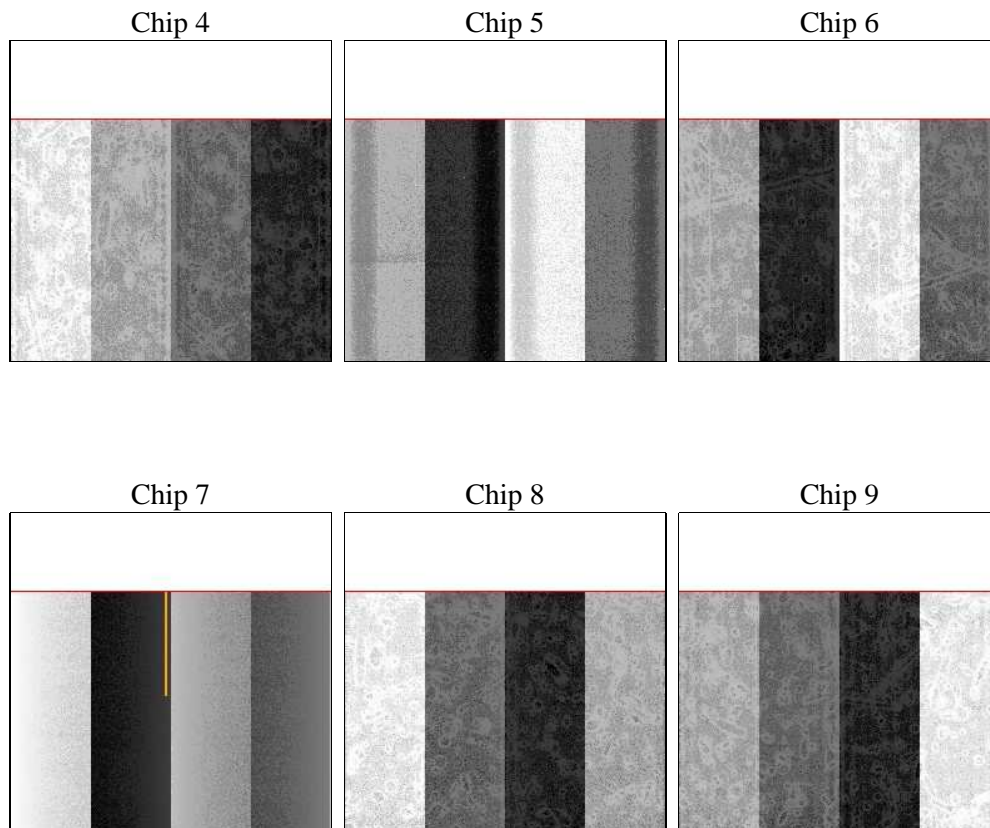
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	20130.0	Sum of GTIs [s]
caldbver	4.5.1.1	&#160	ontime4	20130.0	Sum of GTIs [s]
date	2012-09-01T02:50:15	Date and time of file creation	ontime5	20130.0	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	20130.0	Sum of GTIs [s]
			ontime7	20130.0	Sum of GTIs [s]
			ontime8	20130.0	Sum of GTIs [s]
			ontime9	20127.459009841	Sum of GTIs [s]
			l1events	832968	Number of level 1 events

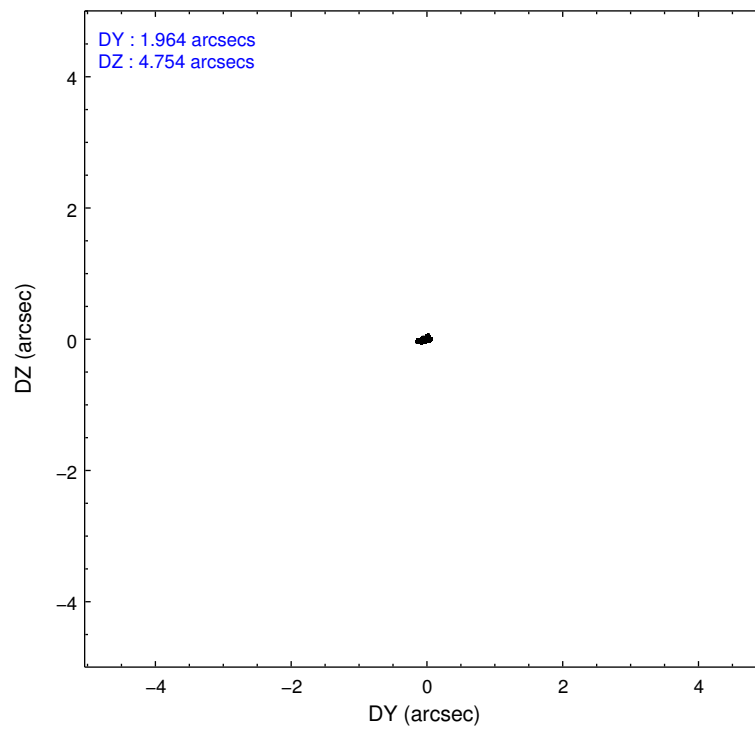
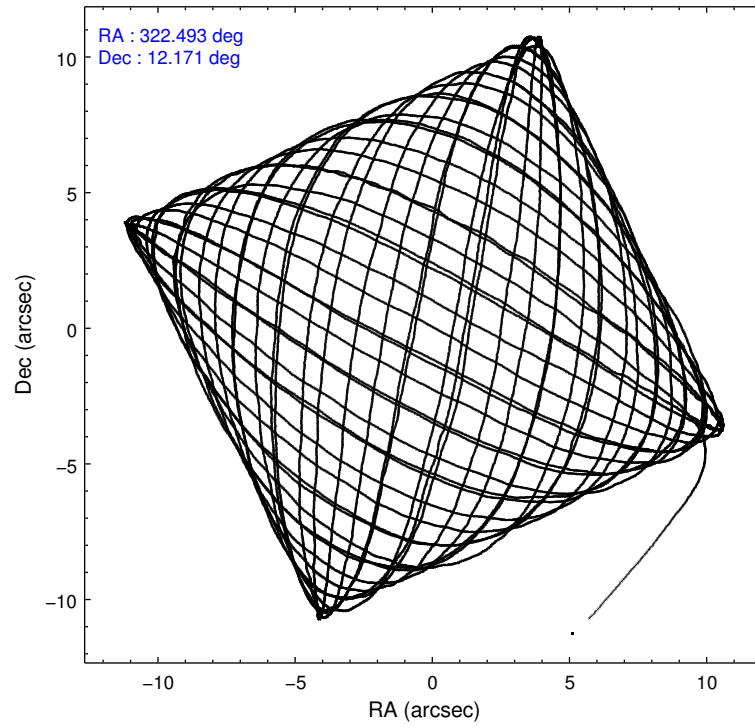
### 2.1.4 Events

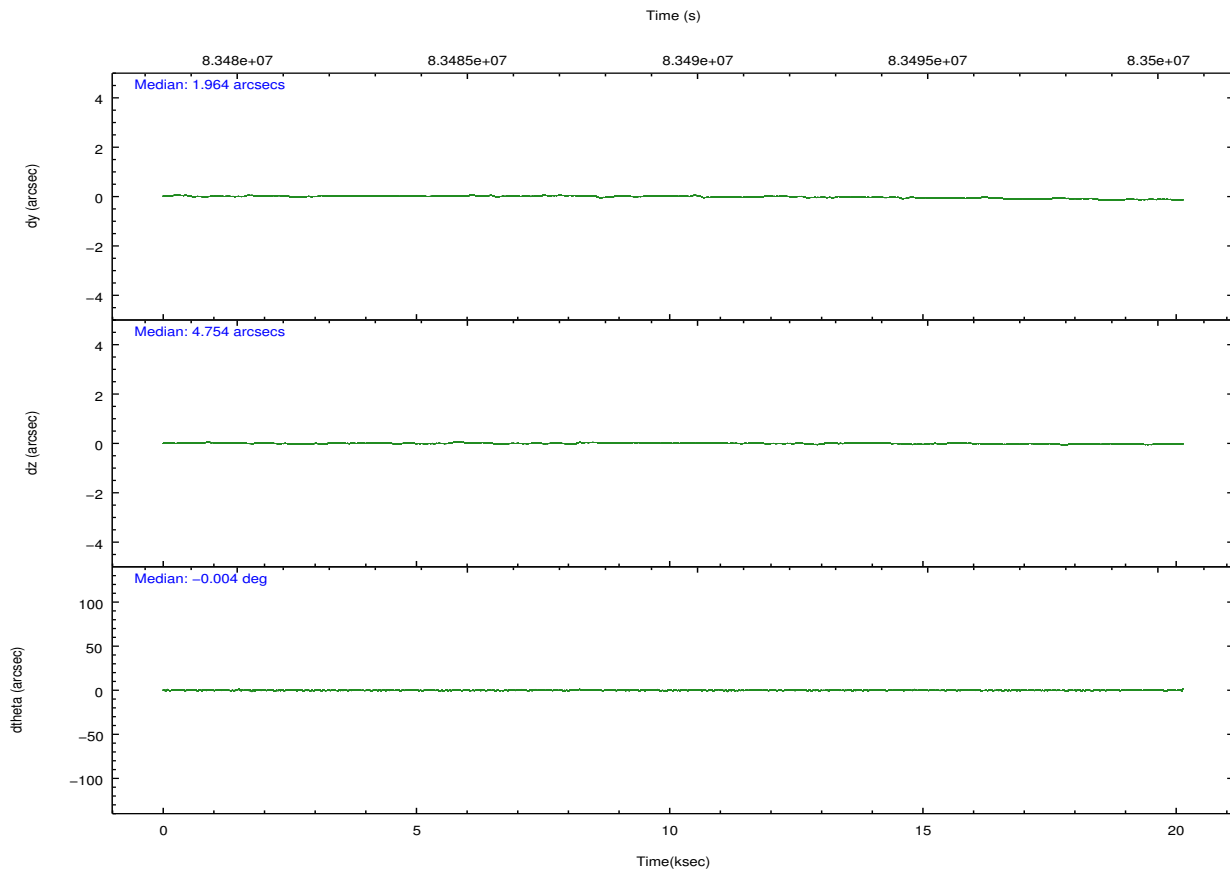
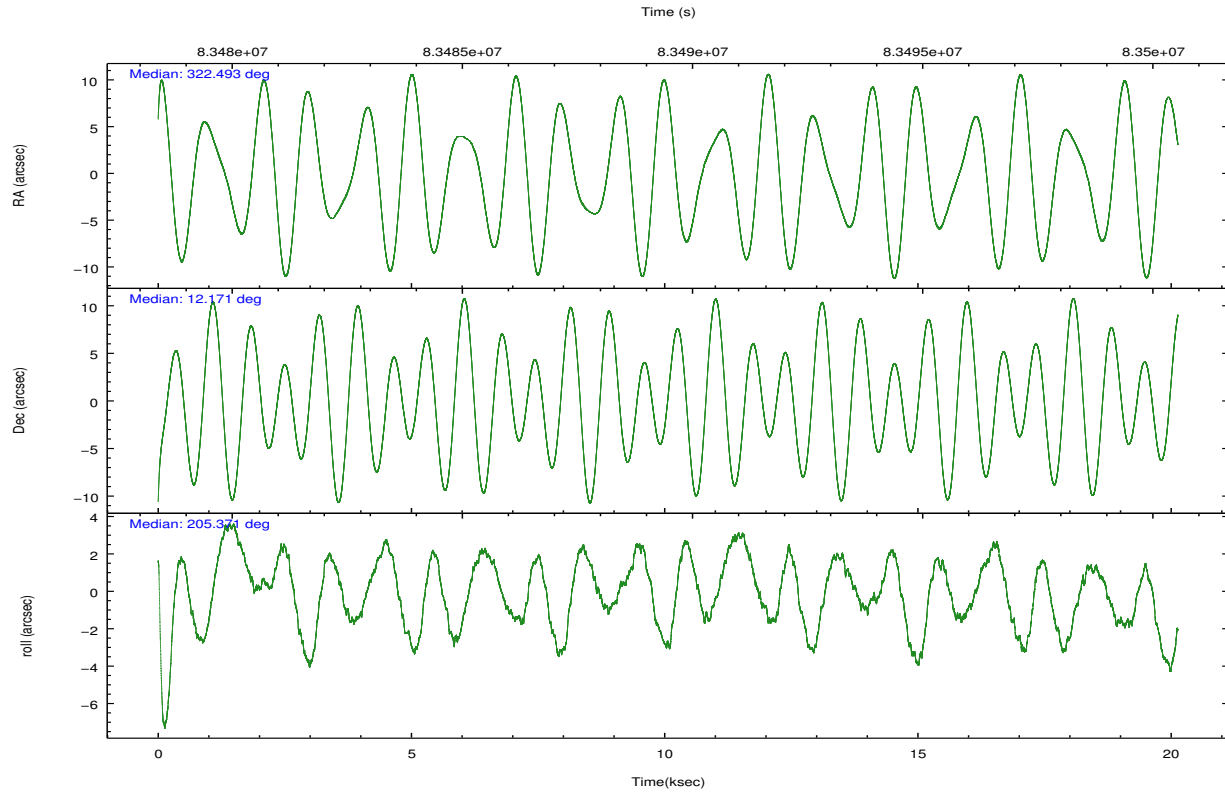
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	109655	156809	145018	178197	142482	100807	grade 0 events	6869	27014	38335	15735	23009	7891
rejected events	95877	72023	91322	78926	101674	86192		6%	17%	26%	8%	16%	7%
rejected %	87%	45%	62%	44%	71%	85%	grade 1 events	44	256	184	398	95	42
								0%	0%	0%	0%	0%	0%
							grade 2 events	2910	19647	7115	22303	6781	2504
								2%	12%	4%	12%	4%	2%
							grade 3 events	1191	4302	2848	10271	3222	1370
								1%	2%	1%	5%	2%	1%
							grade 4 events	1229	4041	2736	10366	3014	1294
								1%	2%	1%	5%	2%	1%
							grade 5 events	3168	10361	3884	13100	4772	3818
								2%	6%	2%	7%	3%	3%
							grade 6 events	1977	32325	3453	42781	6302	2079
								1%	20%	2%	24%	4%	2%
							grade 7 events	92267	58863	86463	63243	95287	81809
								84%	37%	59%	35%	66%	81%

## 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	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	322.509072	322.4933039224599	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	12.193915	12.17129211346802	Subarray start row	1	1
[deg] Pointing Roll	205.212298	205.3722616336816	Subarray row count	774	774
[deg] Roll angle	190.000000	190.000000	Alternating exposures requested	N	N
[deg] Roll tolerance	45.000000	45.000000	[s] Primary exposure time	0.000000	2.5
Roll constraint allows 180D rotation	N	N			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-187.132523	-187.1228876879999			
[mm] SIM translation stage offset	-3	-3.009634895007935			
[s] Observation start time (MET)	83479533.184000	83478266.051247			
Observation start date	2000-08-24T04:44:29	2000-08-24T04:24:26			
[s] Observation end time (MET)	83499533.184000	83500103.677066			
Observation end date	2000-08-24T10:17:49	2000-08-24T10:28:23			
Read mode	TIMED	TIMED			

## 2.3 Aspect



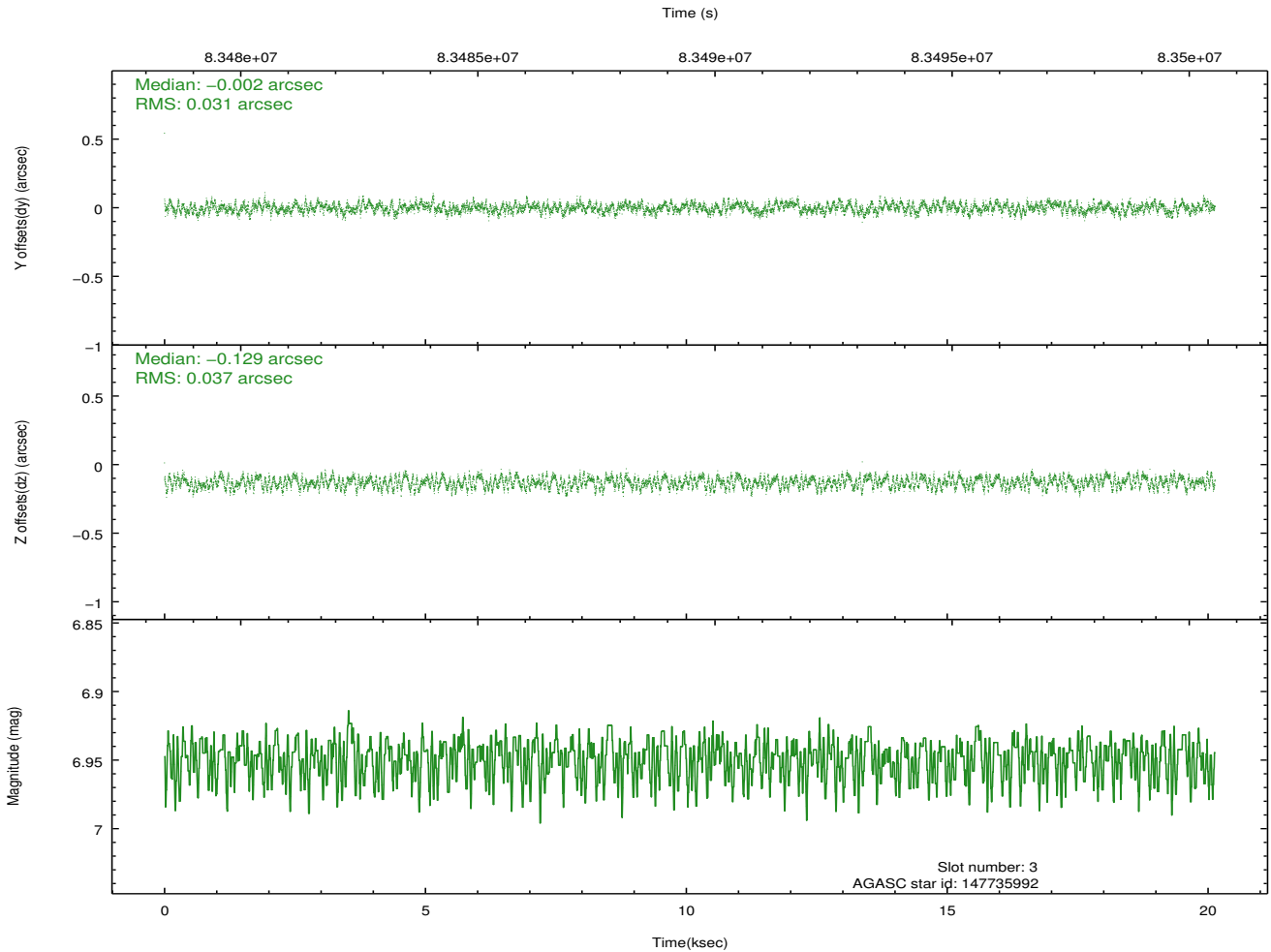
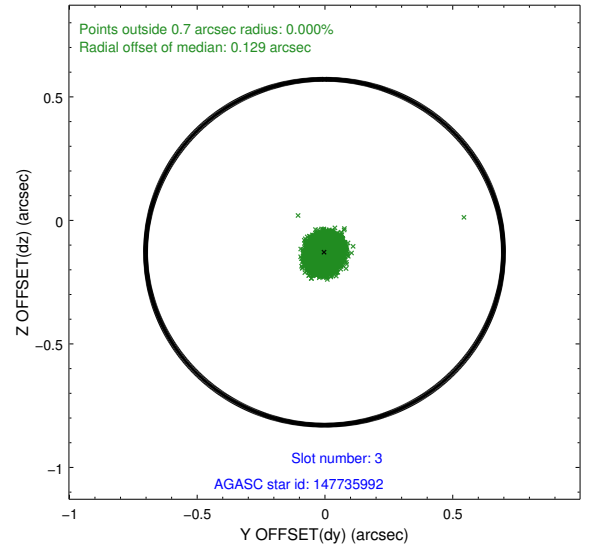
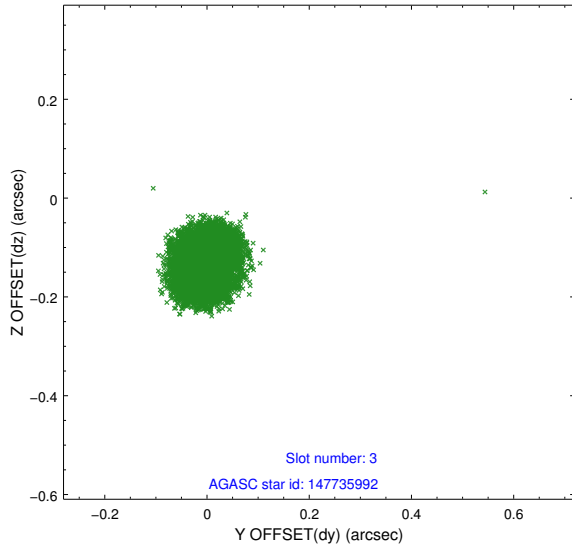


### Slot Statistics

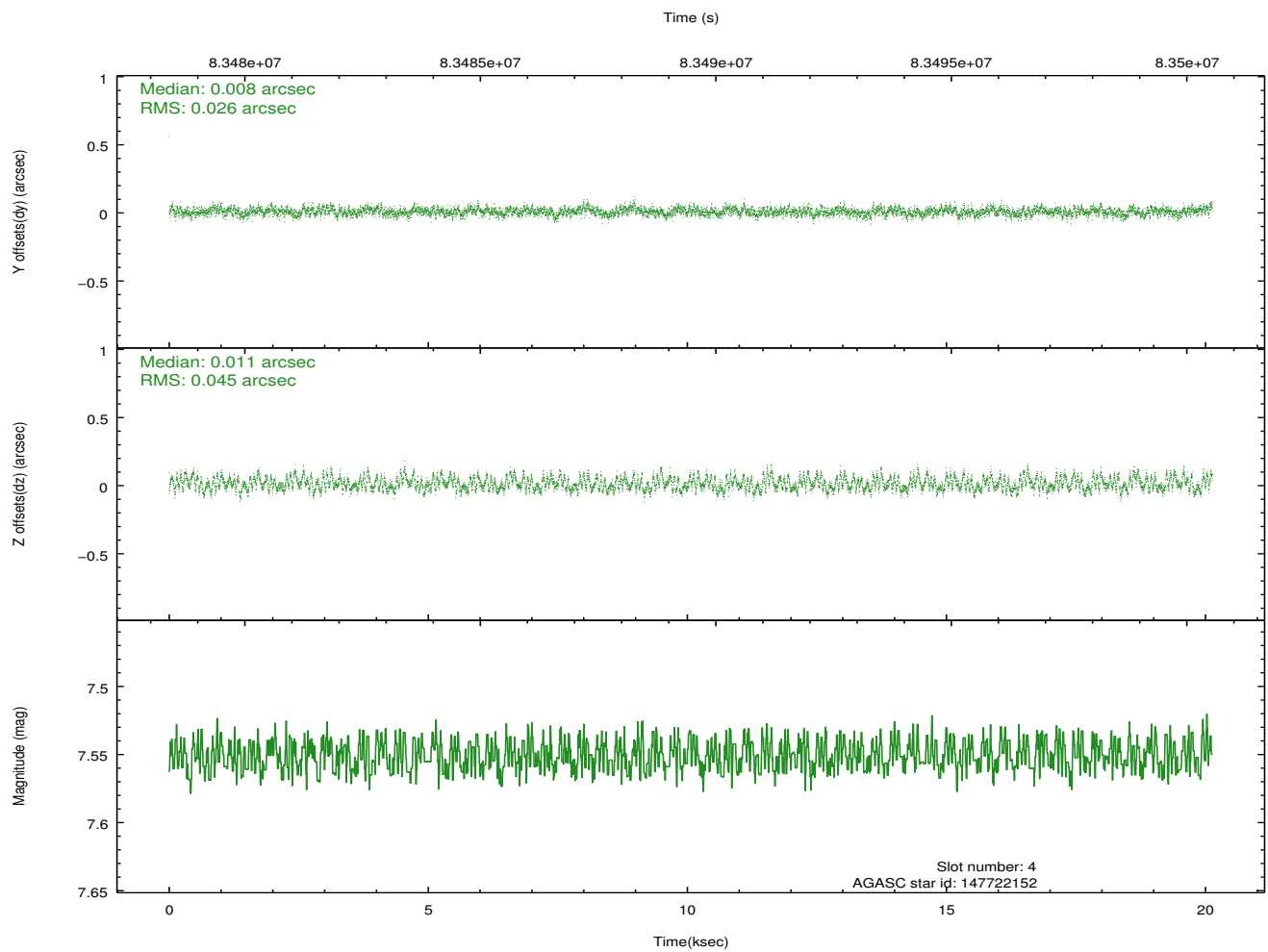
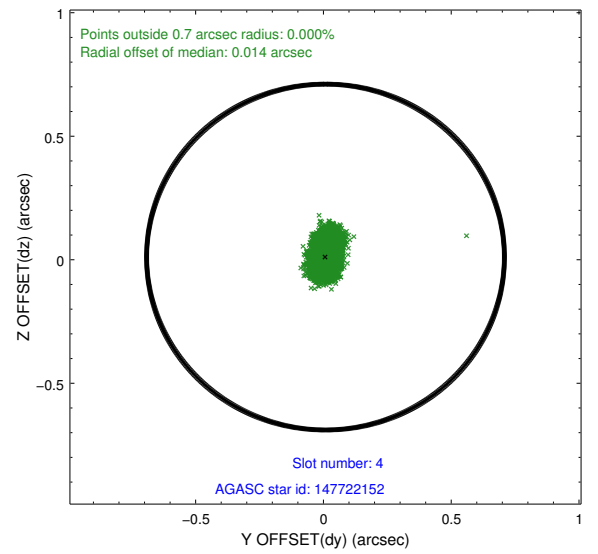
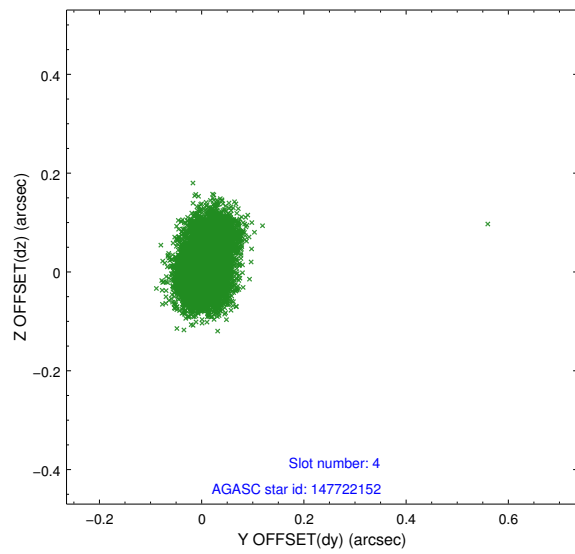
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	4911	-0.031	-0.034	0.007	0.011	0.000000	0.000000	-754.40	-1788.02
1	FID	ACIS-S-4	7.19	4911	0.004	0.024	0.006	0.011	0.000000	0.000000	2158.85	120.29
2	FID	ACIS-S-5	7.23	4911	-0.004	0.018	0.007	0.012	0.000000	0.000000	-1806.96	114.20
3	GUIDE	147735992	6.95	9823	-0.002	-0.129	0.052	0.078	322.299566	11.952911	1037.44	470.50
4	GUIDE	147722152	7.55	9819	0.008	0.011	0.054	0.091	322.735072	12.555367	-1272.37	-839.10
5	GUIDE	147719608	8.69	9821	0.018	0.007	0.063	0.102	322.898936	12.907459	-2332.10	-1742.23
6	GUIDE	147735328	8.67	9819	-0.038	0.077	0.070	0.109	321.823462	12.214663	2149.59	-1097.85
7	GUIDE	147736824	9.14	9813	0.016	0.034	0.079	0.125	322.394074	11.689801	1140.44	1469.30

## 2.4 Star Slots

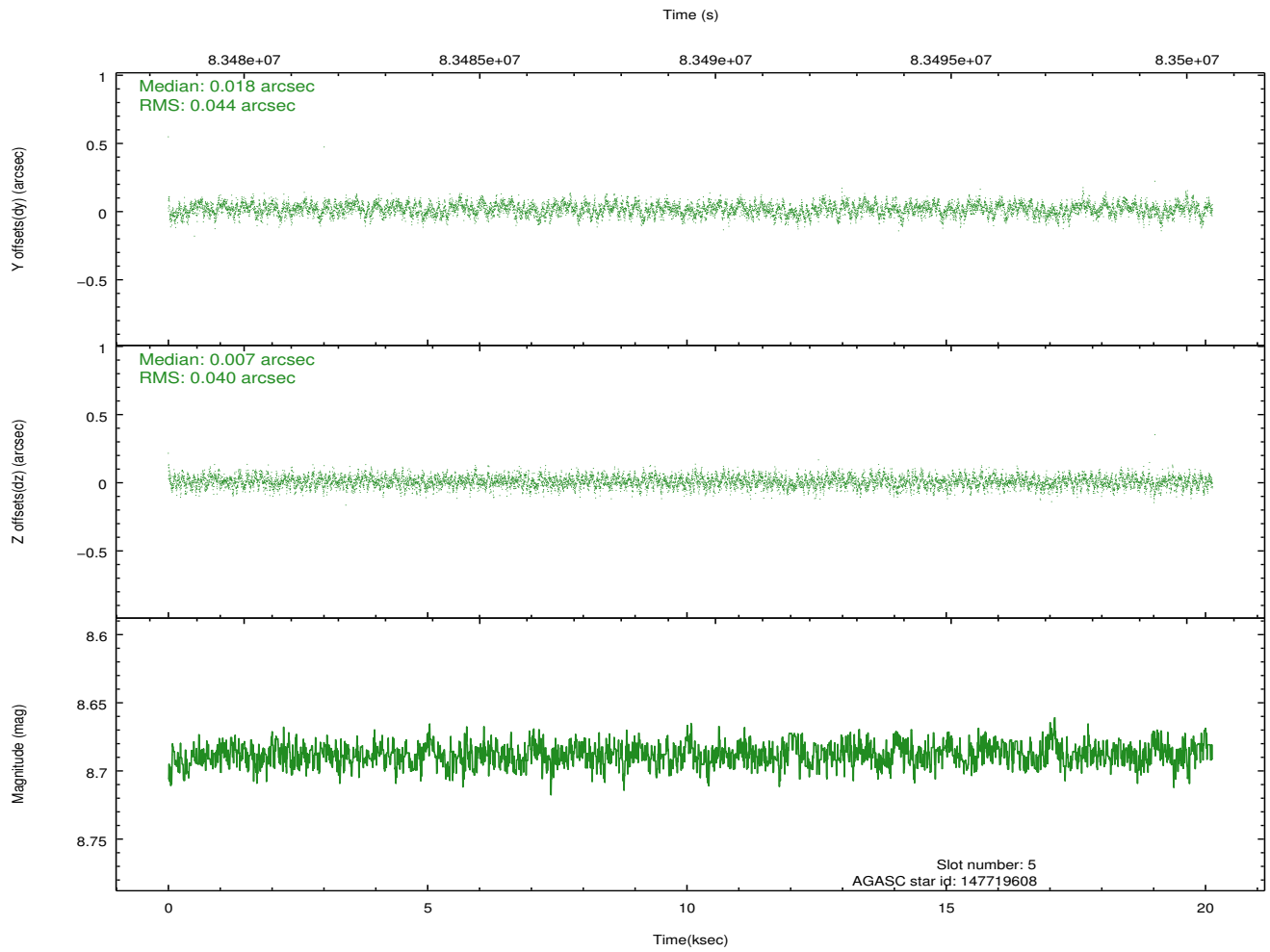
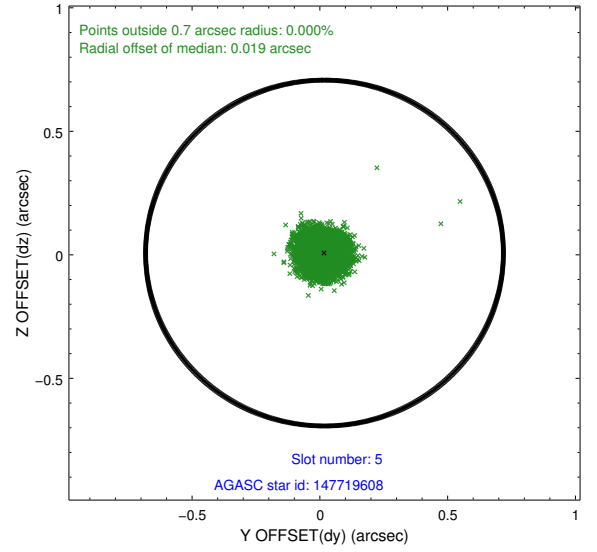
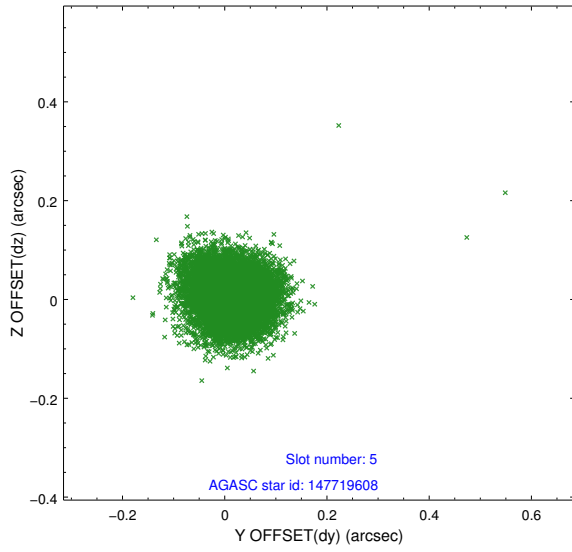
### 2.4.1 Slot 3



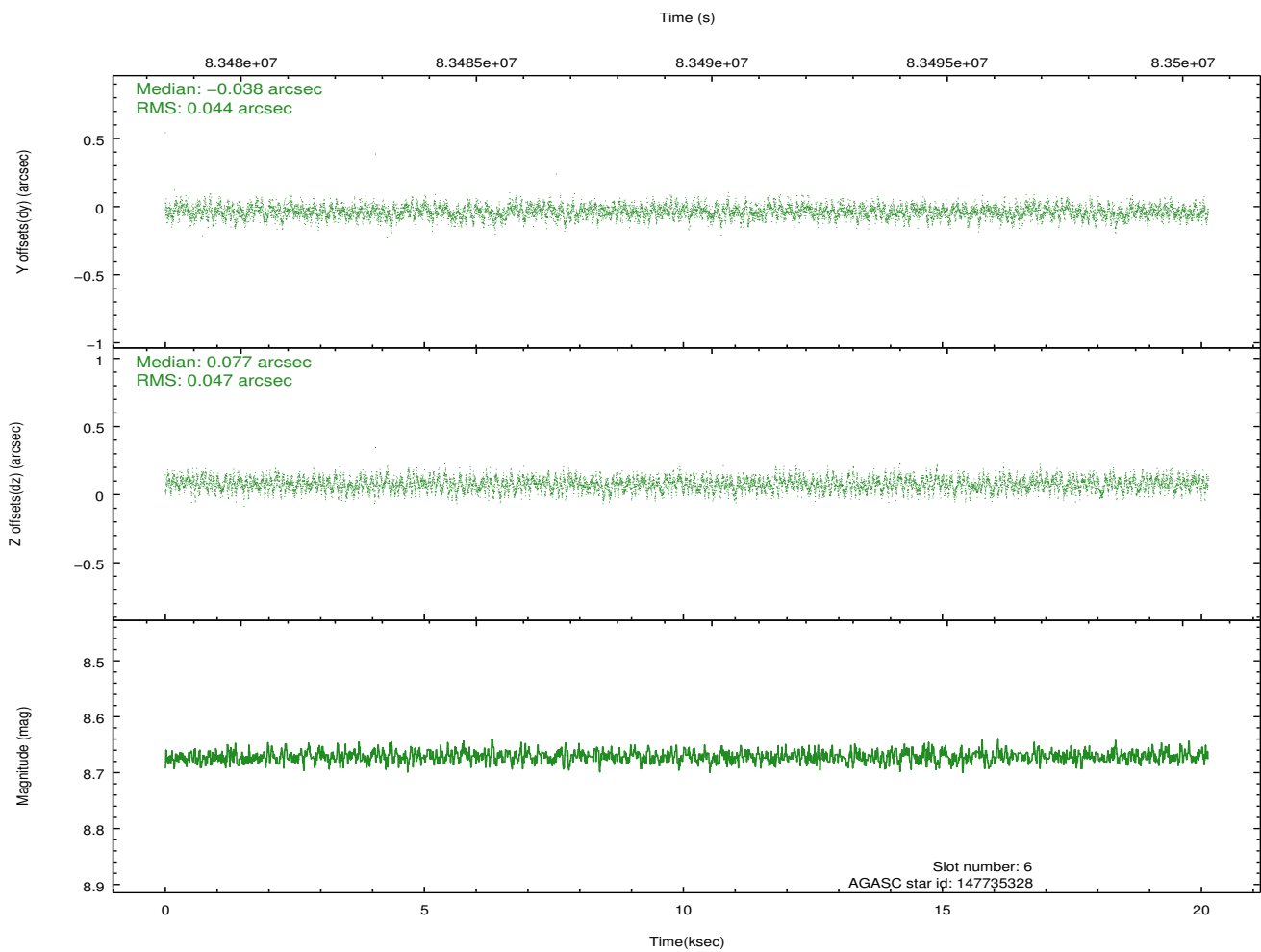
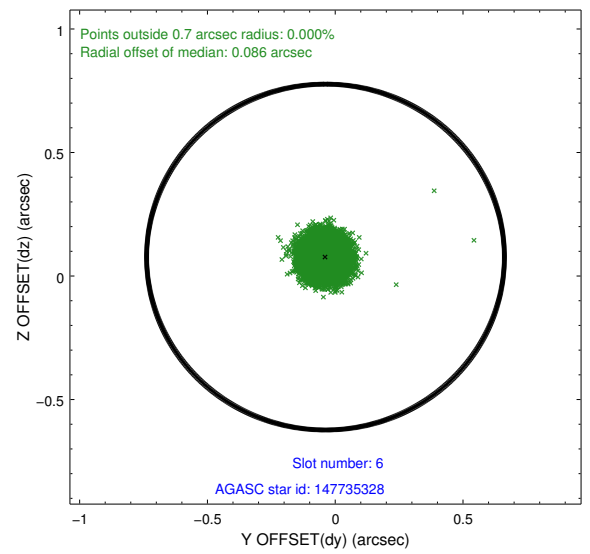
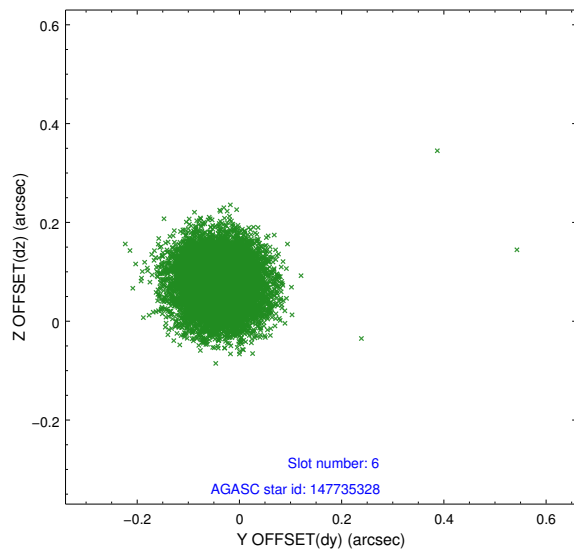
## 2.4.2 Slot 4



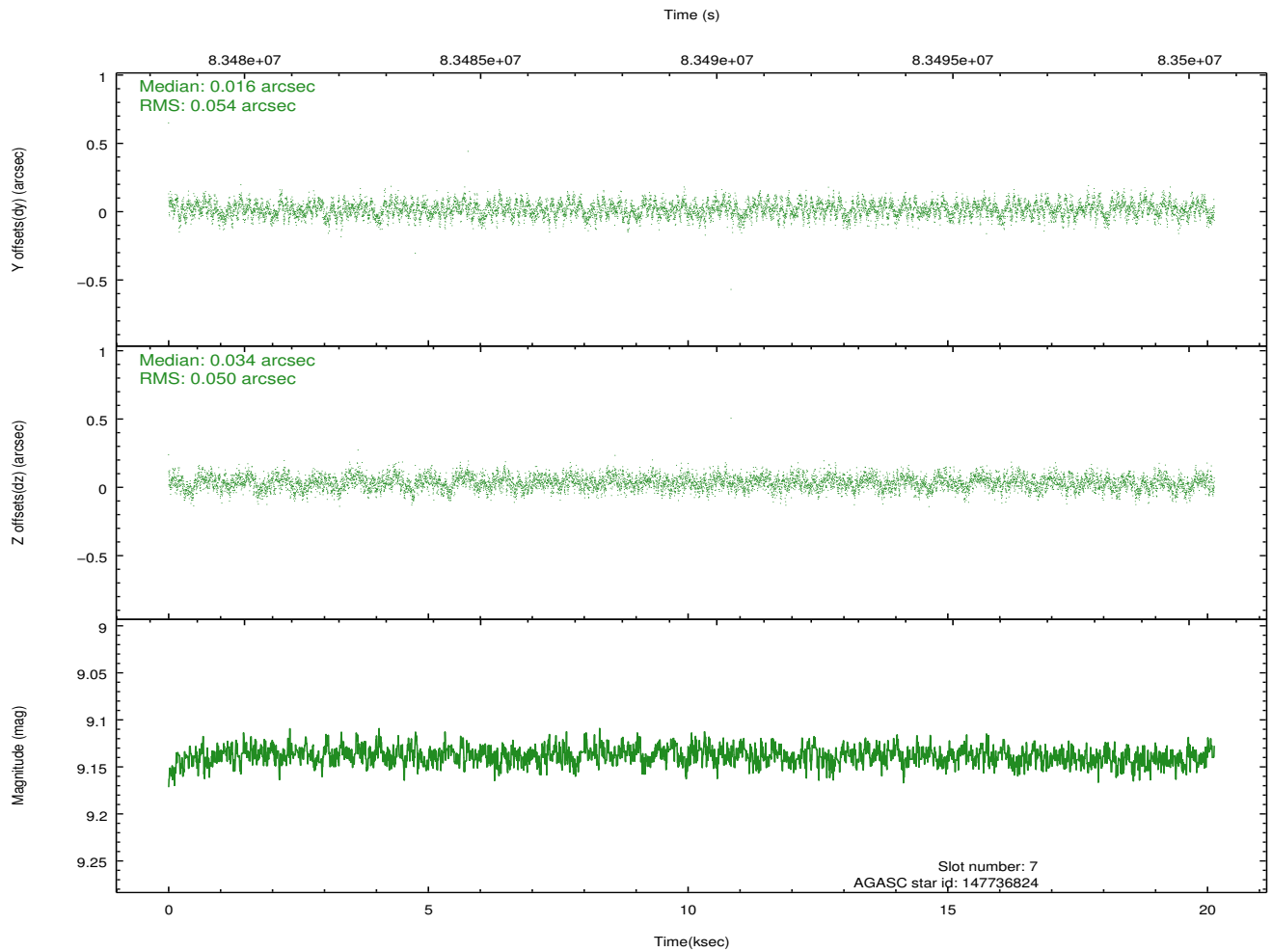
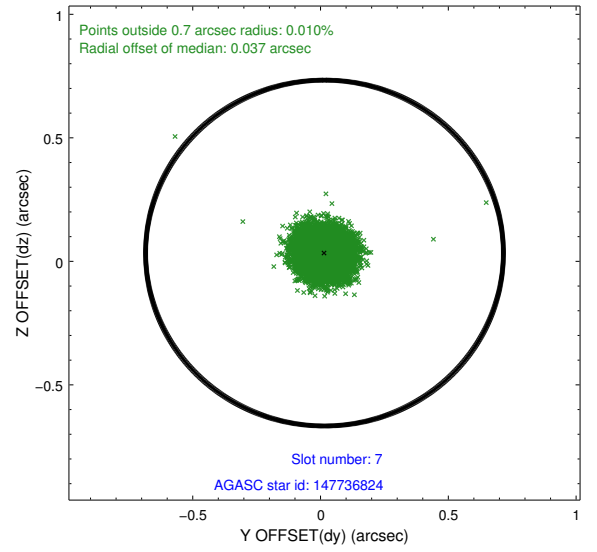
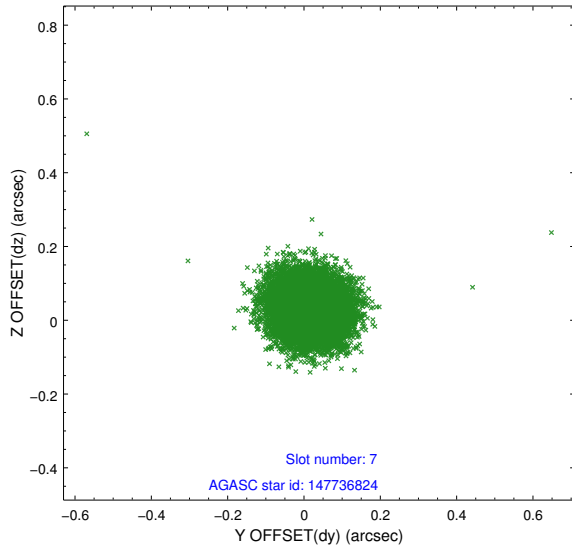
### 2.4.3 Slot 5



## 2.4.4 Slot 6

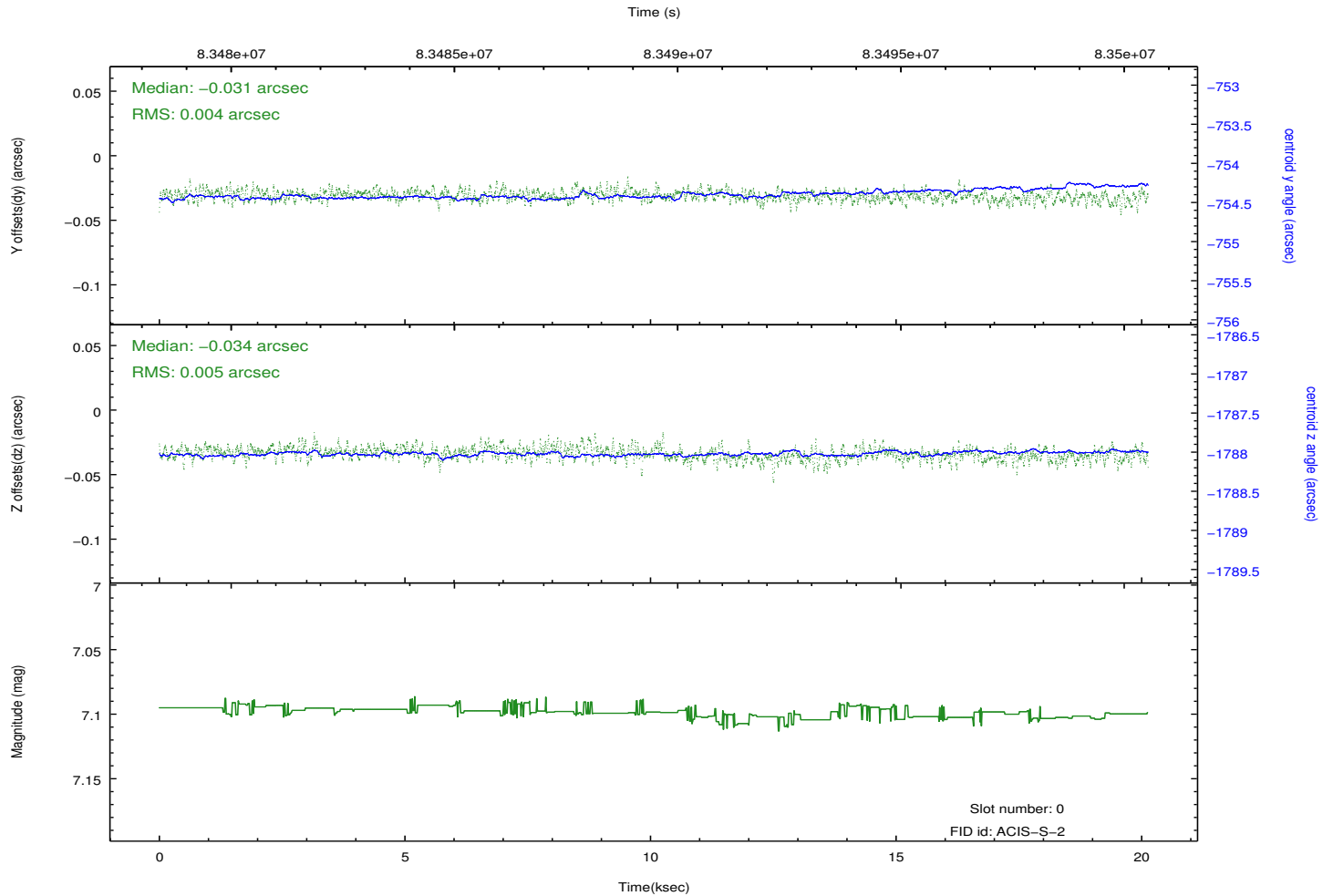
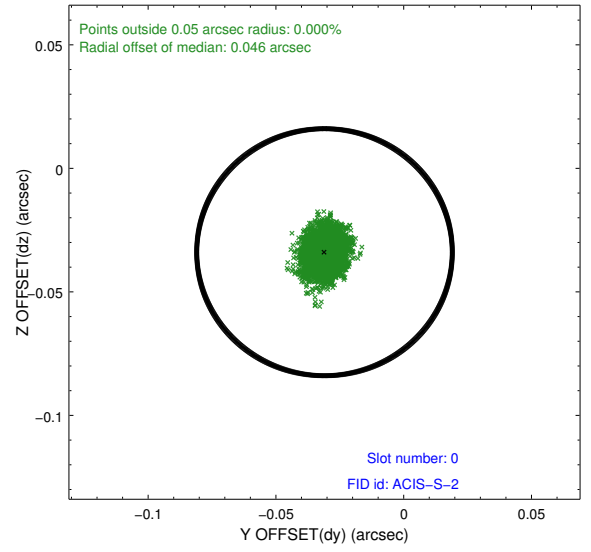
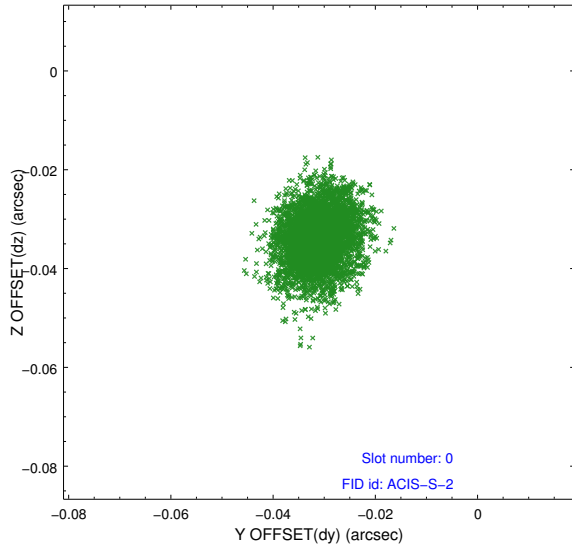


## 2.4.5 Slot 7

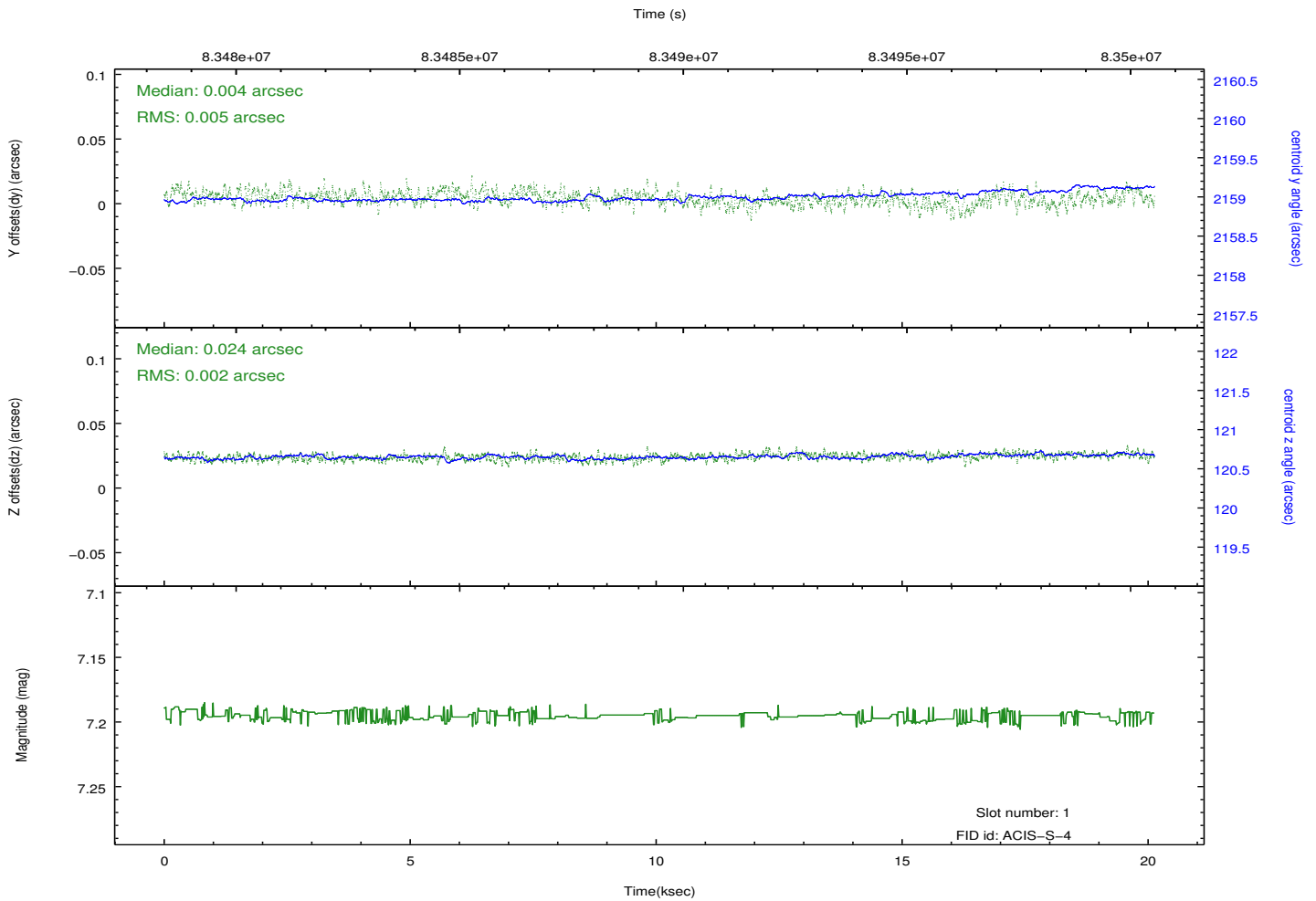
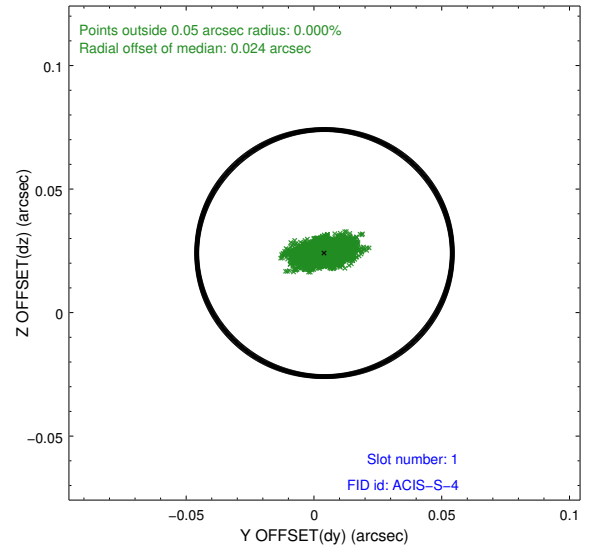
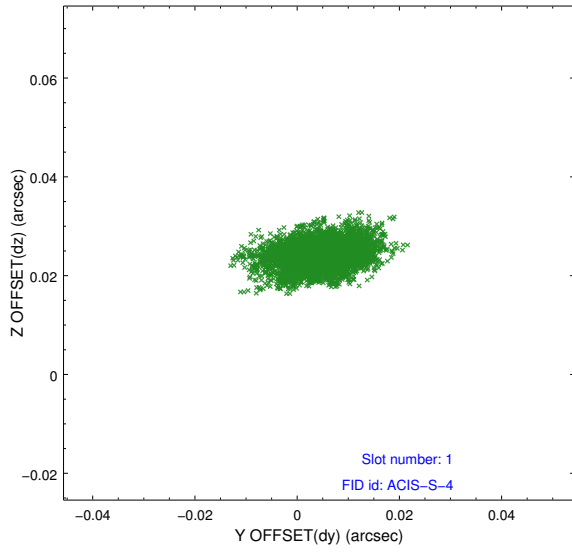


## 2.5 FID Slots

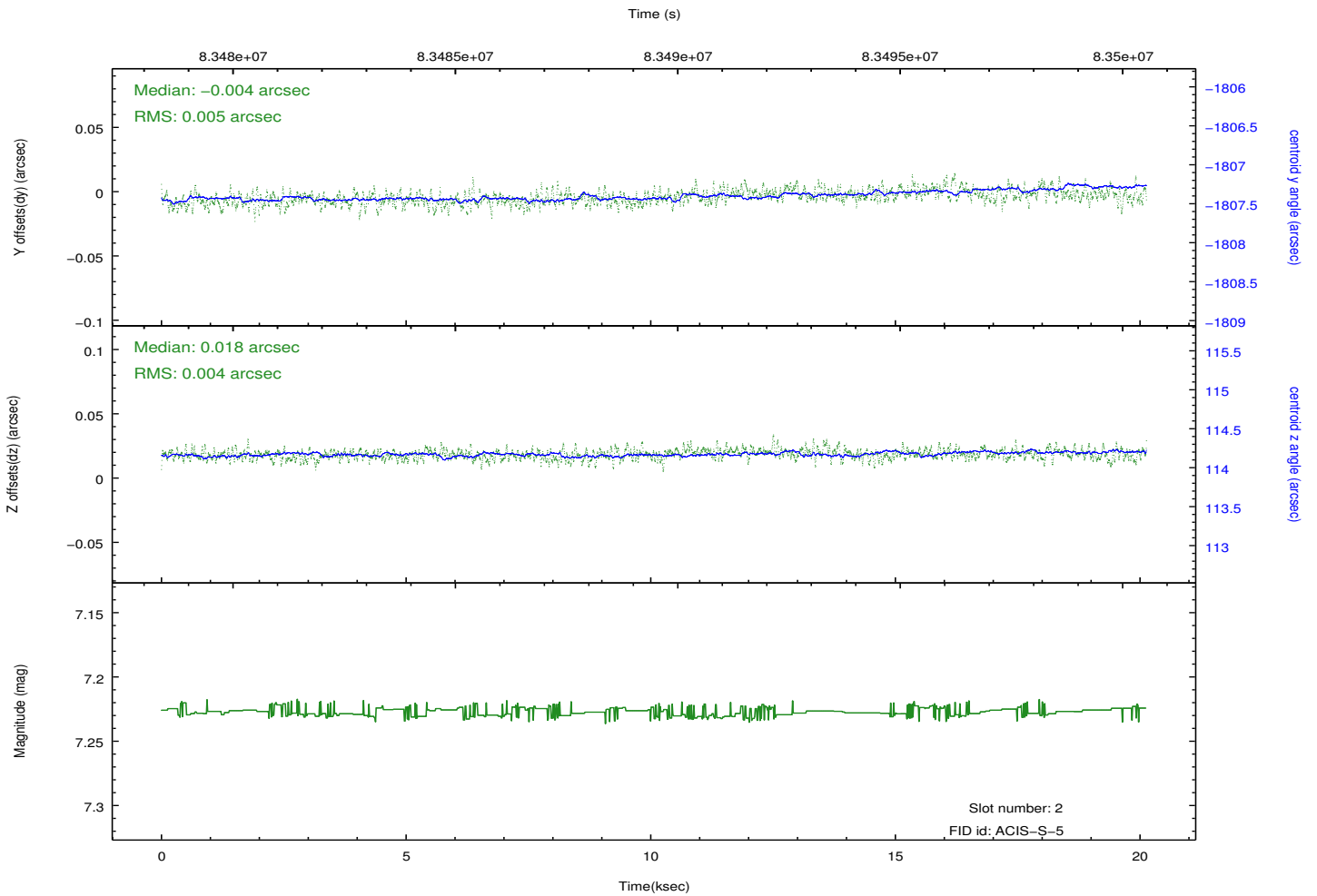
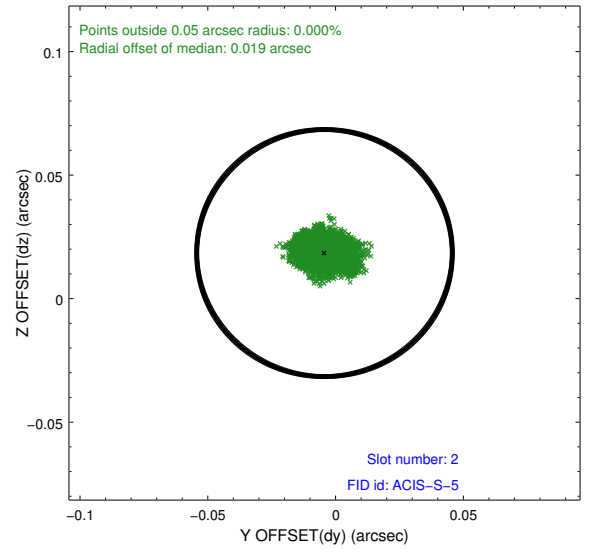
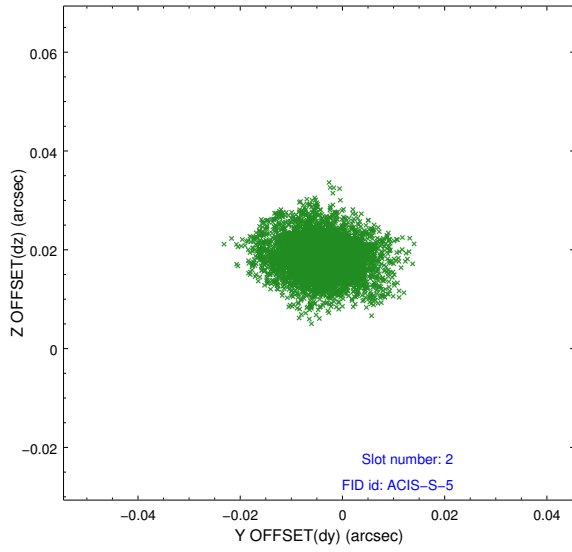
### 2.5.1 Slot 0



## 2.5.2 Slot 1

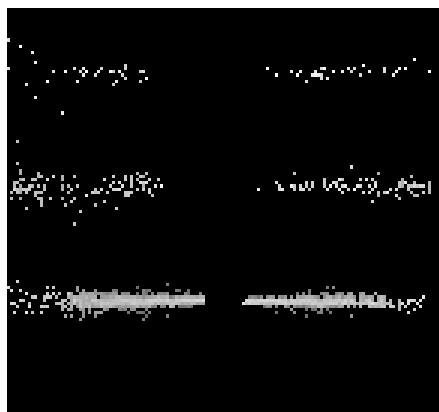


### 2.5.3 Slot 2

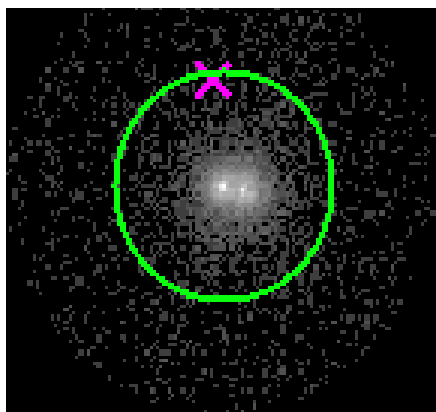


# 3 Gratings

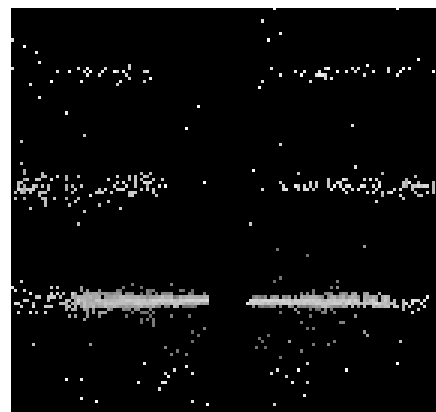
## 3.1 HEG Arm



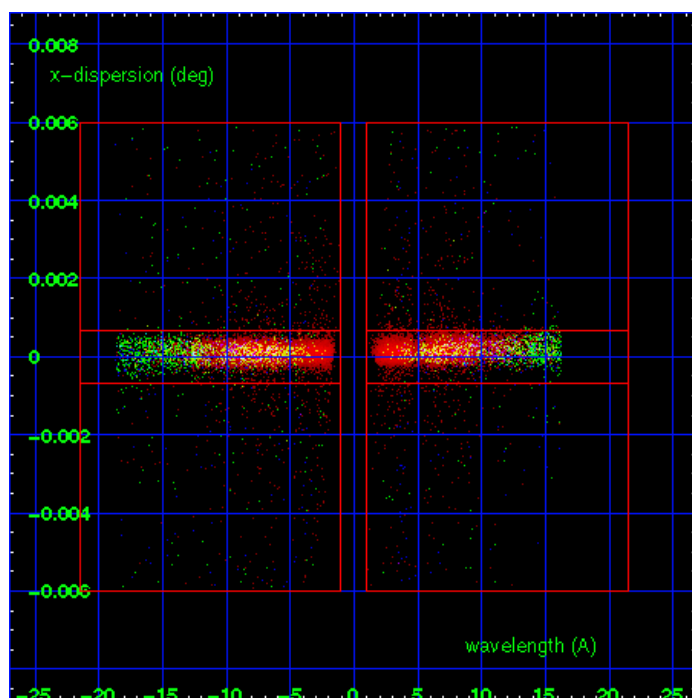
HEG Order Sort 123



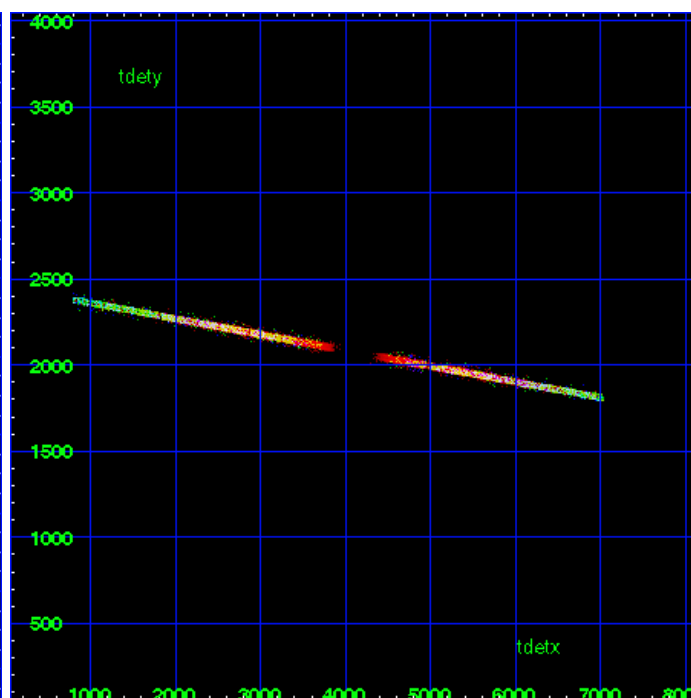
HEG Zero Order



HEG Order Sort ALL

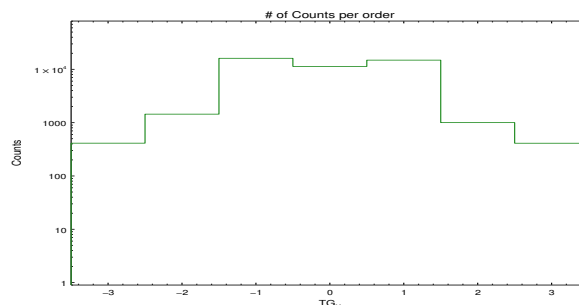


Spot Image HEG

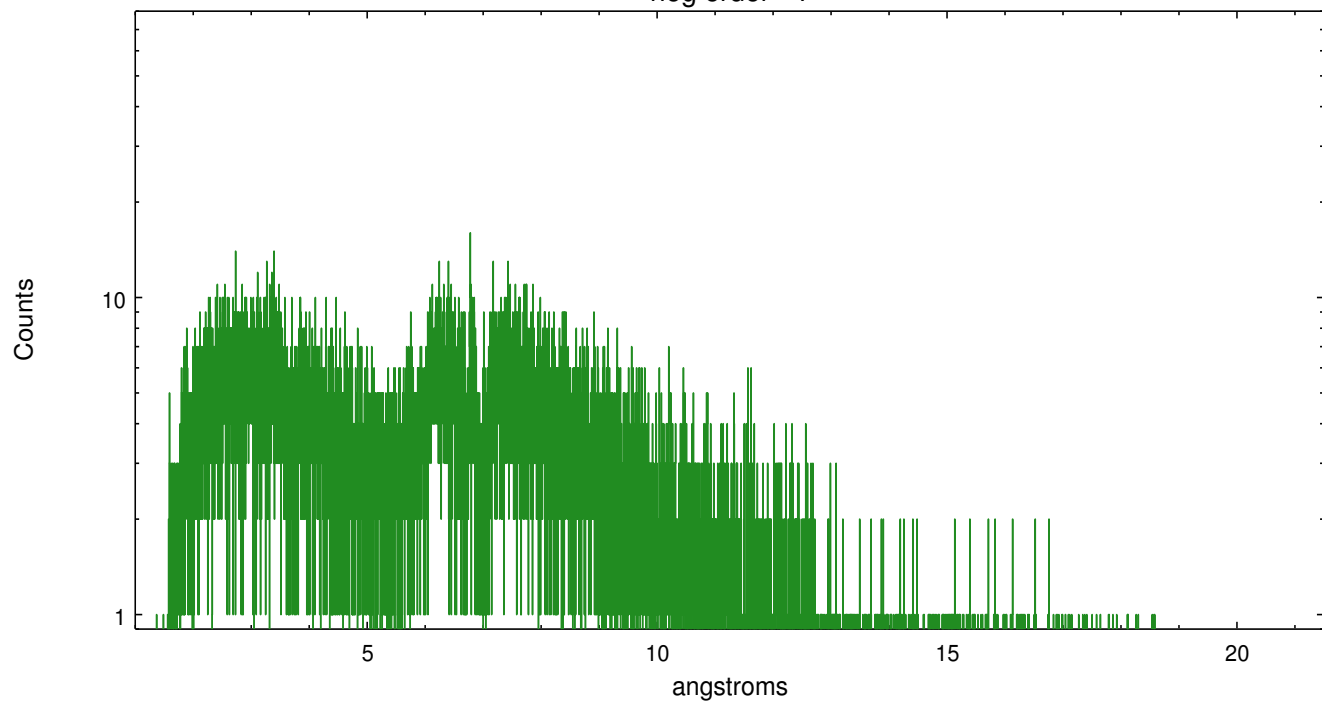


Full Detector HEG

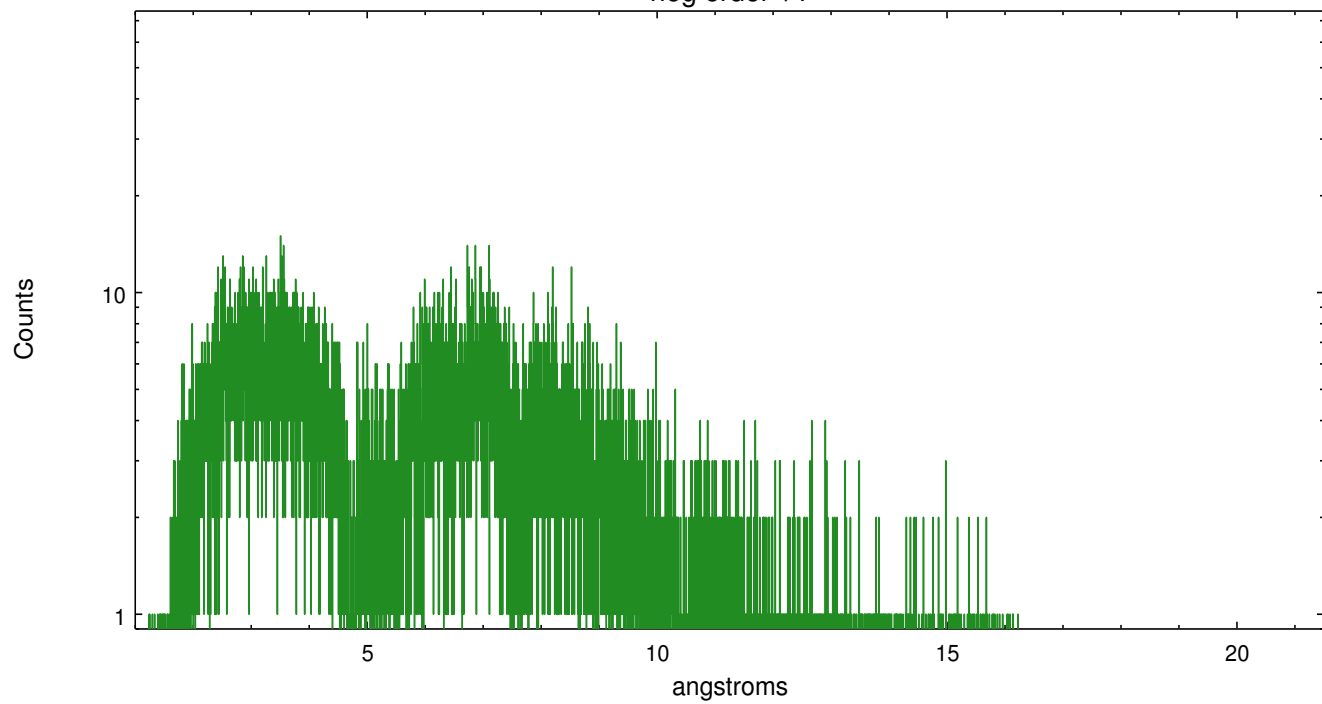
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	412	1443	16095	11343	14871	1002	411



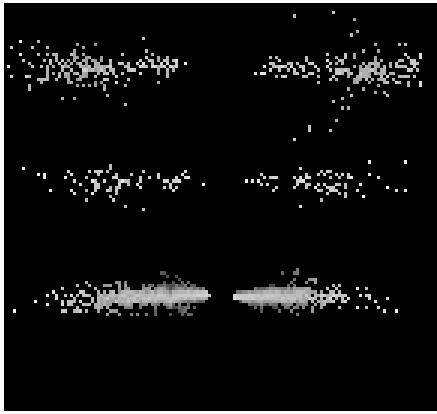
heg order -1



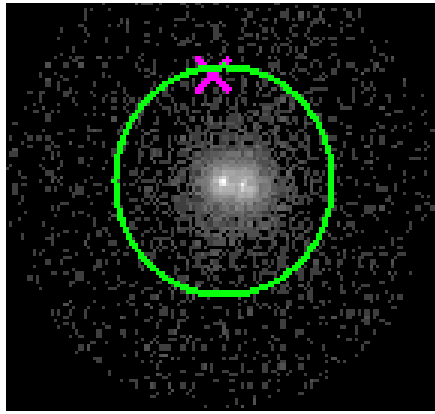
heg order +1



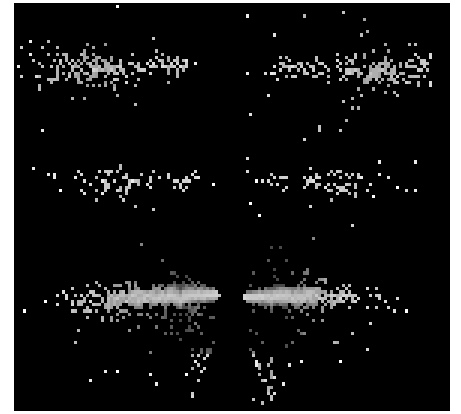
### 3.2 MEG Arm



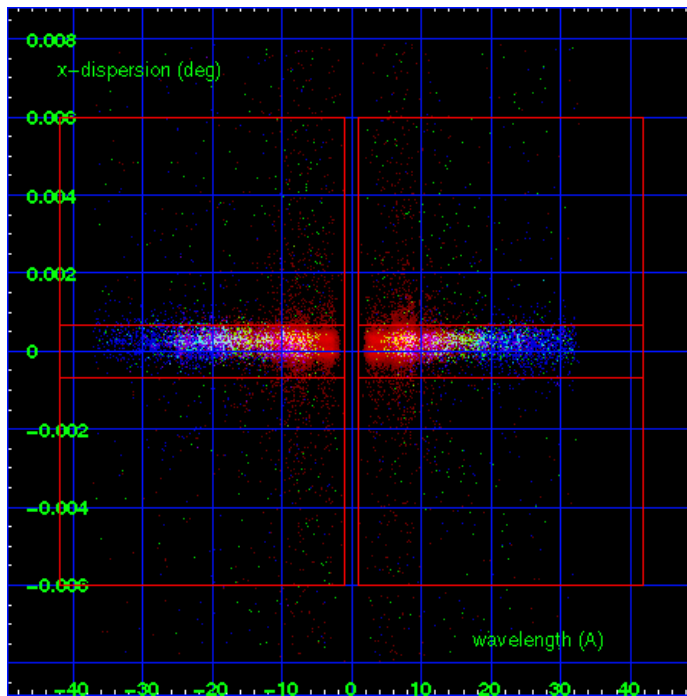
MEG Order Sort 123



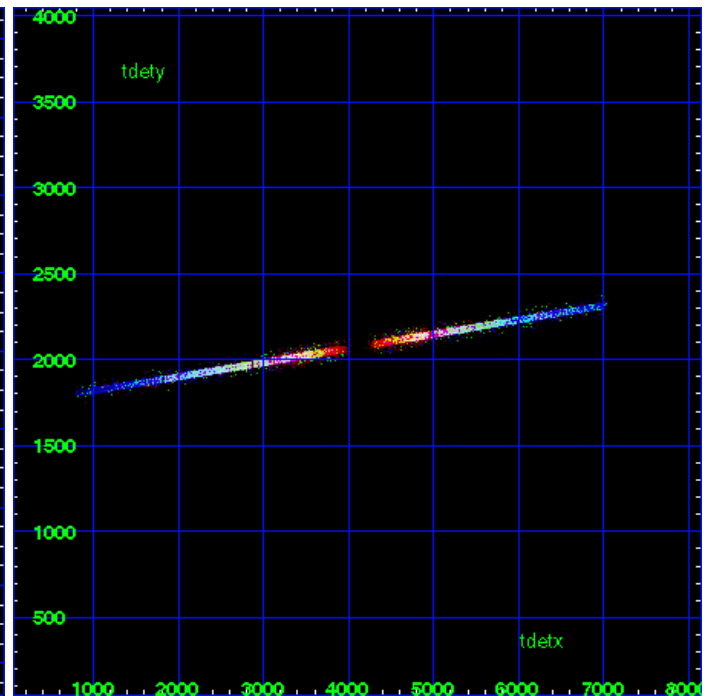
MEG Zero Order



MEG Order Sort ALL

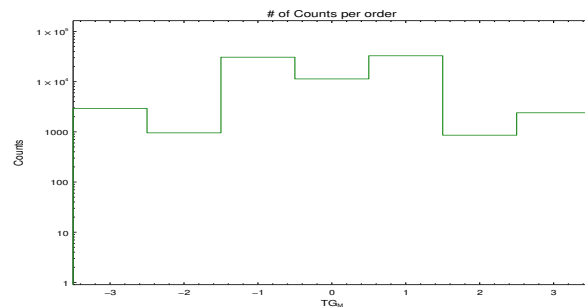


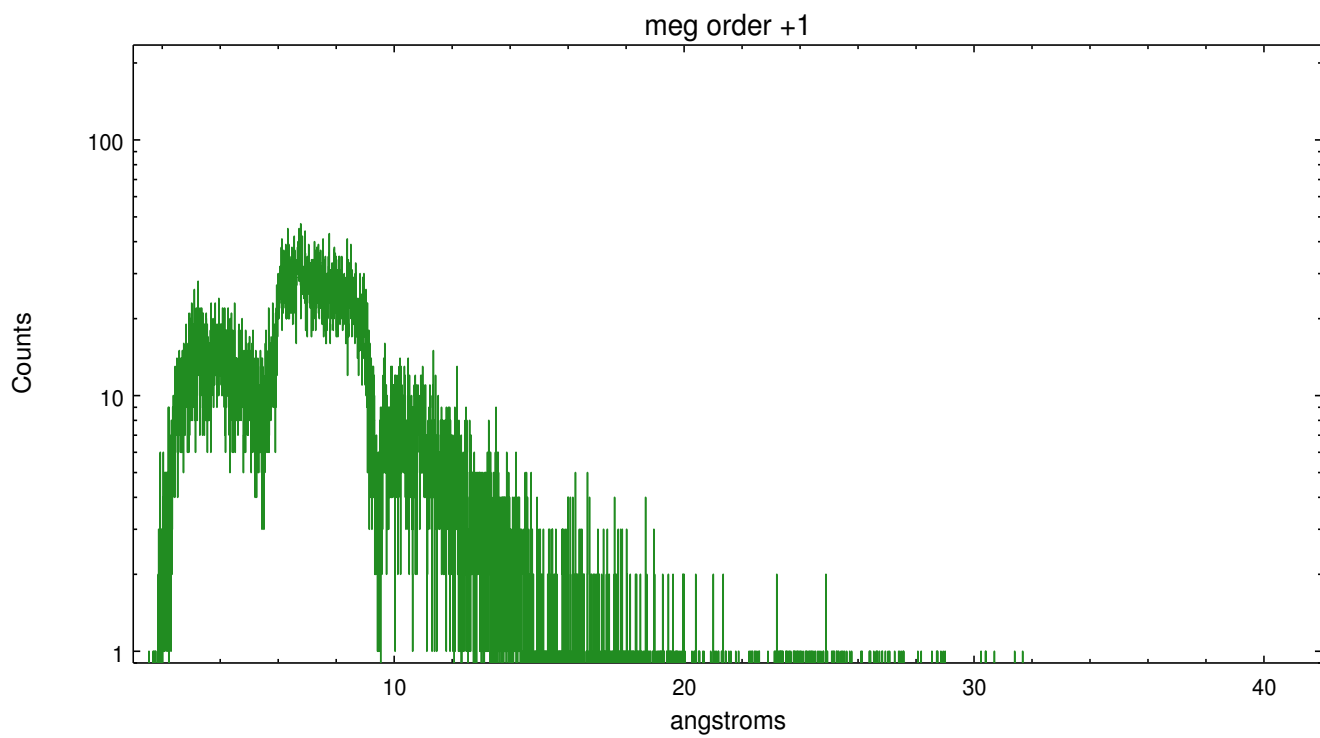
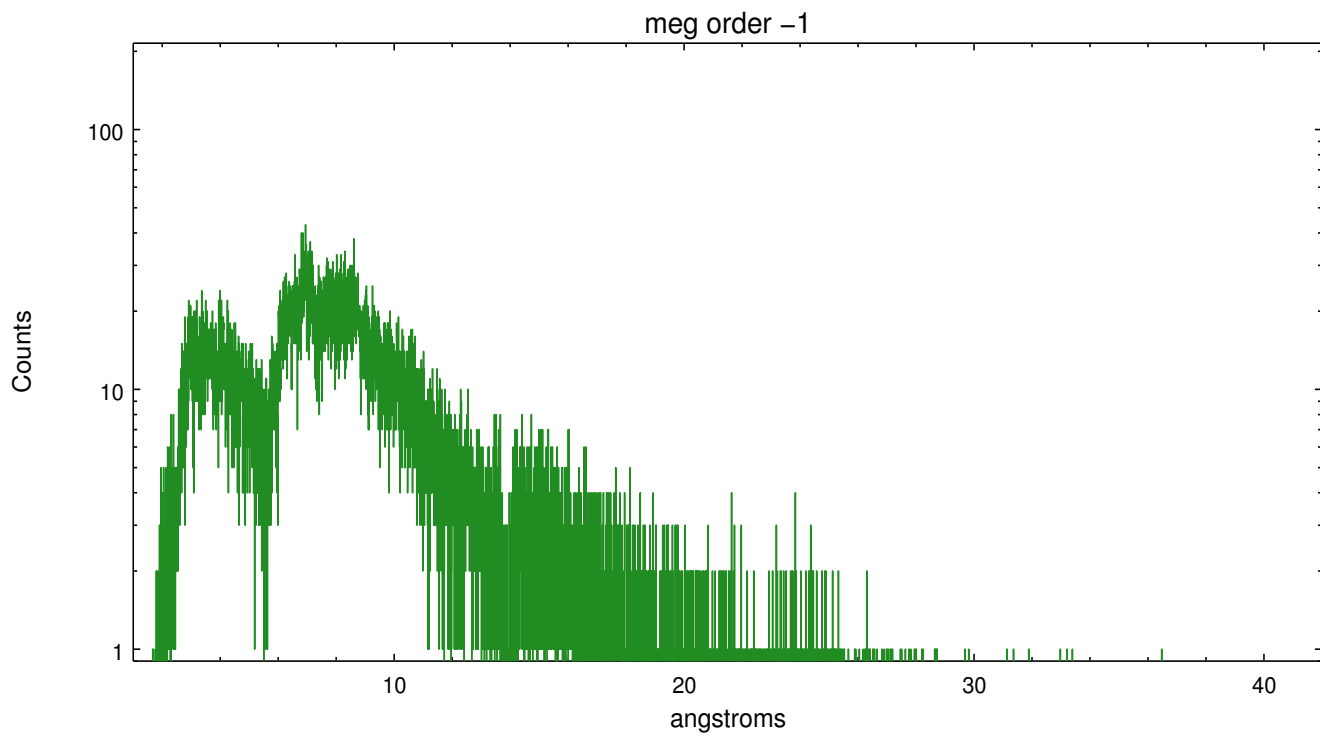
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2930	955	30689	11343	32797	857	2400





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.03

## A.2 Comments

Charge time for this ObsId remains at original value of 20.03 ks, although with the current processing the charge time would have been 20.13 ksec.===== Two sources approximately 2 arcsec apart. Standard data processing software did not correctly locate the zeroth order for either source, but found something halfway between the two sources. Findzero also did not work because there are 2 readout streaks, one for each source, so the solution was not unique. The star with the greater number of counts in the Level 2 data (ra=21:29:58.30, dec=+12:10:02.75) was selected for the spectral extraction, with the sky coordinates determined by eye. Both sources are piled up, so the selected star may not be brighter in actual x-ray flux. Manual intervention was used to input the determined sky coordinates (x=4098.97, y=4068.31) into the \*src1a.fits file table. Note that these corrected coordinates of the zeroth order cannot be reproduced by running tgdetect on the data.=====The extracted spectral data in this processing have wavelength assignments appropriate for the star selected as the position of the zeroth order. However, the two stars are too close together for ACIS to differentiate between the energies of the events for these two objects. The two stars are also aligned close to the dispersion direction. The spectral data extracted is the combined counts of the two sources and the user should take particular care in the analysis.