

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 2733 - L2 Version 3  
Chandra X-Ray Center

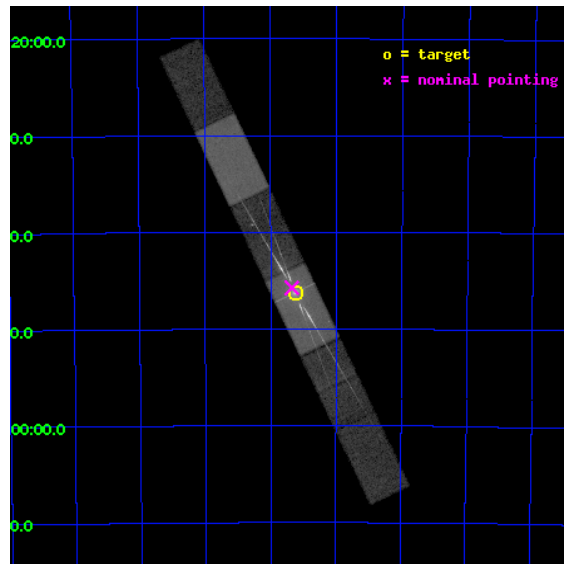
L2 Processing Date : Oct 1 2012

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# 1 Front

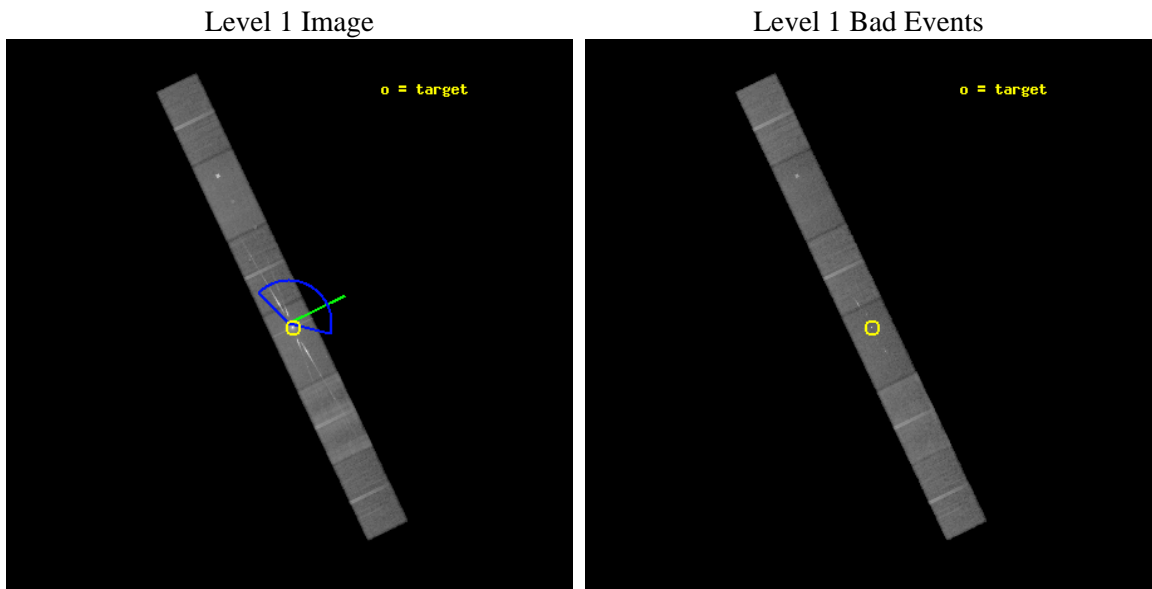
seq_num	400213	Sequence number
obs_id	2733	Observation id
title	PROBING THE CIRCUMSTELLAR MATERIAL IN GX 301-2	Proposal title
observer	Prof. Masao Sako	Principal investigator
object	GX 301-2	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	186.656667	Observer's specified target RA [deg]
dec_targ	-62.770278	Observer's specified target Dec [deg]
ra_nom	186.66907223421	Nominal RA [deg]
dec_nom	-62.762388718248	Nominal Dec [deg]
roll_nom	64.468526639307	Nominal Roll [deg]
revision	3	Processing version of data
ontime	40125.59993358	Sum of GTIs [s]
livetime	39231.1301658	Livetime [s]
ontime4	40121.917903394	Sum of GTIs [s]
ontime5	40123.758913487	Sum of GTIs [s]
ontime6	40125.59993358	Sum of GTIs [s]
ontime7	40125.59993358	Sum of GTIs [s]
ontime8	40125.591689408	Sum of GTIs [s]
ontime9	40125.550649405	Sum of GTIs [s]
l2events	354056	Number of level 2 events



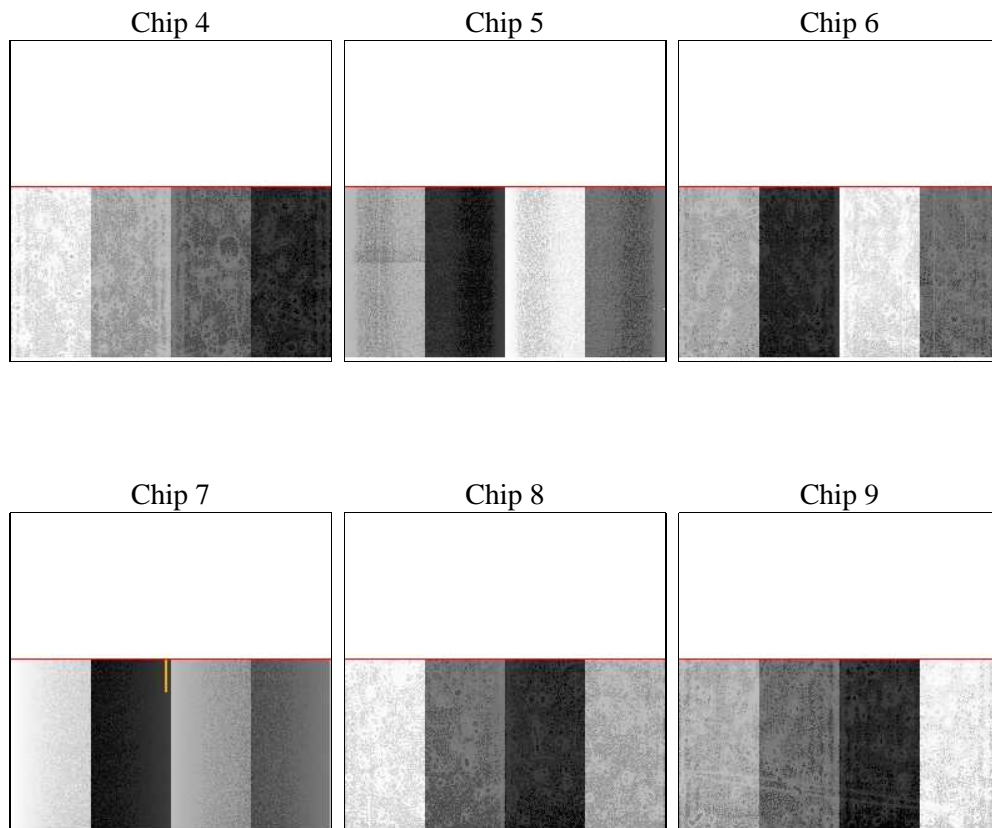
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	40000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	40125.59993358	Sum of GTIs [s]
caldsver	4.5.2	&#160	ontime4	40121.917903394	Sum of GTIs [s]
date	2012-09-30T05:51:27	Date and time of file creation	ontime5	40123.758913487	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	40125.59993358	Sum of GTIs [s]
			ontime7	40125.59993358	Sum of GTIs [s]
			ontime8	40125.591689408	Sum of GTIs [s]
			ontime9	40125.550649405	Sum of GTIs [s]
			l1events	1196161	Number of level 1 events

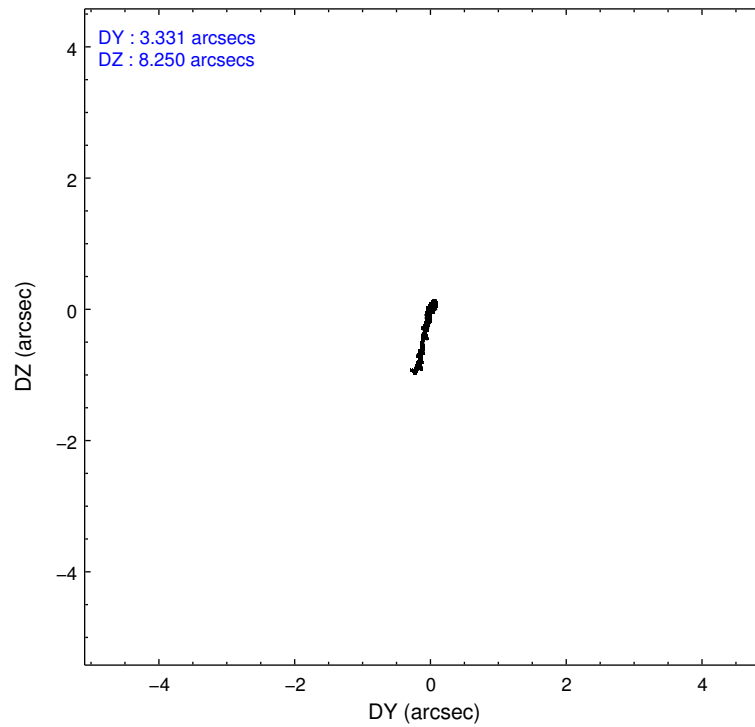
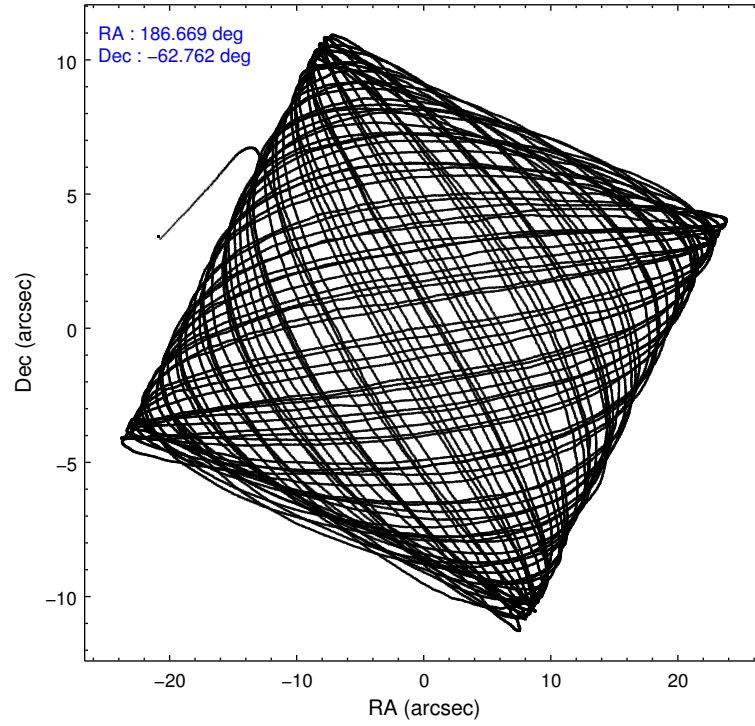
### 2.1.4 Events

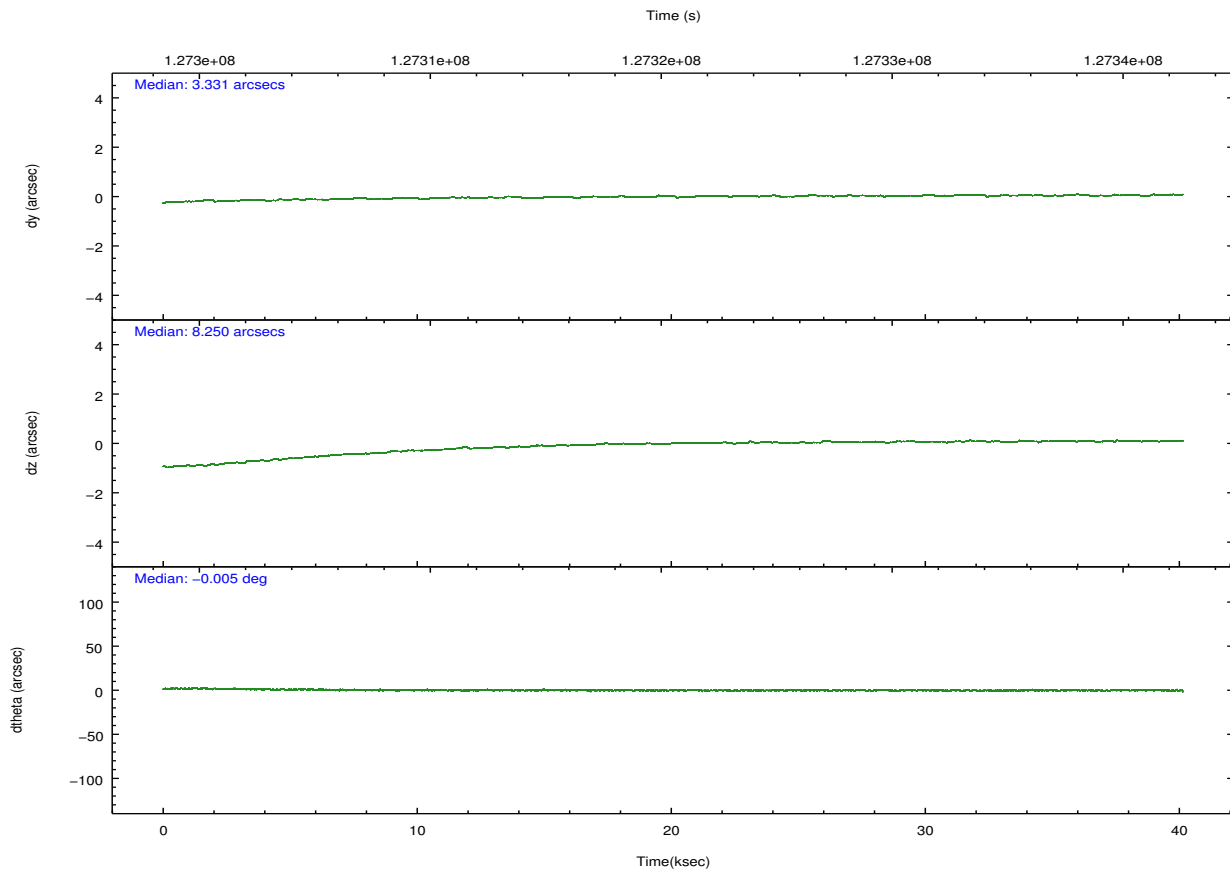
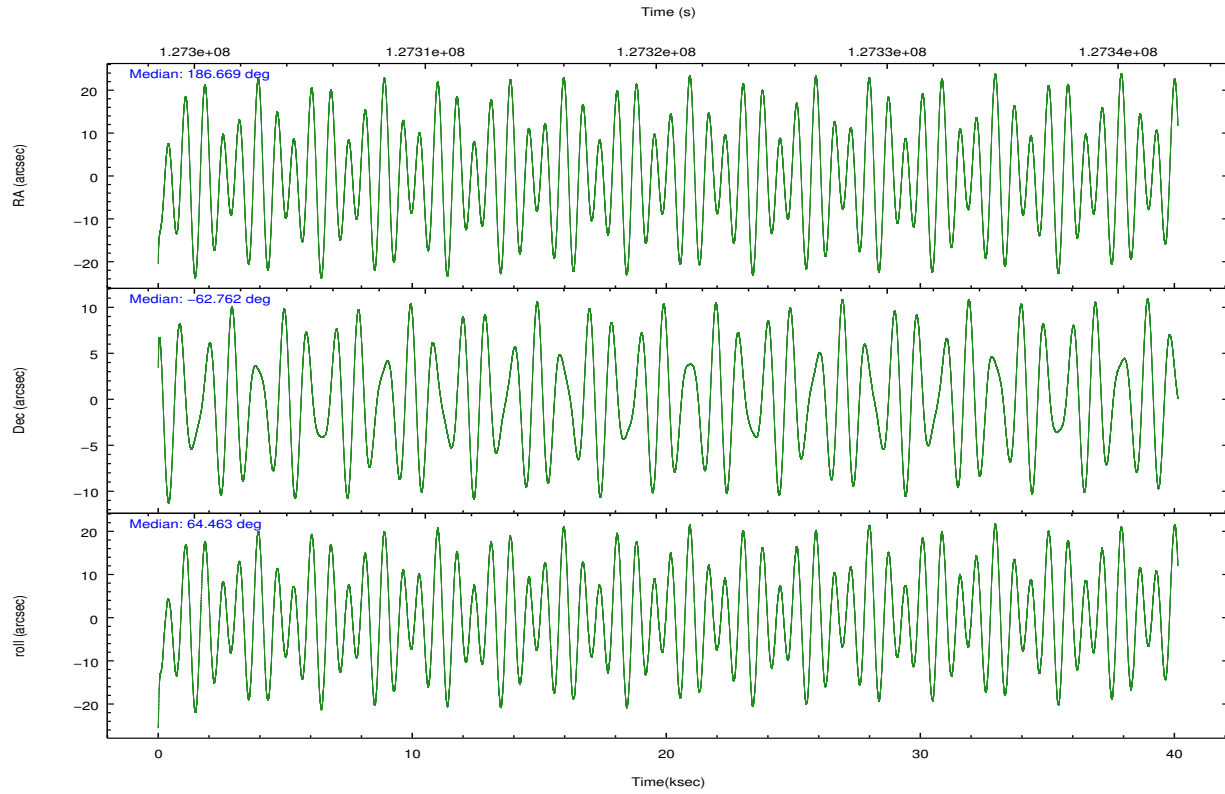
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	160067	202202	184744	277173	230903	141072	grade 0 events	8219	15613	22380	32066	22640	7486
rejected events	139510	105363	131990	106129	151439	122265		5%	7%	12%	11%	9%	5%
rejected %	87%	52%	71%	38%	65%	86%	grade 1 events	62	2654	216	966	151	53
								0%	1%	0%	0%	0%	0%
							grade 2 events	5178	26312	10240	35539	13635	3837
								3%	13%	5%	12%	5%	2%
							grade 3 events	2006	5263	4271	16322	12221	2001
								1%	2%	2%	5%	5%	1%
							grade 4 events	1884	5171	4258	15985	10834	1881
								1%	2%	2%	5%	4%	1%
							grade 5 events	4840	15232	5890	19118	7553	5596
								3%	7%	3%	6%	3%	3%
							grade 6 events	3270	44492	11612	71148	20138	3606
								2%	22%	6%	25%	8%	2%
							grade 7 events	134608	87465	125877	86029	143731	116612
								84%	43%	68%	31%	62%	82%

## 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	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	186.674421	186.6690722342097	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-62.789534	-62.76238871824791	Subarray start row	15	15
[deg] Pointing Roll	64.316656	64.46852663930696	Subarray row count	542	542
[deg] Roll angle	30.000000	30.000000	Alternating exposures requested	N	N
[deg] Roll tolerance	75.000000	75.000000	[s] Primary exposure time	0.000000	1.8
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	-184.708523	-184.7091449985023			
[mm] SIM translation stage offset	-5.424	-5.423377584505516			
Phase constraints	Y	Y			
[d] Phase period	41.498000	41.498000			
[d] Phase epoch (MJD)	50130.726000	50130.726000			
Phase start	0.960000	0.960000			
Phase end	0.980000	0.980000			
Phase start error	0.010000	0.010000			
Phase end error	0.010000	0.010000			
[s] Observation start time (MET)	127300581.184000	127299624.32982			
Observation start date	2002-01-13T09:15:17	2002-01-13T09:00:24			
[s] Observation end	127340581.184000	127341180.90649			

## 2.3 Aspect



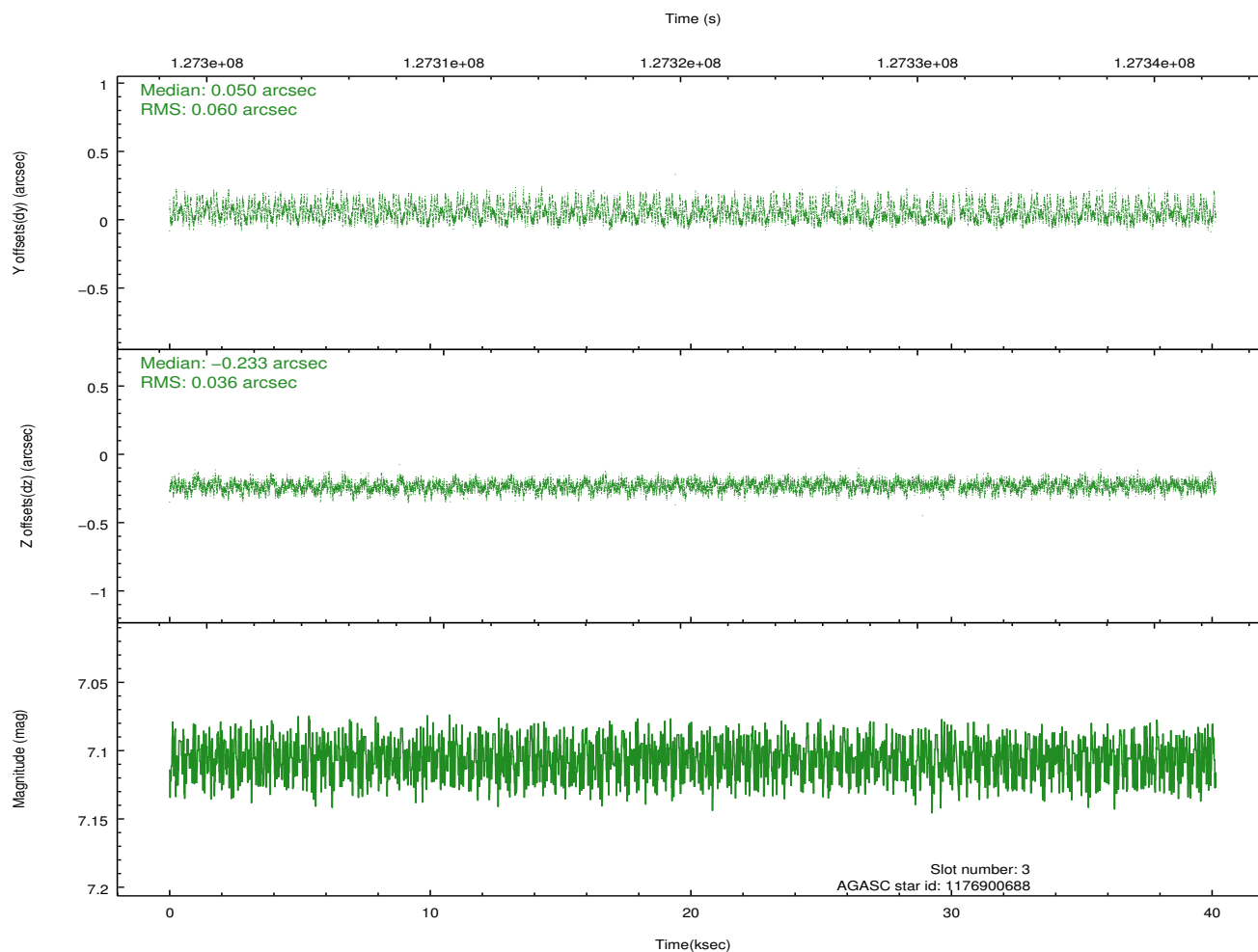
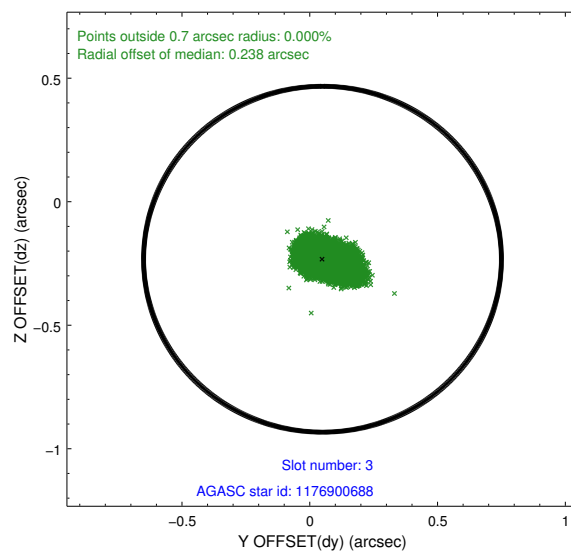
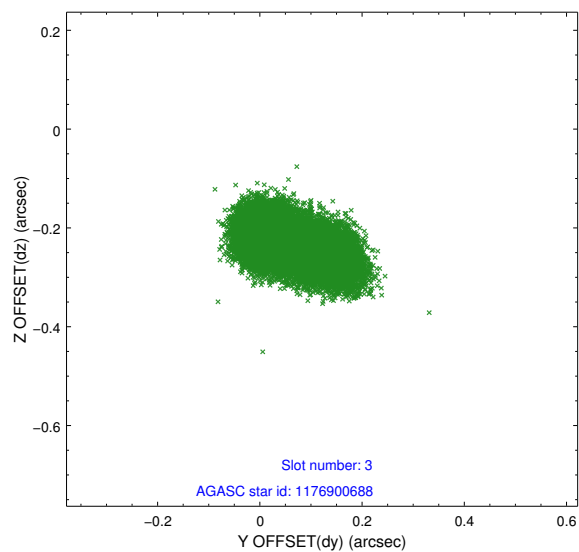


### Slot Statistics

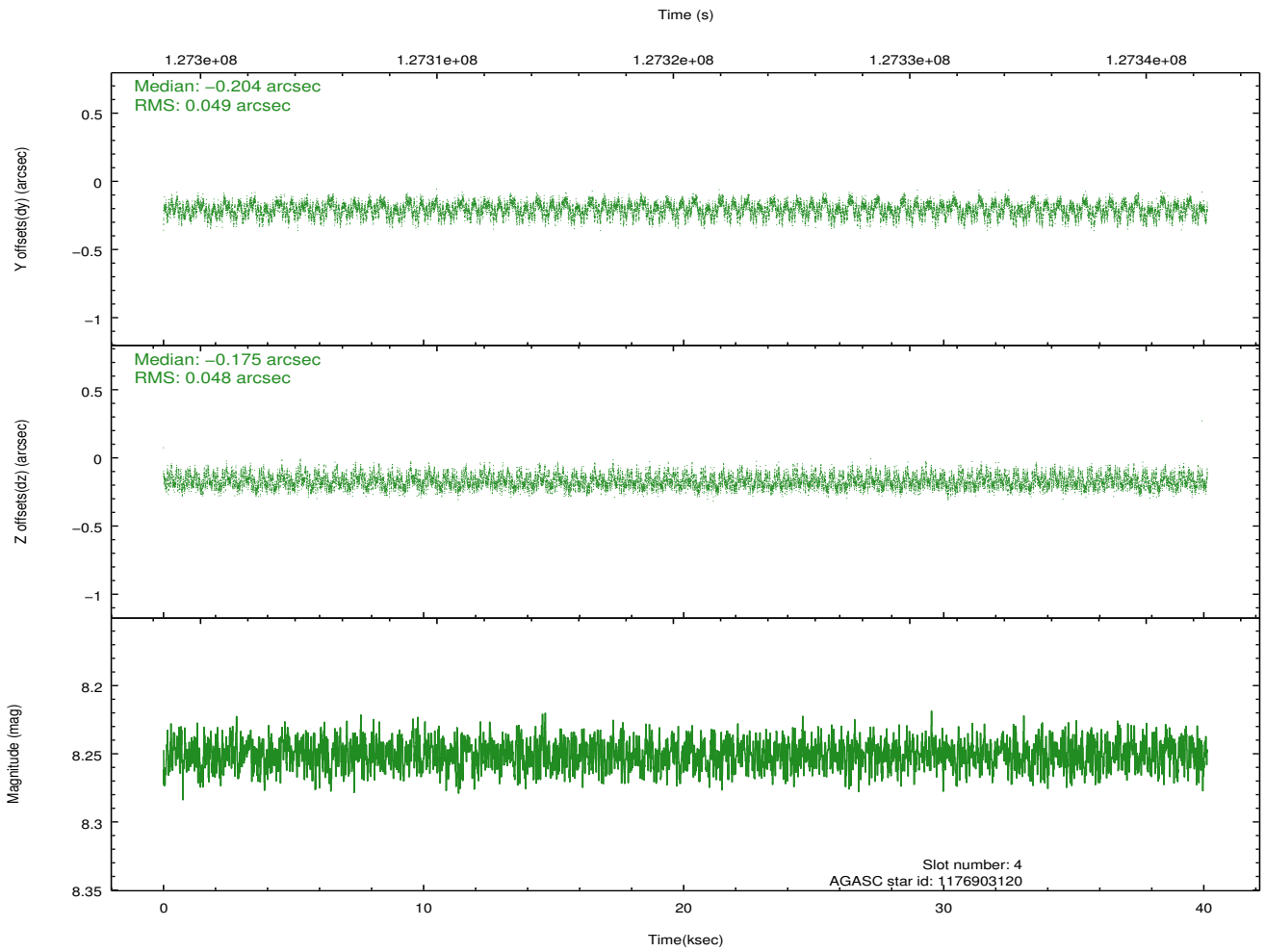
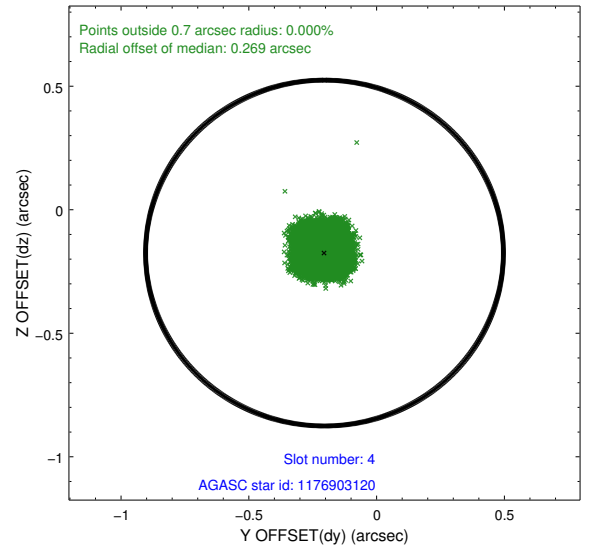
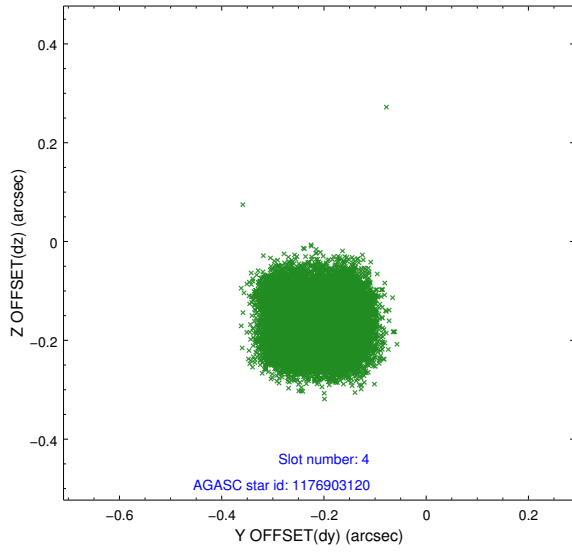
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	9790	-0.048	-0.046	0.009	0.019	0.000000	0.000000	-755.59	-1841.17
1	FID	ACIS-S-4	7.19	9787	0.010	0.036	0.006	0.011	0.000000	0.000000	2157.70	67.41
2	FID	ACIS-S-5	7.23	9788	0.006	0.019	0.009	0.017	0.000000	0.000000	-1808.39	61.02
3	GUIDE	1176900688	7.11	19504	0.050	-0.233	0.074	0.125	184.973775	-62.854186	-1452.97	2399.22
4	GUIDE	1176903120	8.25	19574	-0.204	-0.175	0.074	0.116	186.056854	-62.258063	1271.60	1759.14
5	GUIDE	1176904752	8.81	19572	0.026	0.110	0.062	0.103	187.035955	-62.645951	724.35	-316.05
6	GUIDE	1176902448	9.25	19571	0.107	0.068	0.109	0.168	185.684465	-63.252727	-2208.19	716.61
7	GUIDE	1176910784	9.27	19570	0.018	0.223	0.081	0.130	187.406095	-63.272390	-1058.43	-1824.41

## 2.4 Star Slots

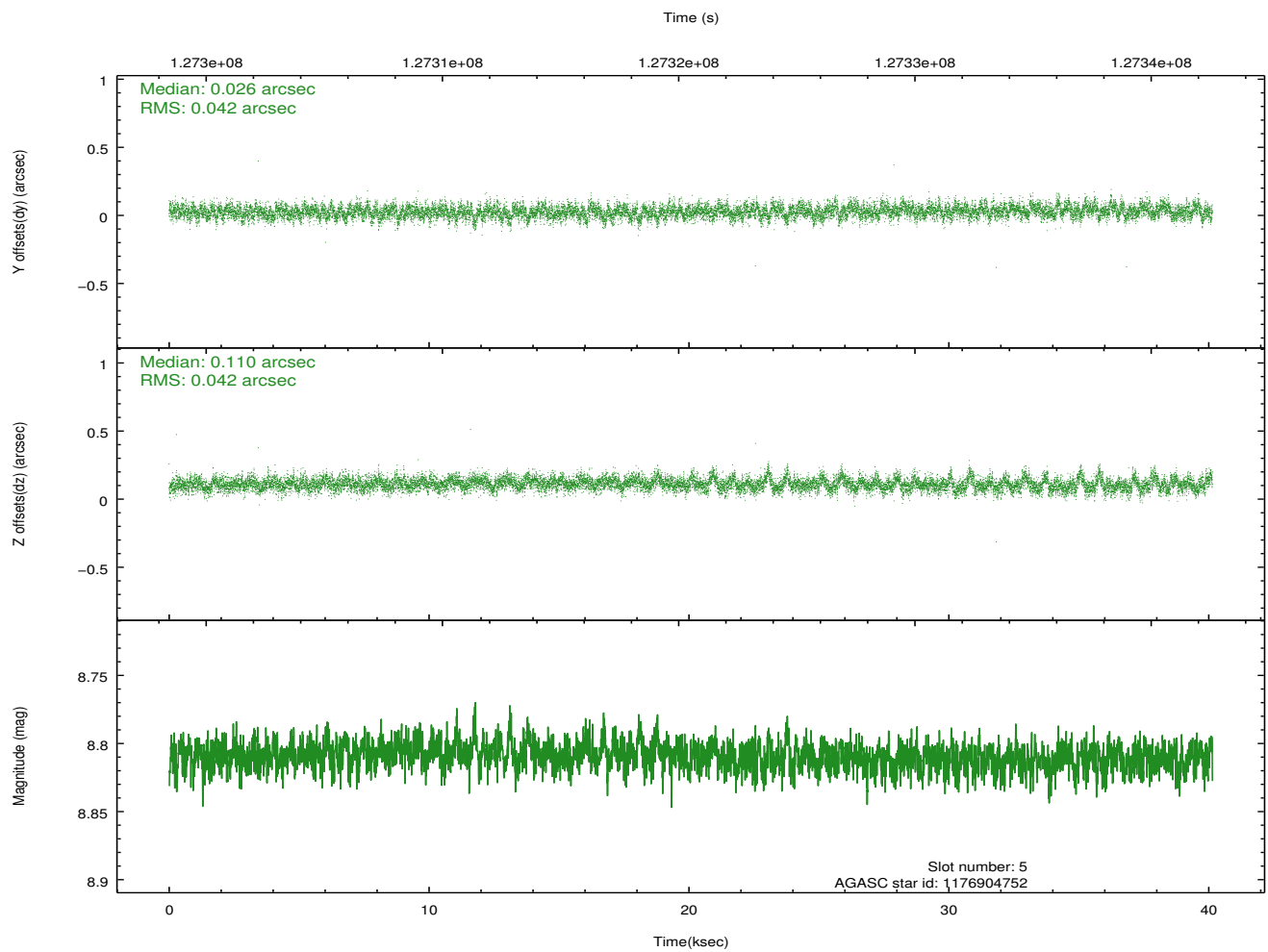
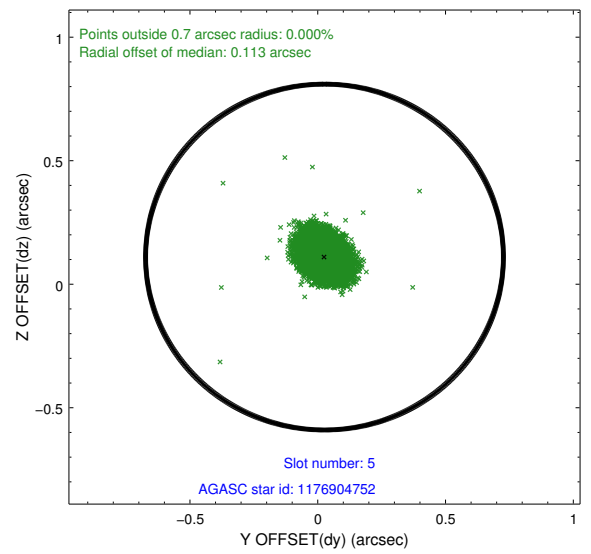
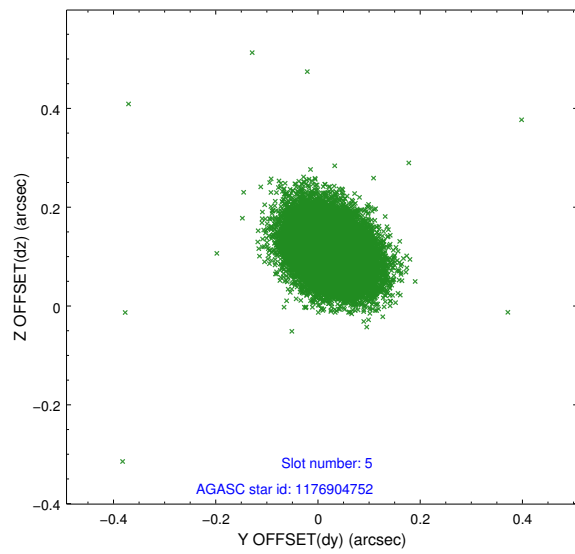
### 2.4.1 Slot 3



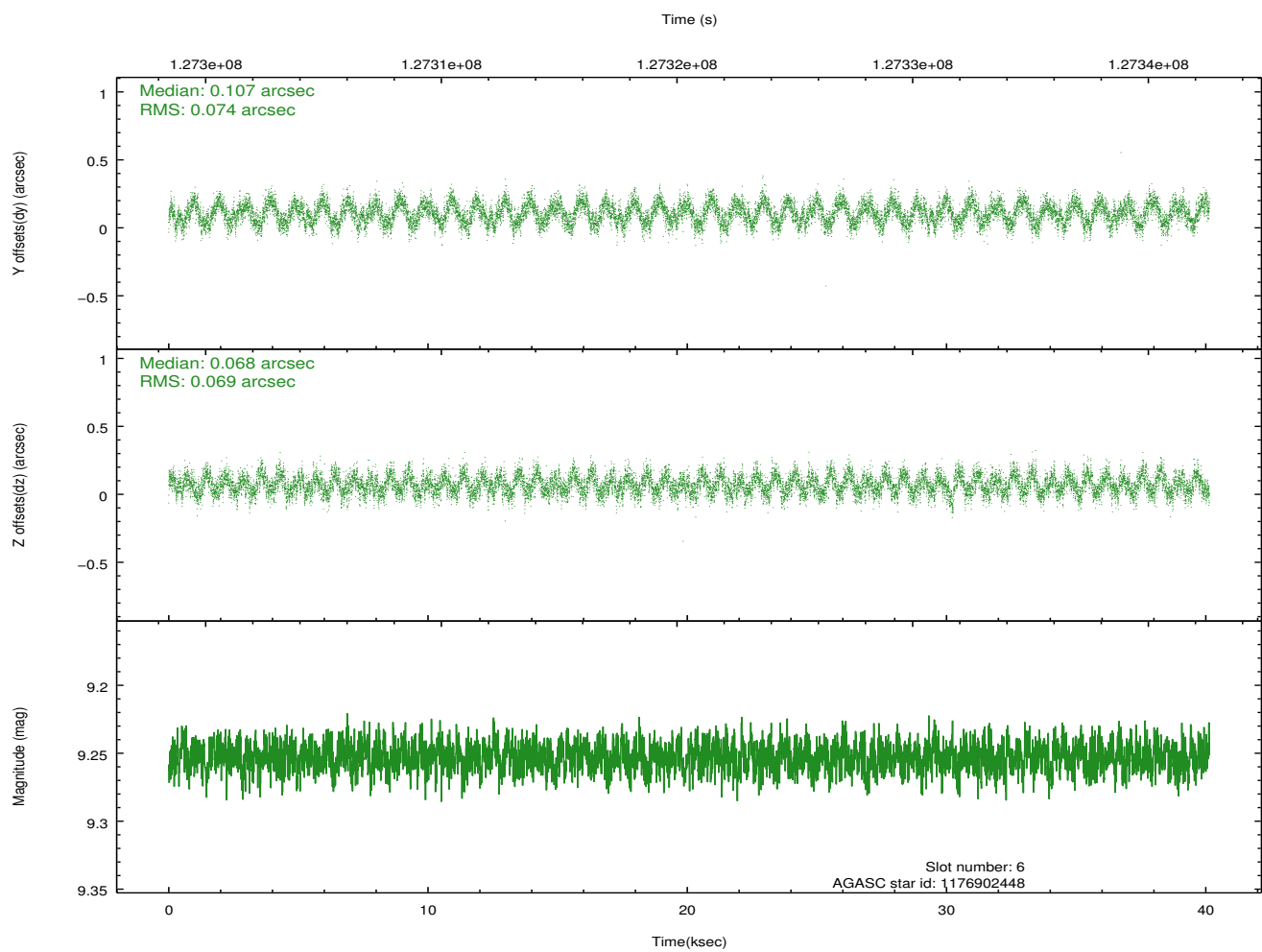
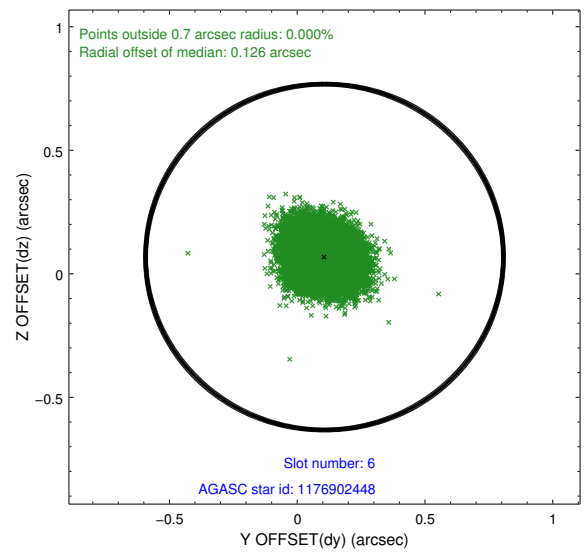
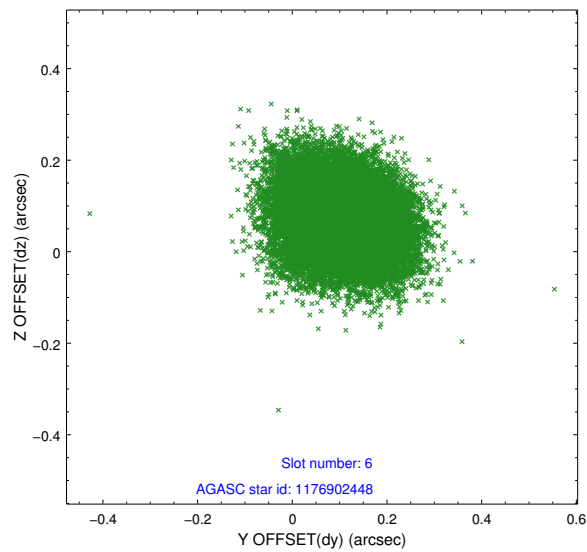
## 2.4.2 Slot 4



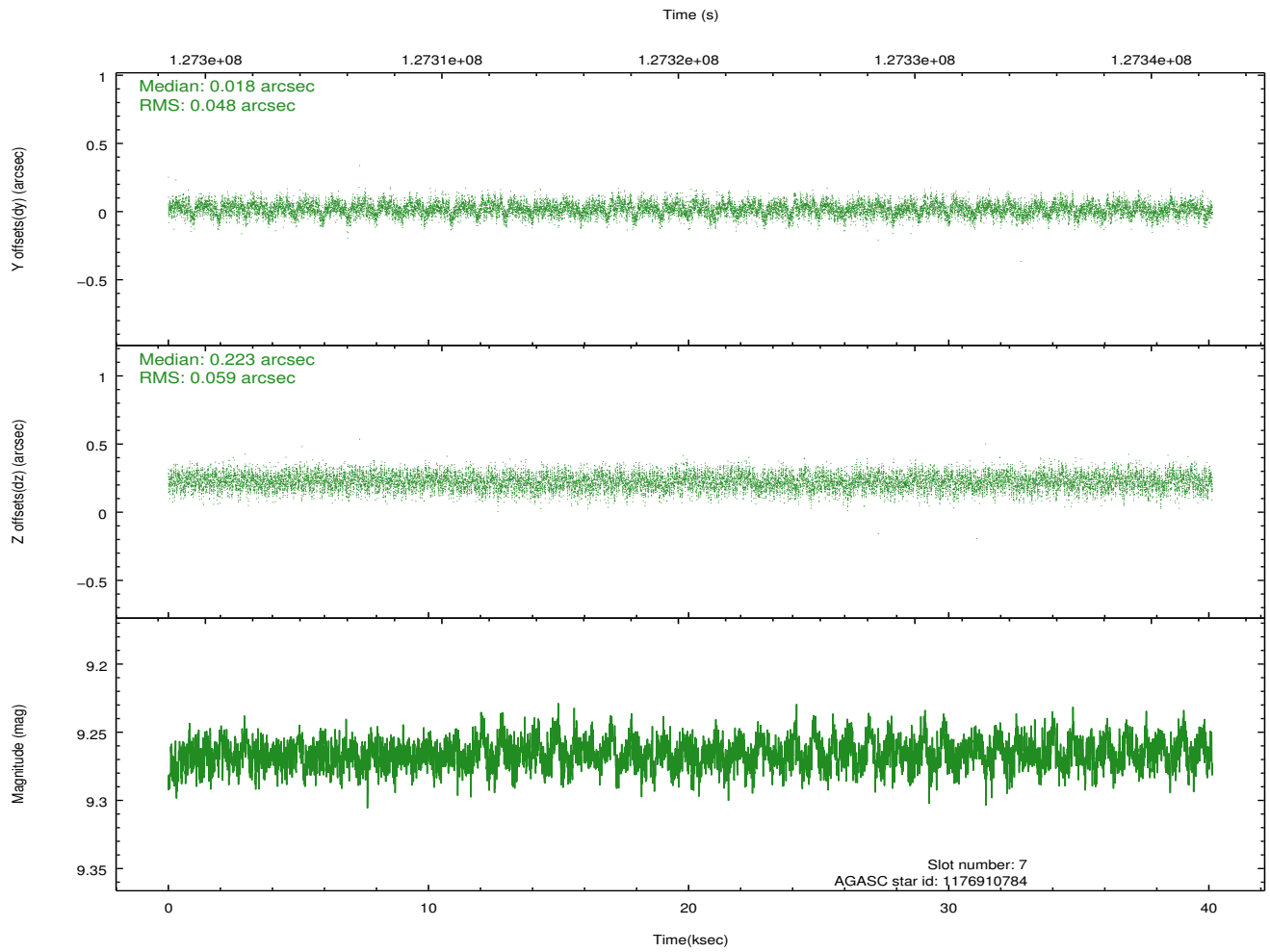
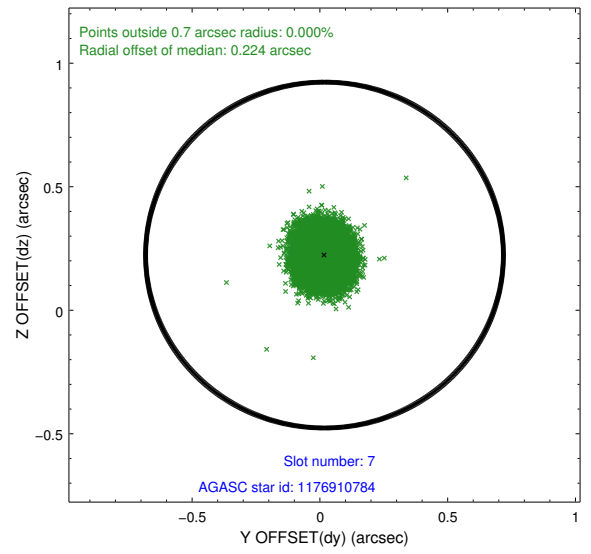
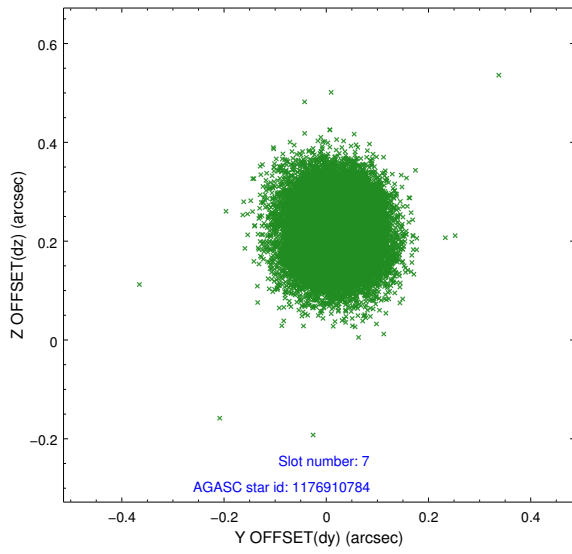
### 2.4.3 Slot 5



## 2.4.4 Slot 6

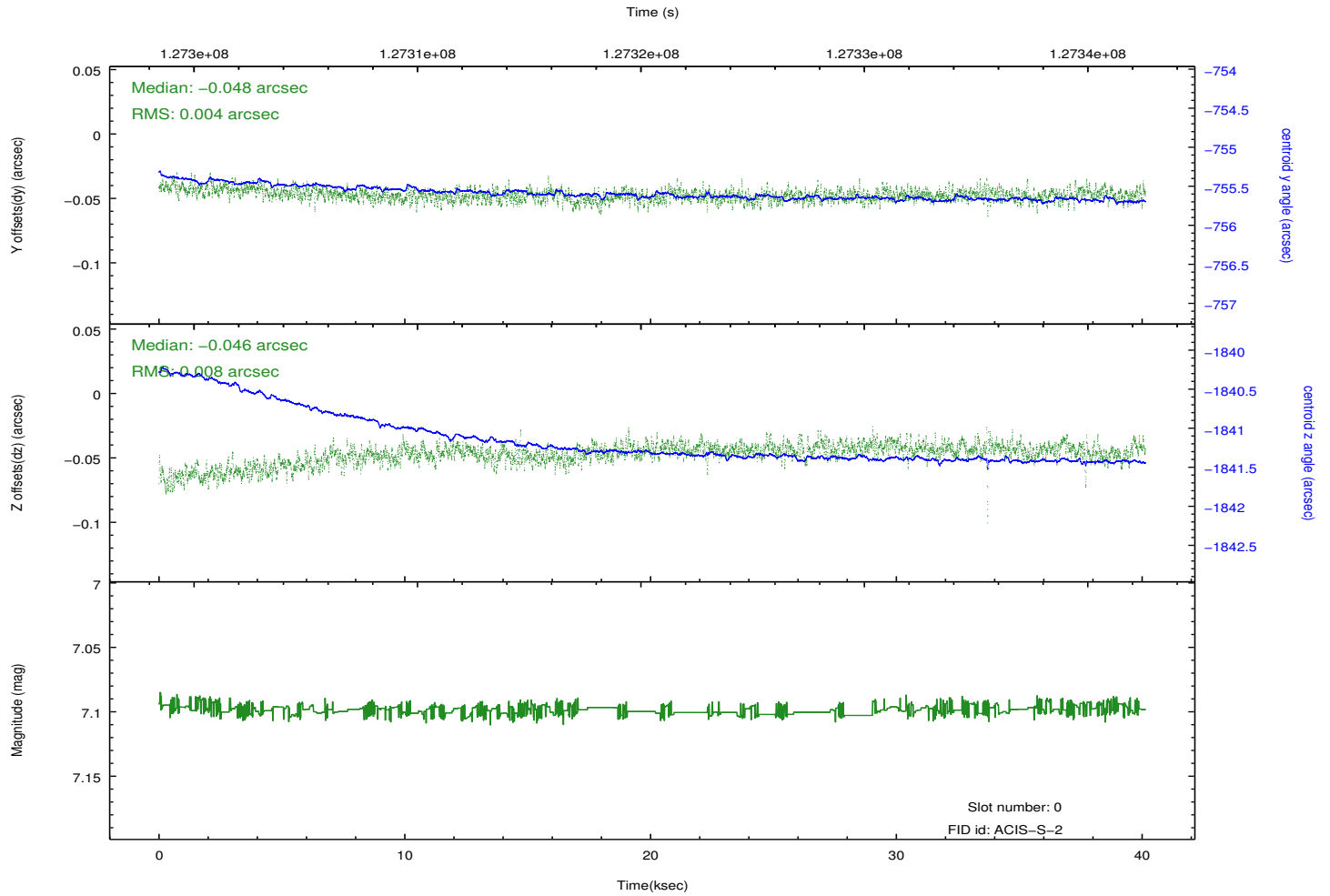
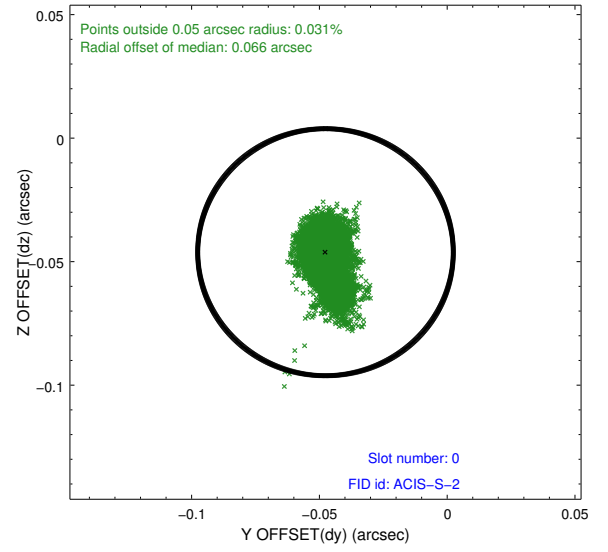
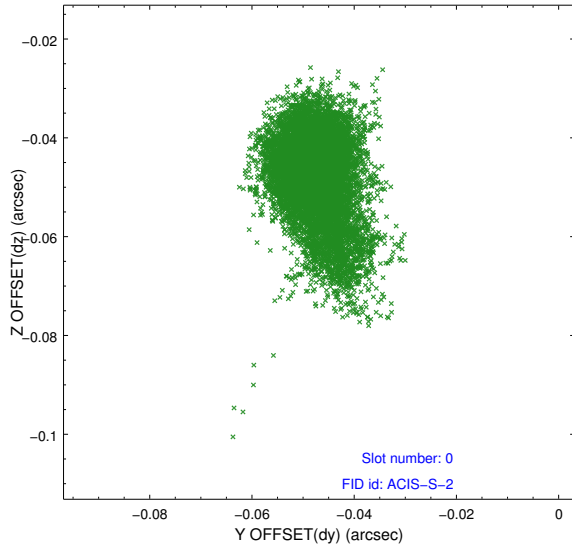


### 2.4.5 Slot 7

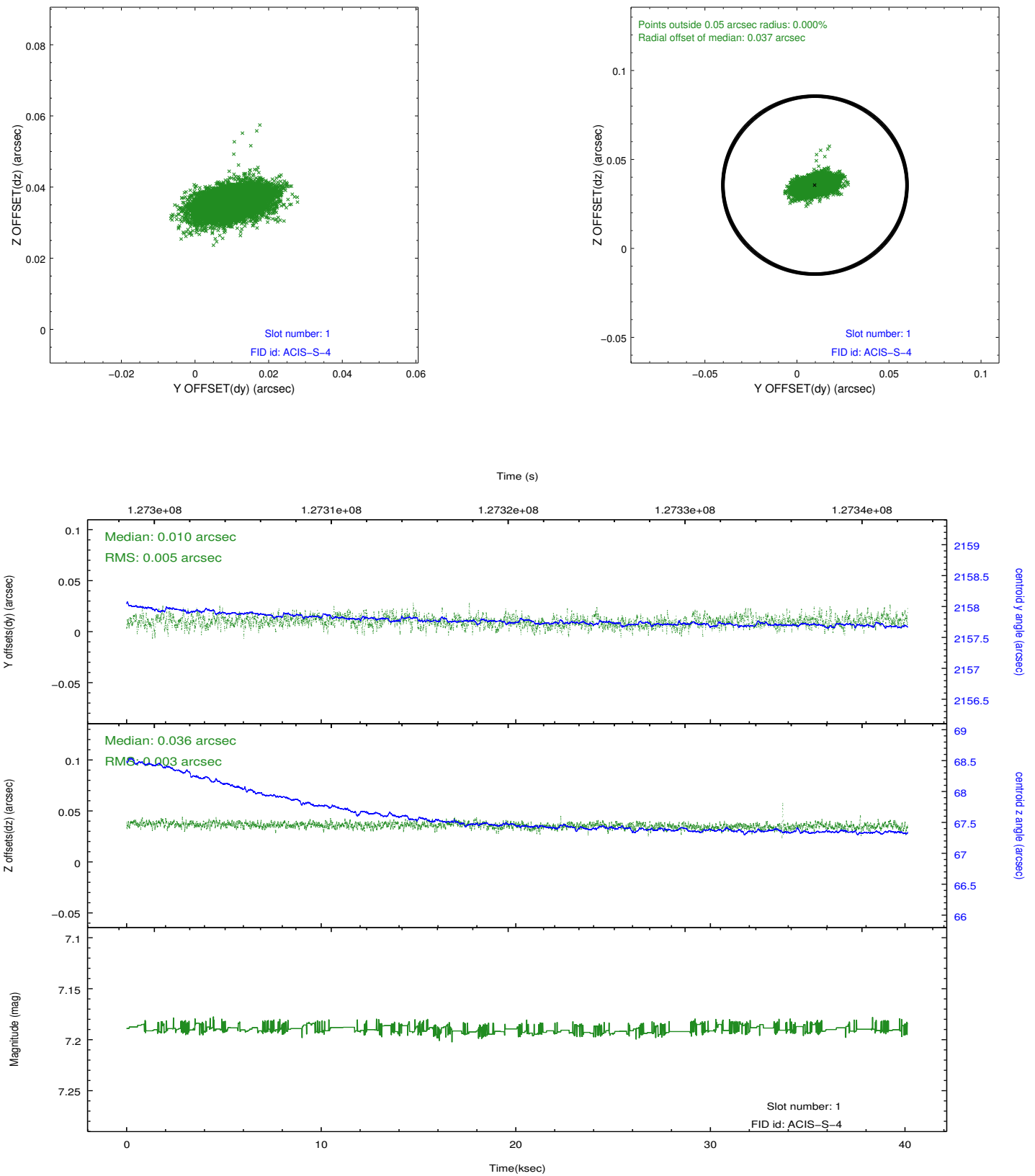


## 2.5 FID Slots

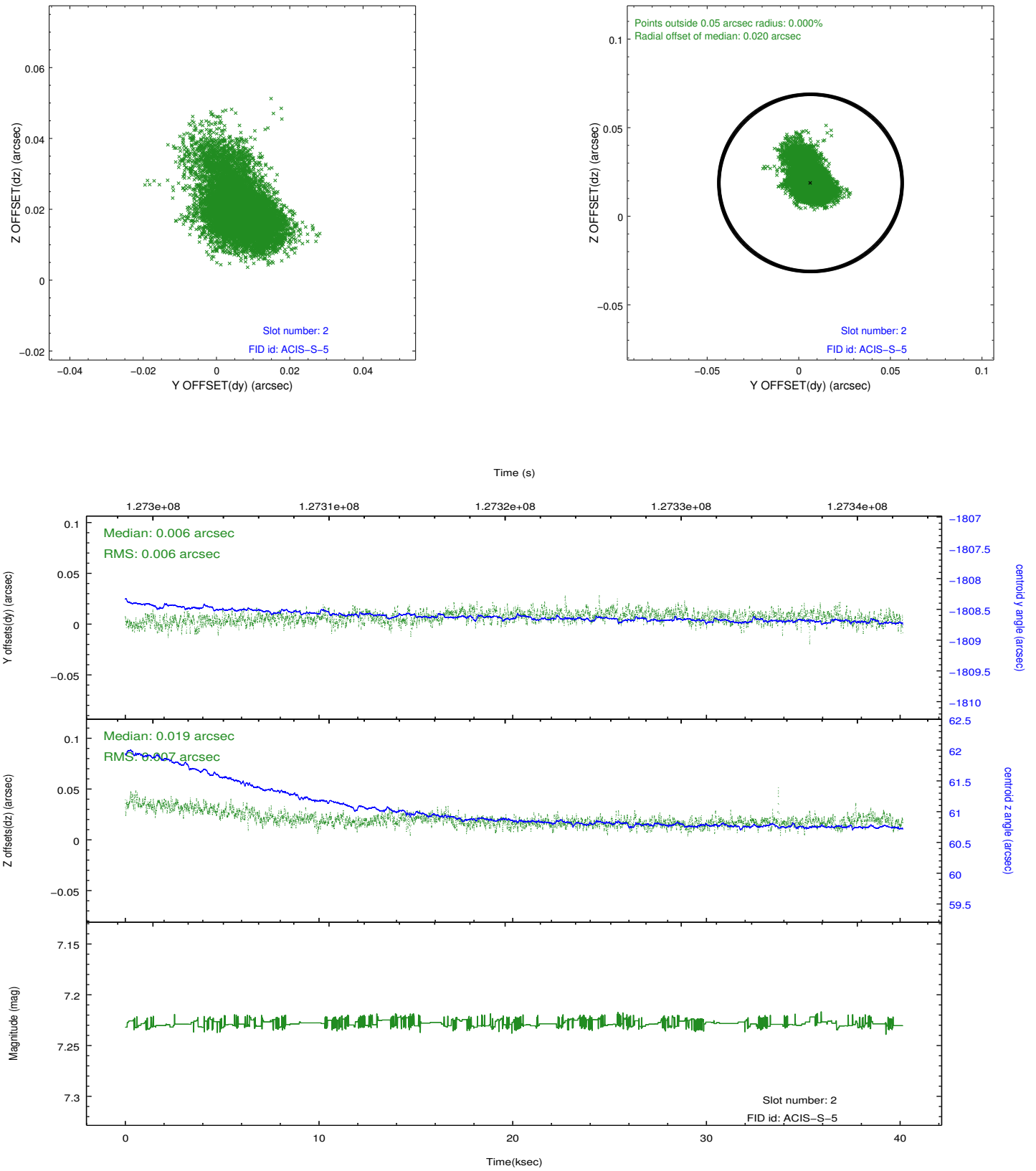
### 2.5.1 Slot 0



## 2.5.2 Slot 1

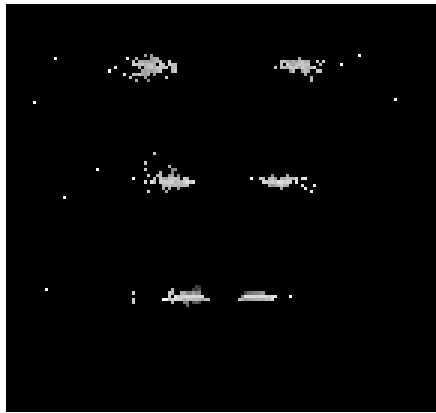


### 2.5.3 Slot 2

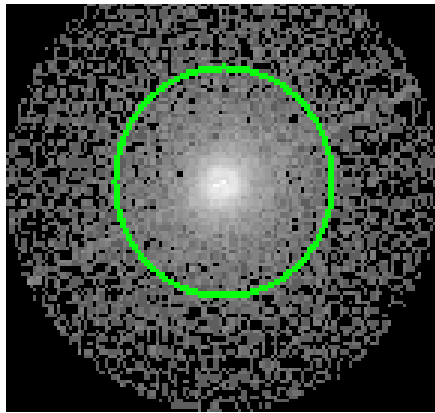


### 3 Gratings

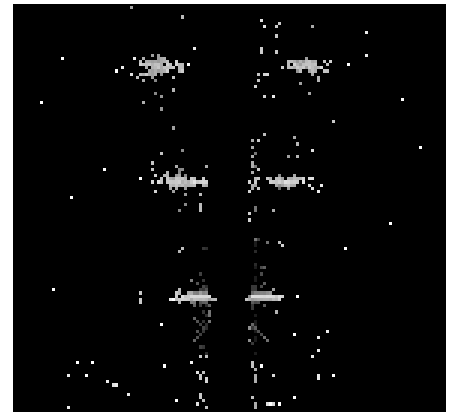
#### 3.1 HEG Arm



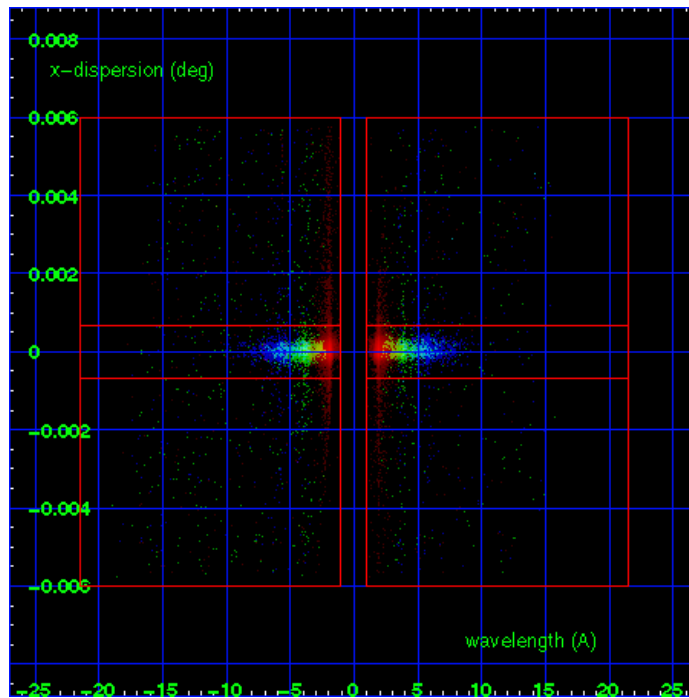
HEG Order Sort 123



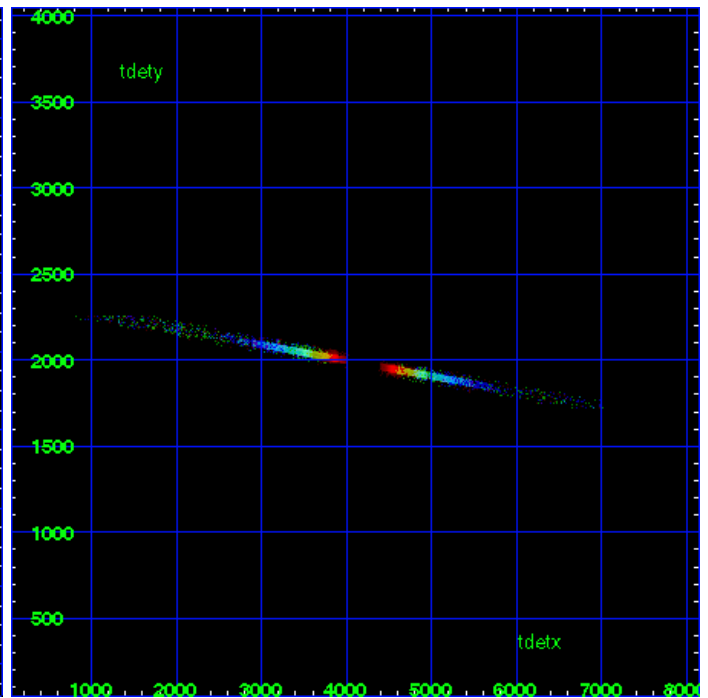
HEG Zero Order



HEG Order Sort ALL

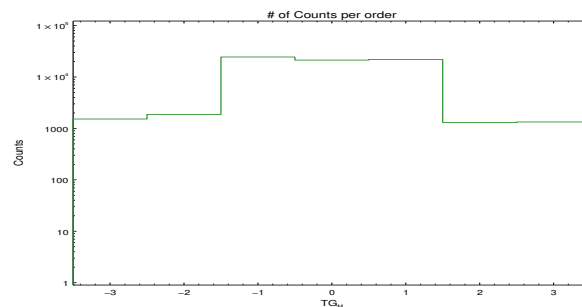


Spot Image HEG

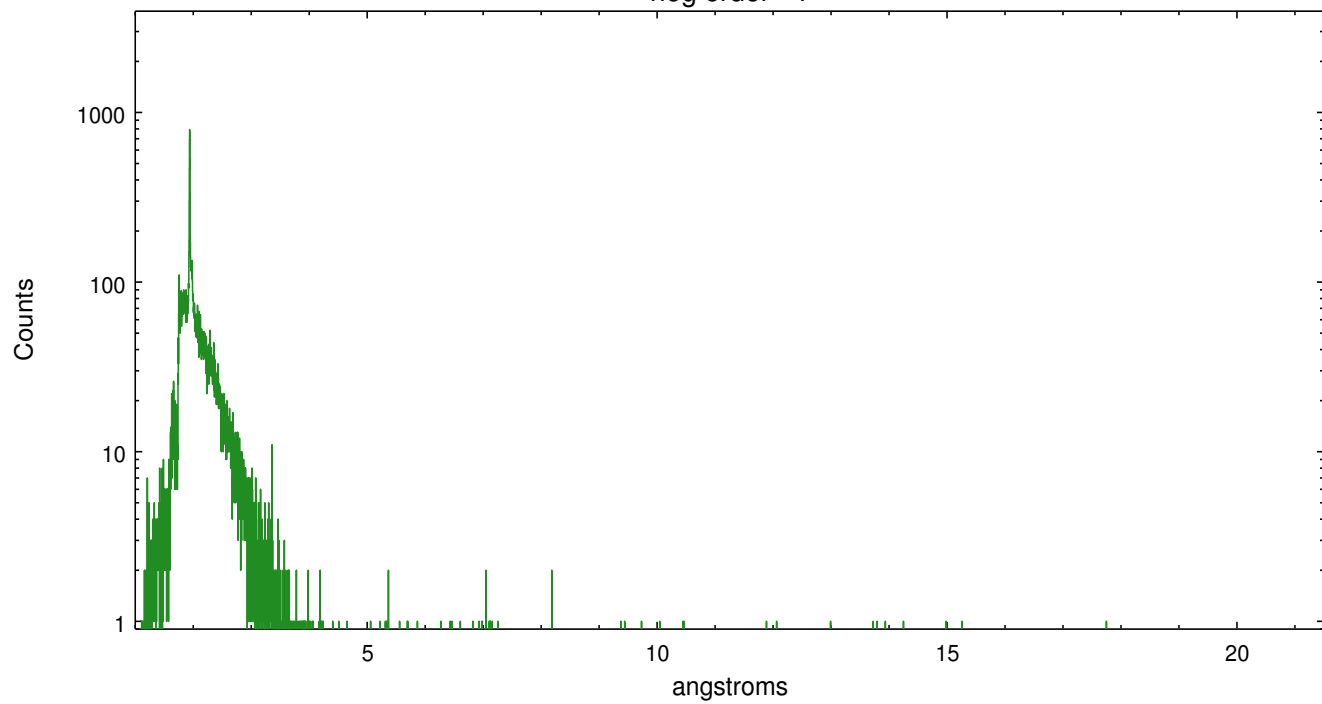


Full Detector HEG

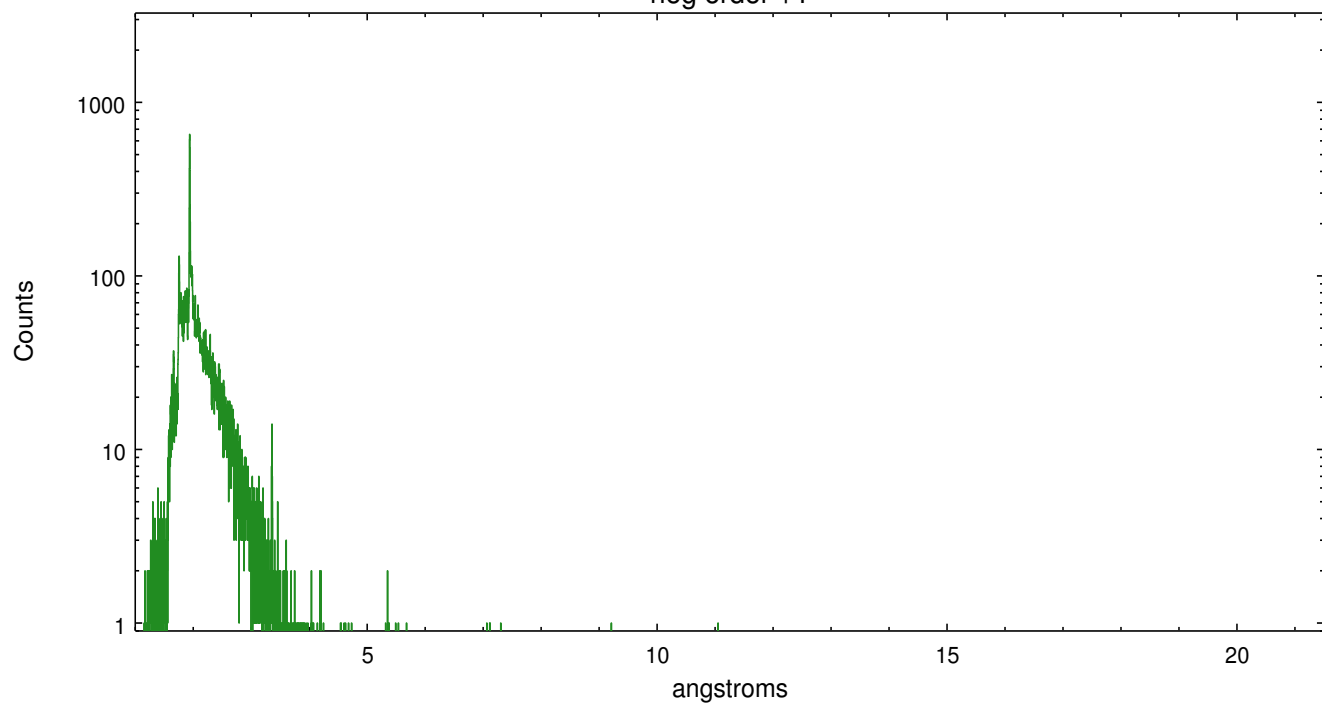
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1523	1867	24473	21295	21916	1300	1334



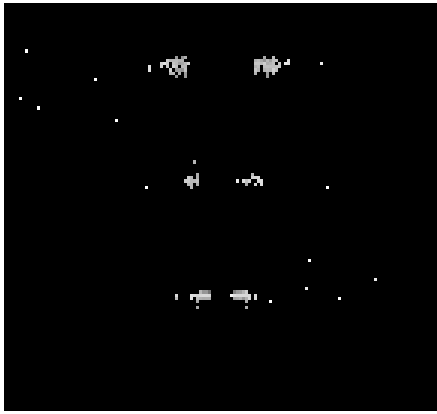
heg order -1



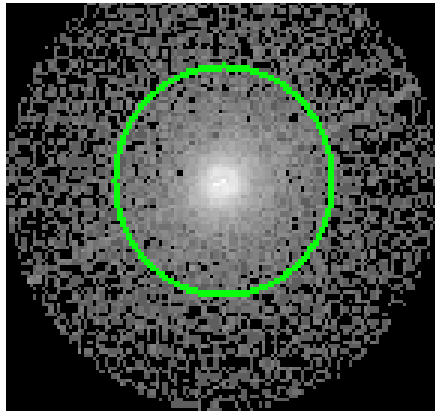
heg order +1



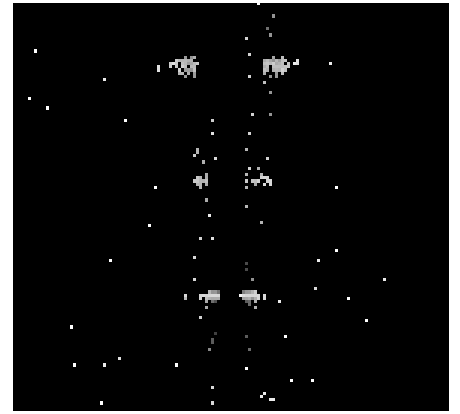
### 3.2 MEG Arm



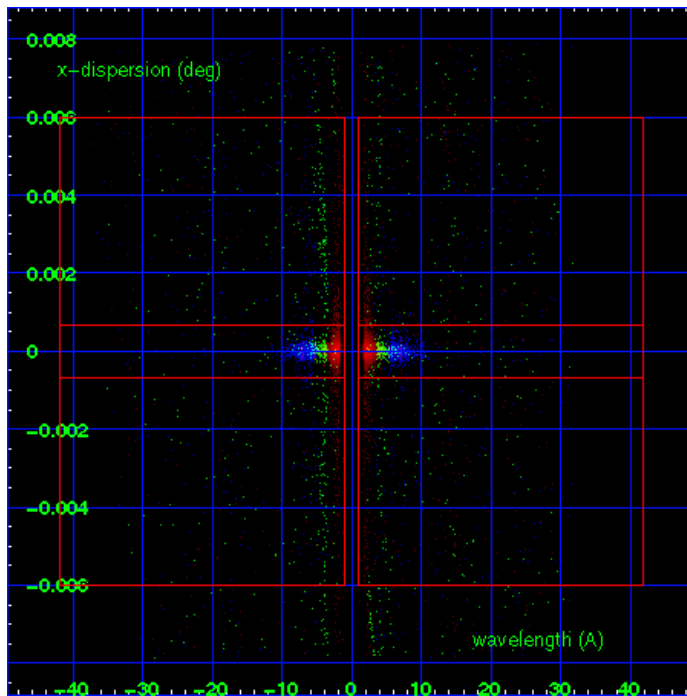
MEG Order Sort 123



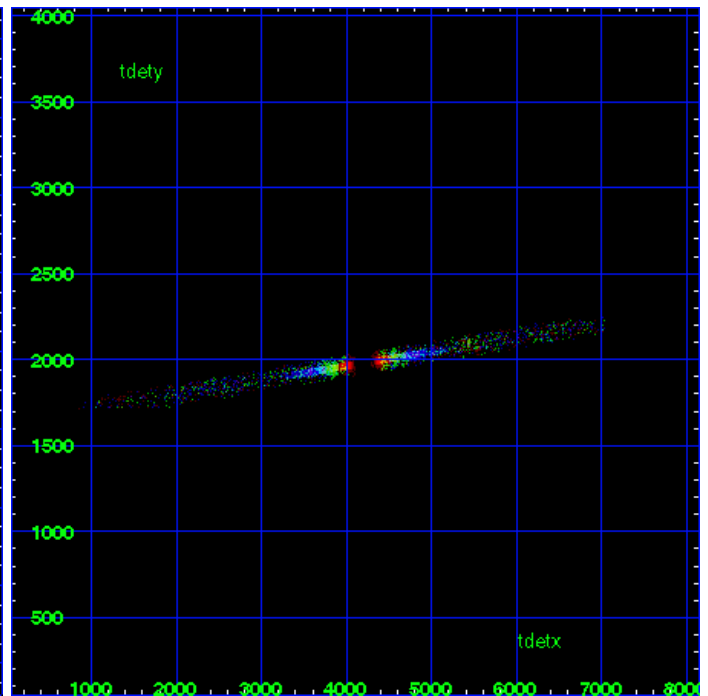
MEG Zero Order



MEG Order Sort ALL

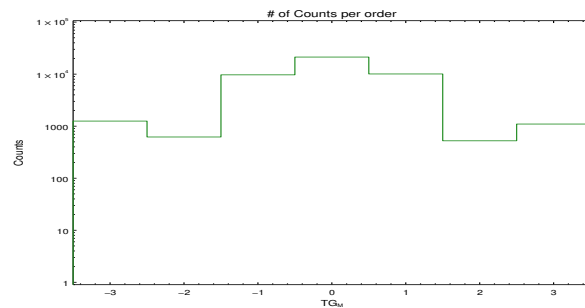


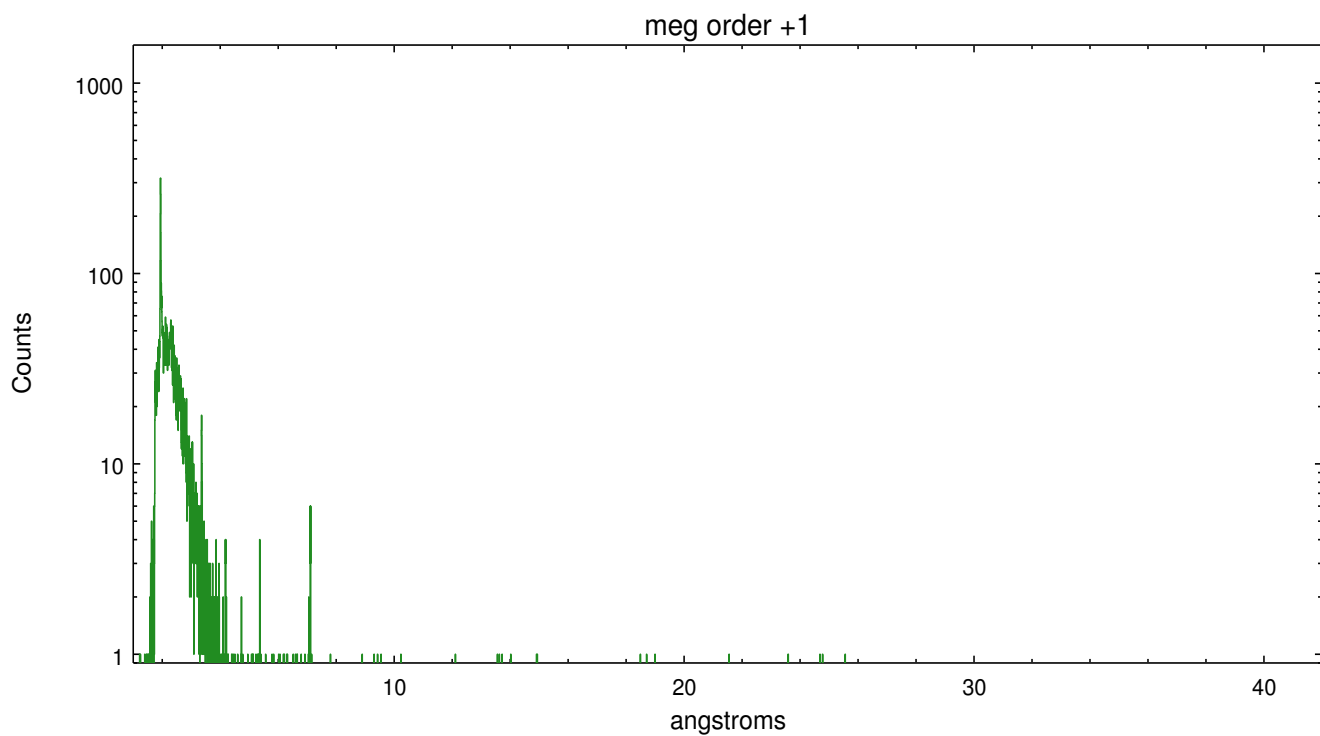
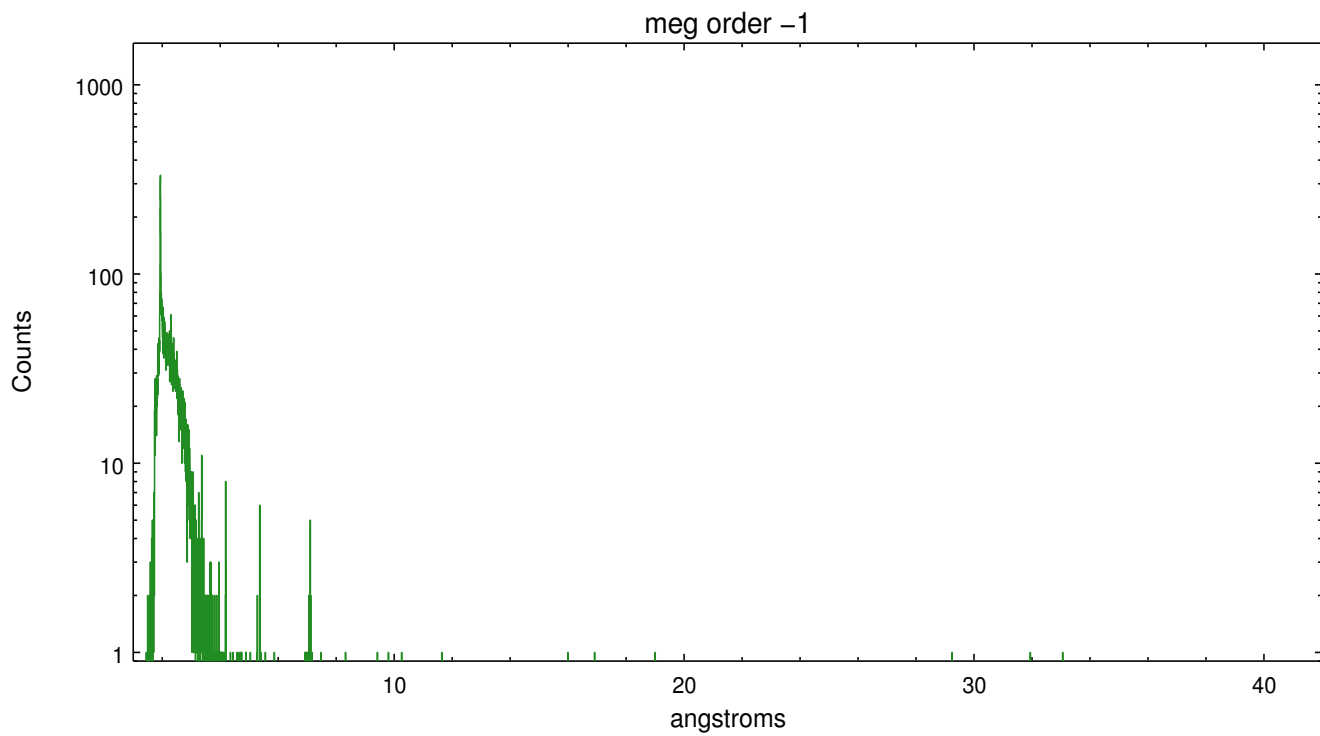
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1253	620	9699	21295	10083	524	1099





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.10.09
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	40.127

## A.2 Comments

Roll constraint met.

===

Standard software processing technique using the tool `tgdetect` failed to determine an accurate position for the zeroth order for this observation. The source is extended and asymmetric. Zeroth order position (x=4138.5, y=4038.25) selected by eye using contours in `ds9` to identify region of strongest emission.

===

For grating analysis of localized X-ray emission within the extended emission, the investigator will need to extract one or more dispersed spectra using user-defined zeroth order positions for all positions of interest.