

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 2431 - L2 Version 3  
Chandra X-Ray Center

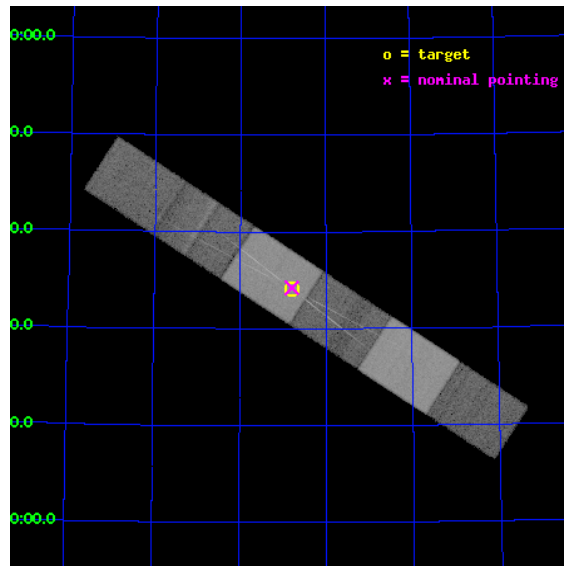
L2 Processing Date : Sep 14 2012

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# 1 Front

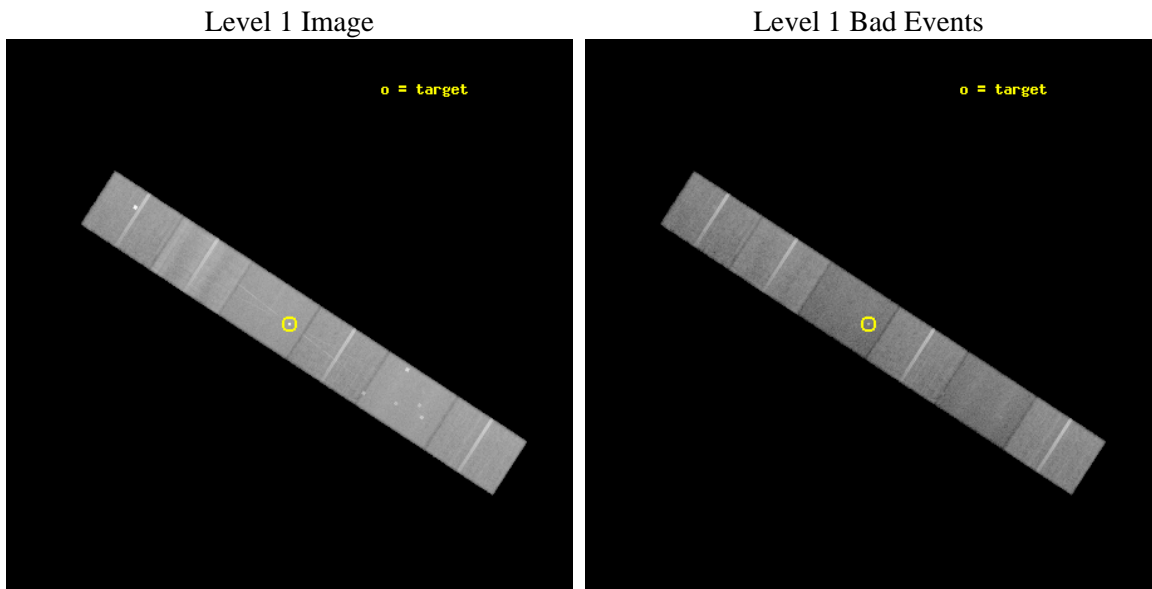
seq_num	700270	Sequence number
obs_id	2431	Observation id
title	GAS DYNAMICS AROUND THE BLACK HOLE IN NGC 3516	Proposal title
observer	Dr Tracey Turner	Principal investigator
object	NGC 3516	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.6975	Observer's specified target RA [deg]
dec_targ	72.568611	Observer's specified target Dec [deg]
ra_nom	166.69819463789	Nominal RA [deg]
dec_nom	72.570796647189	Nominal Dec [deg]
roll_nom	213.00596659657	Nominal Roll [deg]
revision	3	Processing version of data
ontime	36152.5	Sum of GTIs [s]
livetime	35568.605767717	Livetime [s]
ontime4	36152.5	Sum of GTIs [s]
ontime5	36152.5	Sum of GTIs [s]
ontime6	36152.5	Sum of GTIs [s]
ontime7	36152.5	Sum of GTIs [s]
ontime8	36152.478998974	Sum of GTIs [s]
ontime9	36152.437958971	Sum of GTIs [s]
l2events	363643	Number of level 2 events



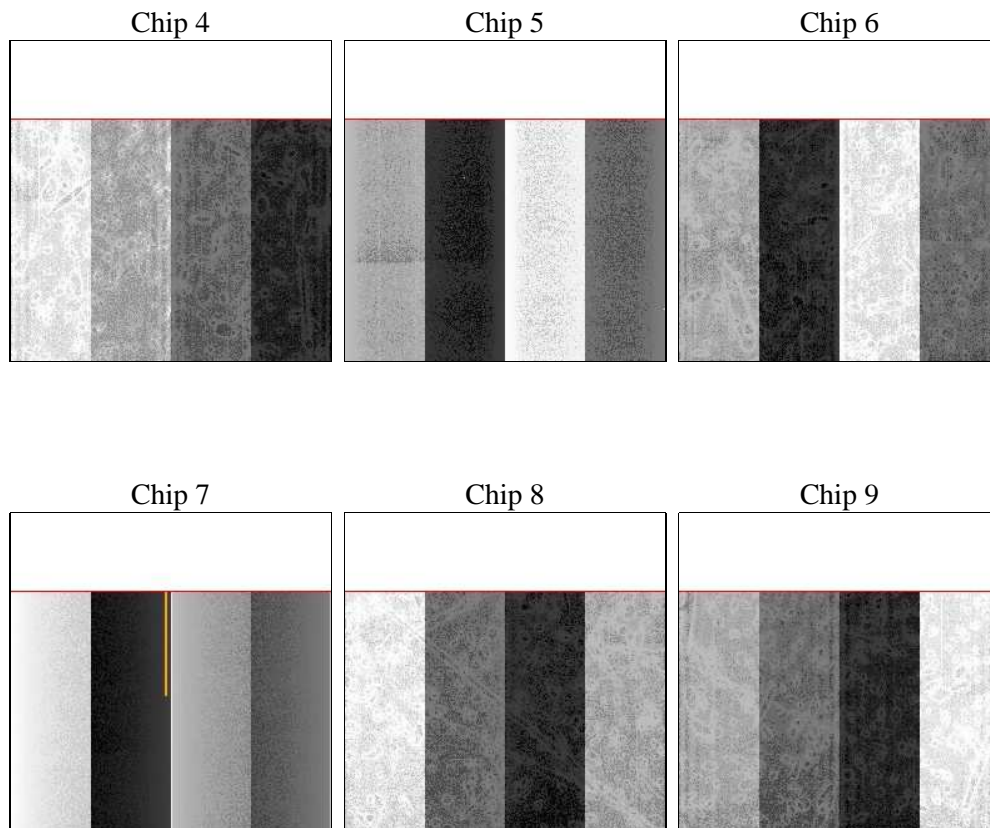
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	36000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	36152.5	Sum of GTIs [s]
caldbver	4.5.1.1	&#160	ontime4	36152.5	Sum of GTIs [s]
date	2012-09-14T22:10:58	Date and time of file creation	ontime5	36152.5	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	36152.5	Sum of GTIs [s]
			ontime7	36152.5	Sum of GTIs [s]
			ontime8	36152.478998974	Sum of GTIs [s]
			ontime9	36152.437958971	Sum of GTIs [s]
			l1events	1563207	Number of level 1 events

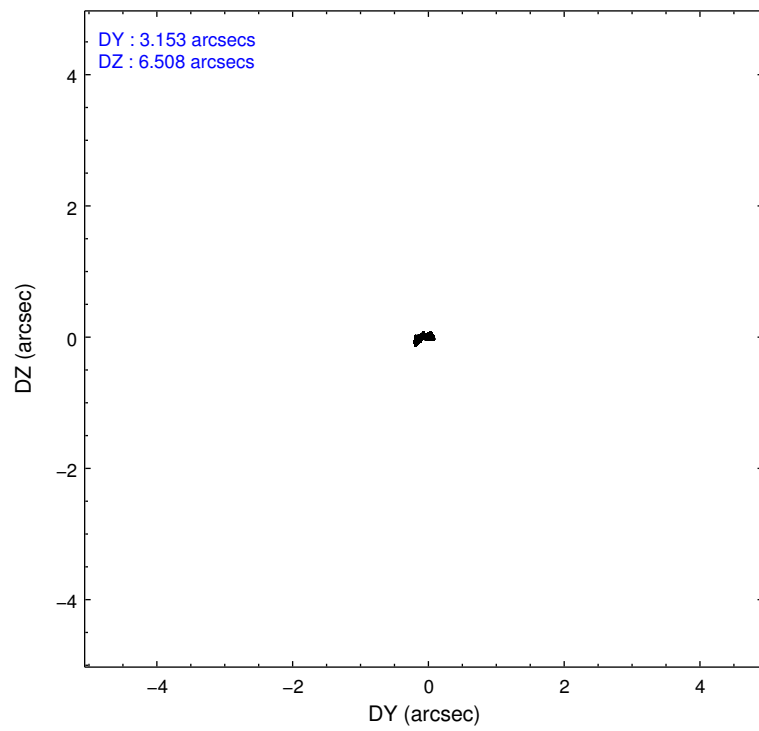
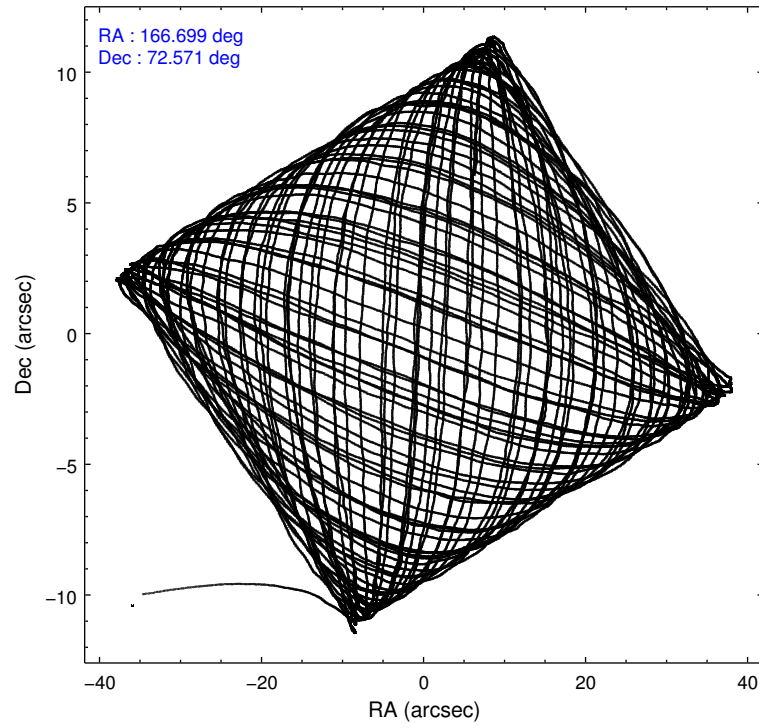
### 2.1.4 Events

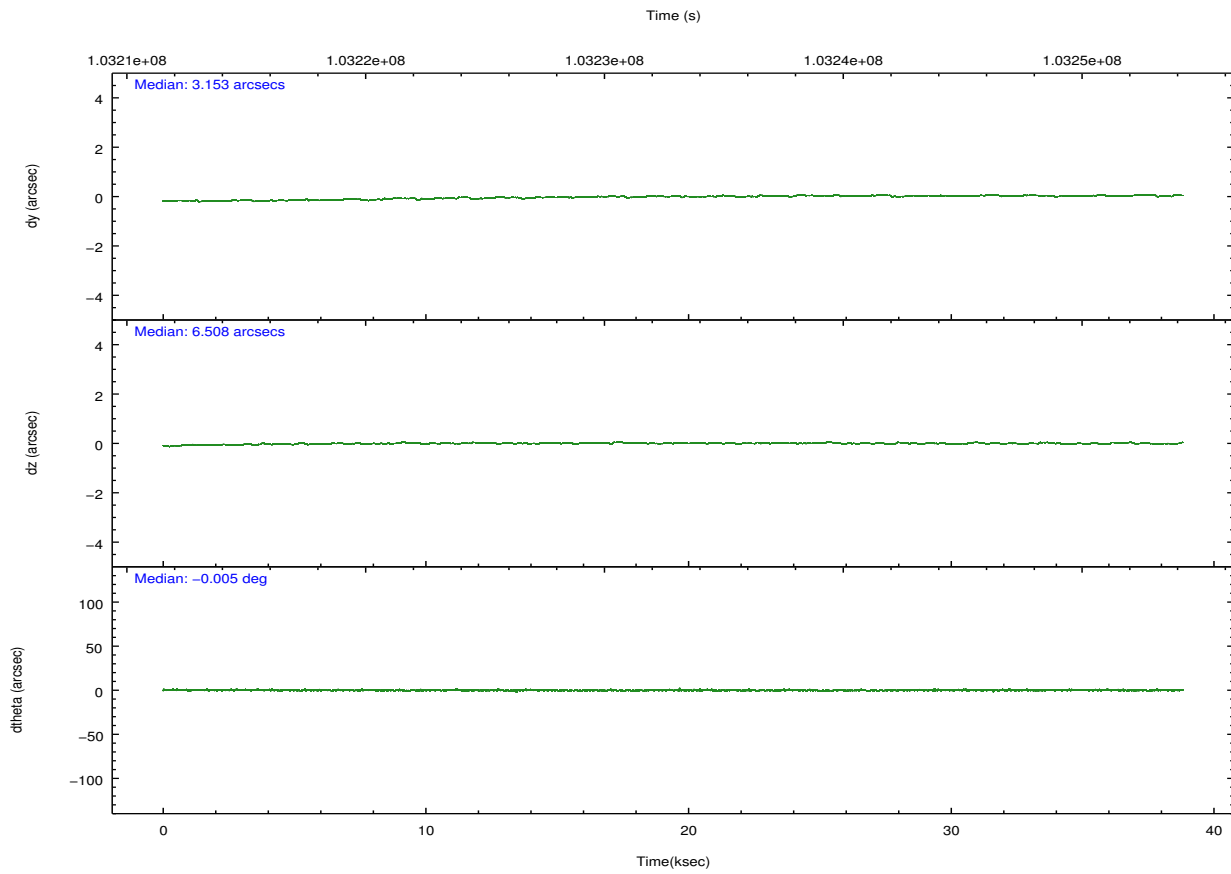
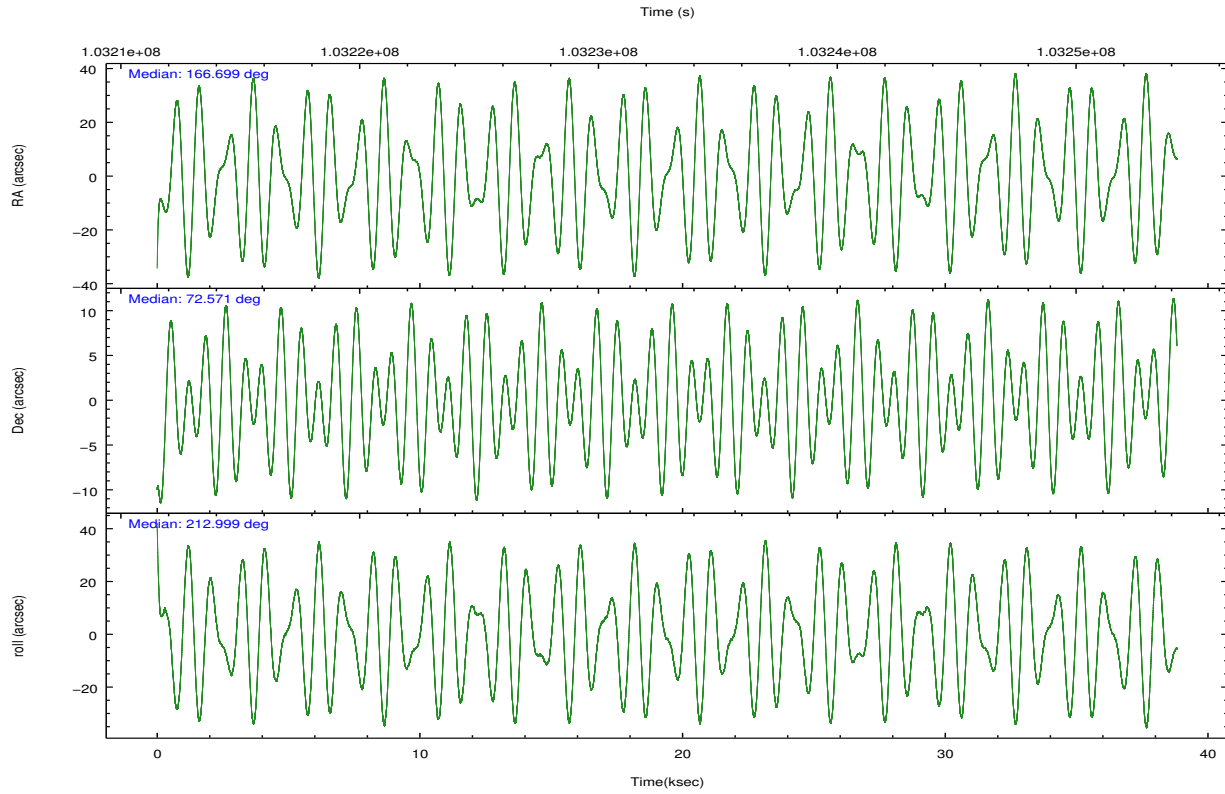
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	262839	273849	231317	250538	310645	234019	grade 0 events	15206	19554	16200	13604	31969	14336
rejected events	229067	132325	197007	126222	219428	188350		5%	7%	7%	5%	10%	6%
rejected %	87%	48%	85%	50%	70%	80%	grade 1 events	114	490	121	318	240	114
								0%	0%	0%	0%	0%	0%
							grade 2 events	7616	42715	6247	26462	15936	19602
								2%	15%	2%	10%	5%	8%
							grade 3 events	2853	7149	2982	11886	12442	3020
								1%	2%	1%	4%	4%	1%
							grade 4 events	2705	7125	3024	11586	11272	2910
								1%	2%	1%	4%	3%	1%
							grade 5 events	5893	19582	6859	21360	9114	7002
								2%	7%	2%	8%	2%	2%
							grade 6 events	5392	64989	5858	60788	19612	5805
								2%	23%	2%	24%	6%	2%
							grade 7 events	223060	112245	190026	104534	210060	181230
								84%	40%	82%	41%	67%	77%

## 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	166.738847	166.6981946378891	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	72.595253	72.5707966471892	Subarray start row	1	1
[deg] Pointing Roll	212.810544	213.0059665965706	Subarray row count	774	774
[s] Window start time (MET)	103215664.184000	103215664.184000	Alternating exposures requested	N	N
[s] Window stop time (MET)	103478464.184000	103478464.184000	[s] Primary exposure time	0.000000	2.5
[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)	103213744.184000	103212725.05476			
Observation start date	2001-04-09T14:28:00	2001-04-09T14:12:05			
[s] Observation end time (MET)	103249744.184000	103252597.5563			
Observation end date	2001-04-10T00:28:00	2001-04-10T01:16:37			
Read mode	TIMED	TIMED			

## 2.3 Aspect



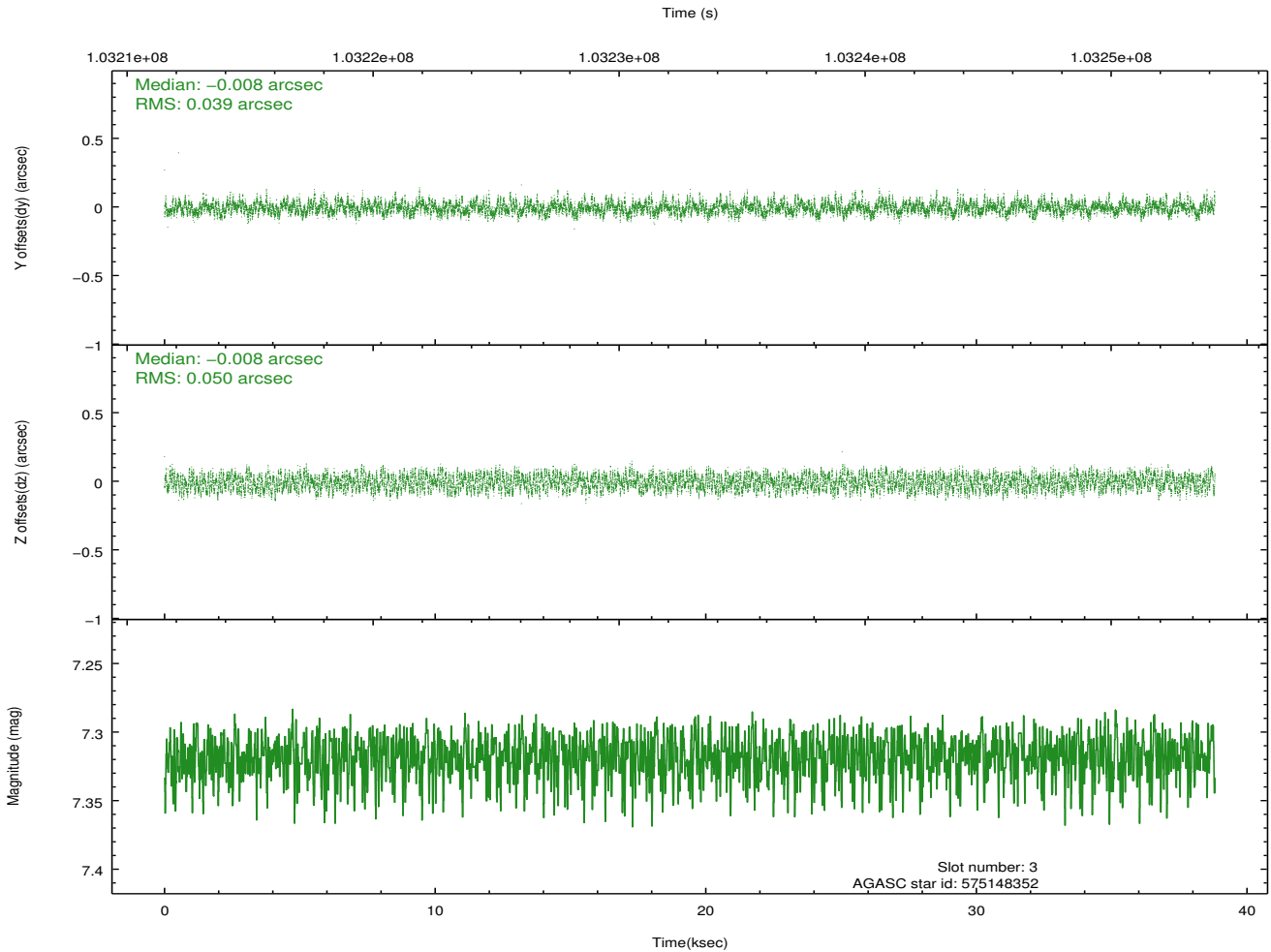
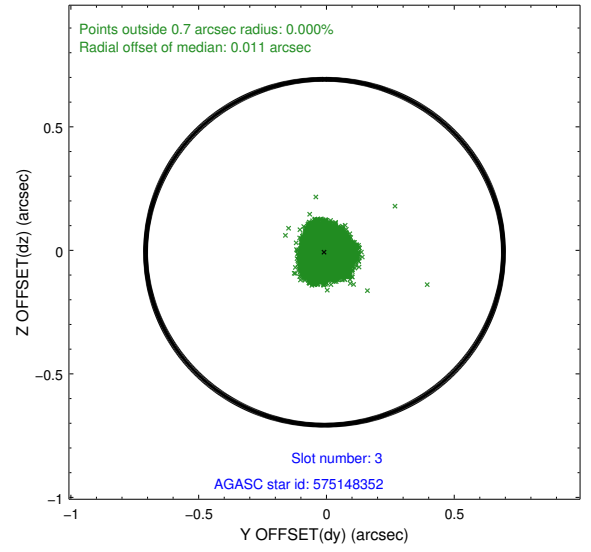
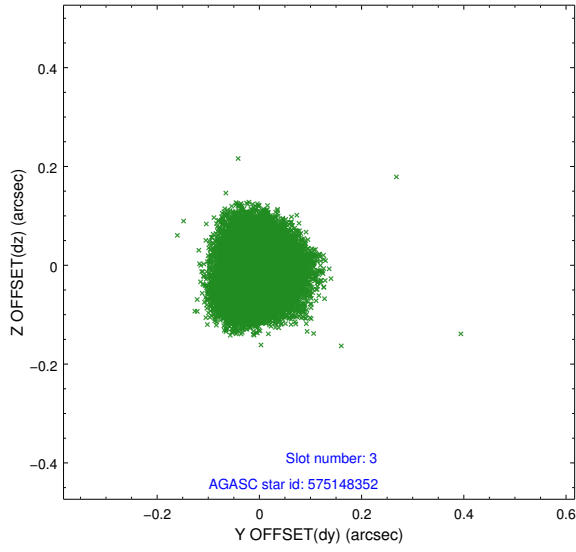


### Slot Statistics

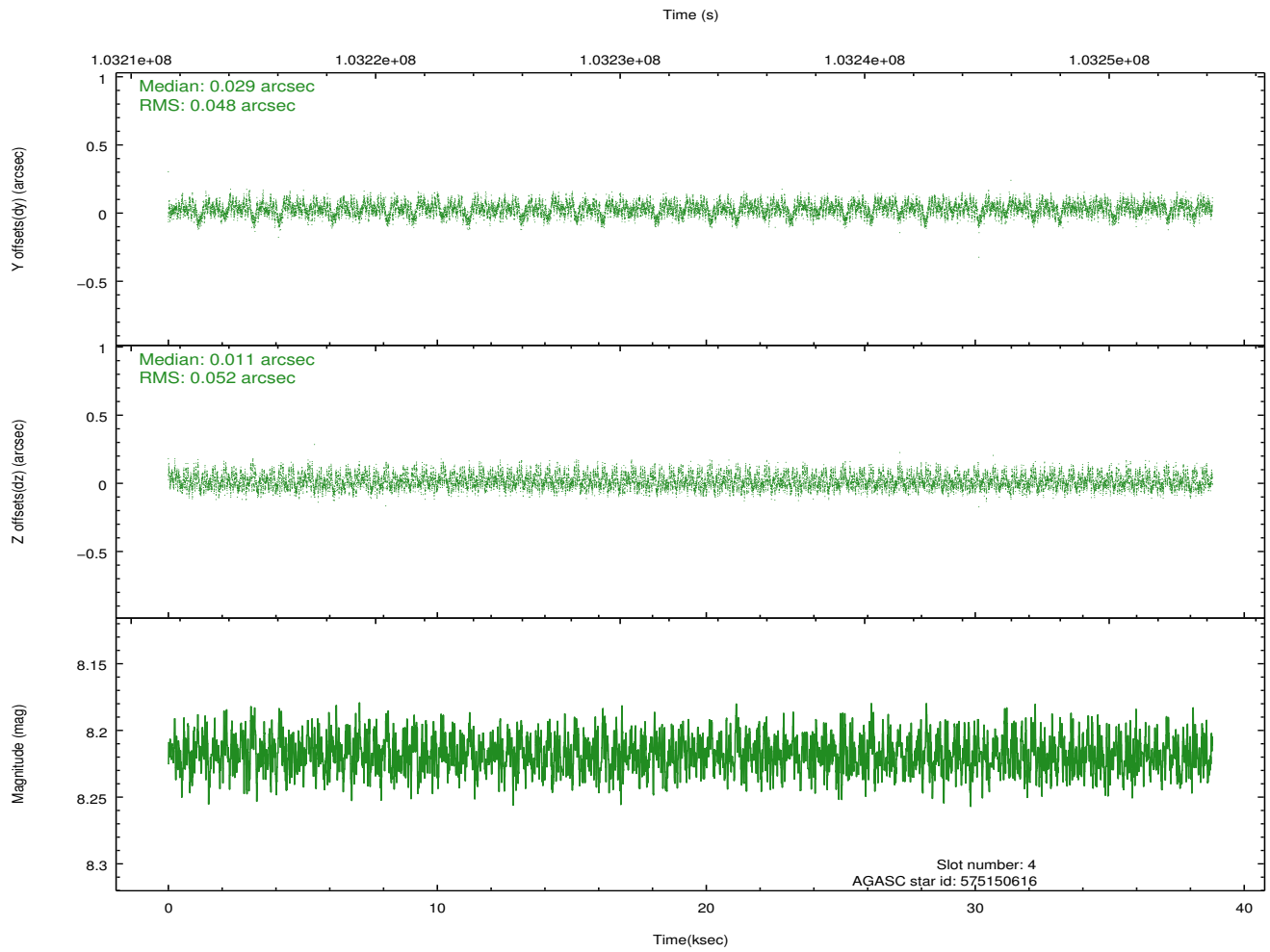
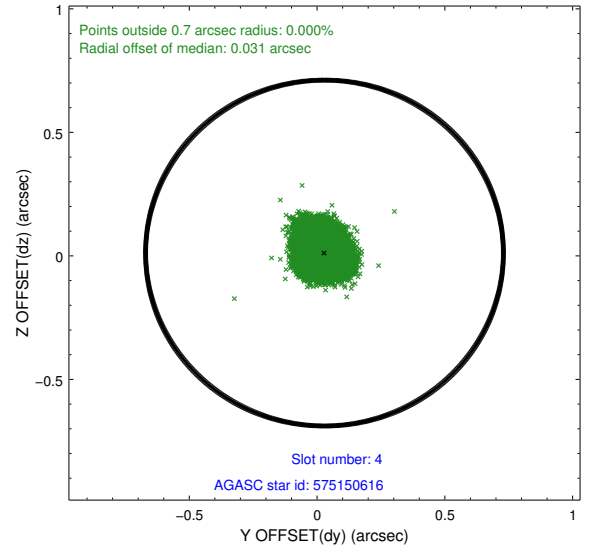
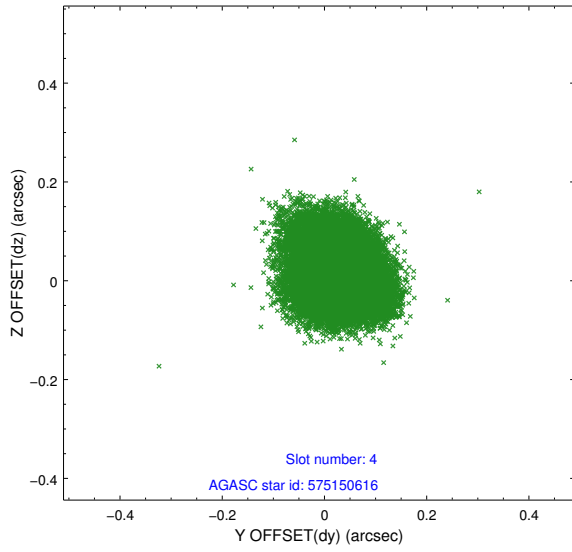
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.19	9467	0.005	0.056	0.006	0.011	0.000000	0.000000	940.48	-1785.37
1	FID	ACIS-S-5	7.24	9468	-0.002	0.032	0.007	0.011	0.000000	0.000000	-1808.51	112.14
2	FID	ACIS-S-6	7.38	9469	-0.025	-0.076	0.007	0.011	0.000000	0.000000	405.99	756.01
3	GUIDE	575148352	7.32	18937	-0.008	-0.008	0.070	0.103	167.090916	71.958979	911.55	2136.86
4	GUIDE	575150616	8.22	18930	0.029	0.011	0.076	0.119	167.218511	72.045663	624.50	1949.56
5	GUIDE	575541080	8.93	18920	-0.017	-0.045	0.070	0.111	167.870403	73.115273	-2013.64	-942.06
6	GUIDE	575543720	9.34	18928	-0.007	0.000	0.089	0.144	164.695945	72.631615	1754.79	-1330.81
7	GUIDE	575541344	9.37	18917	0.005	0.039	0.094	0.148	166.947366	72.953762	-883.23	-966.11

## 2.4 Star Slots

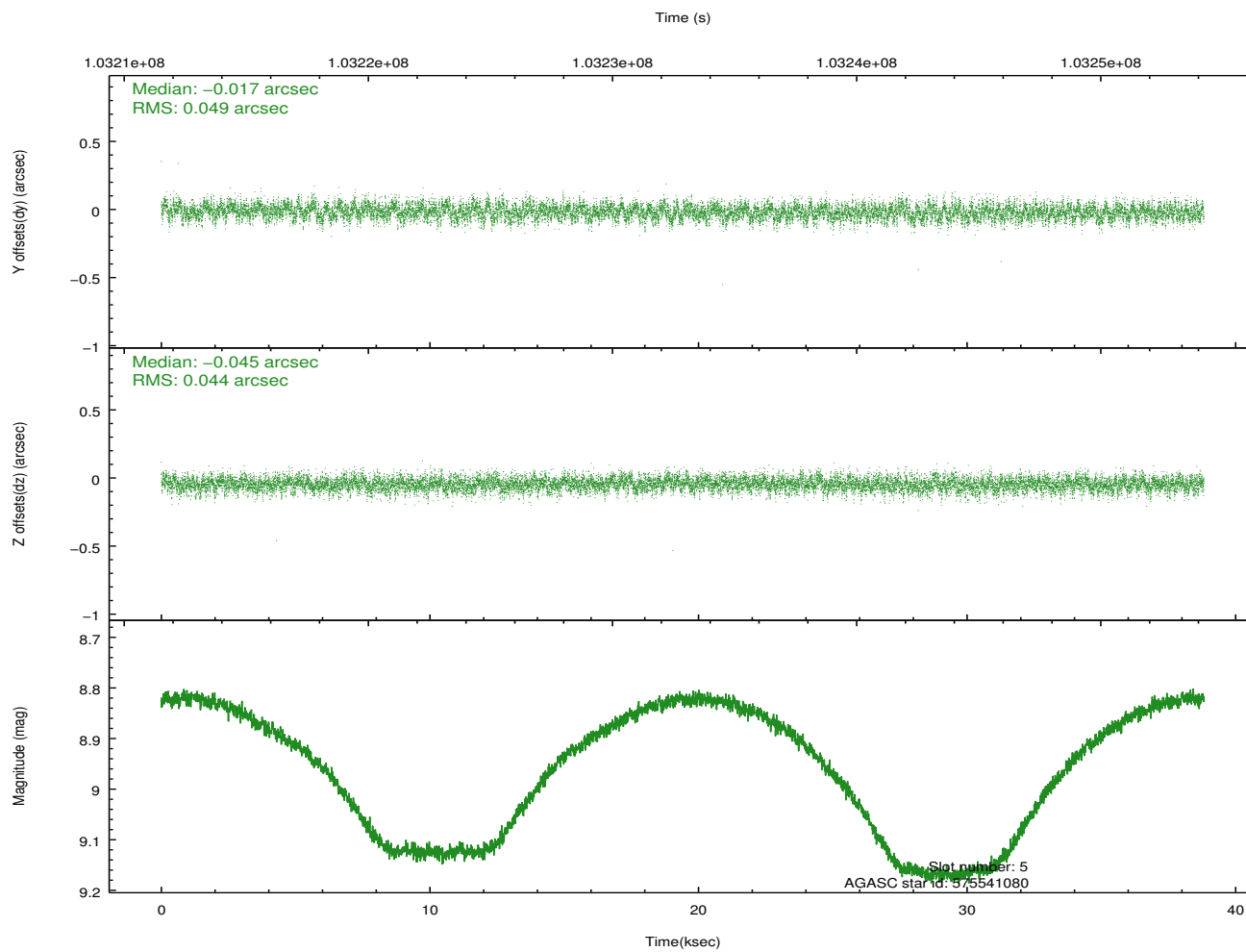
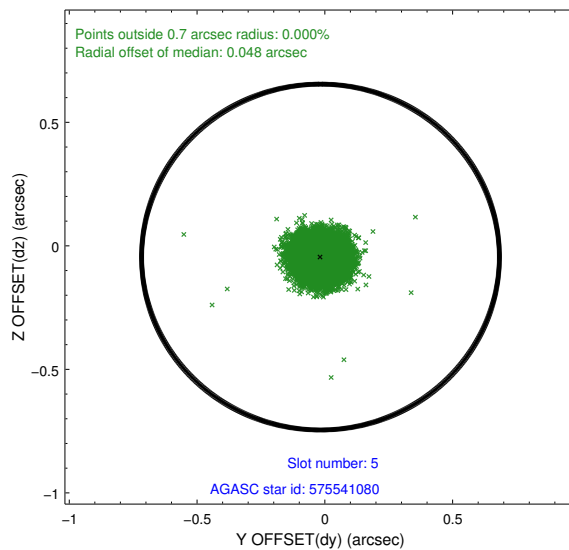
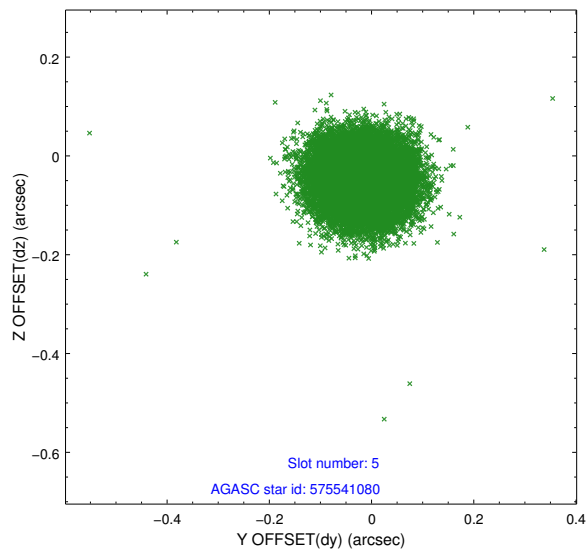
### 2.4.1 Slot 3



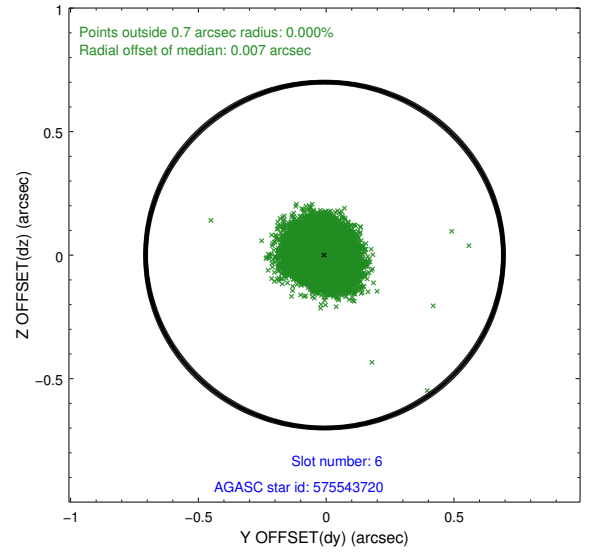
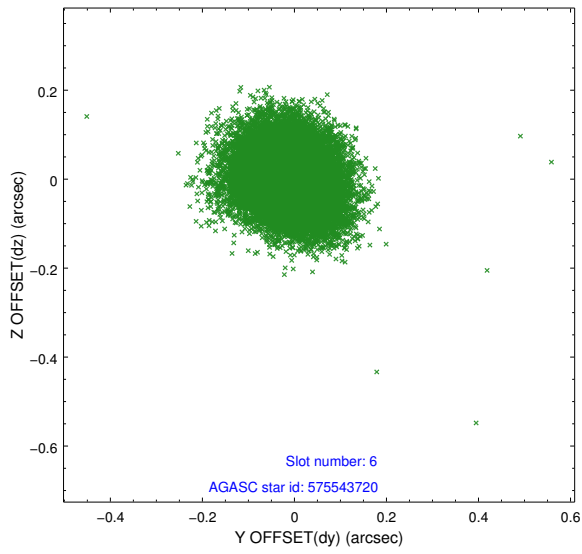
### 2.4.2 Slot 4



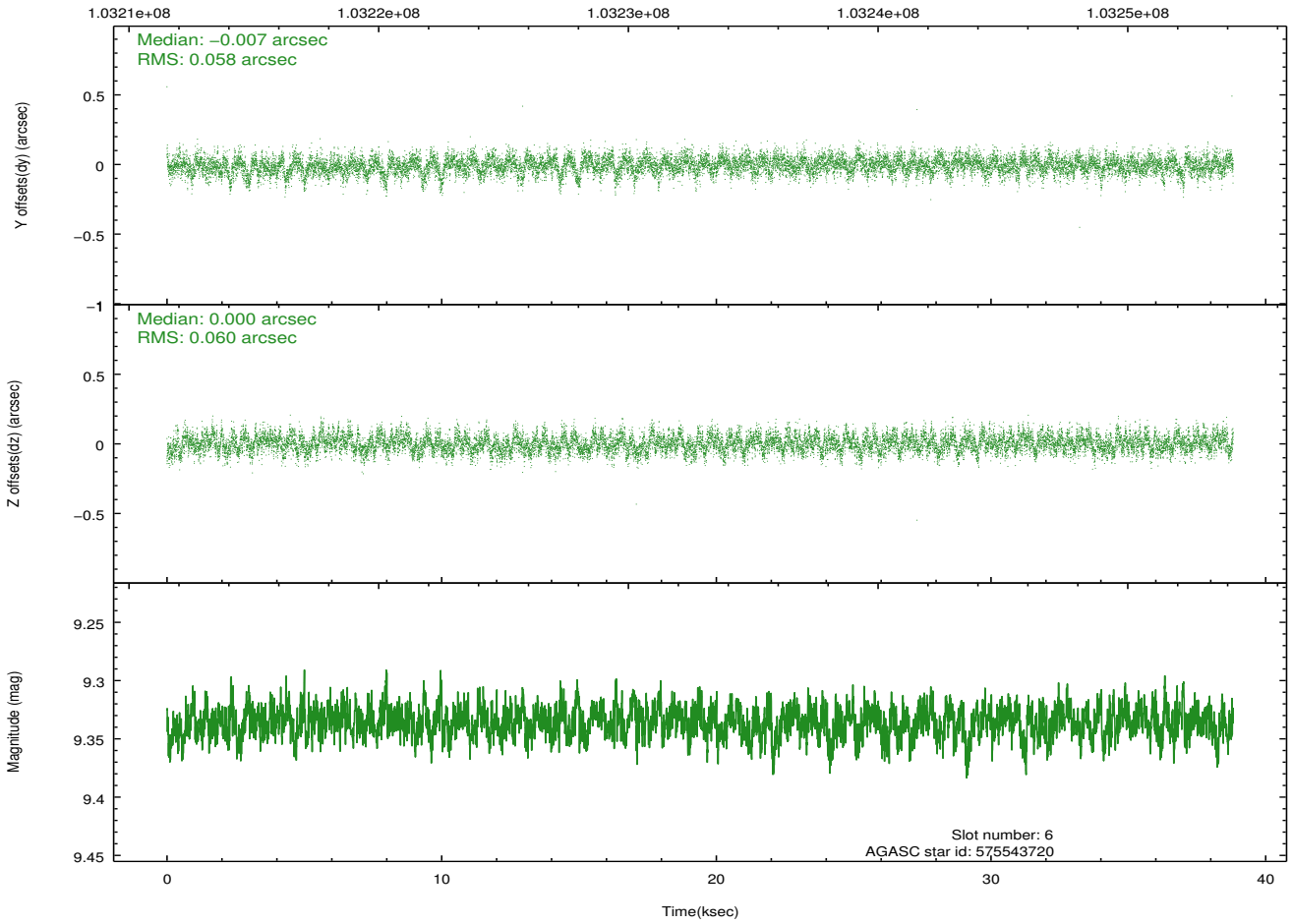
### 2.4.3 Slot 5



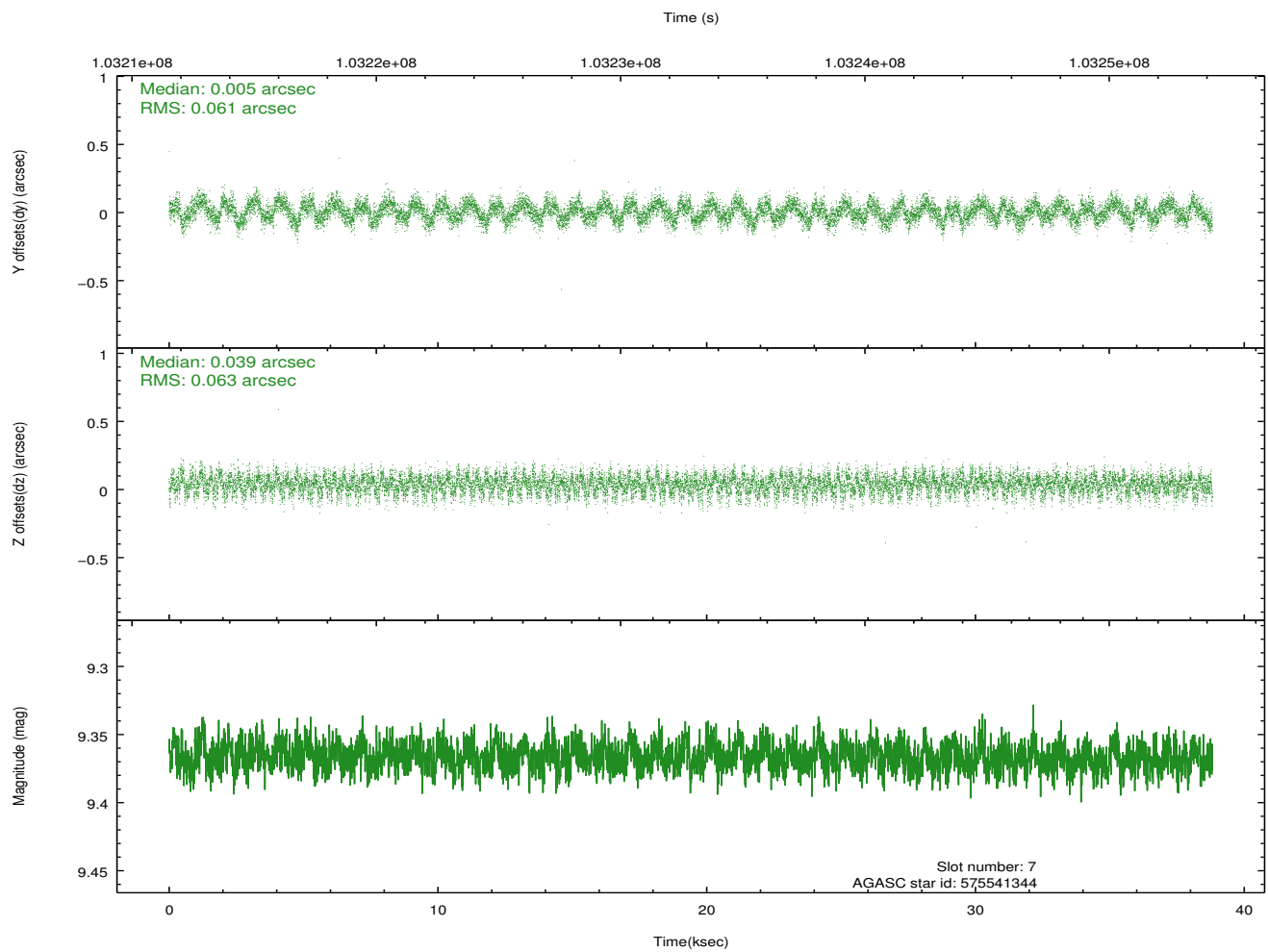
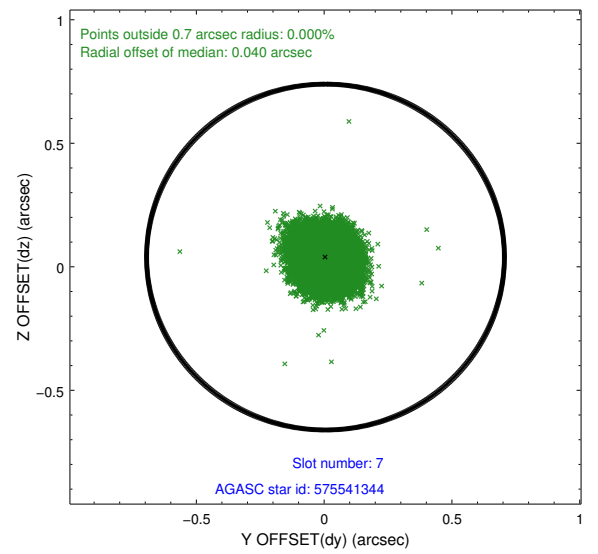
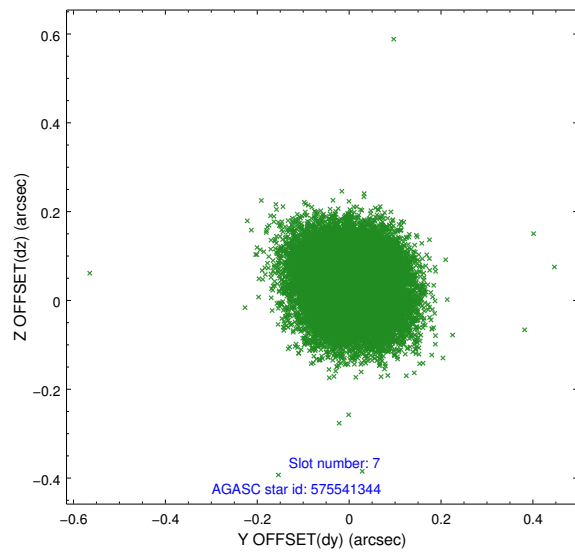
### 2.4.4 Slot 6



Time (s)

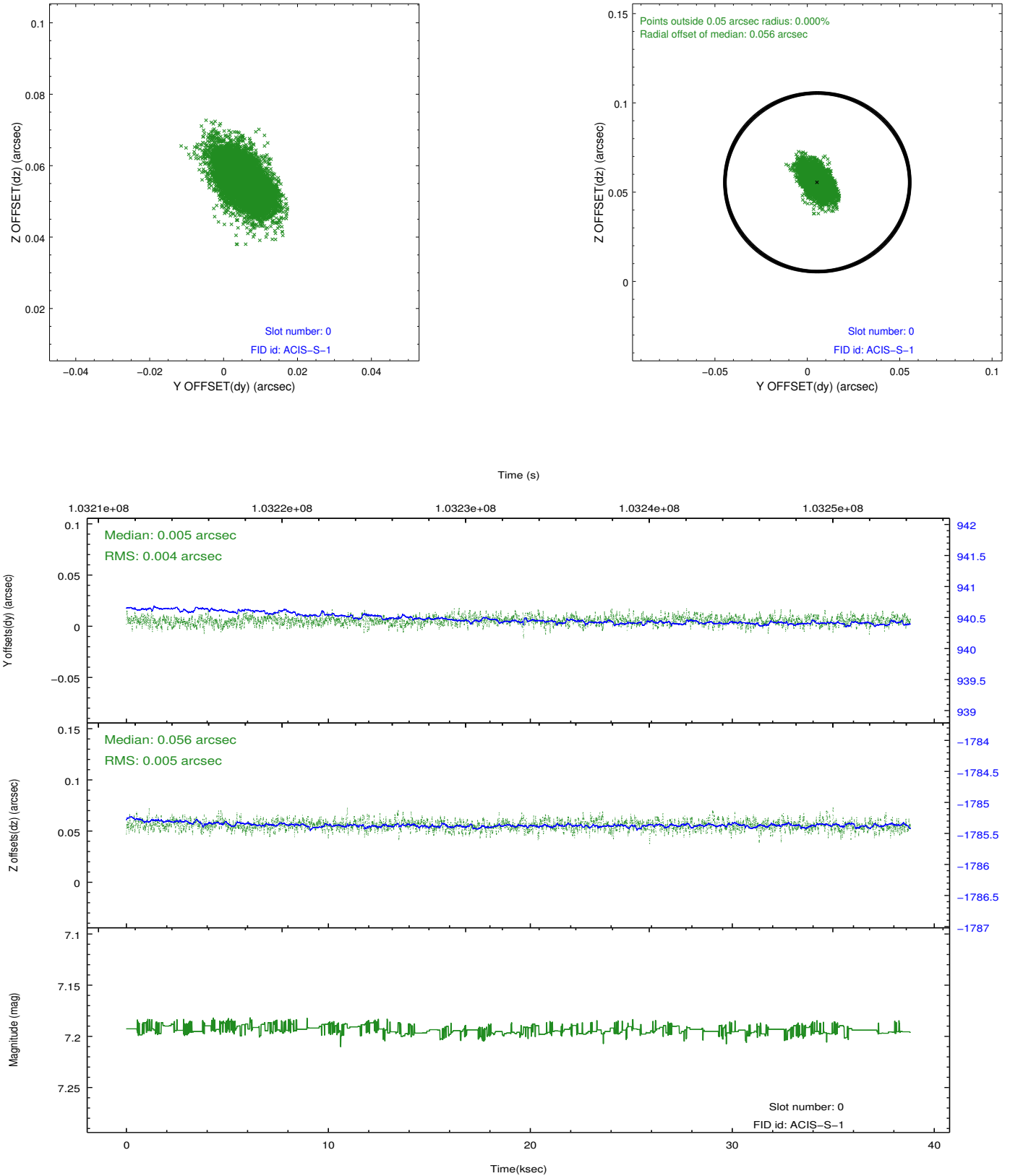


## 2.4.5 Slot 7

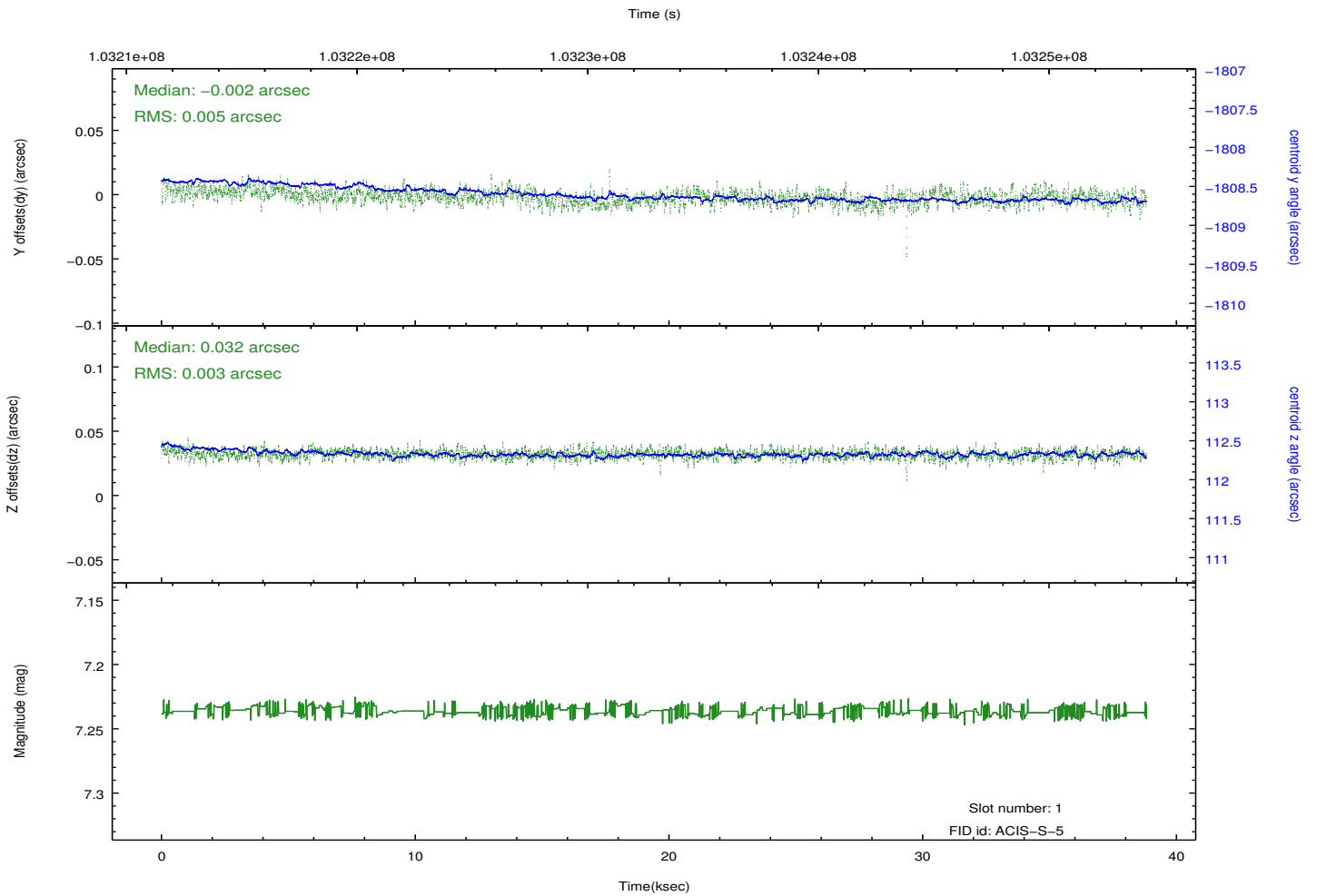
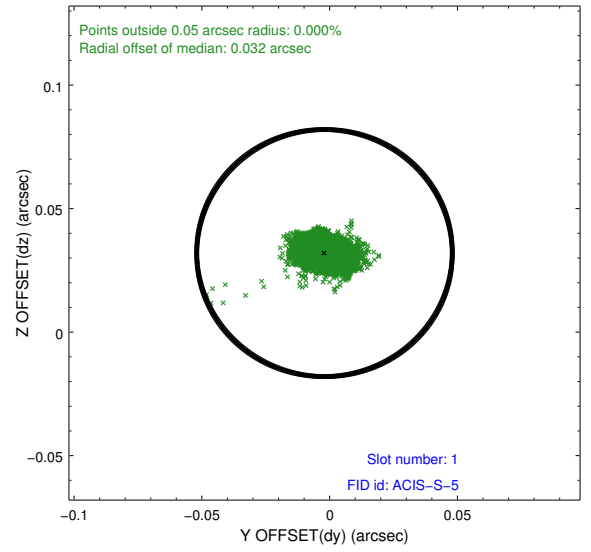
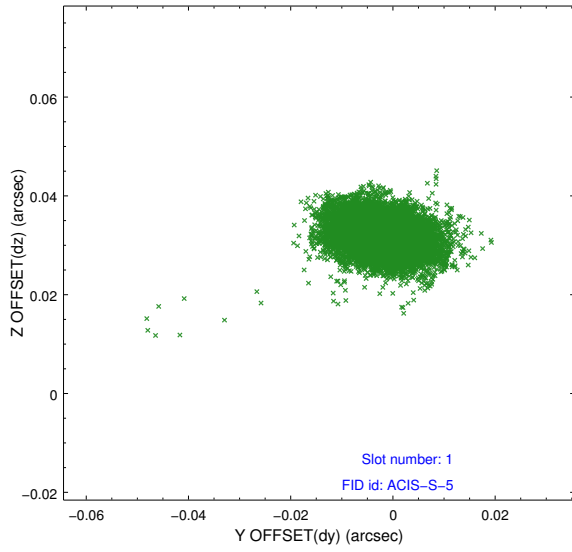


## 2.5 FID Slots

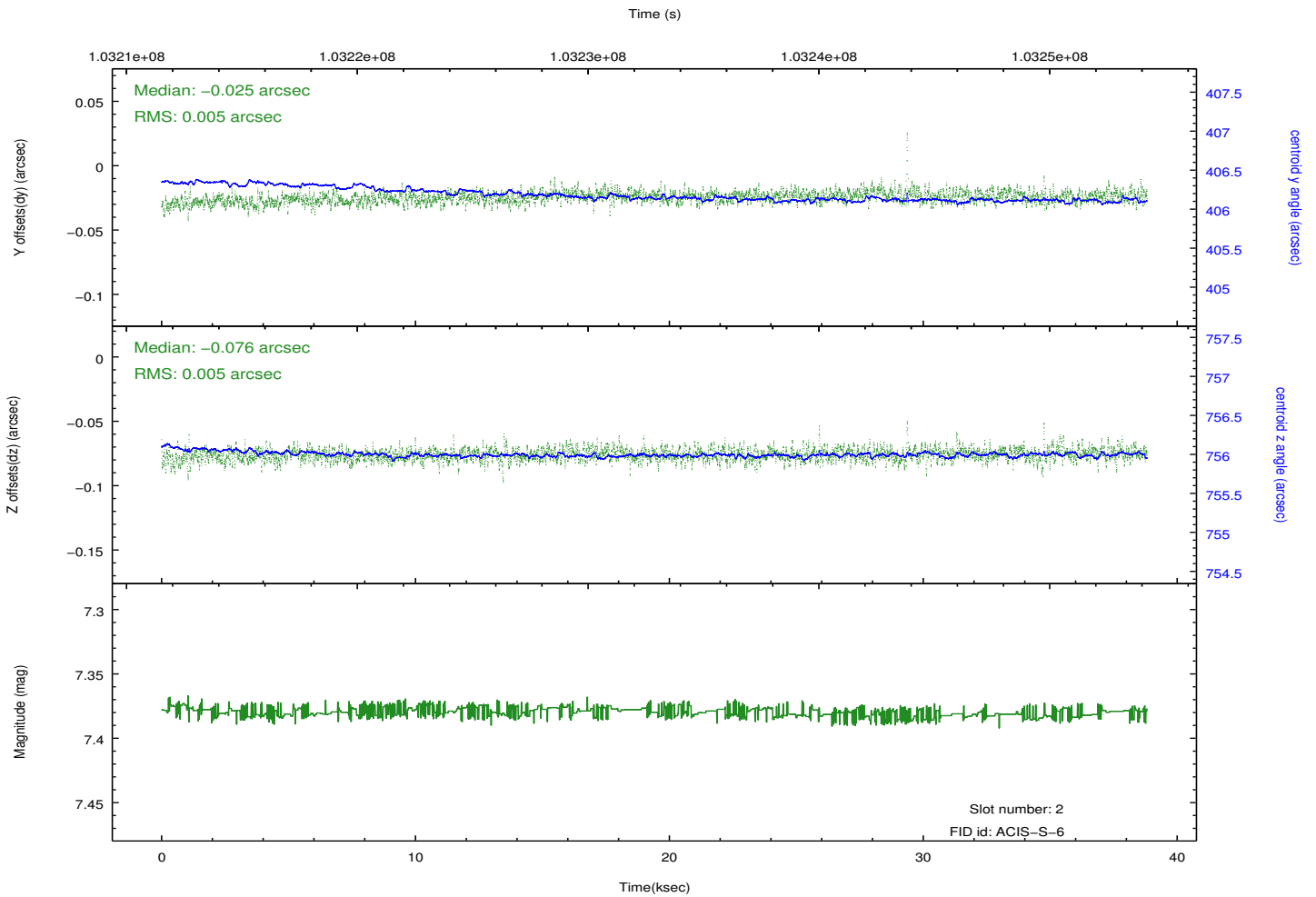
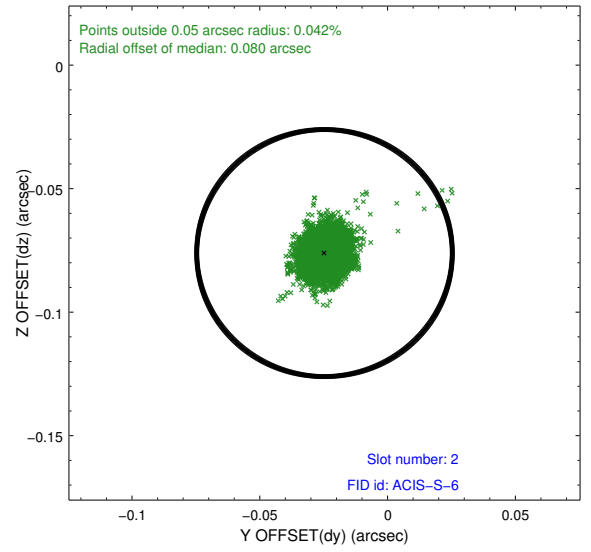
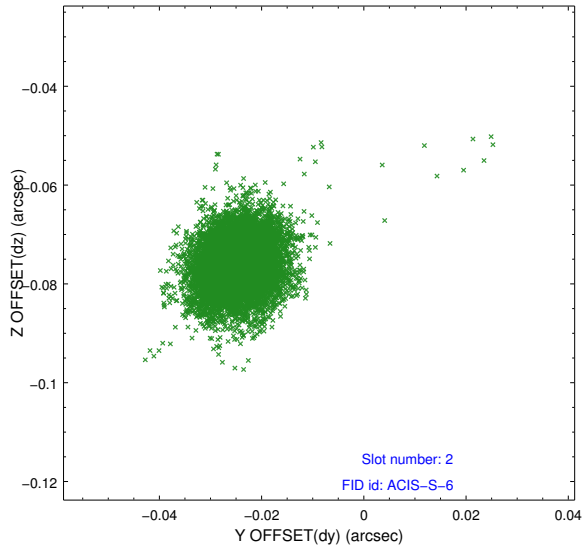
### 2.5.1 Slot 0



## 2.5.2 Slot 1

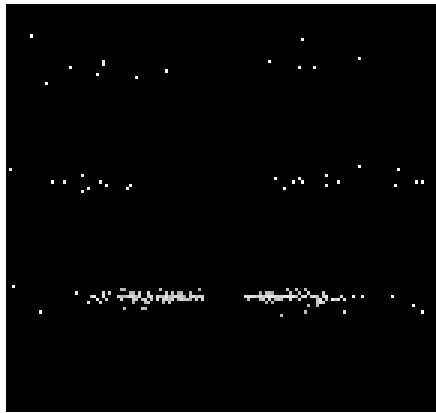


### 2.5.3 Slot 2

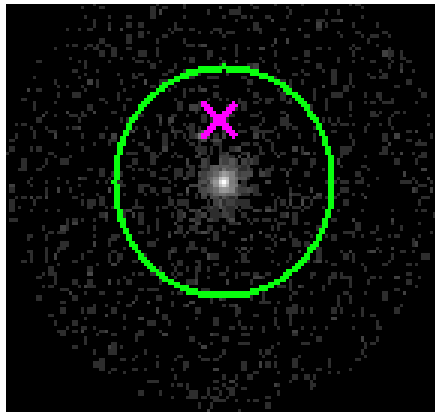


### 3 Gratings

#### 3.1 HEG Arm



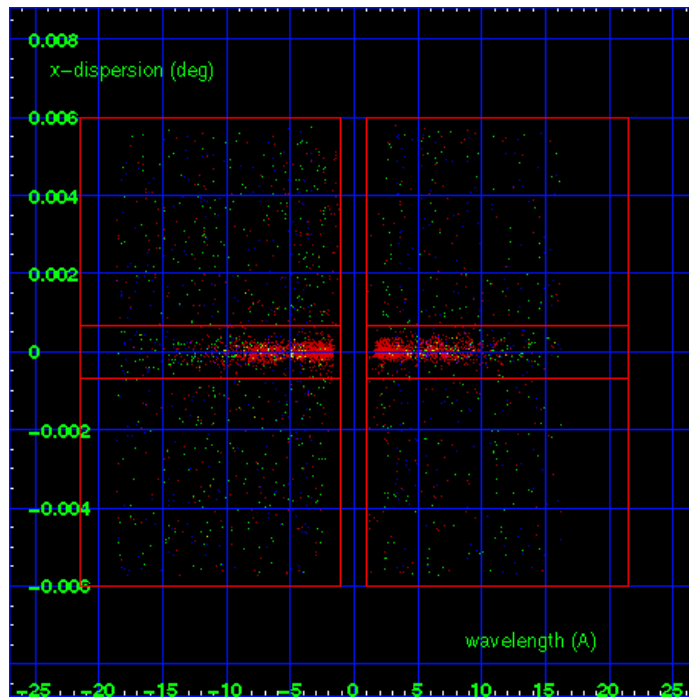
HEG Order Sort 123



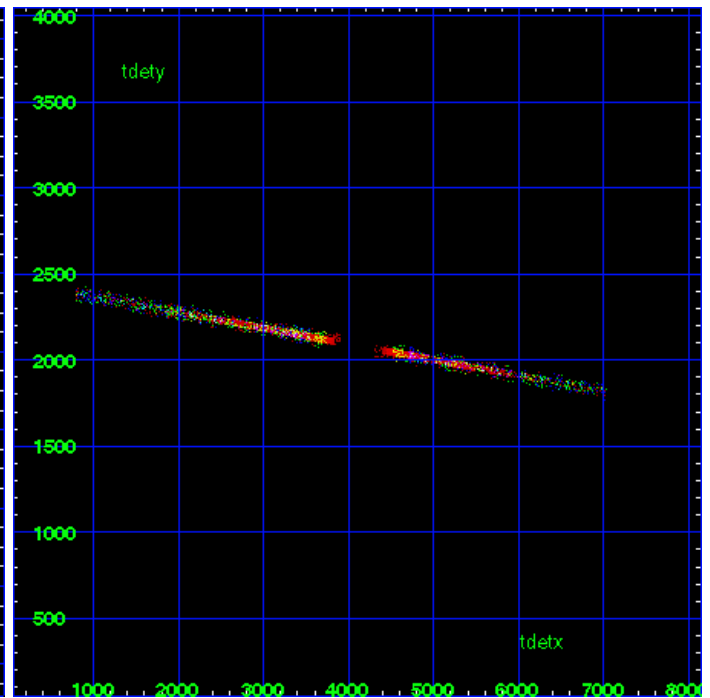
HEG Zero Order



HEG Order Sort ALL

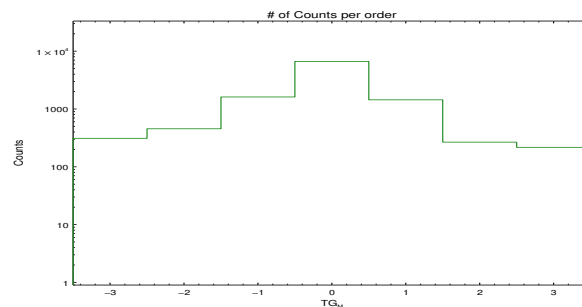


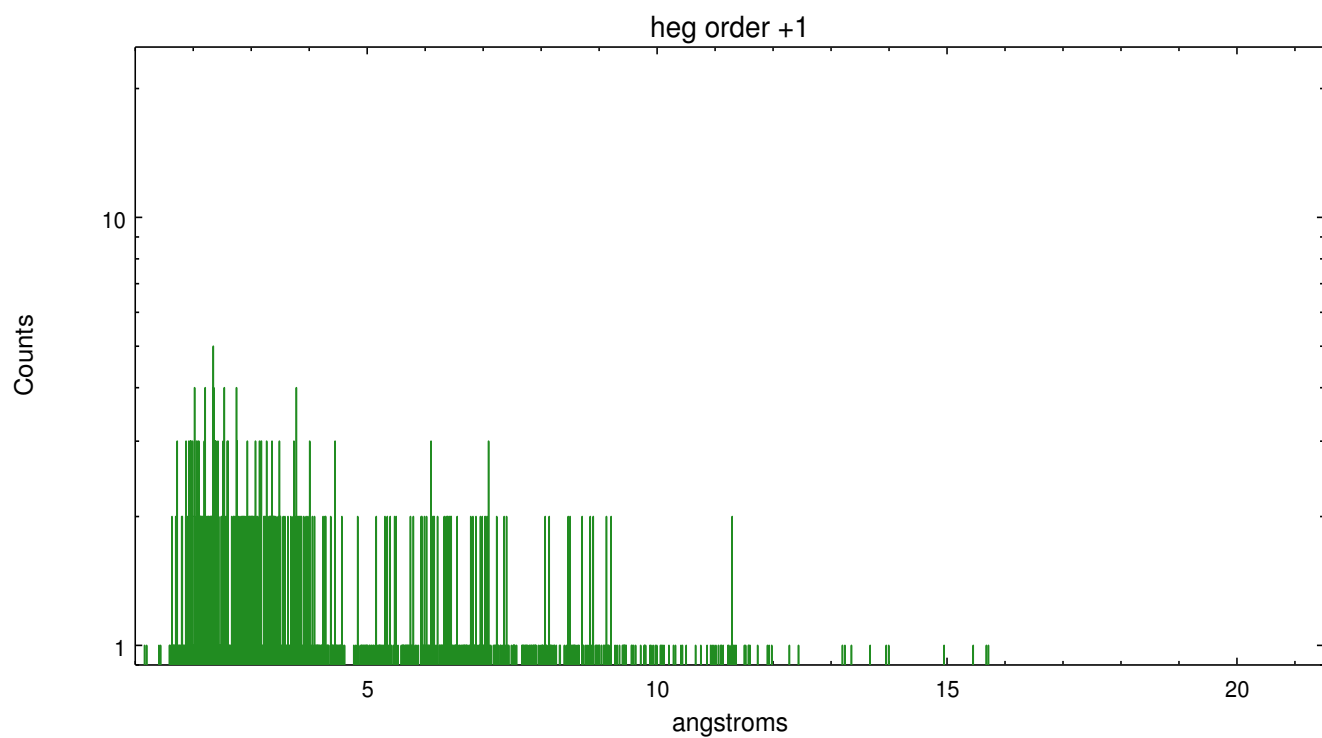
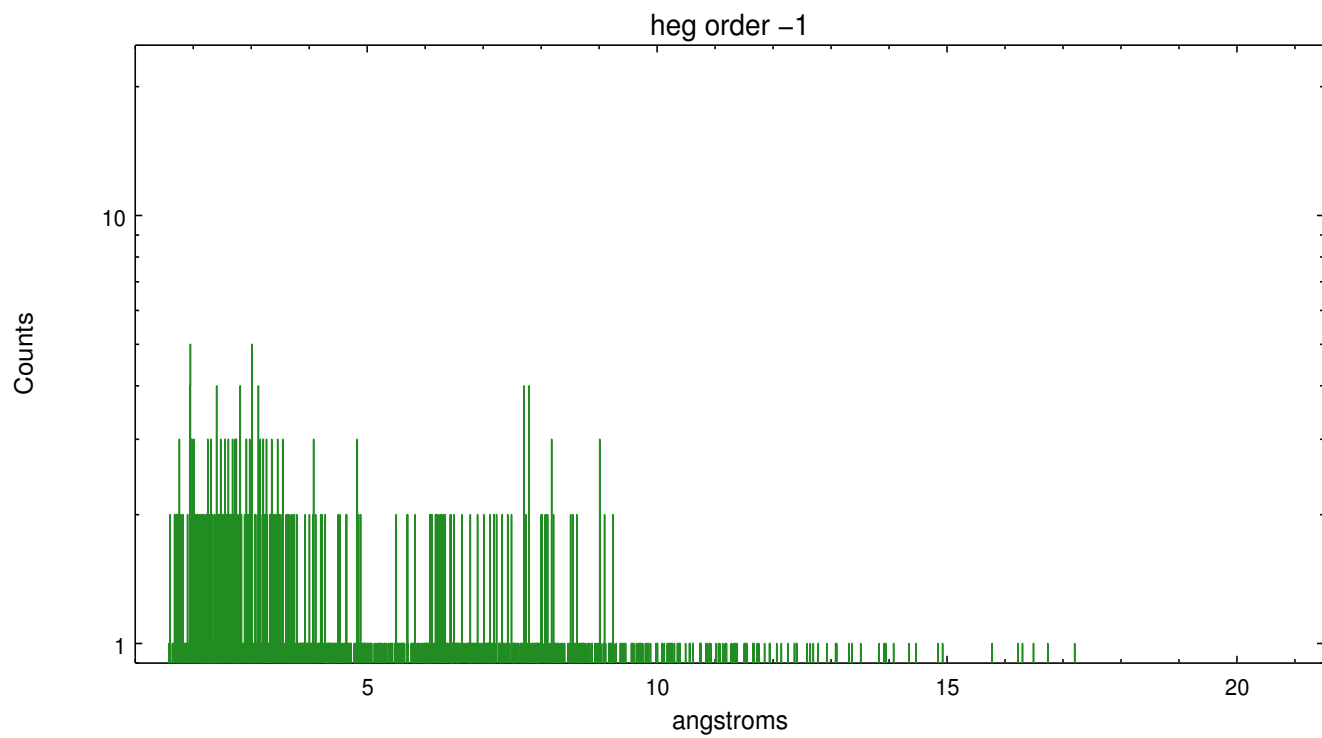
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	311	455	1615	6646	1441	267	217

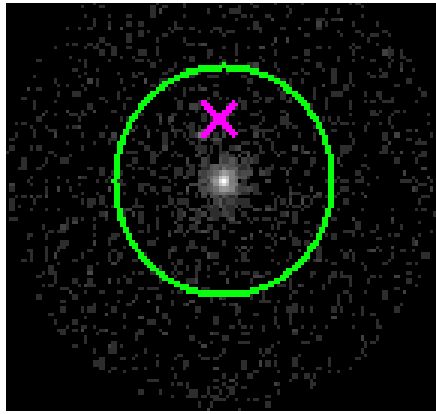




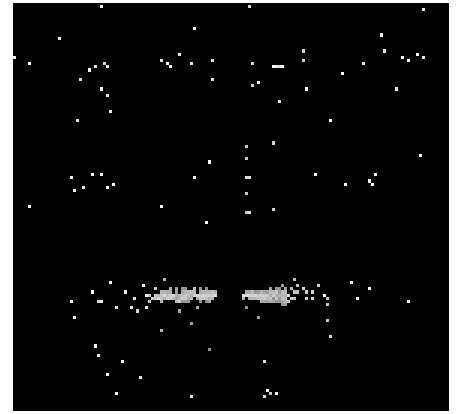
### 3.2 MEG Arm



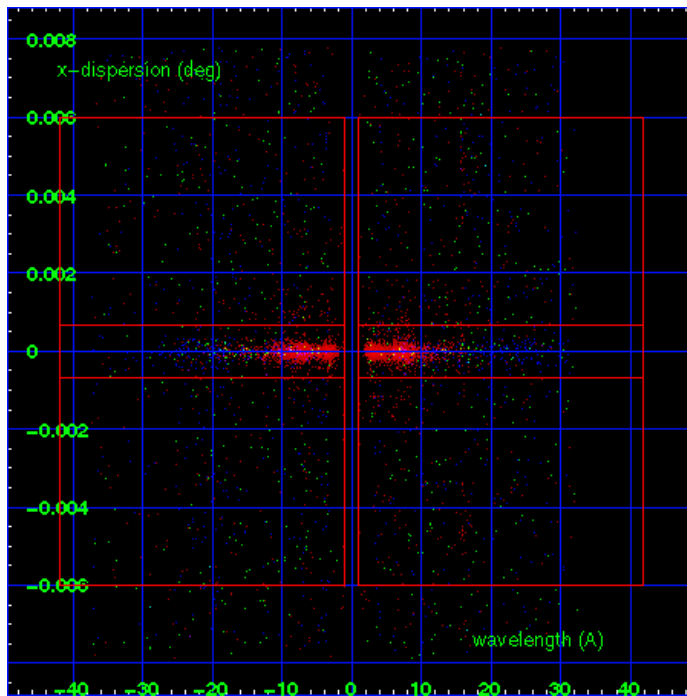
MEG Order Sort 123



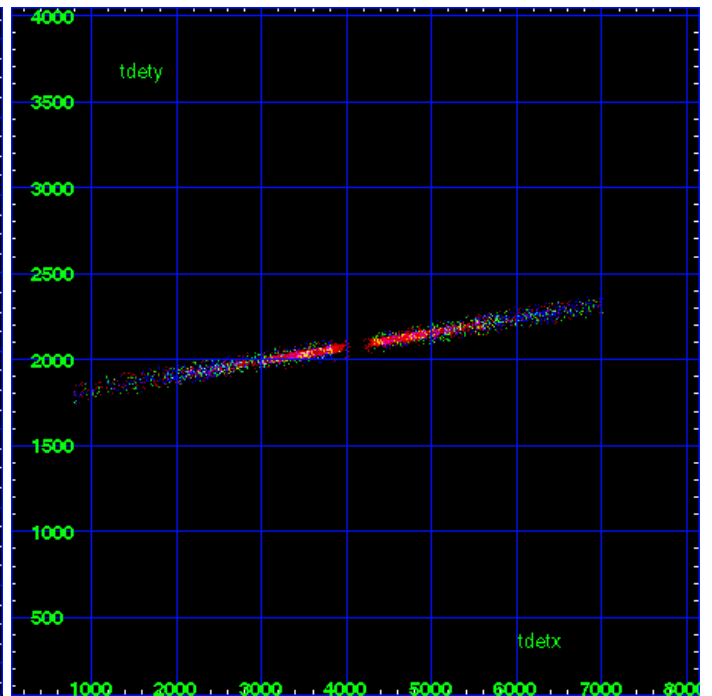
MEG Zero Order



MEG Order Sort ALL

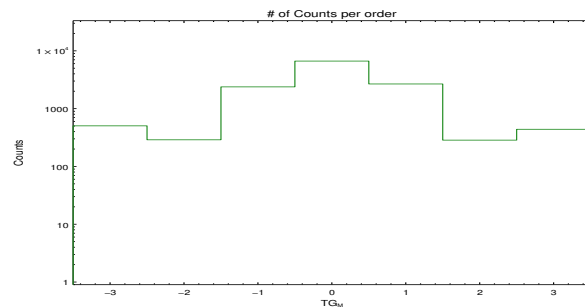


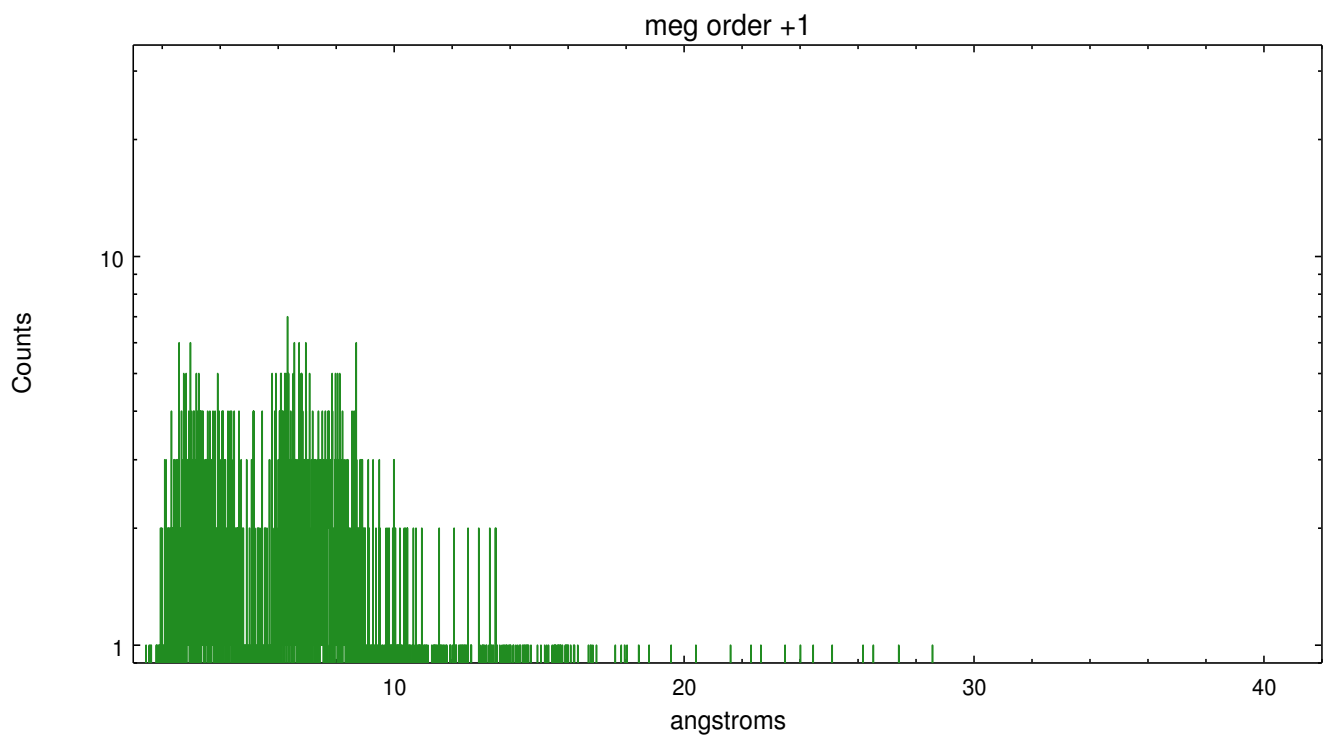
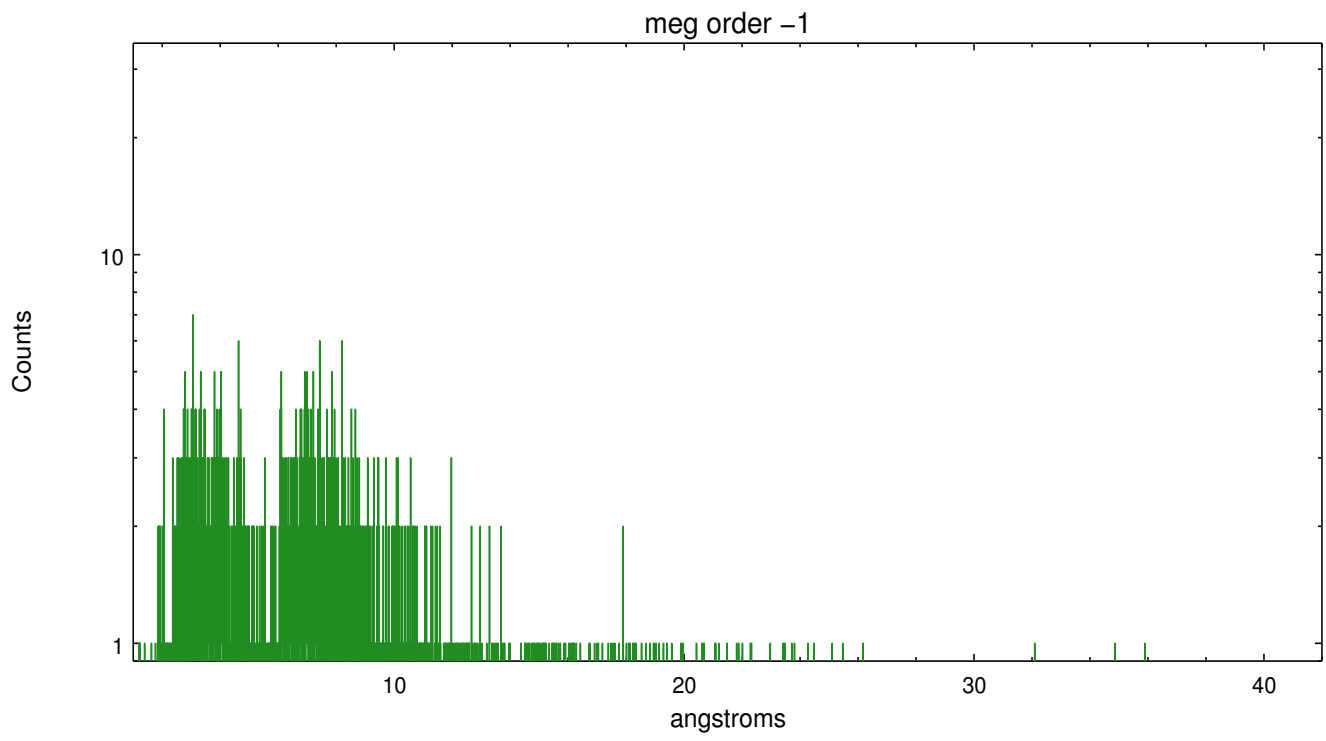
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	504	289	2380	6646	2672	285	439





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.21
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	36.155

## A.2 Comments

Coordinated with XMM, RXTE, and BeppoSAX.

===

Chip ACIS-S4 suffers from an unusually large amplitude of streaks of instrumental origin. The user may want to run the CIAO tool 'destreak' on the Level 2 event data. When using destreak, note that setting 'max' to 1, especially for gratings data, may remove a large fraction of the data. Users should check the output 'timefile' to see what percent of the data was removed. See the CIAO help file for more details.