

# V&V Reference Report

## L2 ASCDS Version : 7.6.9

Observation 2089 - L2 Version 002  
Chandra X-Ray Center

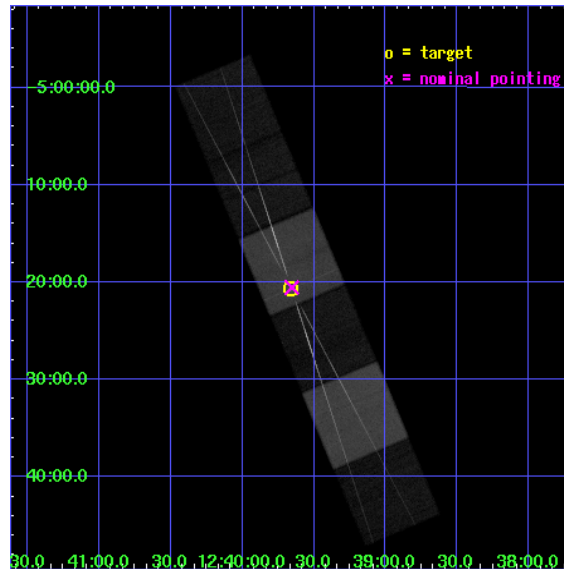
L2 Processing Date : Jan 26 2007

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# 1 Front

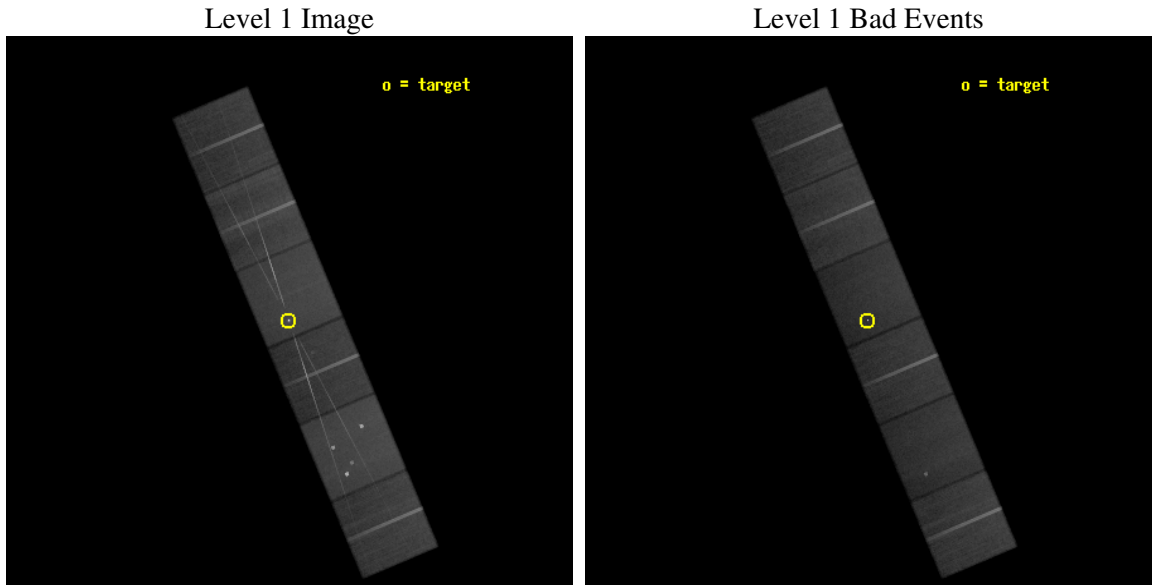
seq_num	700279
obs_id	2089
title	DECONVOLUTION OF THE RELATIVISTIC FE-K LINES IN SEYFERT 1 GALAXIES AND PHYSICS FROM THE NARROW EMISSION COMPONENT
observer	Dr. Tahir Yaqoob
object	NGC 4593
dtcycle	0
cycle	P
ra_targ	189.914583
dec_targ	-5.344306
ra_nom	189.91353850676
dec_nom	-5.342355172574
roll_nom	247.16782710358
revision	3
ontime	79907.036153689
livetime	78895.20514767
ontime4	79913.518014342
ontime5	79910.277113944
ontime6	79910.277113944
ontime7	79907.036153689
ontime8	79903.795163527
ontime9	79907.036153704
l2events	907062



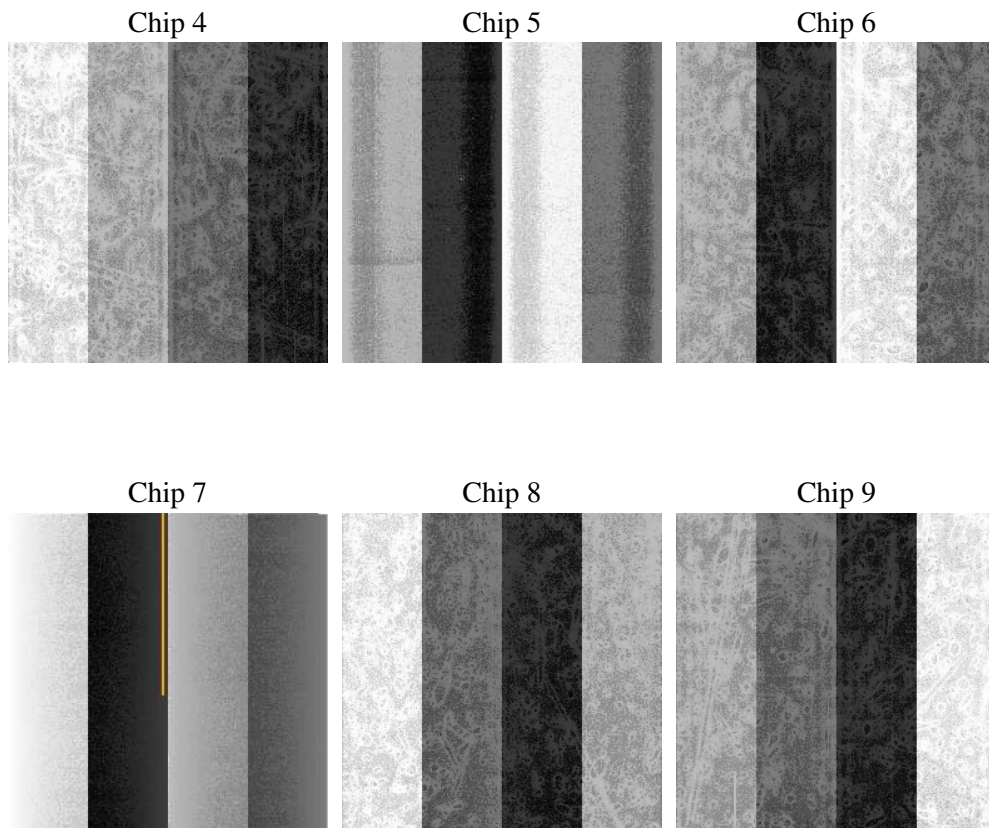
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.9
caldbver	3.2.4
date	2006-12-11T14:03:54
revision	2

sched_exp_time	79975.000000
ontime	79907.036153689
ontime4	79913.518014342
ontime5	79910.277113944
ontime6	79910.277113944
ontime7	79907.036153689
ontime8	79903.795163527
ontime9	79907.036153704
l1events	3917952

### 2.1.4 Events

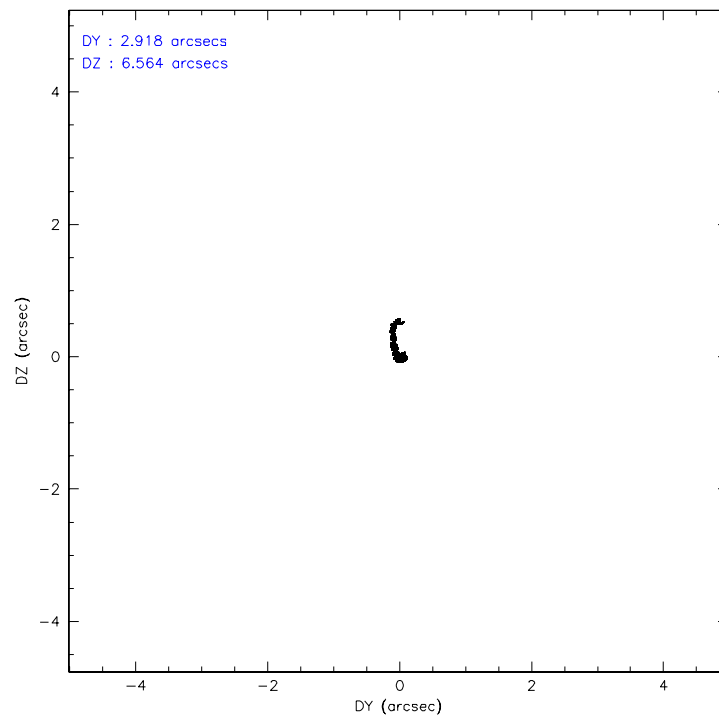
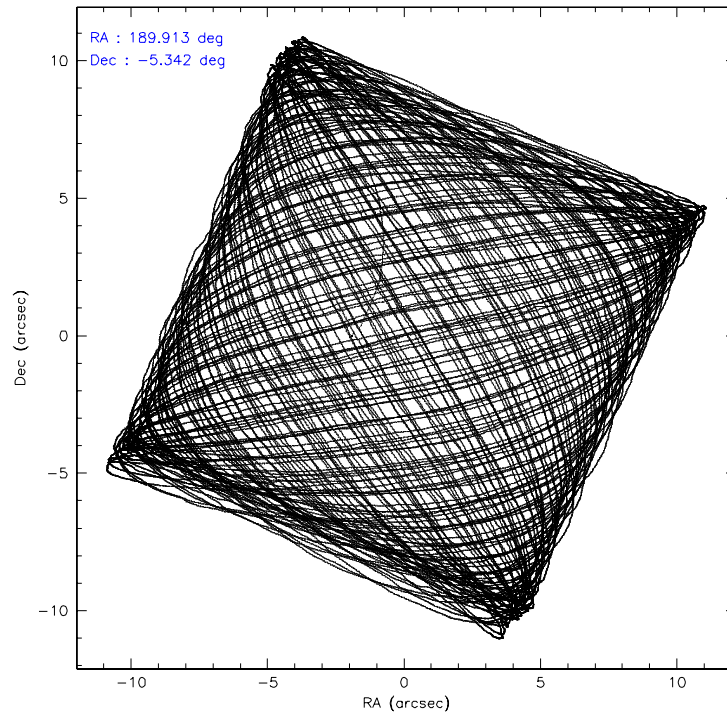
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	598069	788604	579571	739761	684005	527942
rejected events	532382	410008	475306	427530	532716	462228
rejected %	89%	51%	82%	57%	77%	87%

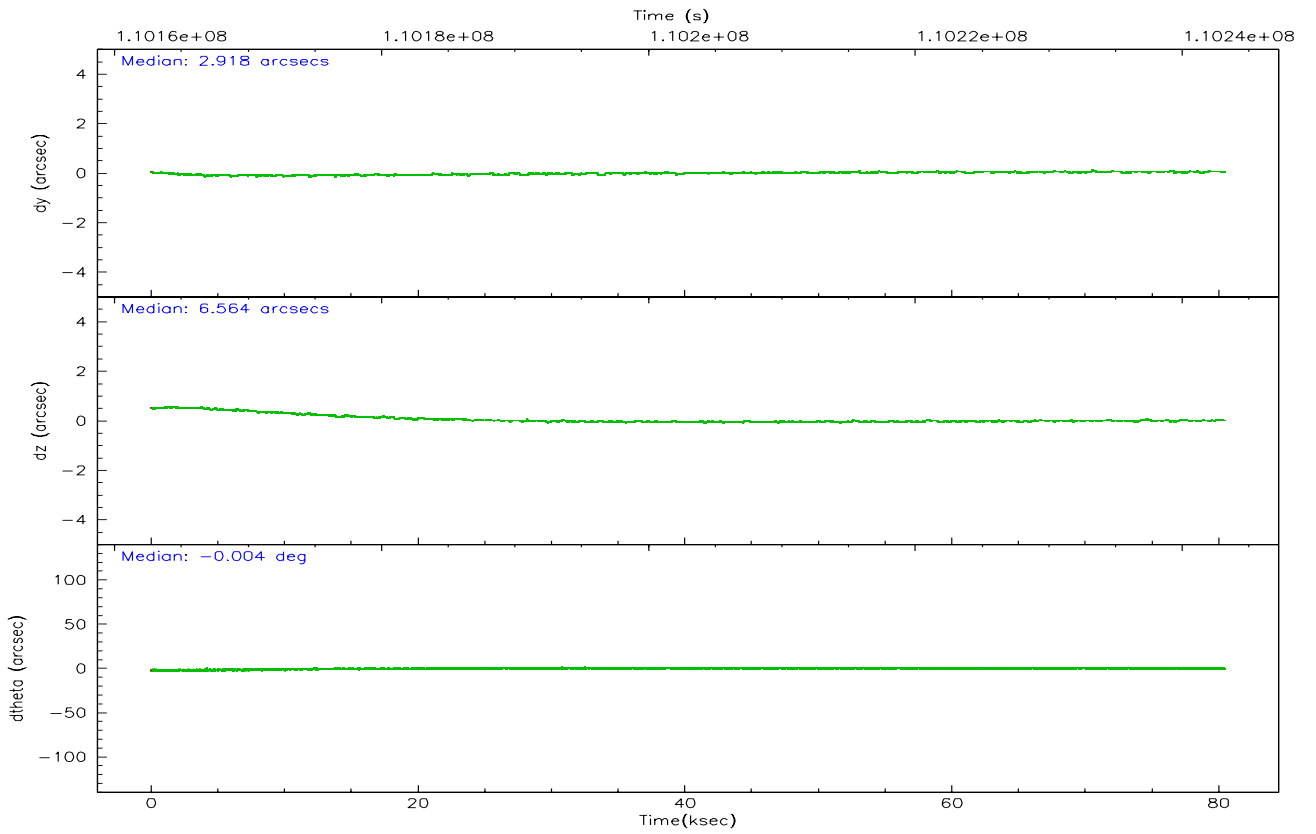
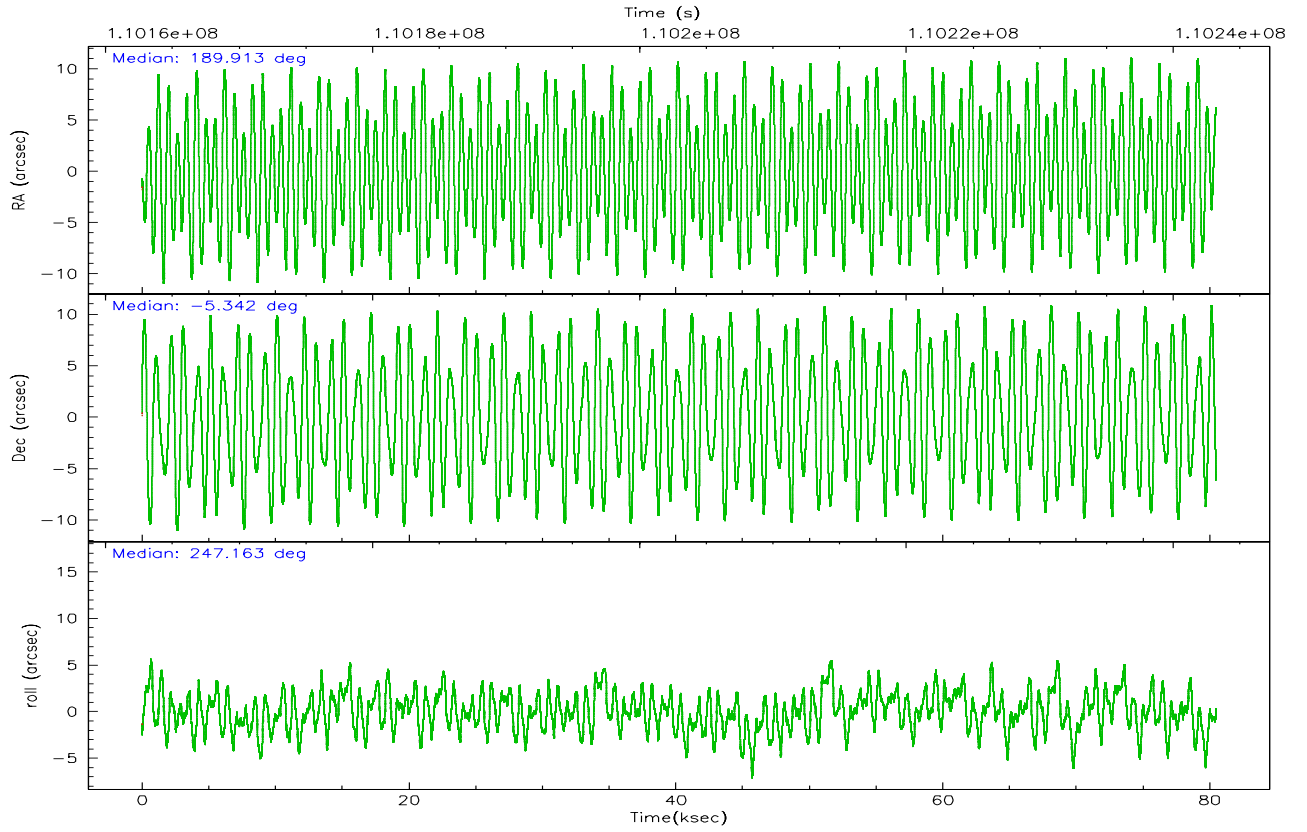
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	27766	65994	58742	25765	59794	28372
	4%	8%	10%	3%	8%	5%
grade 1 events	287	2903	374	896	449	253
	0%	0%	0%	0%	0%	0%
grade 2 events	15397	108970	17149	76727	30178	13022
	2%	13%	2%	10%	4%	2%
grade 3 events	5931	9041	7692	19236	14166	6249
	0%	1%	1%	2%	2%	1%
grade 4 events	5650	8606	7524	19273	13365	6021
	0%	1%	1%	2%	1%	1%
grade 5 events	19269	35927	22409	50114	28451	22825
	3%	4%	3%	6%	4%	4%
grade 6 events	10949	186018	13165	171252	33794	12055
	1%	23%	2%	23%	4%	2%
grade 7 events	512820	371145	452516	376498	503808	439145
	85%	47%	78%	50%	73%	83%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
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
Pointing RA	189.909839	189.9135385067565	Subarray requested	NONE	NONE
Pointing Dec	-5.315329	-5.342355172574004	Alternating exposures requested	N	N
Pointing Roll	247.010857	247.1678271035812	Primary exposure time	0.000000	3.2
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-187.132523	-187.1228876879999			
SIM translation stage offset (mm)	-3	-3.009634895007935			
Observation start time	110163242.184000	110162118.2125			
Observation start date	2001-06-29T00:52:58	2001-06-29T00:35:18			
Observation end time	110243217.184000	110244615.34073			
Observation end date	2001-06-29T23:05:53	2001-06-29T23:30:15			
Read mode	TIMED	TIMED			

## 2.3 Aspect



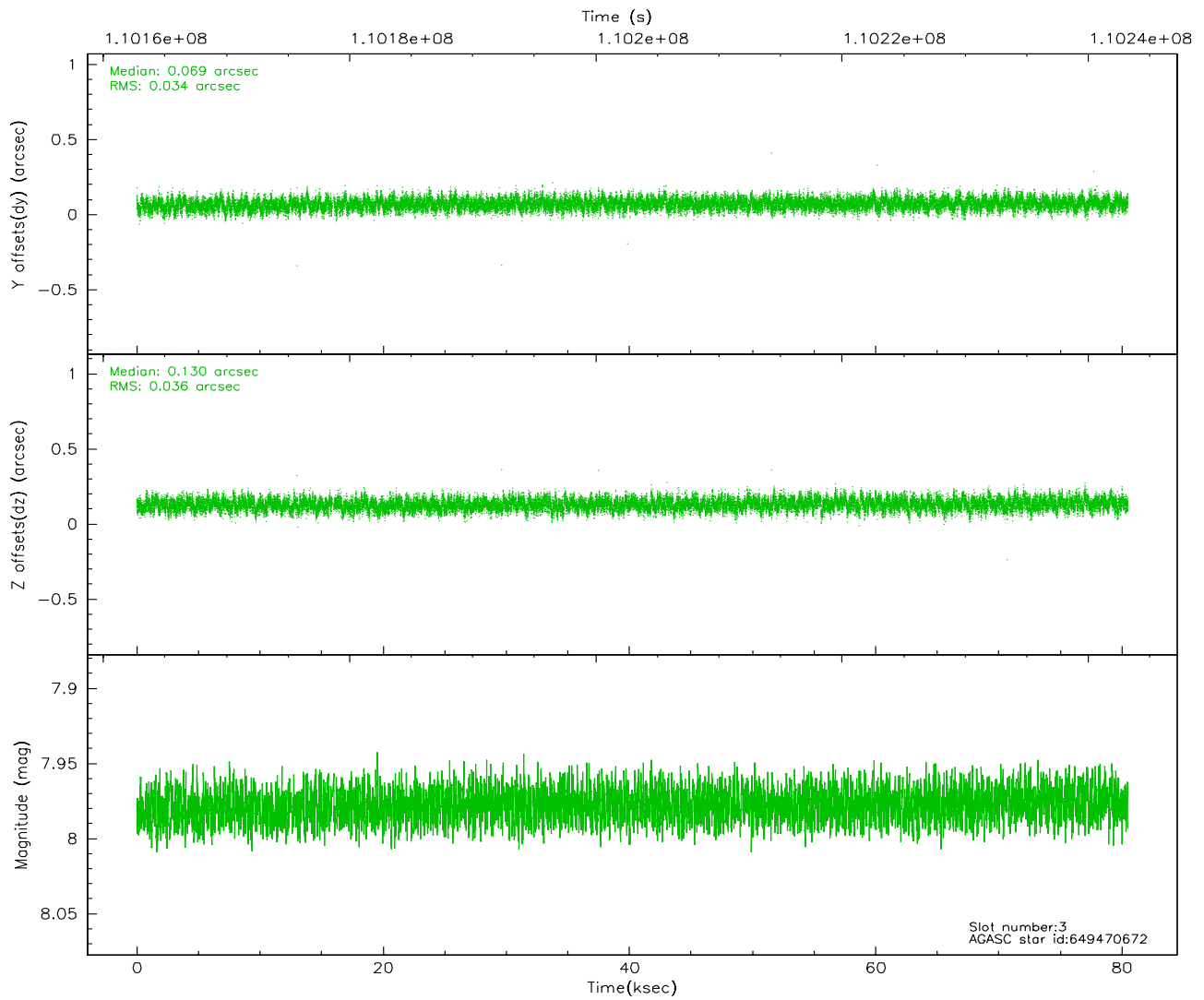
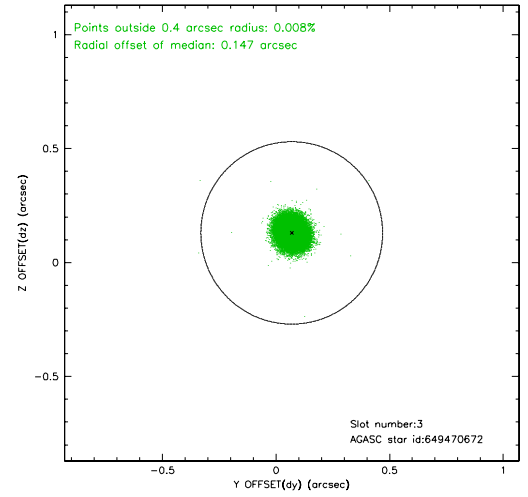
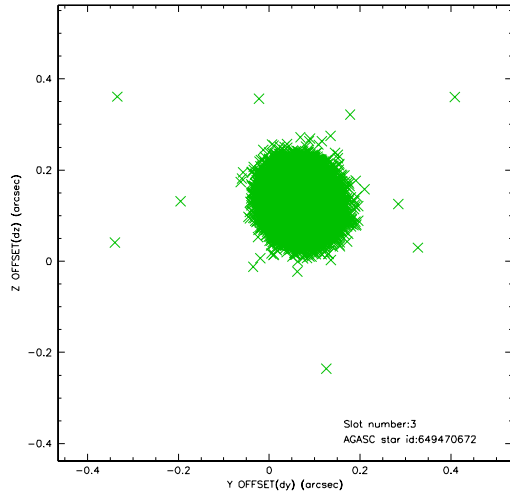


### Slot Statistics

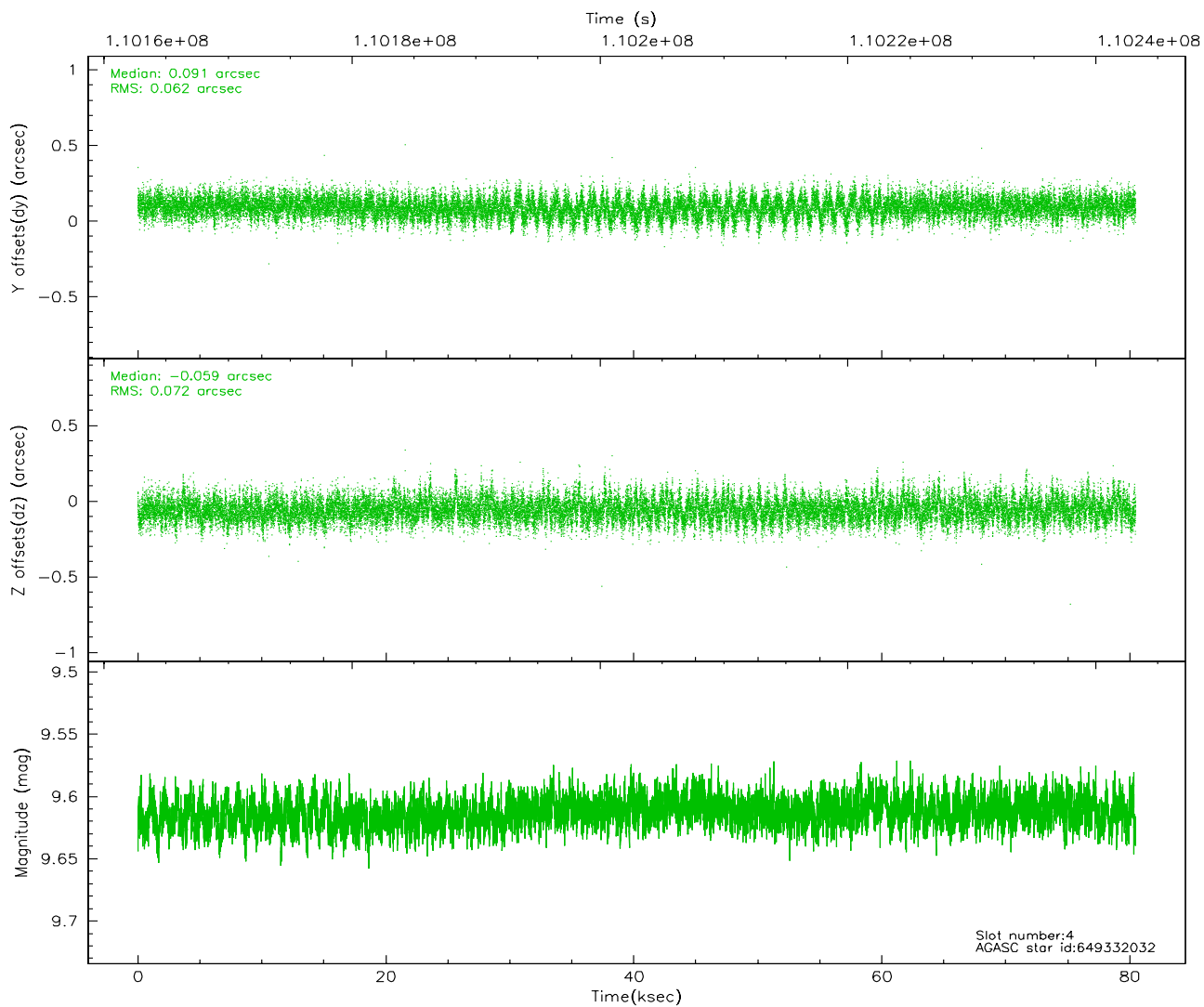
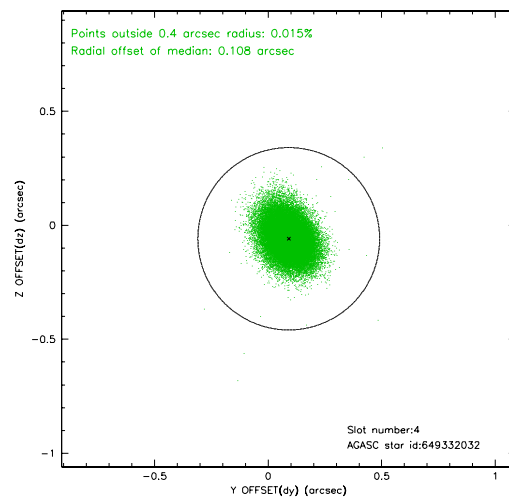
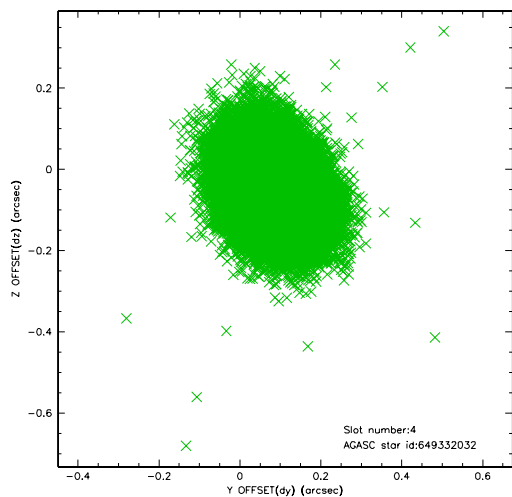
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	19625	-0.014	-0.020	0.008	0.017	0.000000	0.000000	-755.36	-1789.95
1	FID	ACIS-S-4	7.19	19624	-0.064	0.012	0.005	0.009	0.000000	0.000000	2157.90	118.64
2	FID	ACIS-S-5	7.23	19625	0.047	0.017	0.008	0.019	0.000000	0.000000	-1808.23	112.22
3	GUIDE	649470672	7.98	39171	0.069	0.130	0.053	0.085	190.035984	-5.984080	2039.71	1357.39
4	GUIDE	649332032	9.61	39226	0.091	-0.059	0.100	0.166	189.579865	-5.358550	605.50	-1026.93
5	GUIDE	649331320	9.90	39218	0.136	-0.236	0.125	0.202	189.163588	-5.422718	1402.11	-2309.65
6	GUIDE	649334280	9.95	39209	-0.075	-0.058	0.126	0.204	189.318029	-5.004690	-199.68	-2389.40
7	GUIDE	649076280	9.92	39217	-0.226	0.221	0.144	0.237	190.733083	-4.962792	-2320.37	2224.08

## 2.4 Star Slots

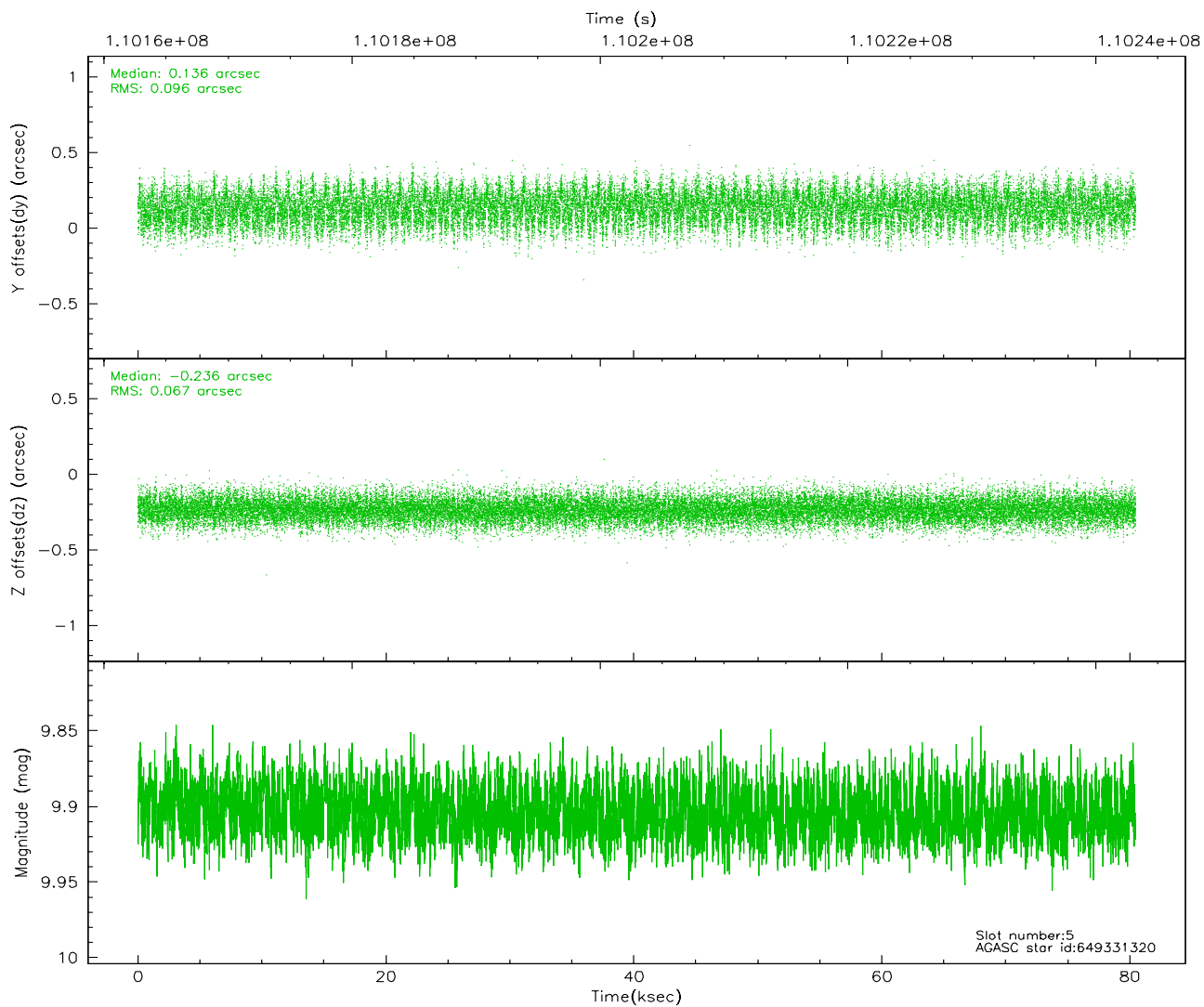
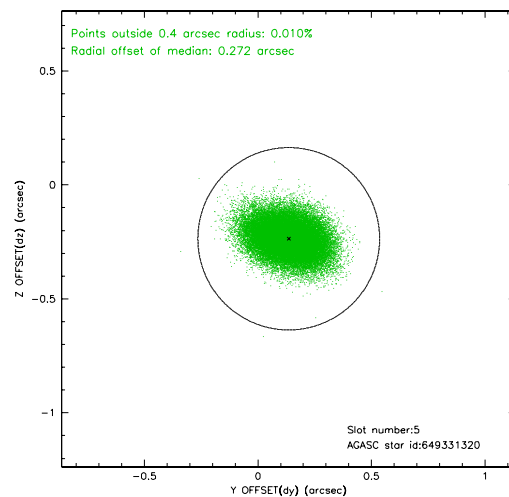
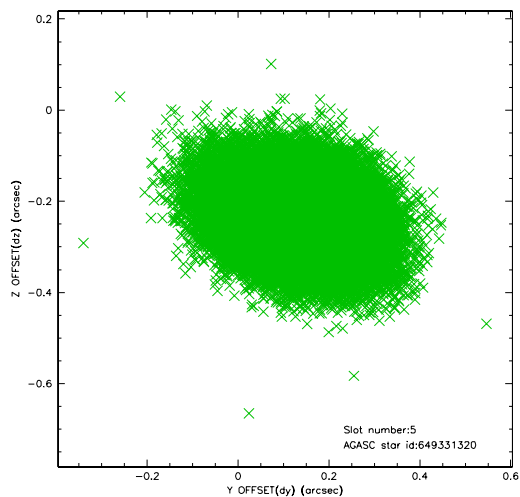
### 2.4.1 Slot 3



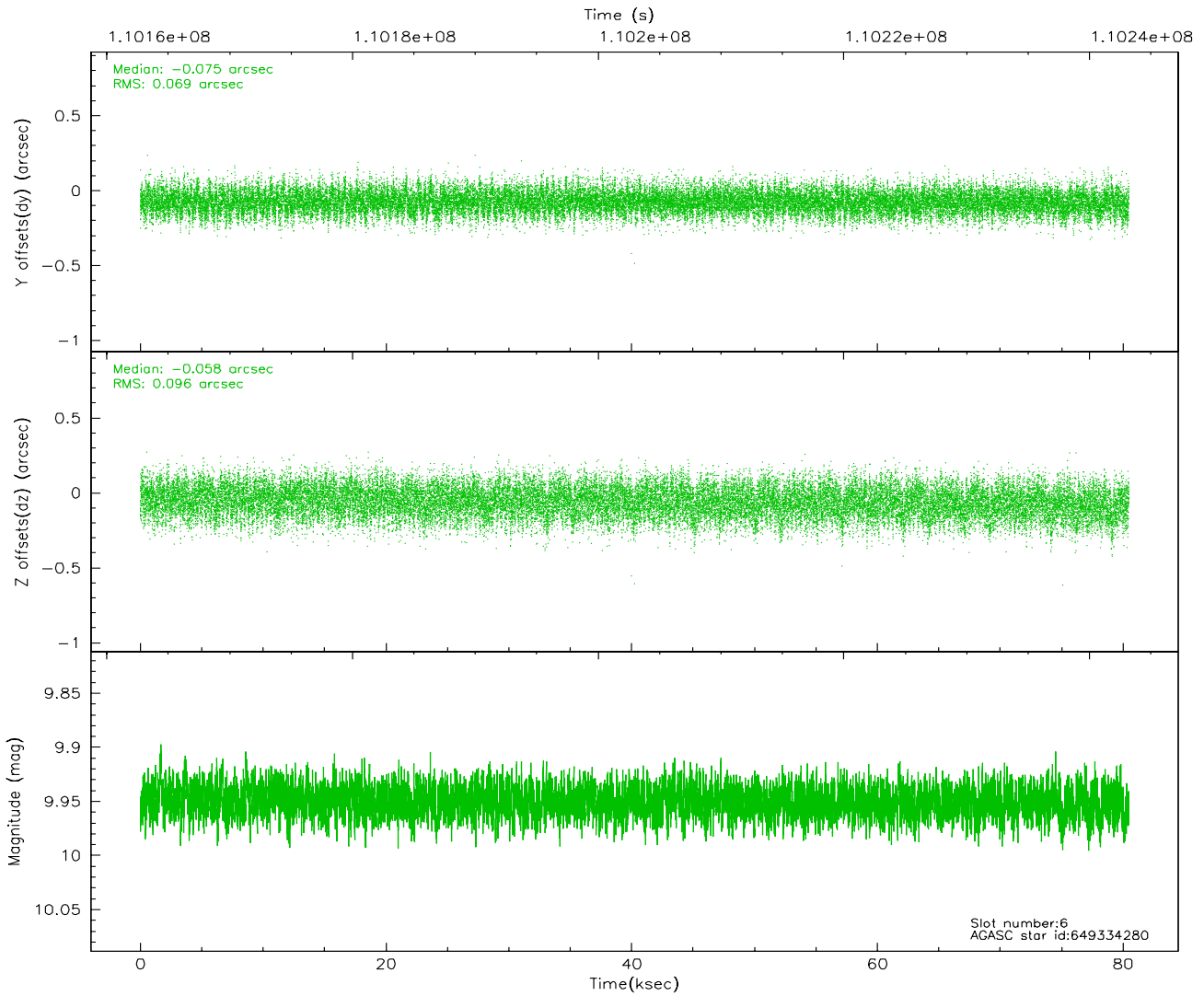
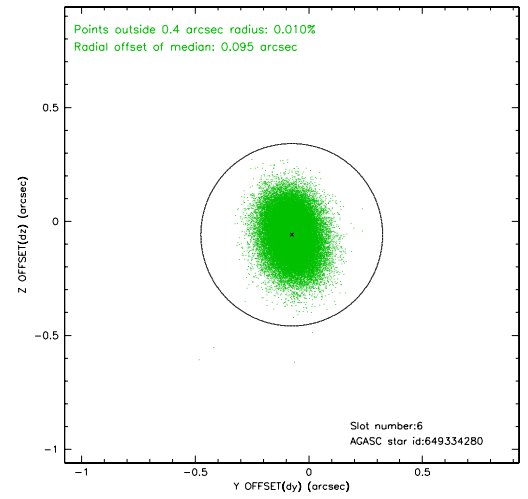
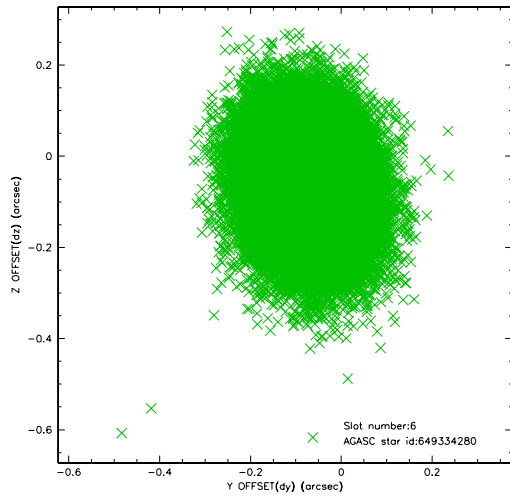
## 2.4.2 Slot 4



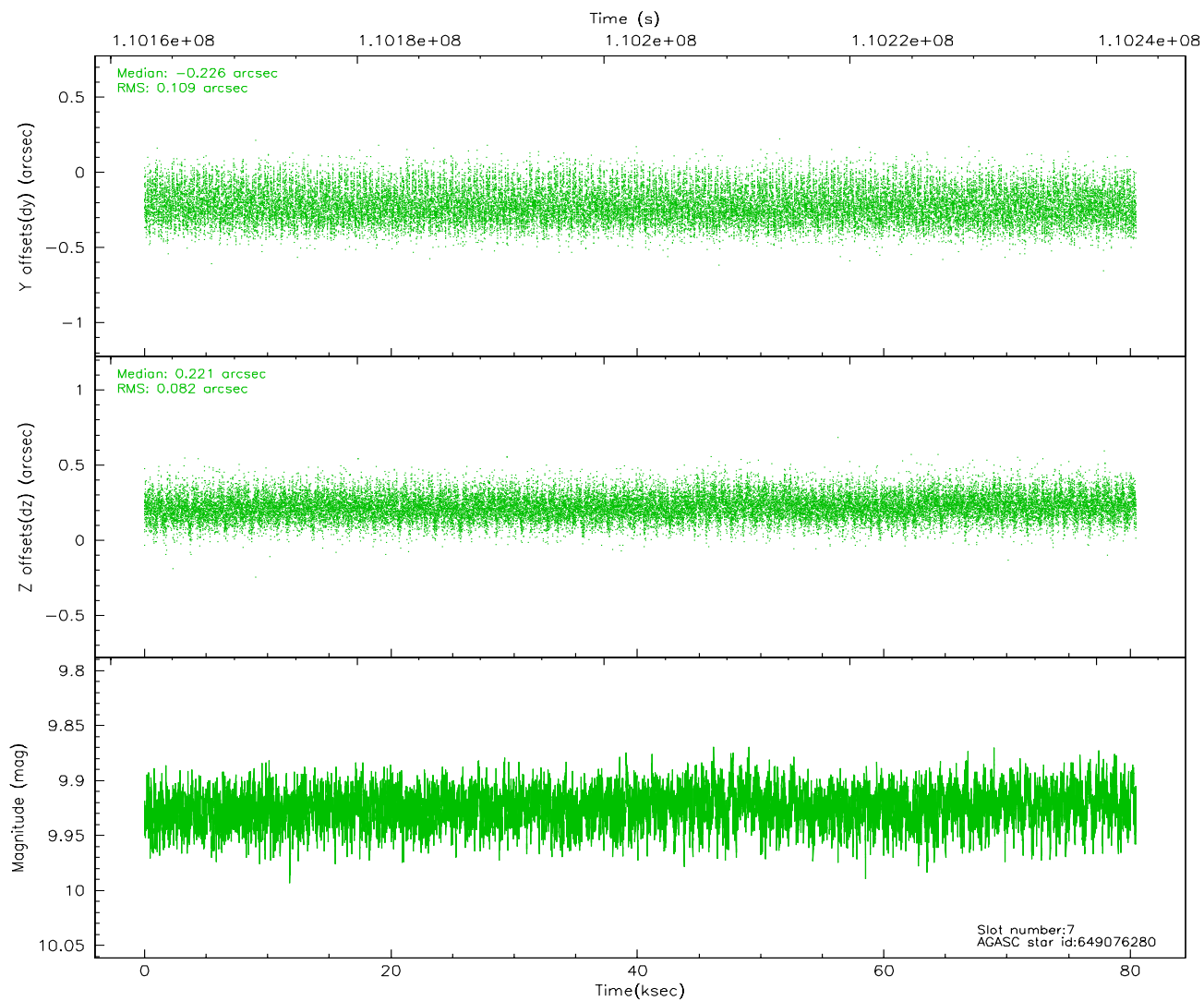
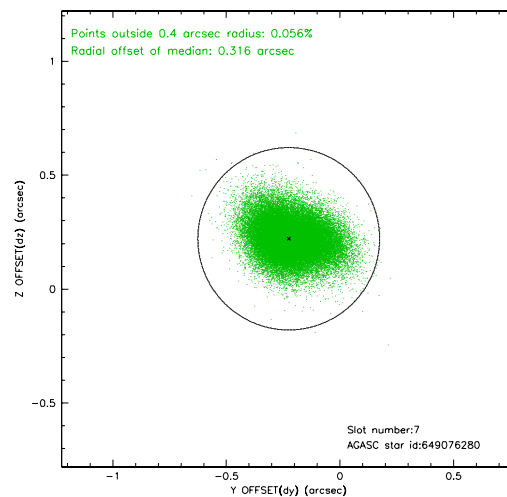
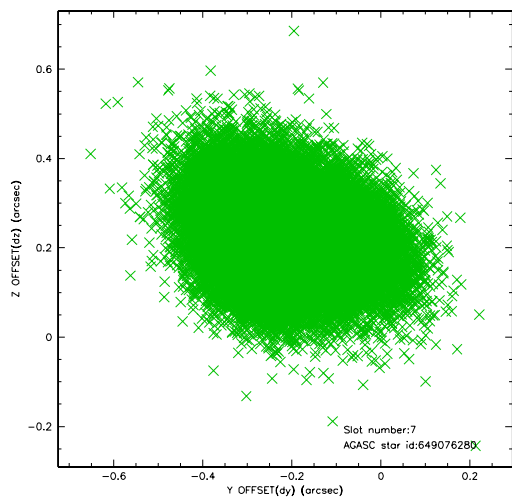
### 2.4.3 Slot 5



### 2.4.4 Slot 6

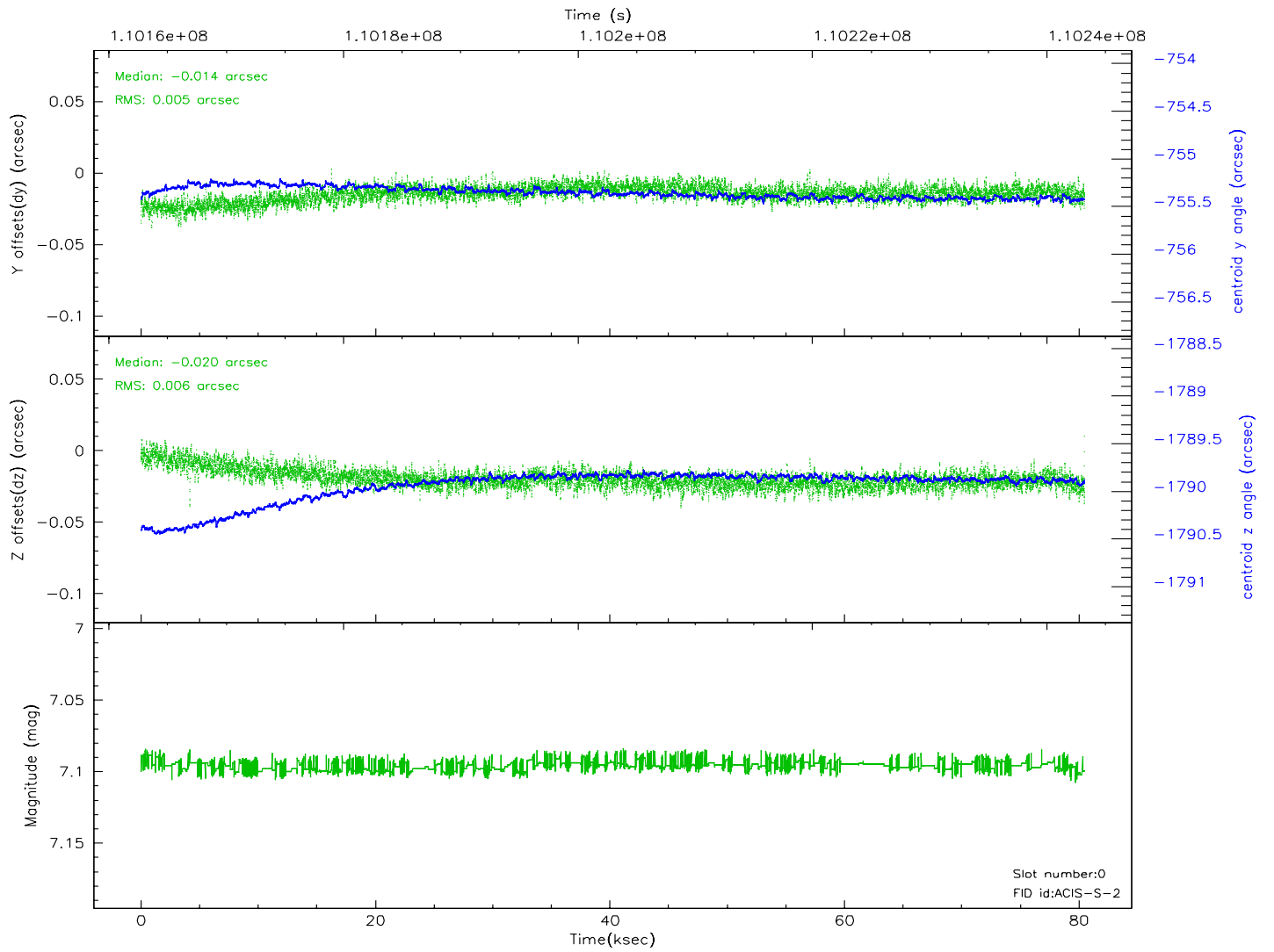
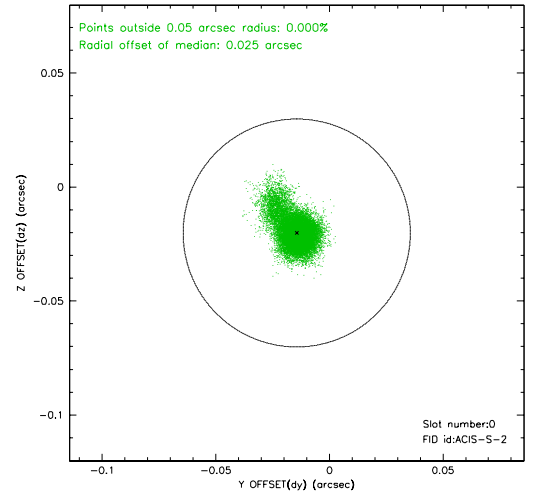
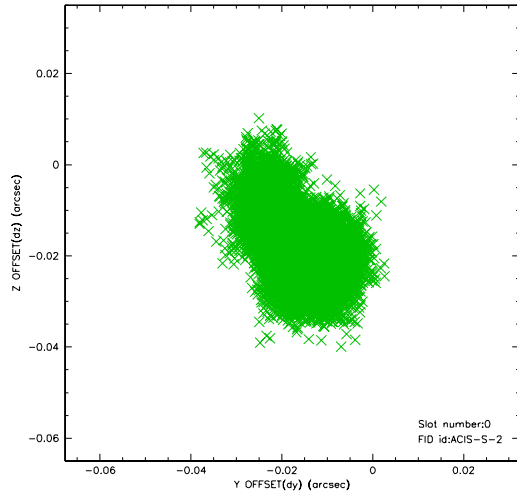


## 2.4.5 Slot 7

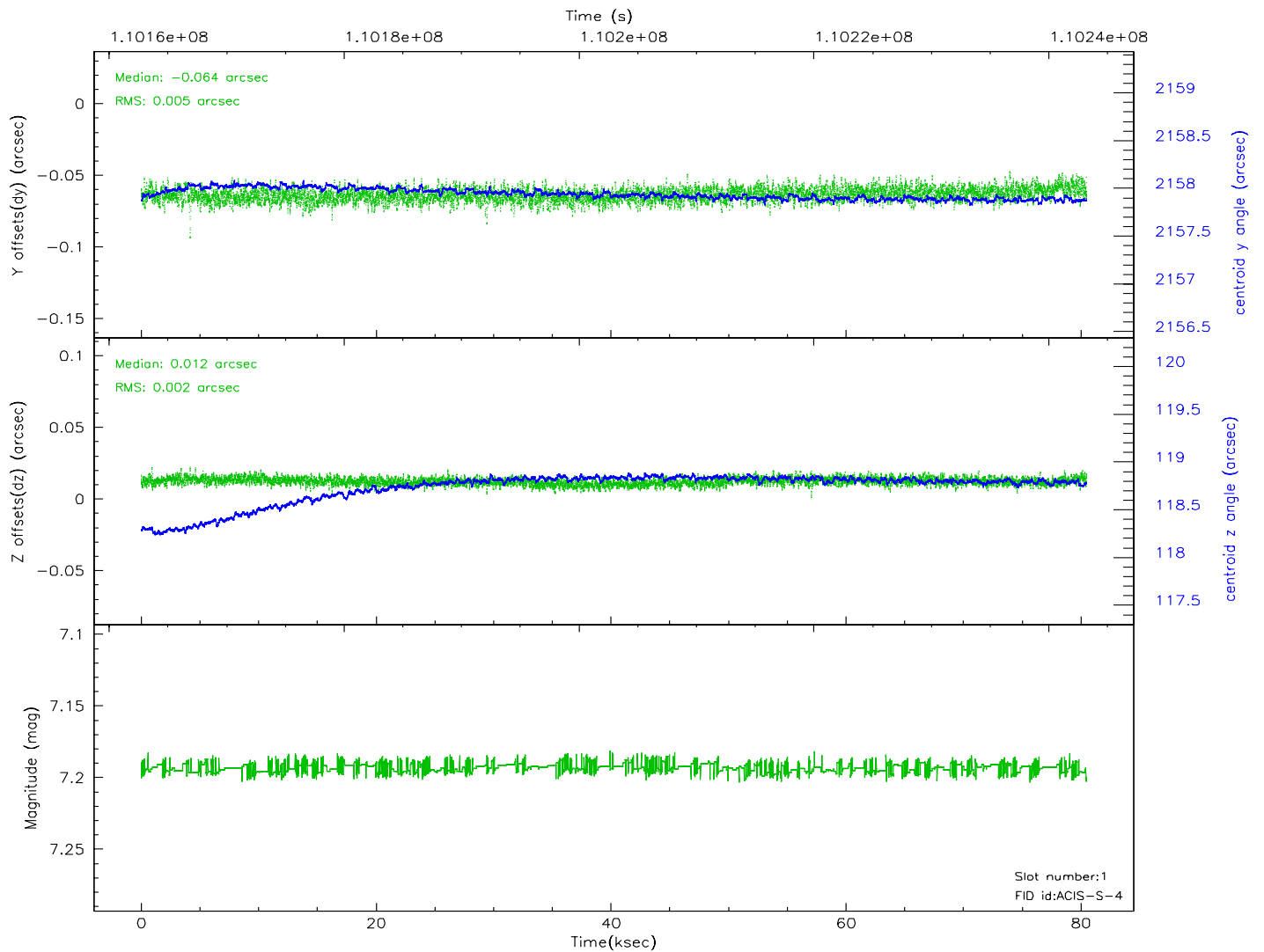
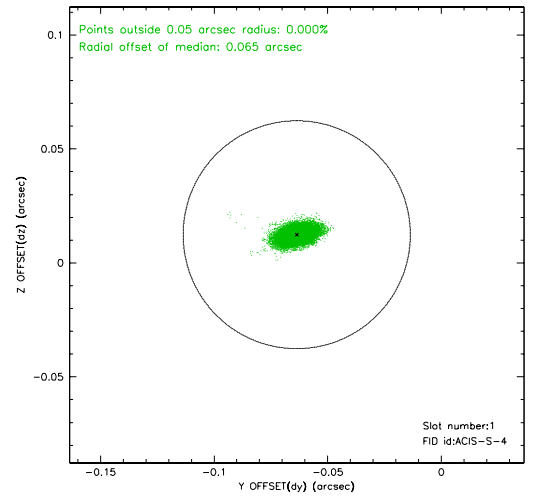
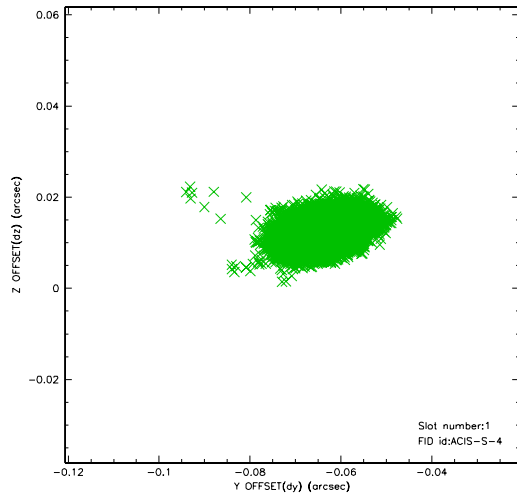


## 2.5 FID Slots

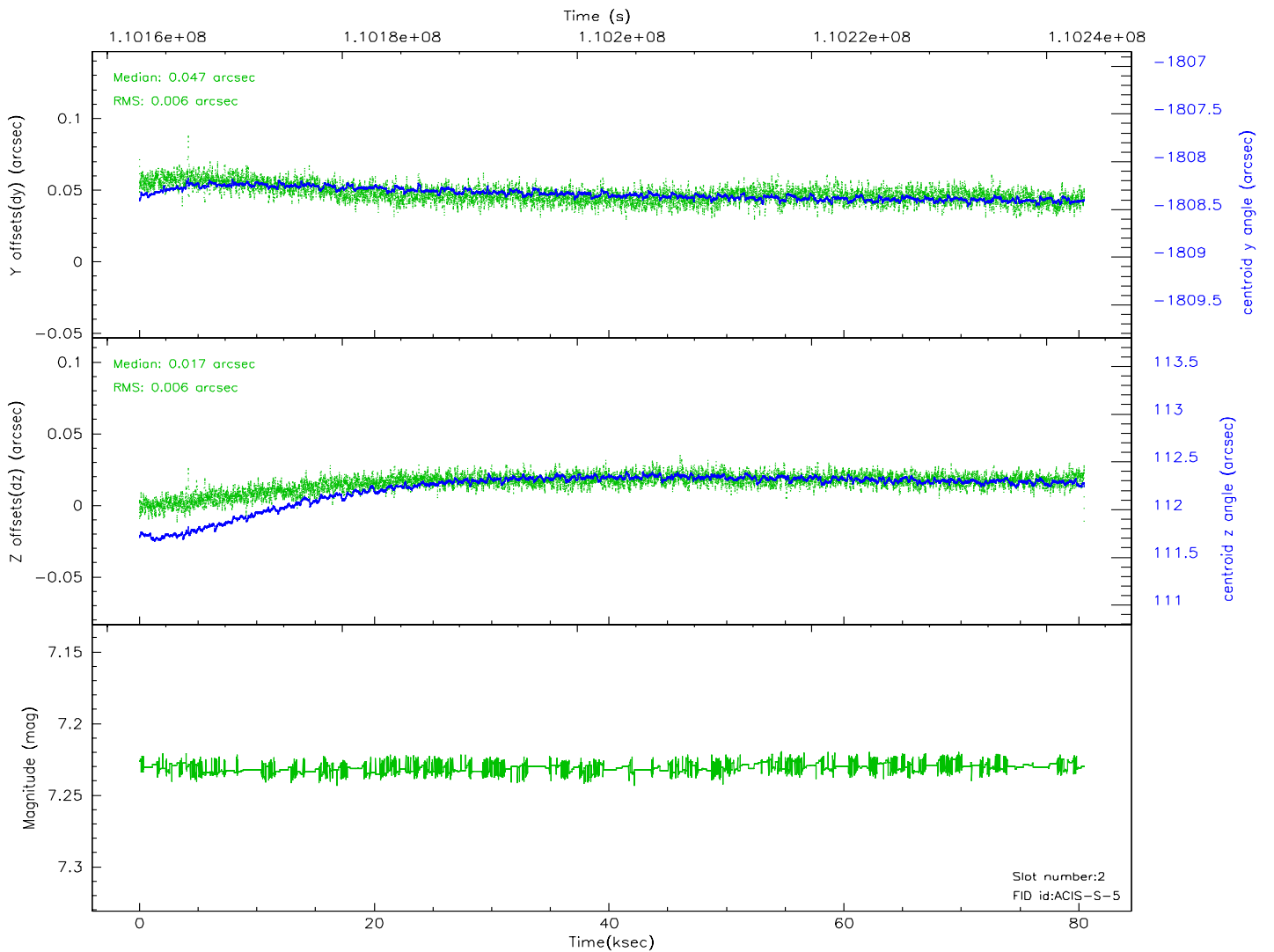
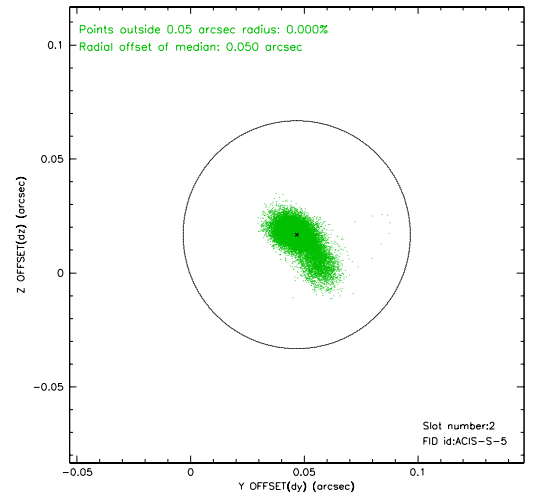
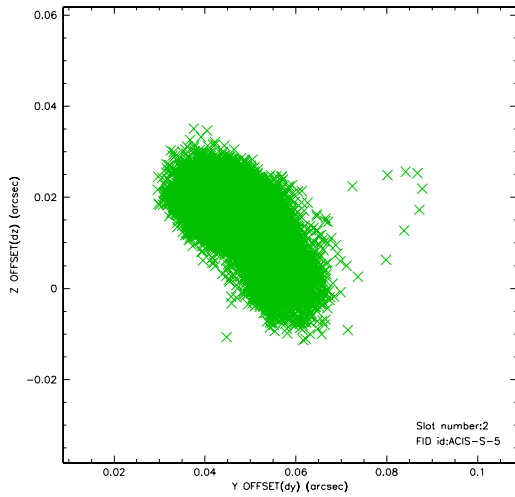
### 2.5.1 Slot 0



## 2.5.2 Slot 1

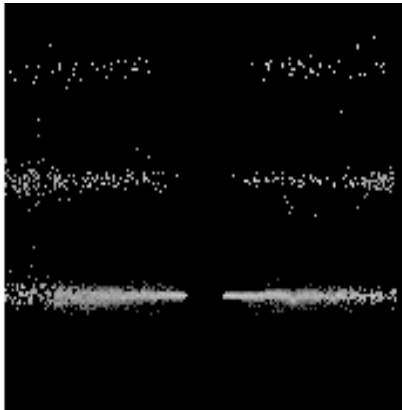


### 2.5.3 Slot 2

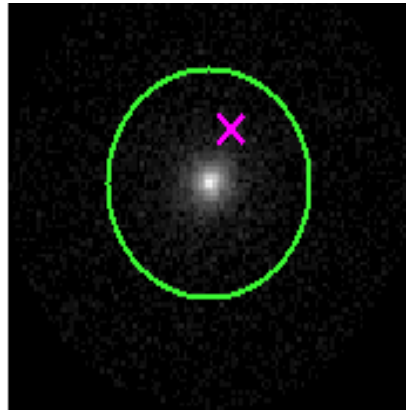


# 3 Gratings

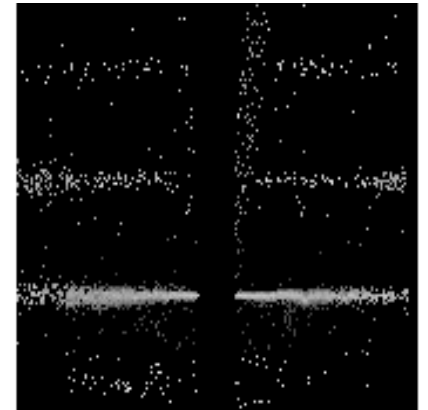
## 3.1 HEG Arm



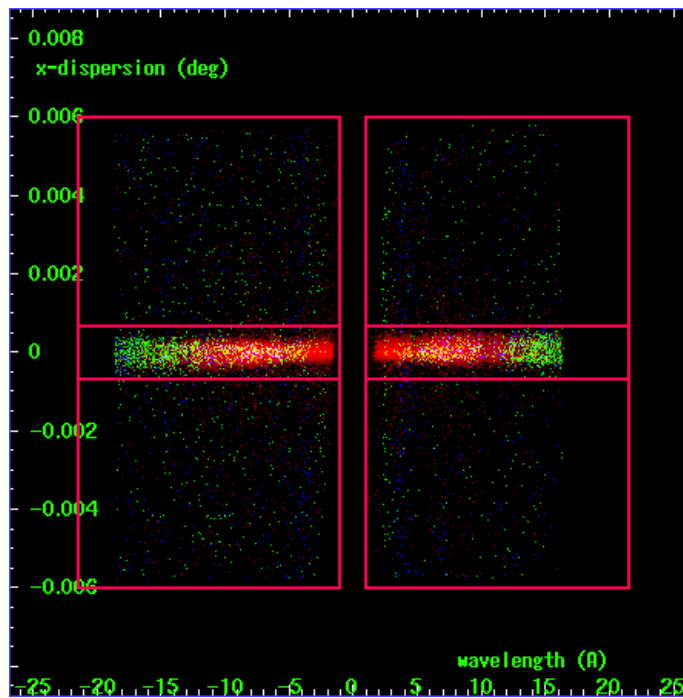
HEG Order Sort 123



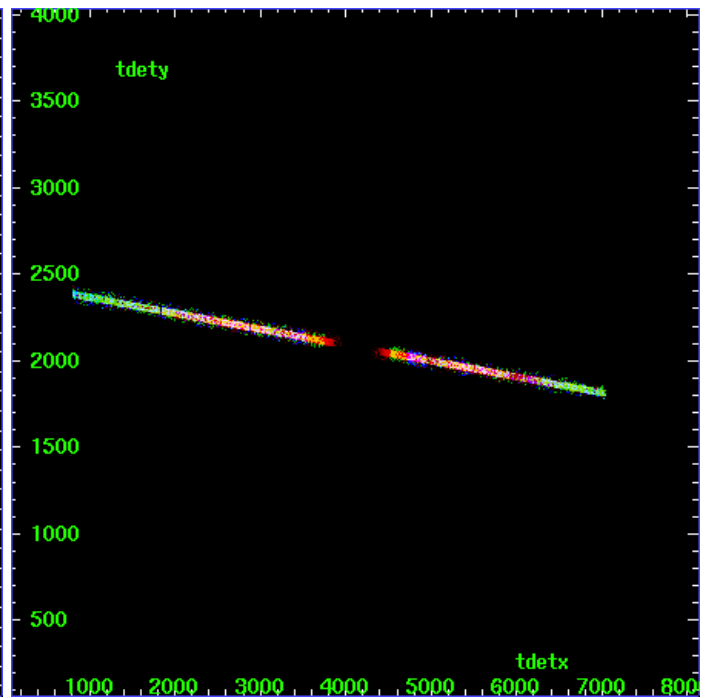
HEG Zero Order



HEG Order Sort ALL

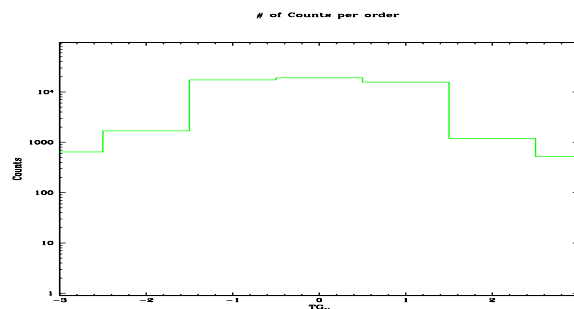


Spot Image HEG

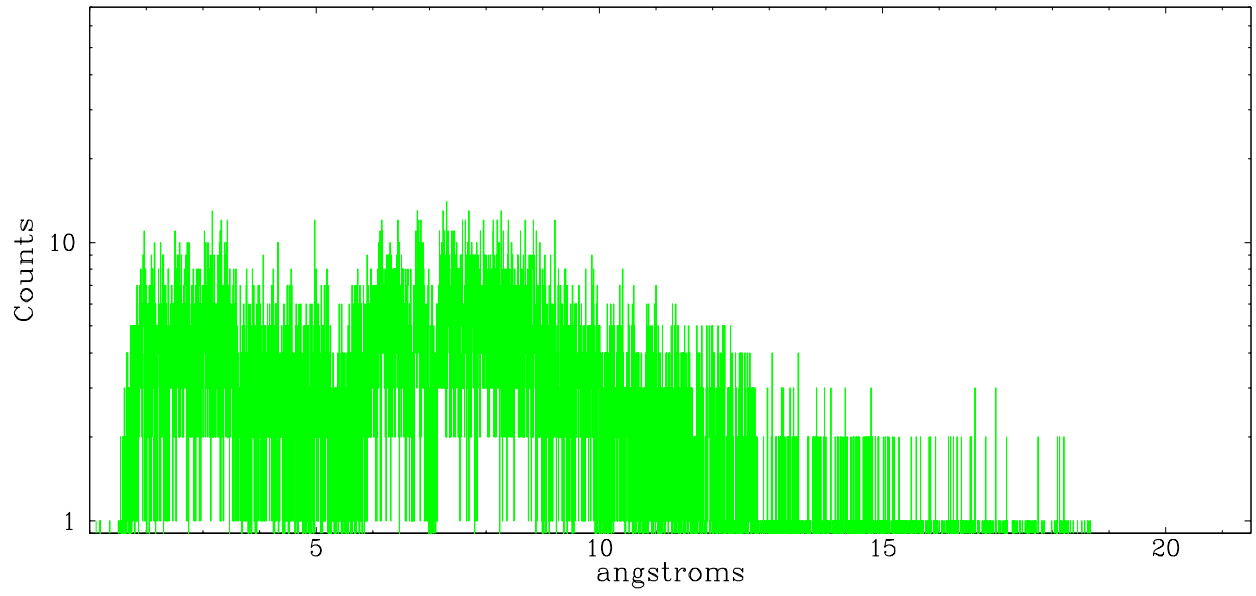


Full Detector HEG

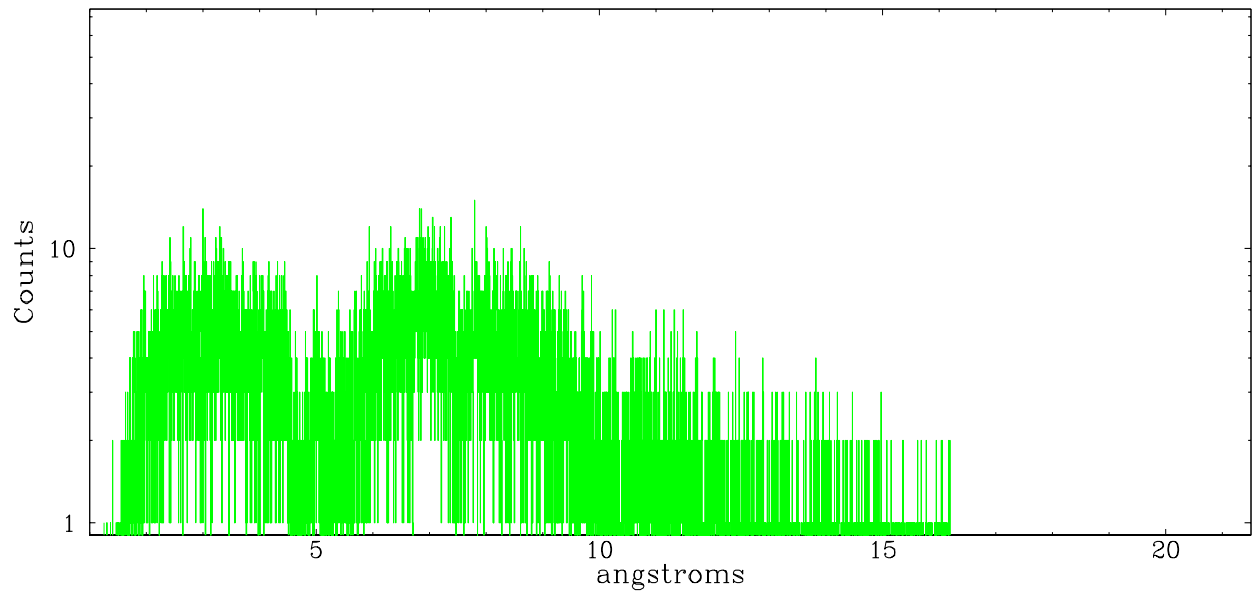
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	640	1685	17404	19057	15715	1201	521



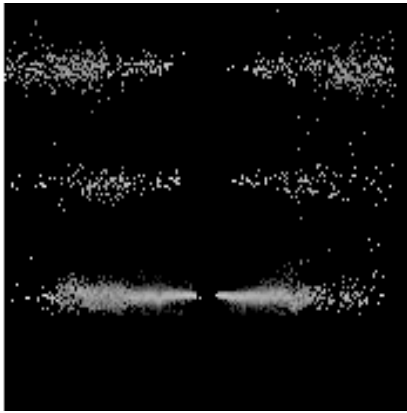
heg order -1



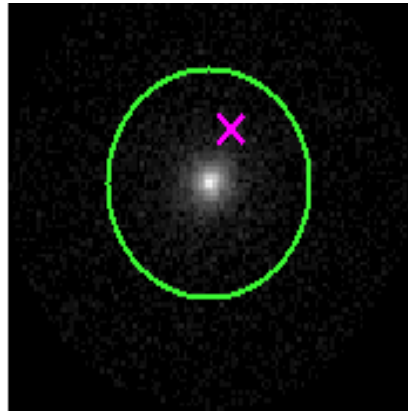
heg order +1



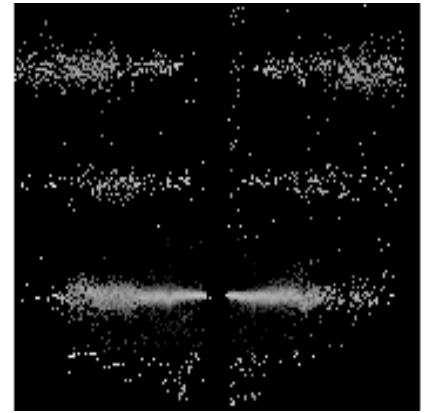
### 3.2 MEG Arm



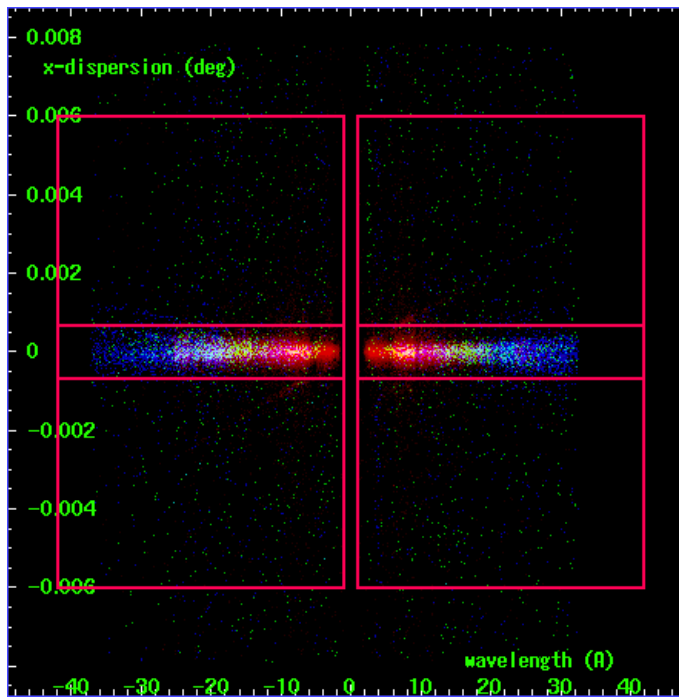
MEG Order Sort 123



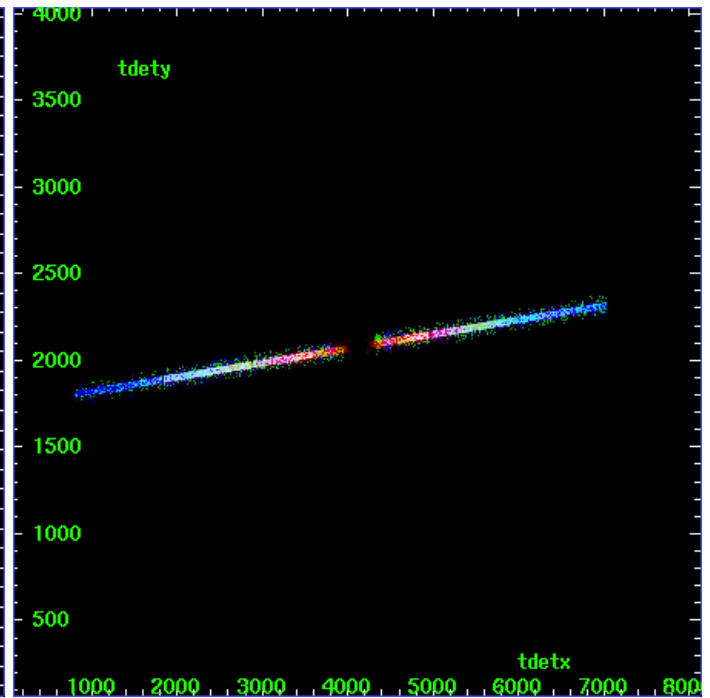
MEG Zero Order



MEG Order Sort ALL

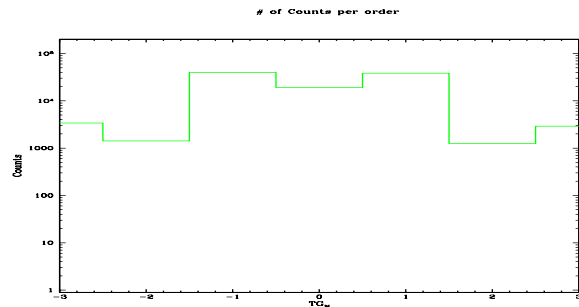


Spot Image MEG

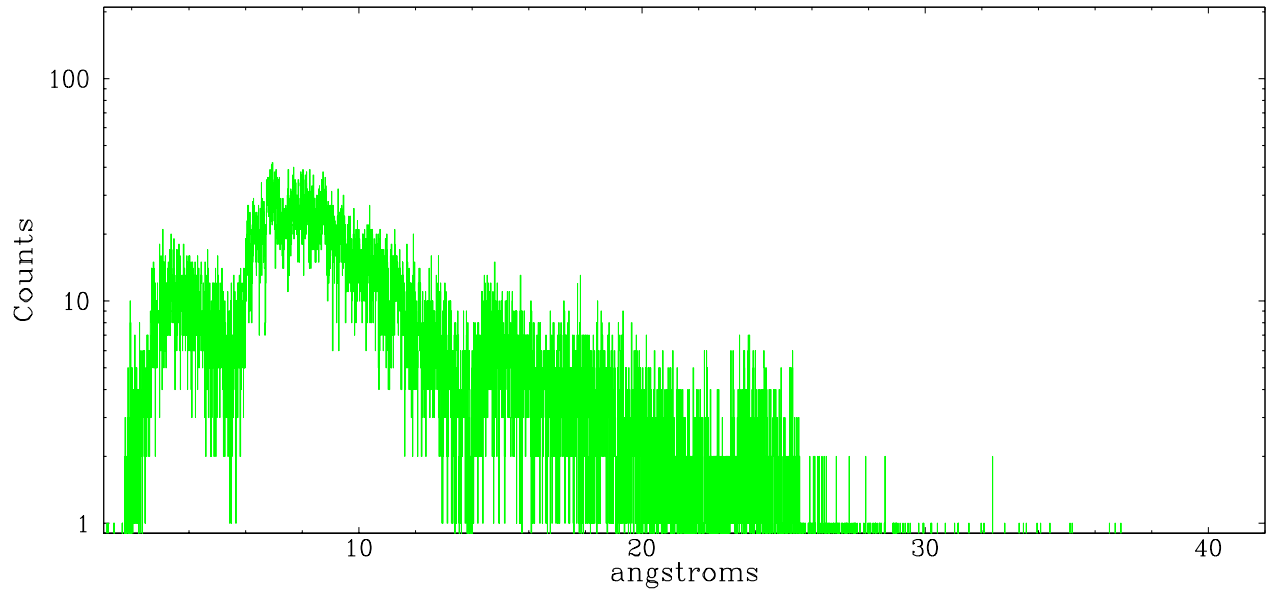


Full Detector MEG

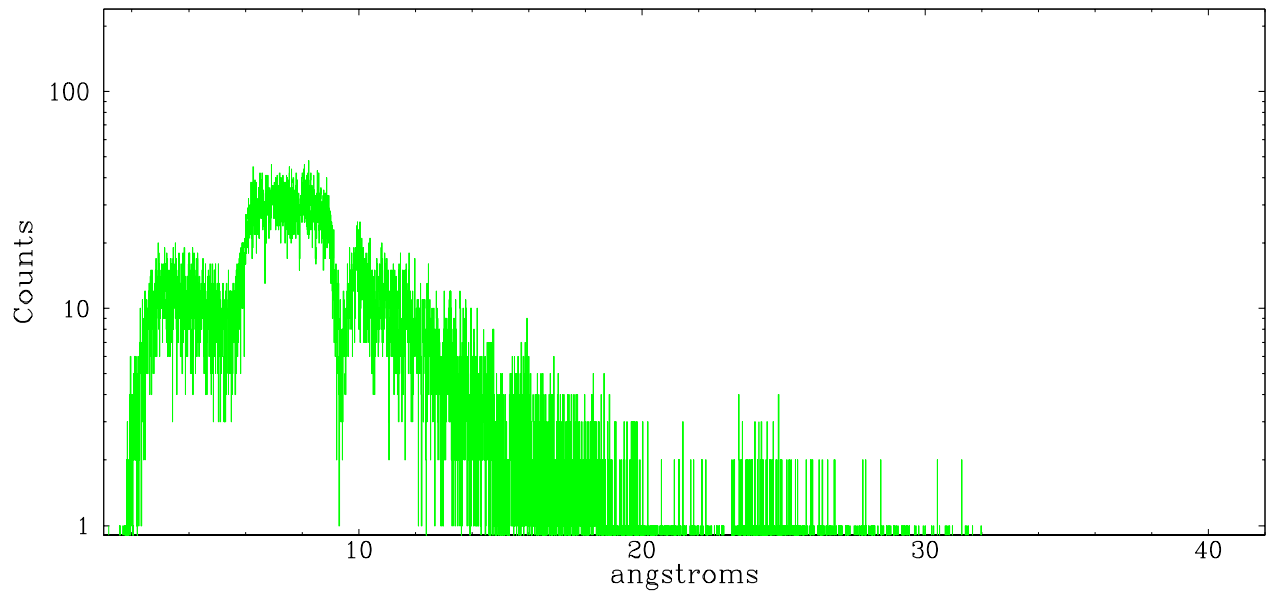
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	3398	1417	39942	19057	38507	1247	2898



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2007.03.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	79.9

## A.2 Comments

Coordinated with RXTE. Source is somewhat piled up and standard software processing technique using the tool `tgdetect` did not give an accurate position for the zeroth order. Zeroth order position for this observation has been determined using the known angle between the readout streak and the meg spectral arm. The newly determined zeroth order coordinates have been placed in the `*srcla.fits` file, replacing the coordinates determined by `tgdetect`. The sky coordinates used in this processing of the data are `x=4090.50`, `y=4083.27`; `ra=12:39:39.448`, `dec=-05:20:38.99`.