

# V&V Reference Report

## L2 ASCDS Version : 7.6.8.1

Observation 4399 - L2 Version 001  
Chandra X-Ray Center

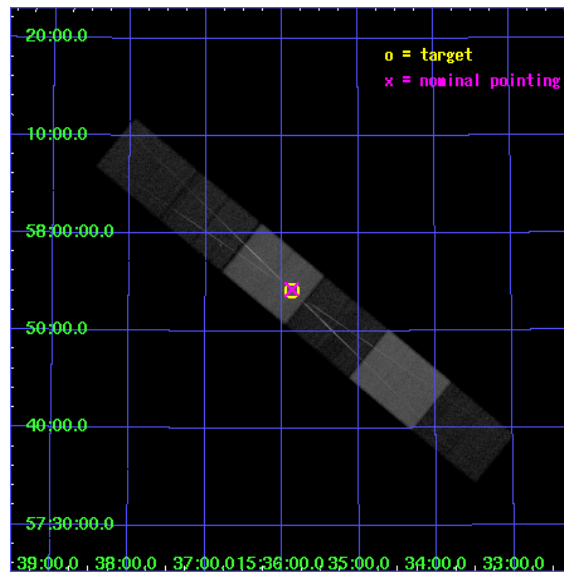
L2 Processing Date : Aug 10 2006

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# 1 Front

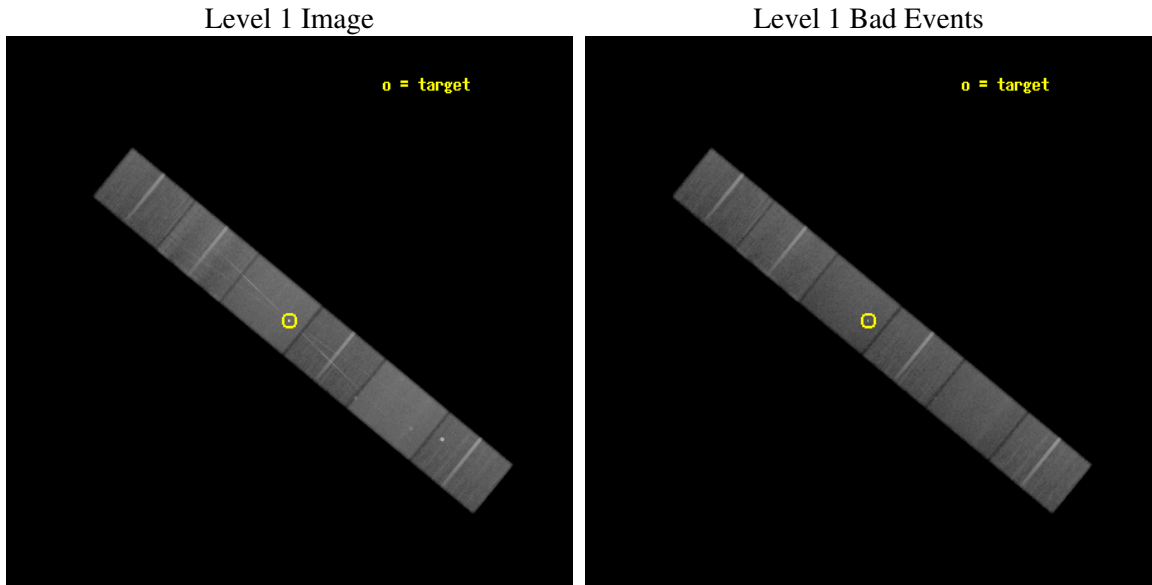
seq_num	700629
obs_id	4399
title	PROBING THE WARM ABSORBER/EMITTER IN THE SEYFERT 1 GALAXY MARKARIAN 290
observer	Prof. Claude Canizares
object	MARKARIAN 290
dtcycle	0
cycle	P
ra_targ	233.967917
dec_targ	57.9025
ra_nom	233.96810769328
dec_nom	57.90473514321
roll_nom	219.40944446958
revision	2
ontime	85142.5
livetime	83767.374775682
ontime4	85139.959129423
ontime5	85142.5
ontime6	85142.5
ontime7	85142.5
ontime8	85139.958989918
ontime9	85142.5
l2events	625201



## 2 OBI

### 2.1 OBI

#### 2.1.1 Images

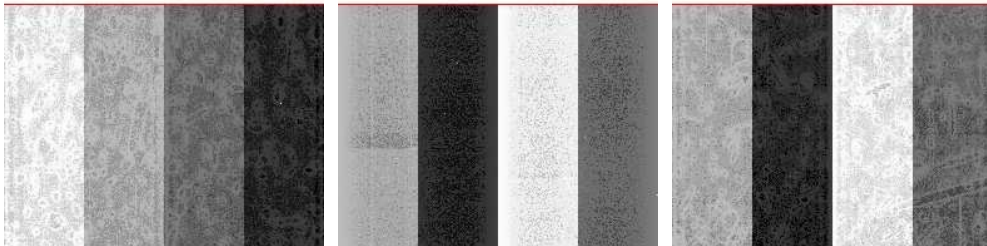


#### 2.1.2 Bias

Chip 4

Chip 5

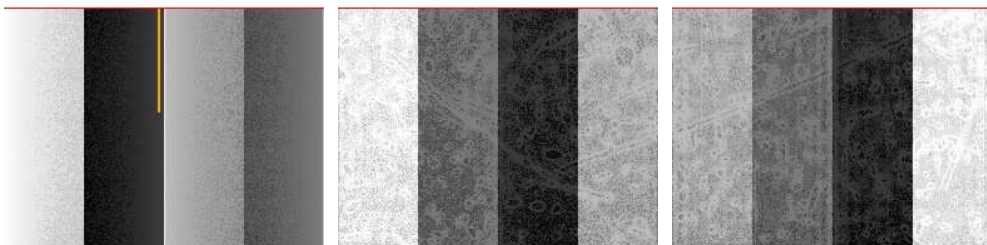
Chip 6



Chip 7

Chip 8

Chip 9



### 2.1.3 Parameters

obi_num	1
ascdsver	7.6.8.1
caldsver	3.2.2
date	2006-08-10T06:32:15
revision	2

sched_exp_time	85000.000000
ontime	85149.233582228
ontime4	85146.692711651
ontime5	85149.233582228
ontime6	85149.233582228
ontime7	85149.233582228
ontime8	85146.692572147
ontime9	85149.233582228
l1events	2784982

### 2.1.4 Events

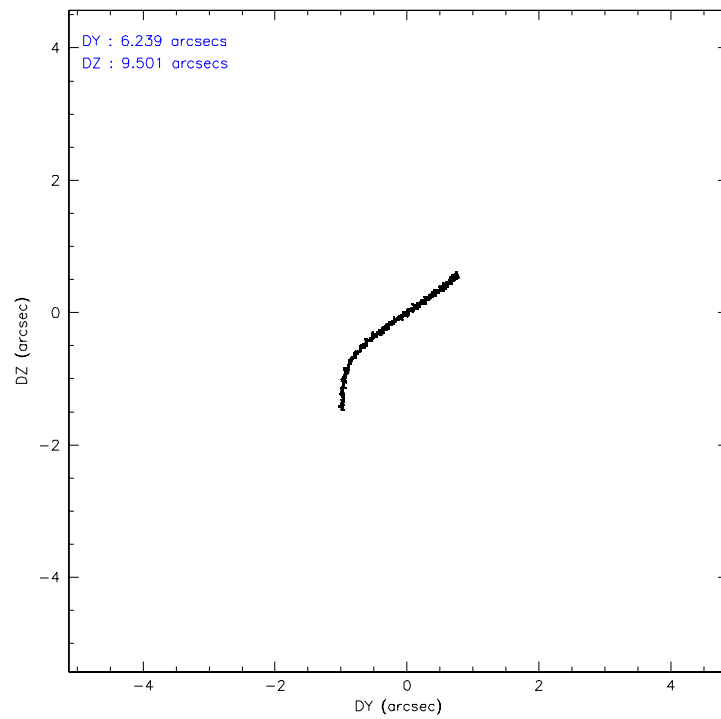
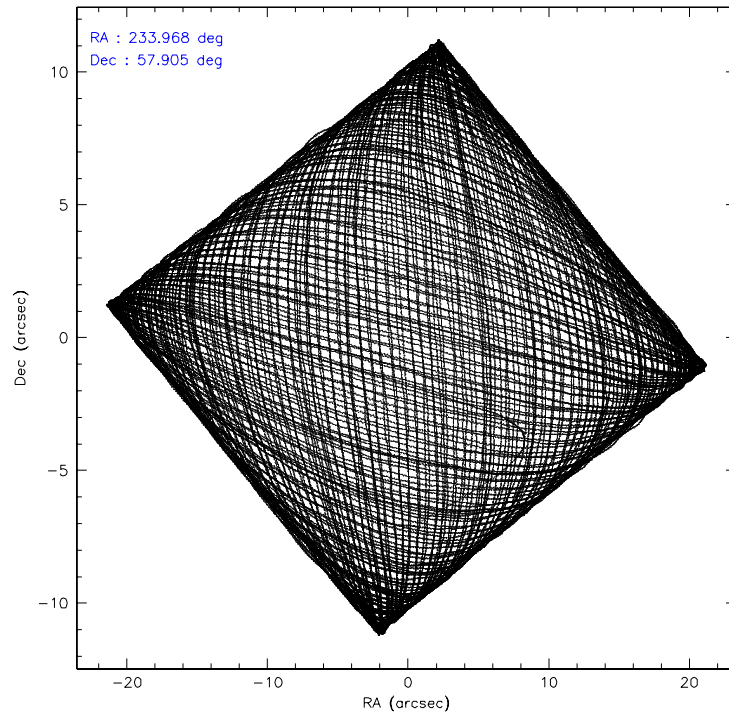
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	434209	550789	397271	533176	489630	379907
rejected events	377783	313216	342243	312230	384525	332073
rejected %	87%	56%	86%	58%	78%	87%

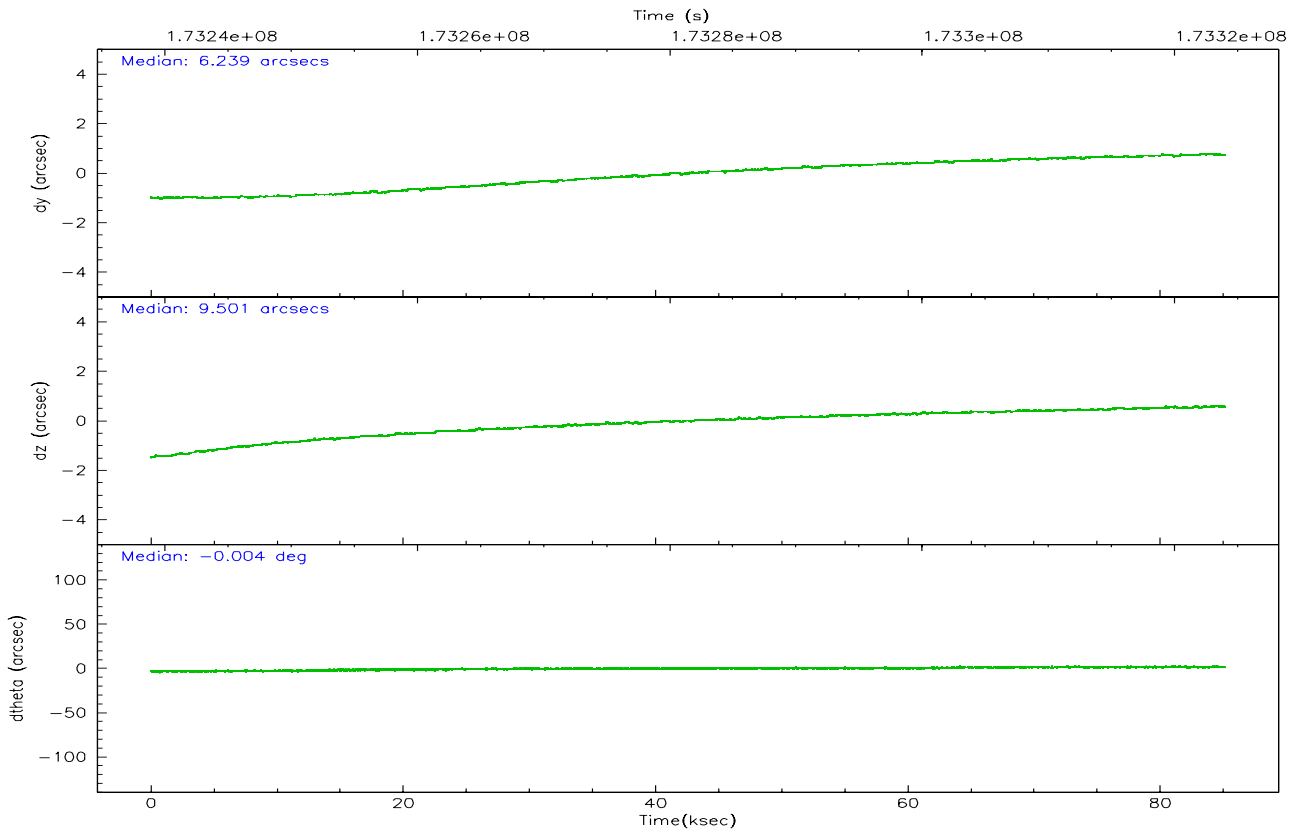
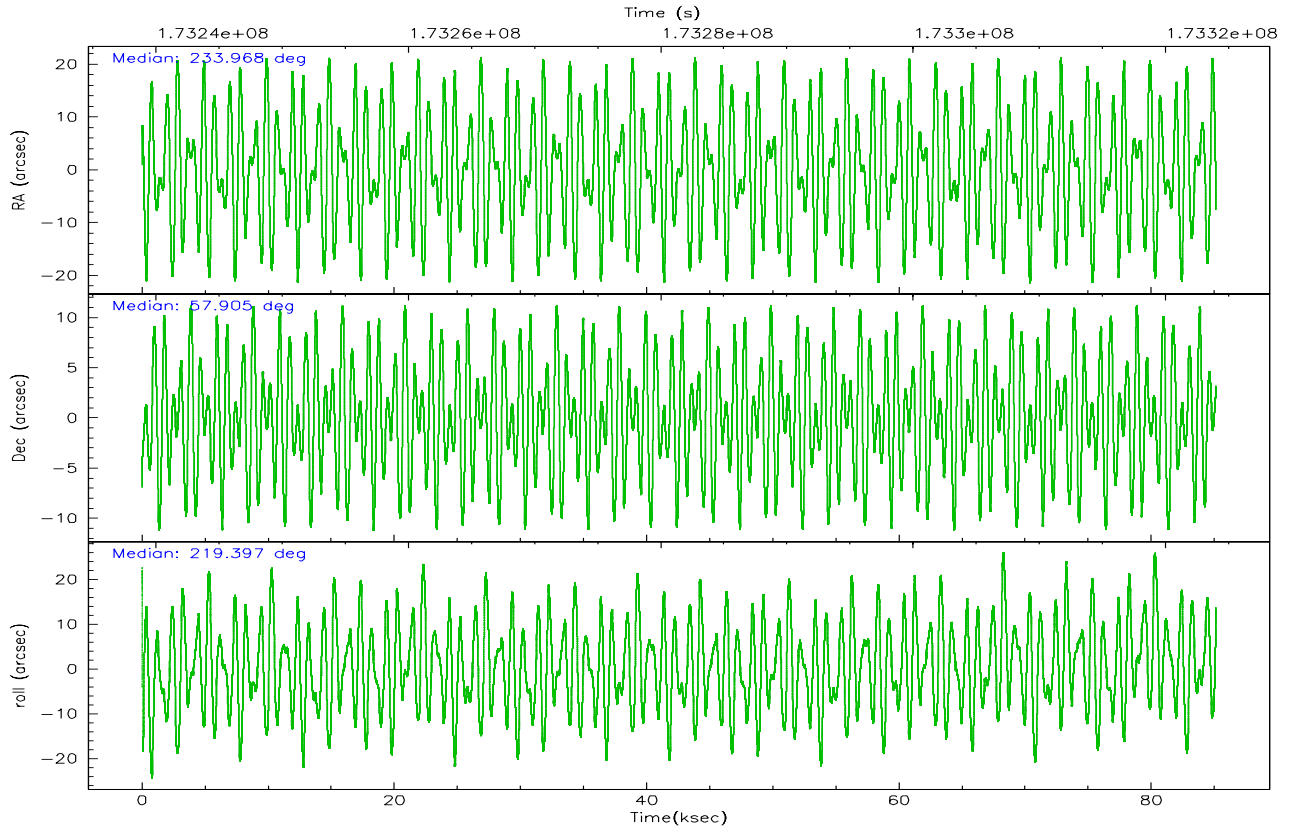
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	28745	11595	25149	16550	34958	19660
	6%	2%	6%	3%	7%	5%
grade 1 events	323	493	180	433	315	167
	0%	0%	0%	0%	0%	0%
grade 2 events	9937	73409	10285	53656	22060	9083
	2%	13%	2%	10%	4%	2%
grade 3 events	5241	6747	5222	14207	11287	5226
	1%	1%	1%	2%	2%	1%
grade 4 events	4906	6095	5001	13610	10537	4954
	1%	1%	1%	2%	2%	1%
grade 5 events	16053	27711	17080	37420	21817	17909
	3%	5%	4%	7%	4%	4%
grade 6 events	7605	139754	9378	122943	26298	8916
	1%	25%	2%	23%	5%	2%
grade 7 events	361399	284985	324976	274357	362358	313992
	83%	51%	81%	51%	74%	82%

## 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	On-chip summing requested	N	N
Observation mode	POINTING	POINTING	Subarray requested	CUSTOM	CUSTOM
Pointing RA	233.985471	233.968107693276	Subarray start row	1	1
Pointing Dec	57.930341	57.9047351432101	Subarray row count	774	774
Pointing Roll	219.238108	219.4094444695802	Alternating exposures requested	N	N
SIM focus pos (mm)	-0.684267	-0.6828225247311905	Primary exposure time	0.000000	2.5
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-187.132523	-187.1254020033014			
SIM translation stage offset (mm)	-3	-3.007120579706367			
Observation start time	173239033.184000	173237948.10728			
Observation start date	2003-06-29T01:56:09	2003-06-29T01:39:08			
Observation end time	173324033.184000	173324430.43596			
Observation end date	2003-06-30T01:32:49	2003-06-30T01:40:30			
Read mode	TIMED	TIMED			

## 2.3 Aspect



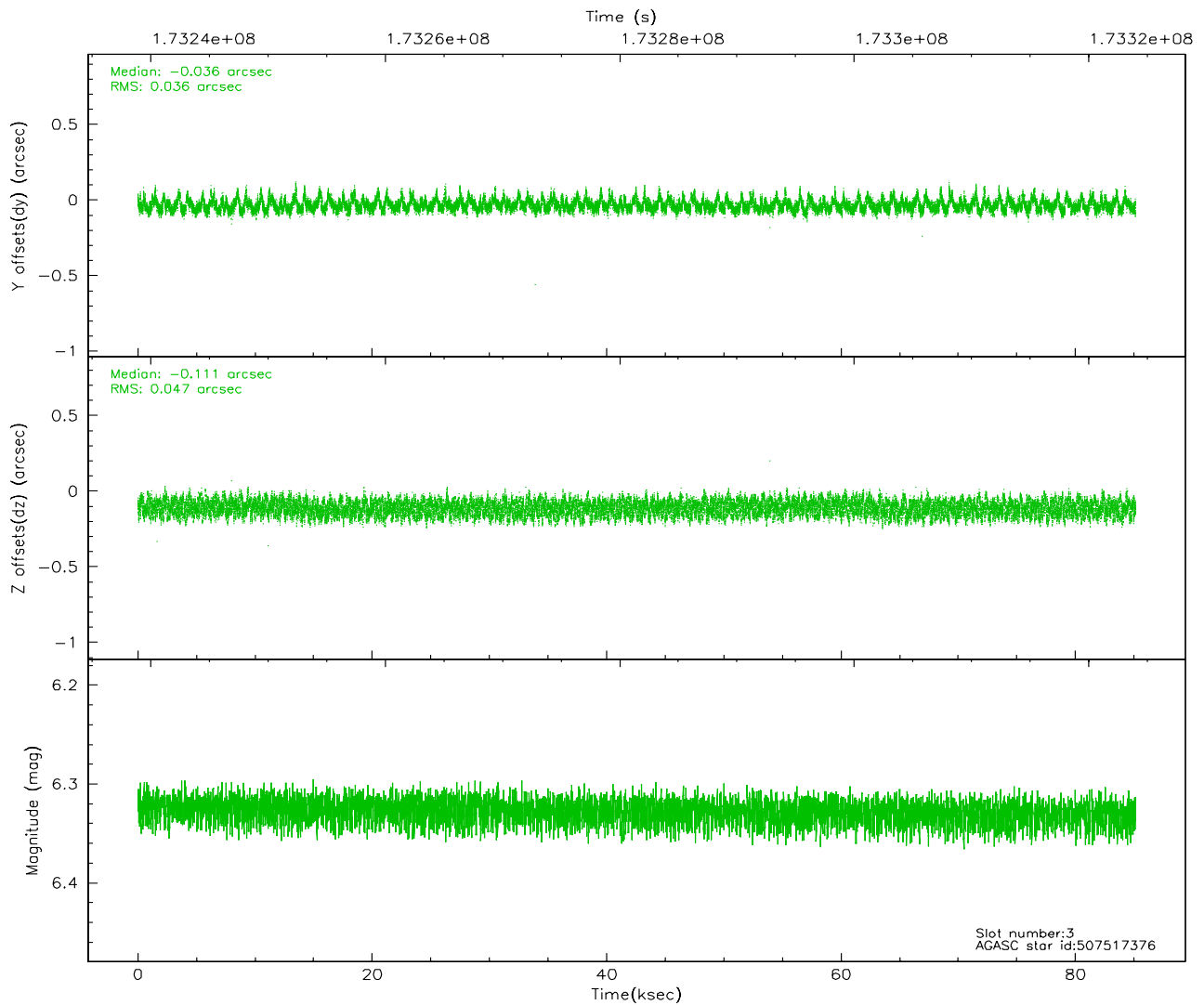
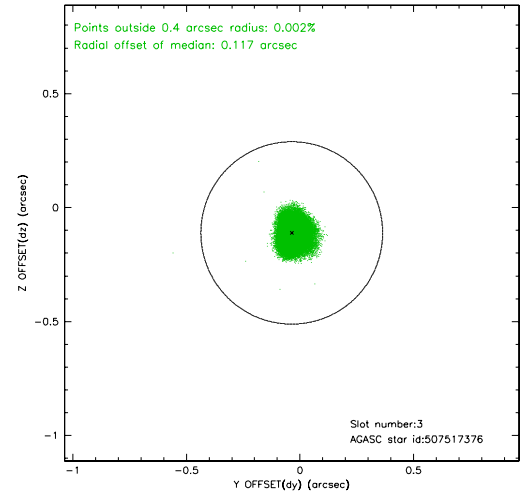
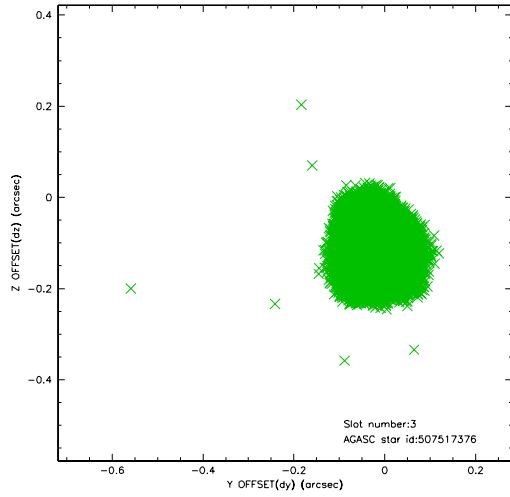


### Slot Statistics

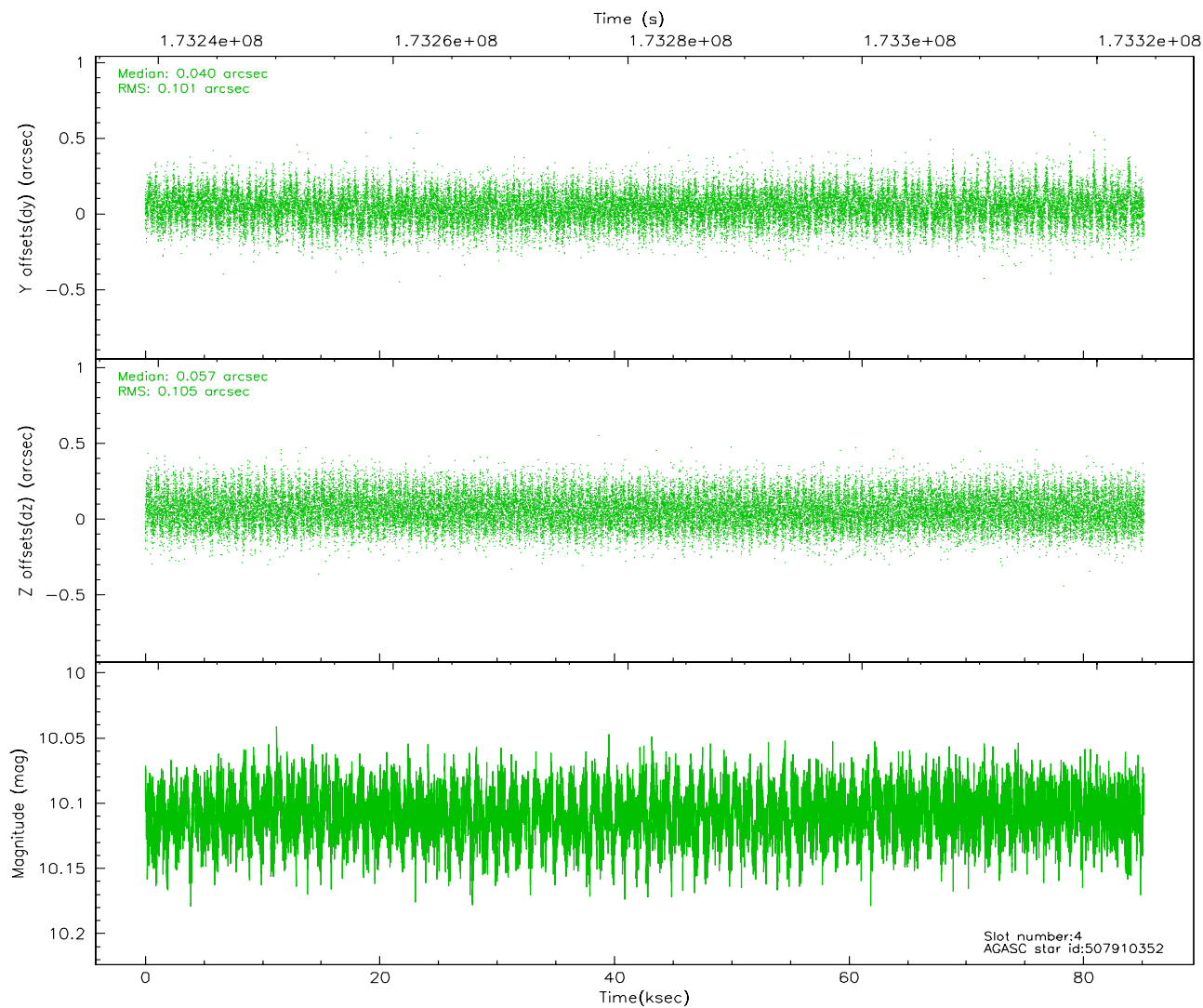
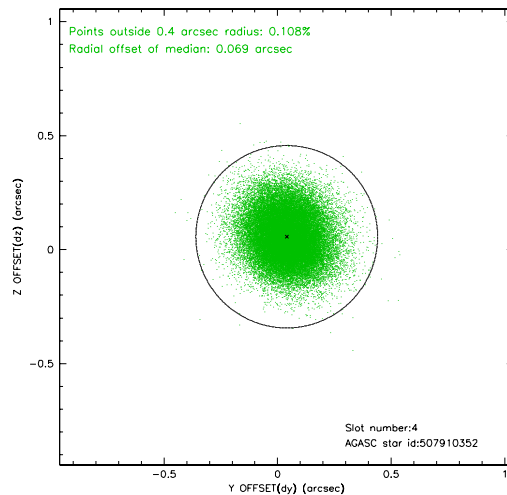
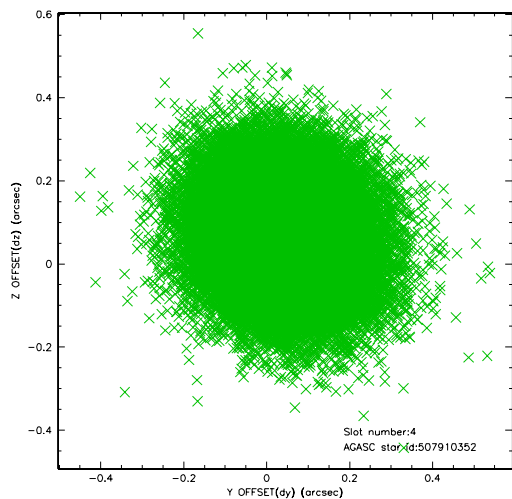
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	20767	-0.055	-0.033	0.021	0.030	0.000000	0.000000	-758.75	-1792.72
1	FID	ACIS-S-4	7.19	20766	0.047	0.035	0.034	0.055	0.000000	0.000000	2154.68	115.89
2	FID	ACIS-S-5	7.23	20766	-0.023	0.009	0.019	0.033	0.000000	0.000000	-1811.65	109.47
3	GUIDE	507517376	6.33	41534	-0.036	-0.111	0.065	0.099	234.727410	57.461777	-50.83	2208.97
4	GUIDE	507910352	10.11	41487	0.040	0.057	0.155	0.252	232.620414	57.785943	2341.64	-1274.38
5	GUIDE	507910944	9.11	41511	-0.119	-0.014	0.095	0.154	233.075683	57.963052	1264.24	-1199.01
6	GUIDE	507914840	9.60	41507	0.102	-0.027	0.122	0.197	234.138477	57.741300	202.82	712.78
7	GUIDE	507915904	7.82	41532	0.003	0.099	0.065	0.105	234.676266	57.520719	-106.01	1981.70

## 2.4 Star Slots

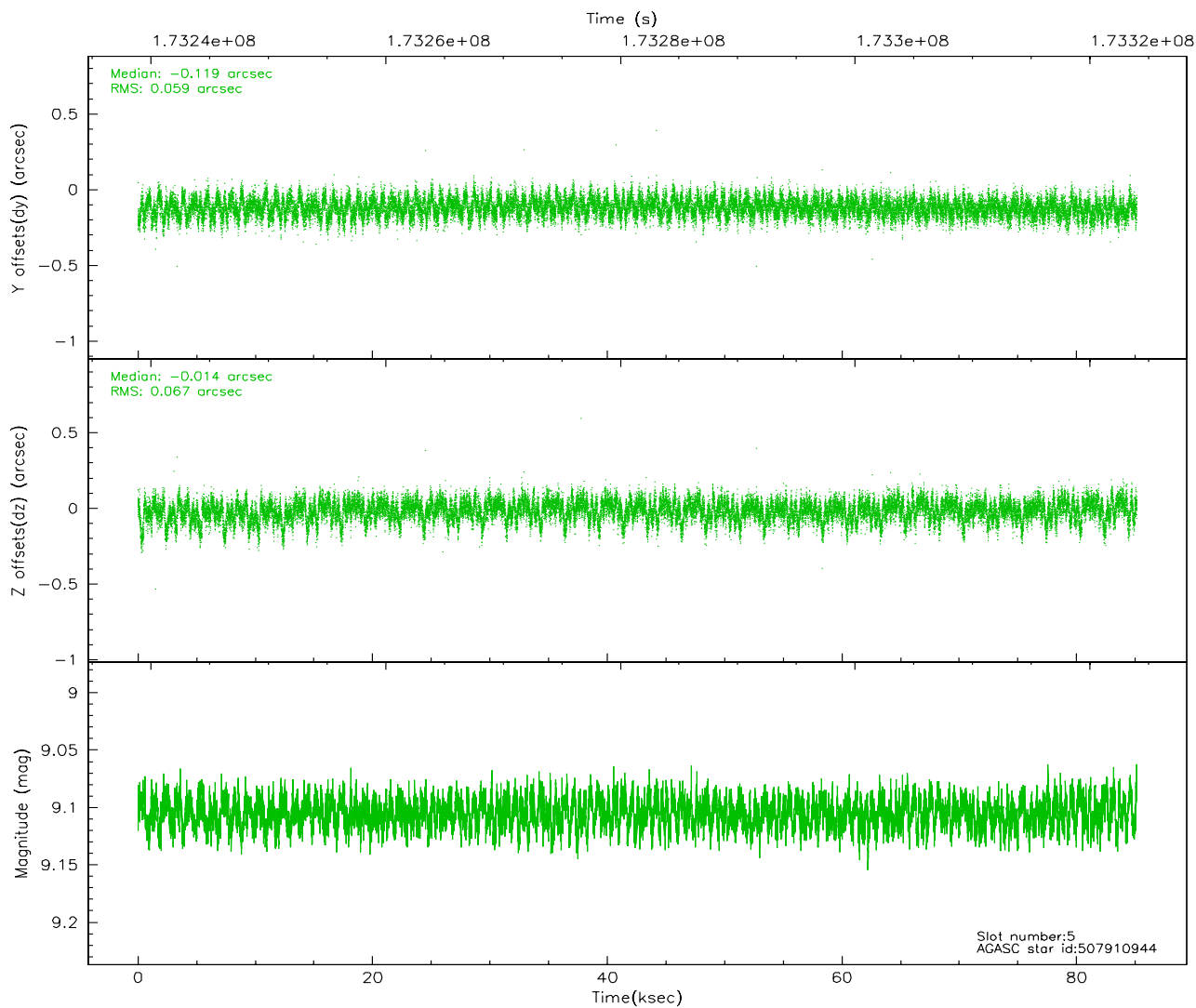
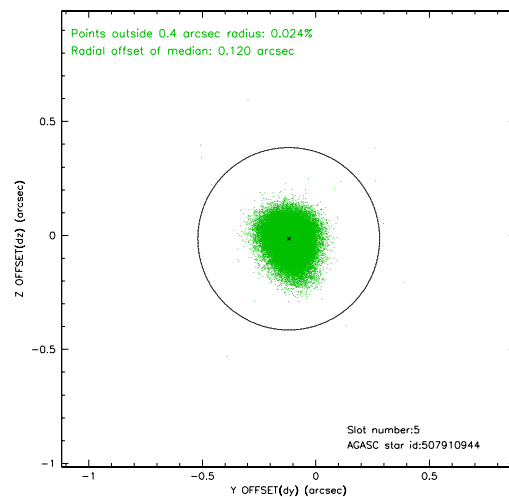
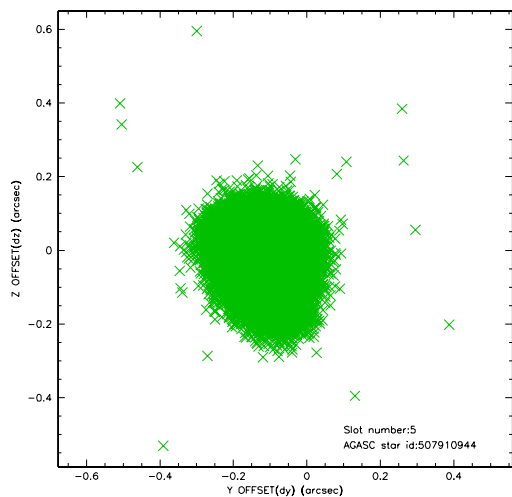
### 2.4.1 Slot 3



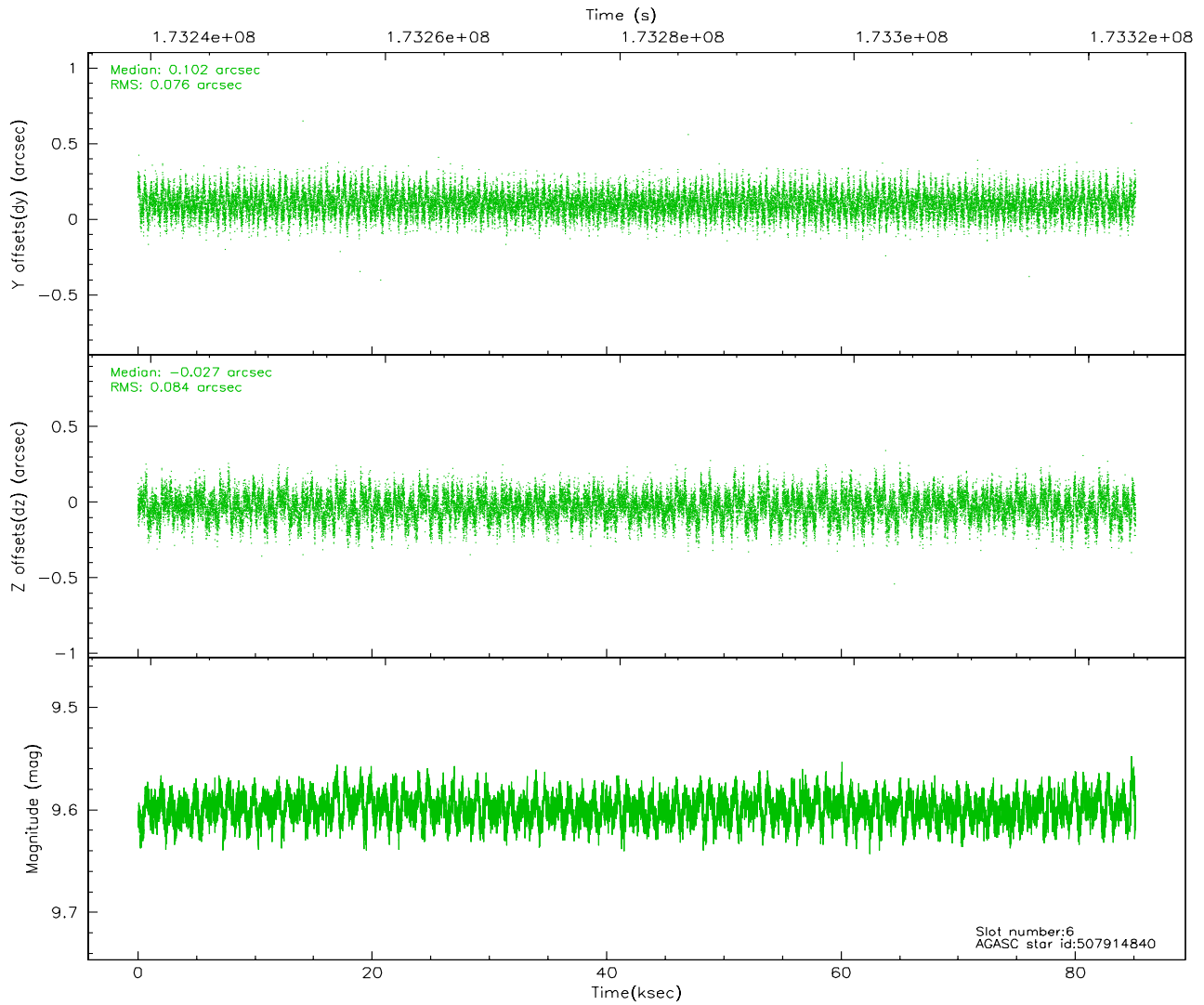
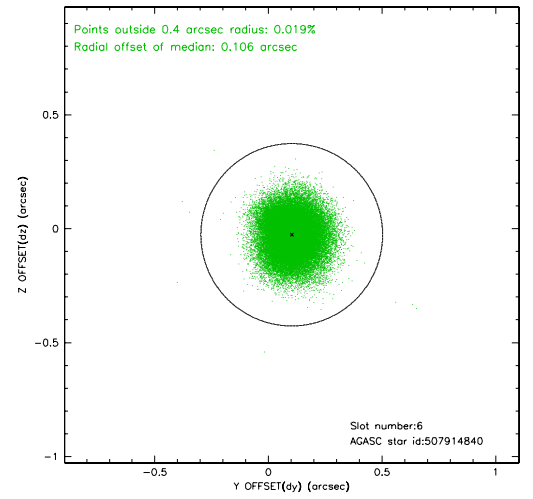
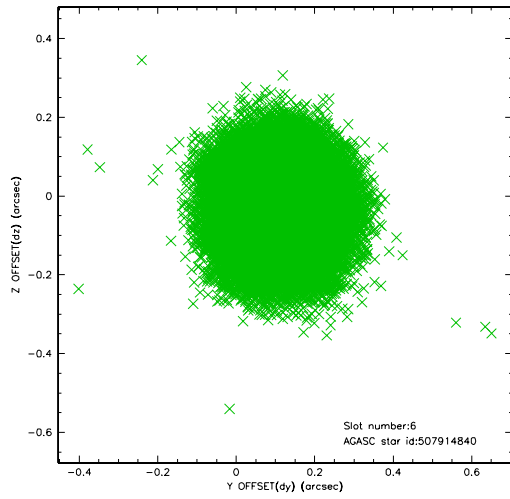
## 2.4.2 Slot 4



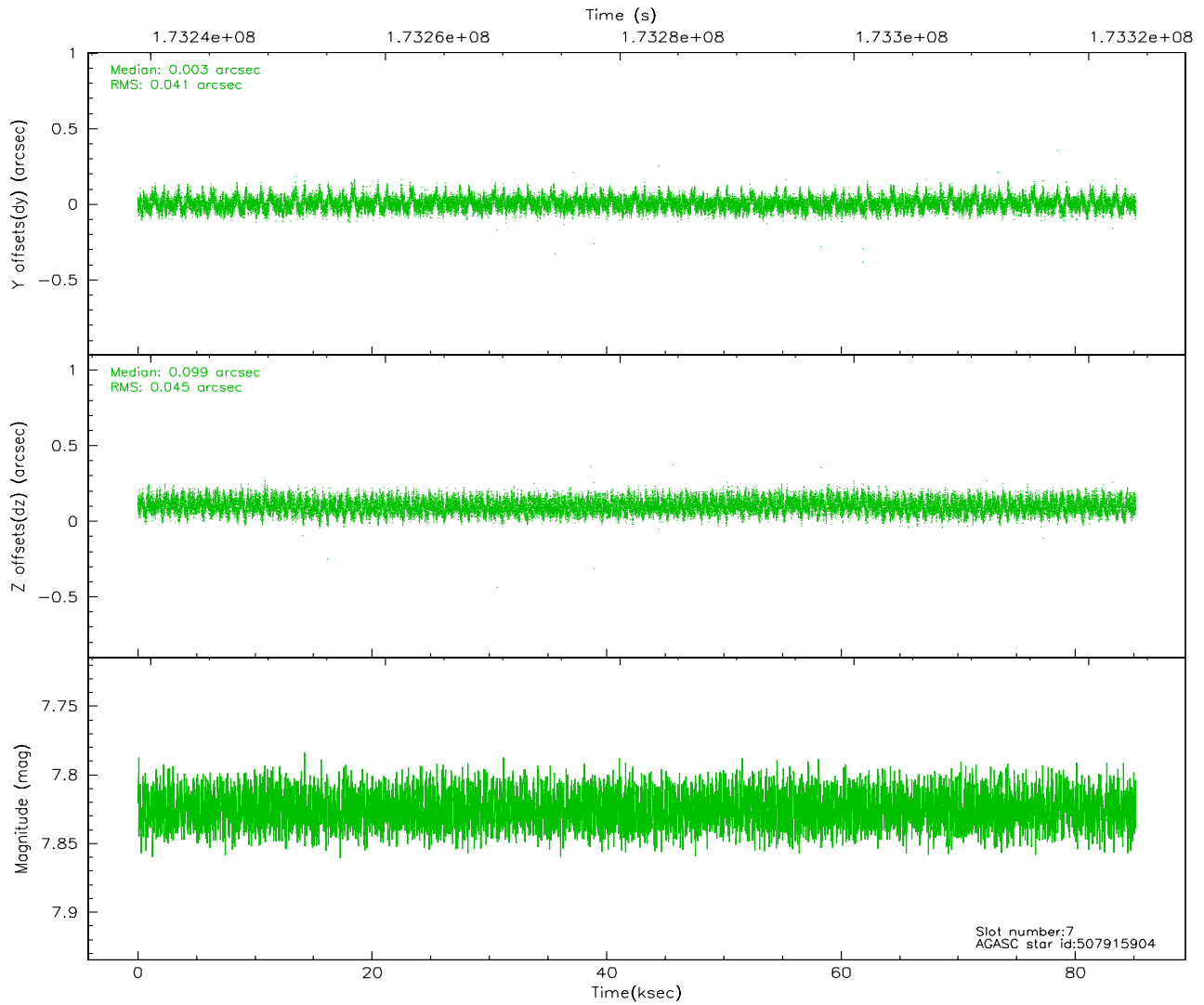
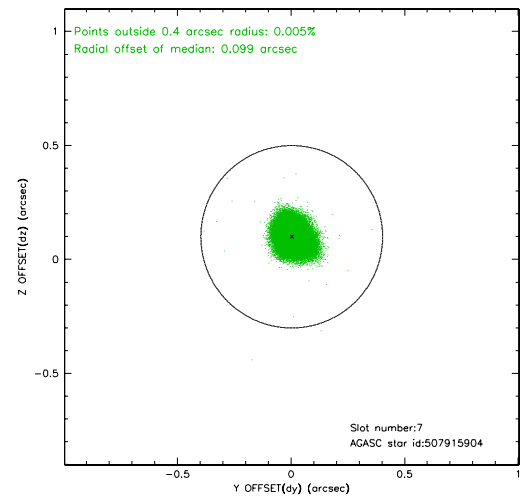
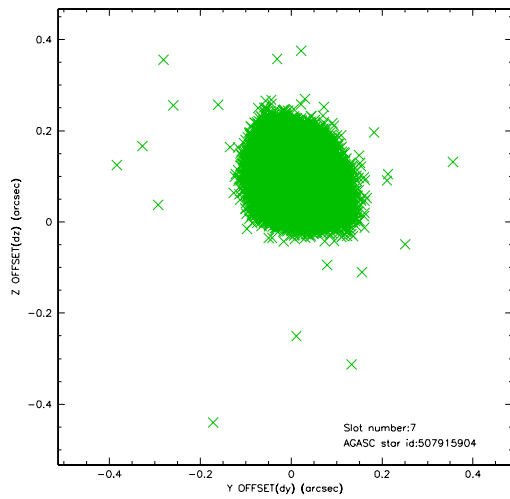
### 2.4.3 Slot 5



### 2.4.4 Slot 6

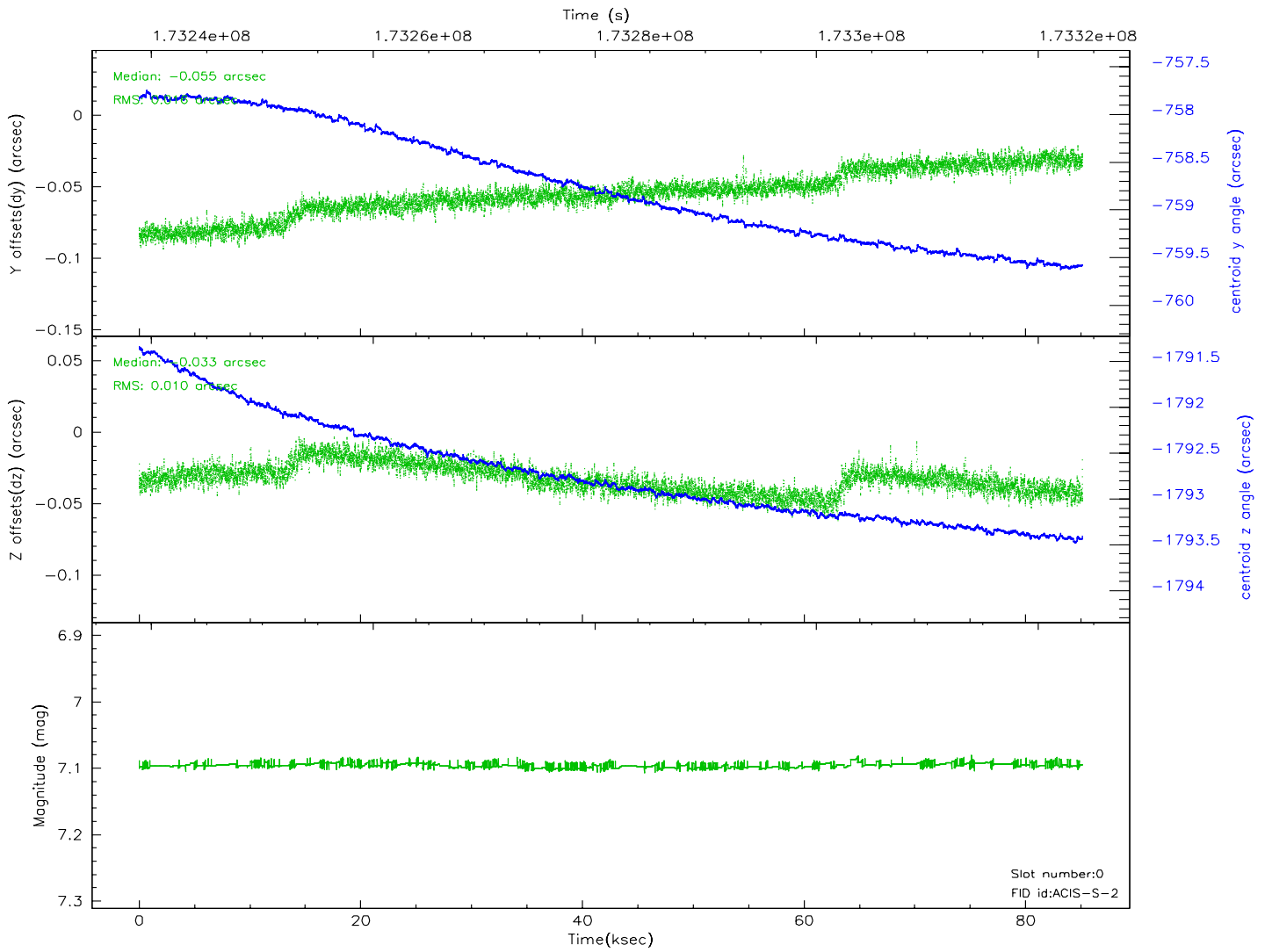
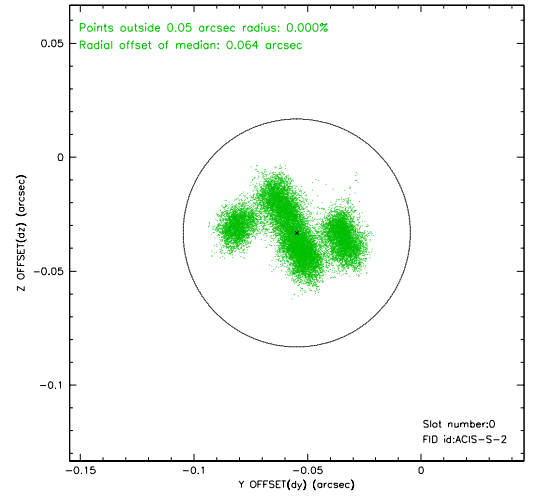
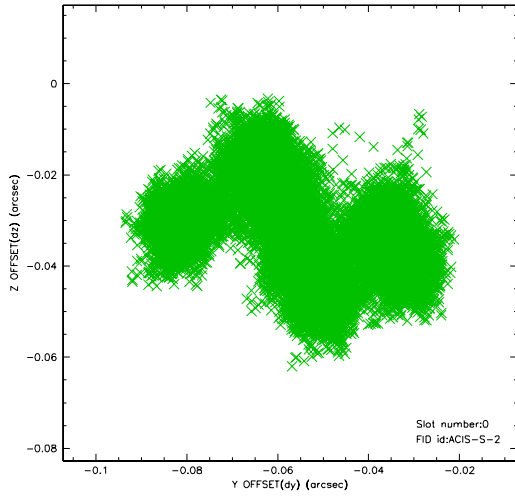


## 2.4.5 Slot 7

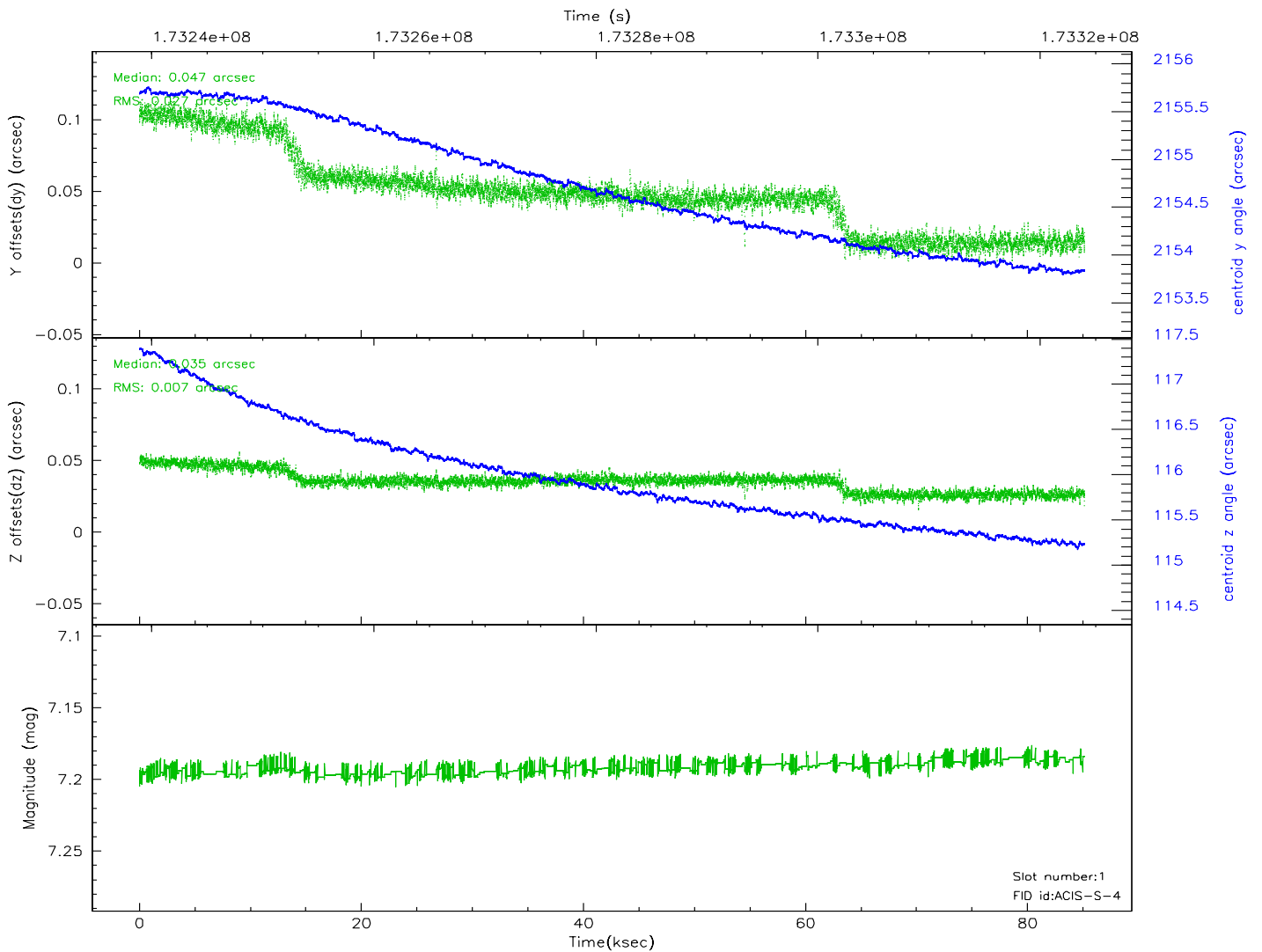
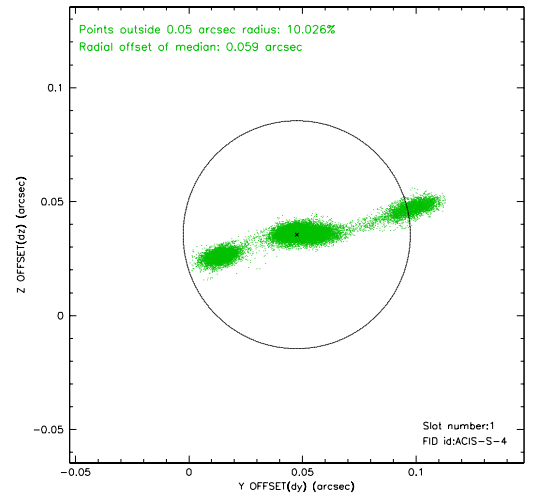
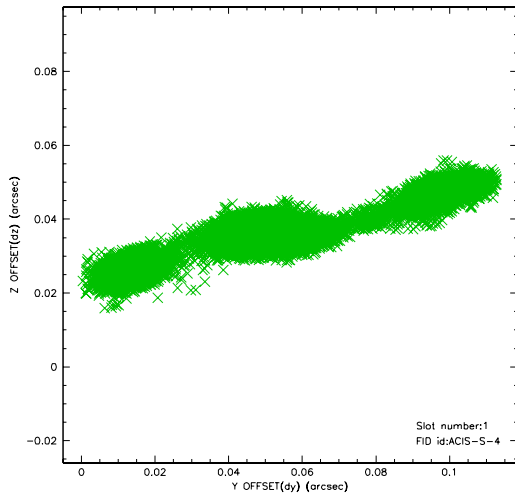


## 2.5 FID Slots

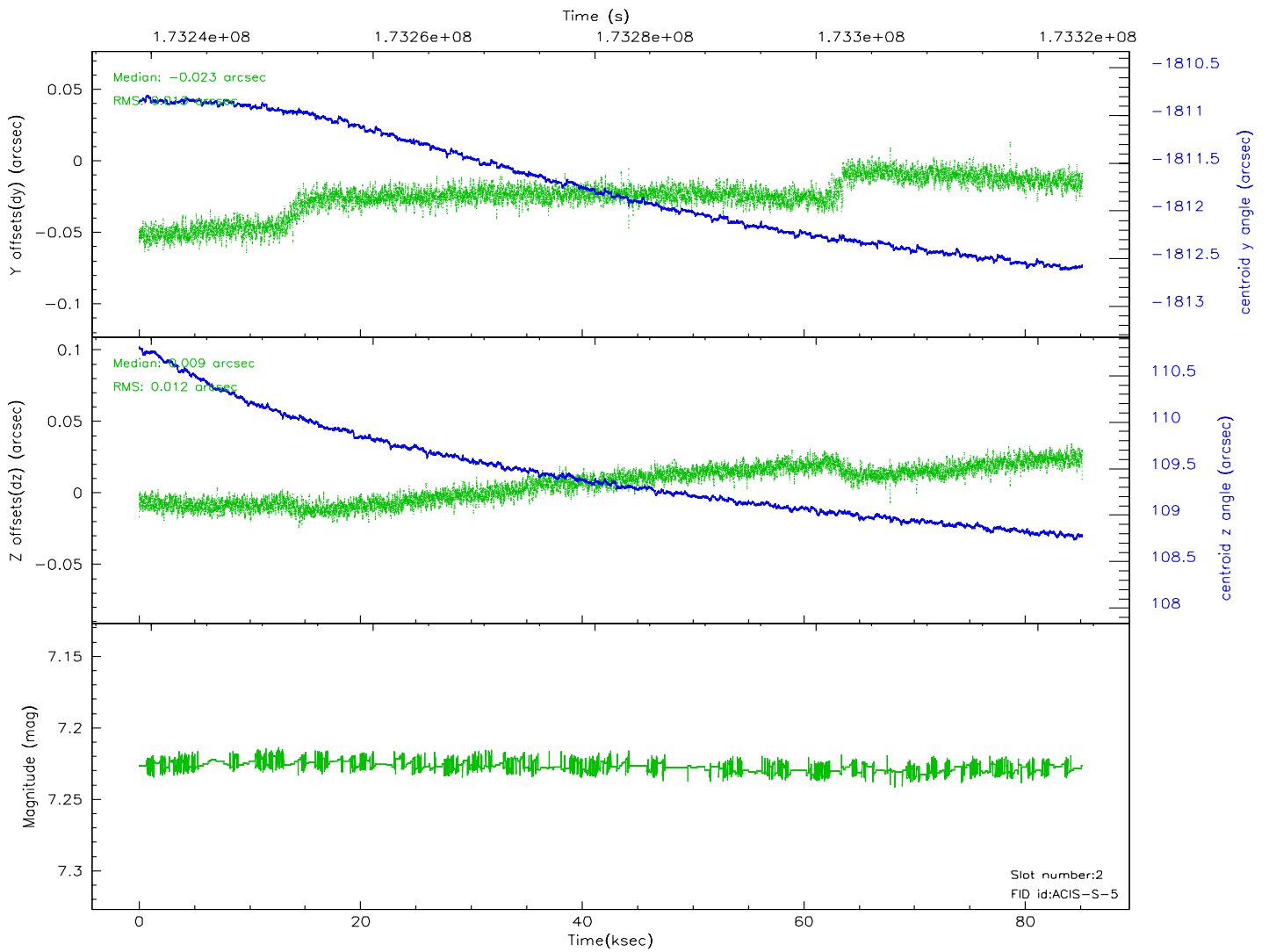
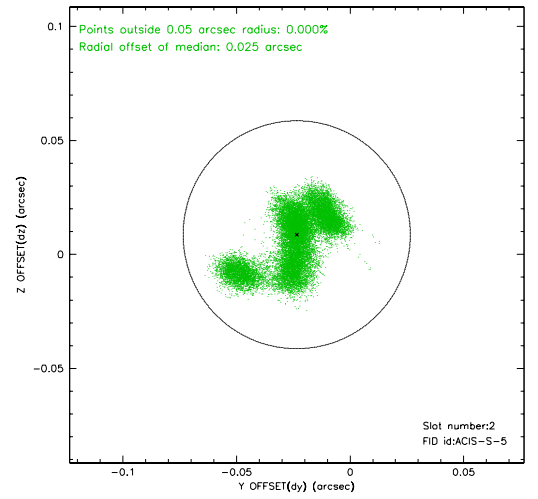
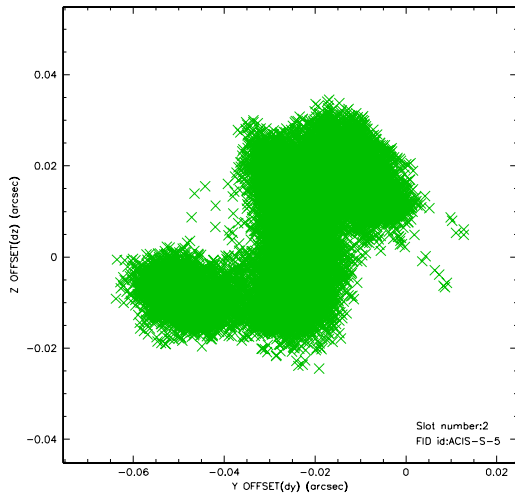
### 2.5.1 Slot 0



## 2.5.2 Slot 1

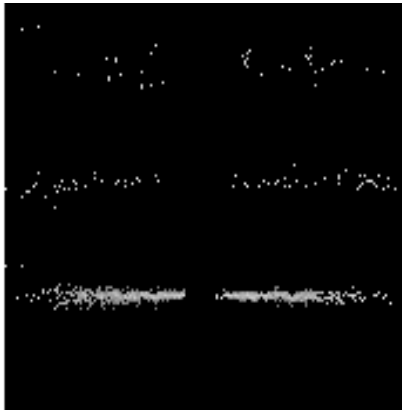


### 2.5.3 Slot 2

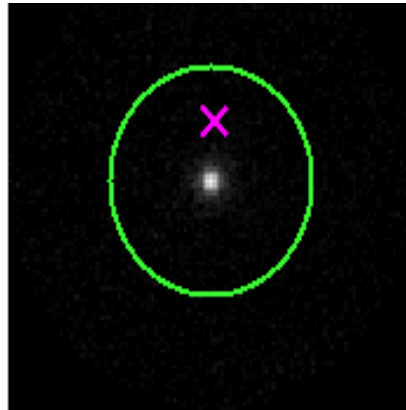


# 3 Gratings

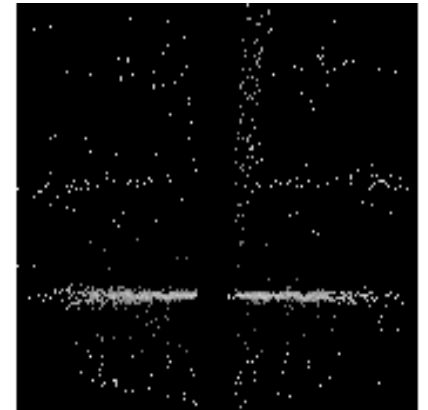
## 3.1 HEG Arm



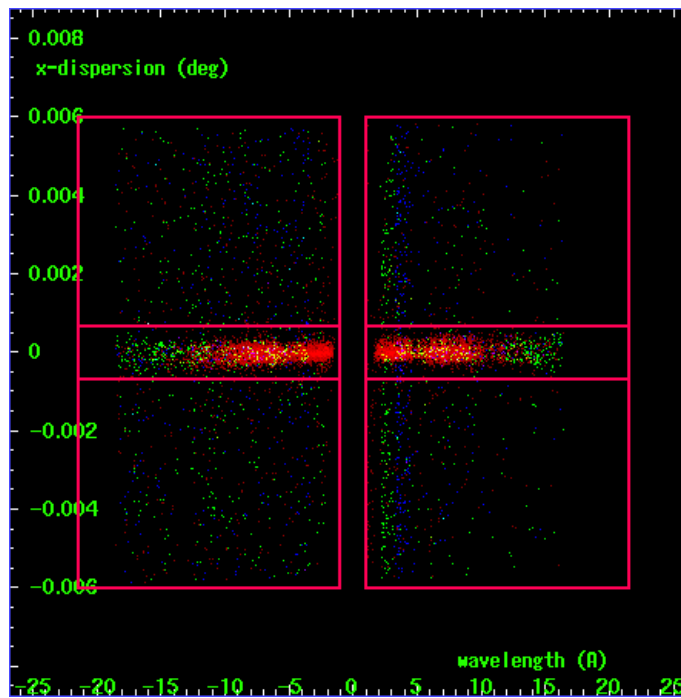
HEG Order Sort 123



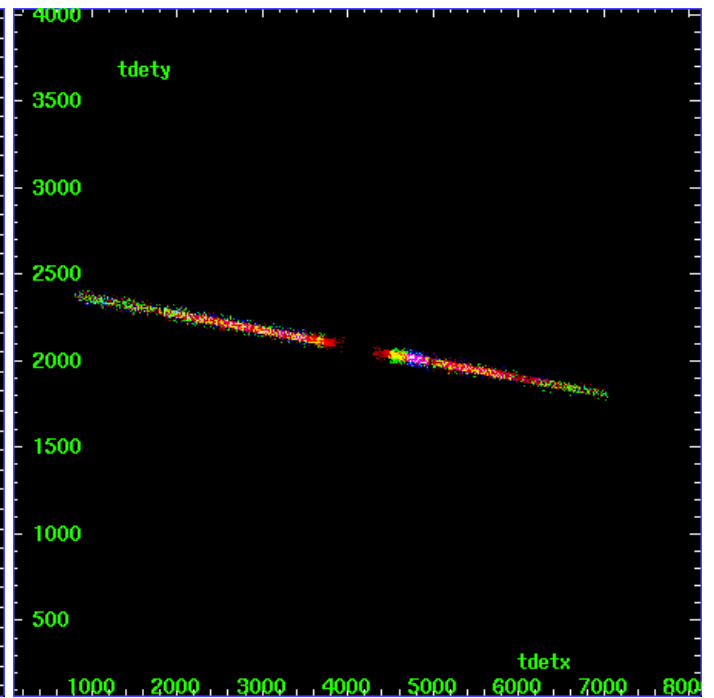
HEG Zero Order



HEG Order Sort ALL

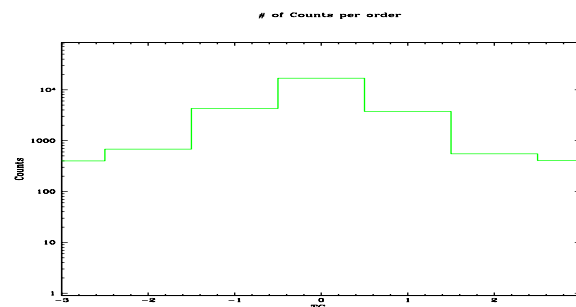


Spot Image HEG

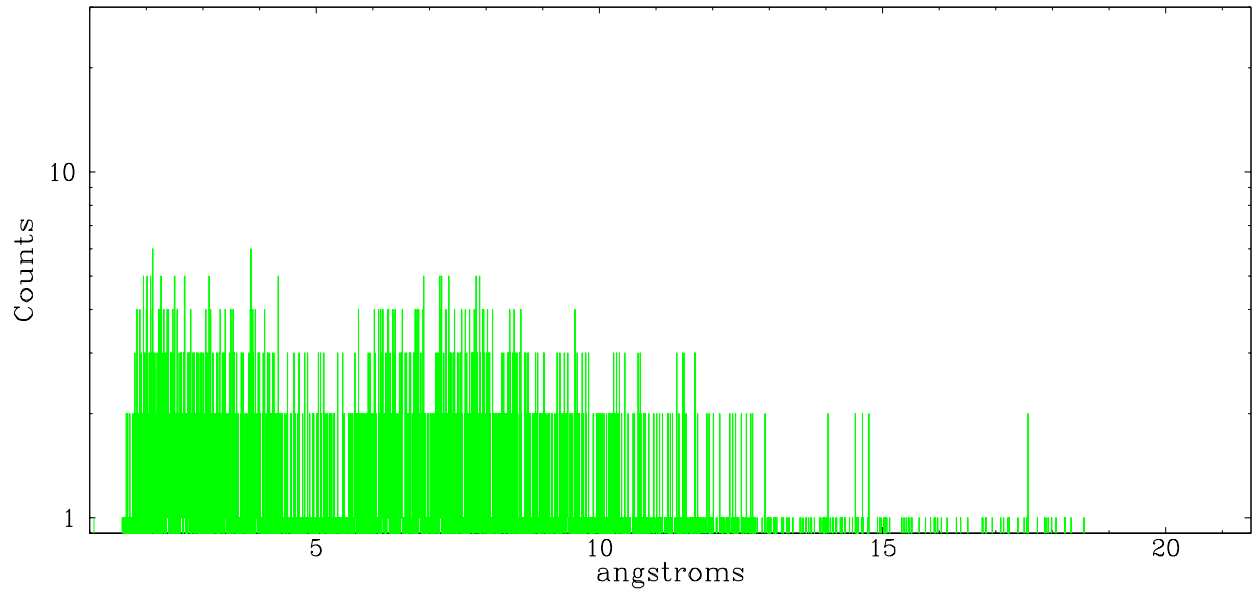


Full Detector HEG

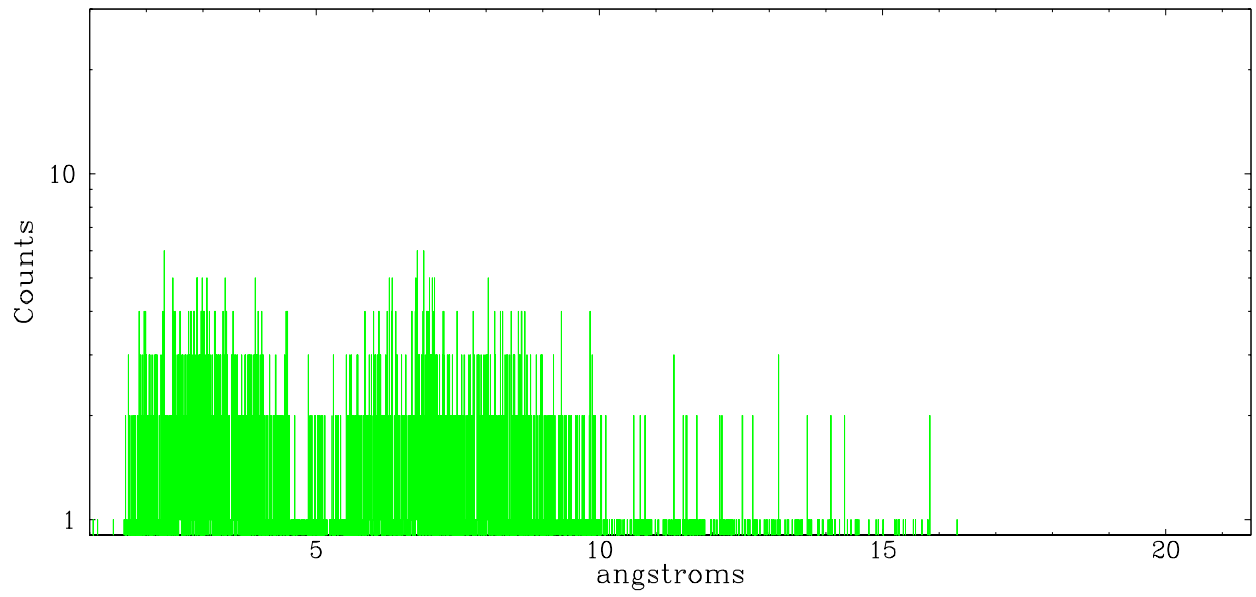
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	401	680	4286	16862	3734	552	407



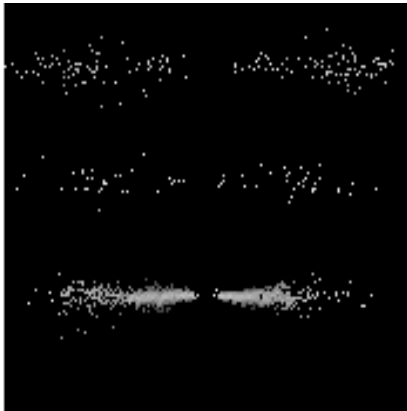
heg order -1



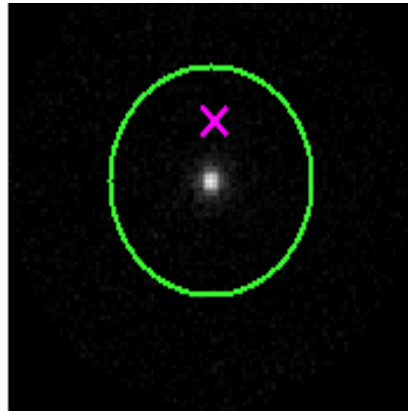
heg order +1



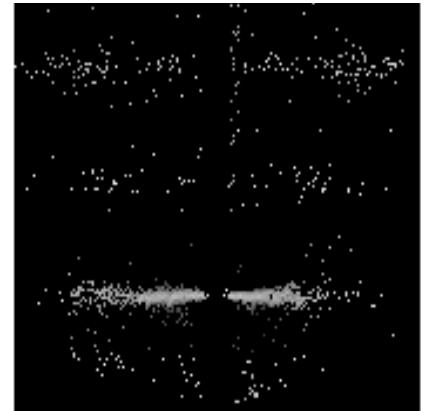
### 3.2 MEG Arm



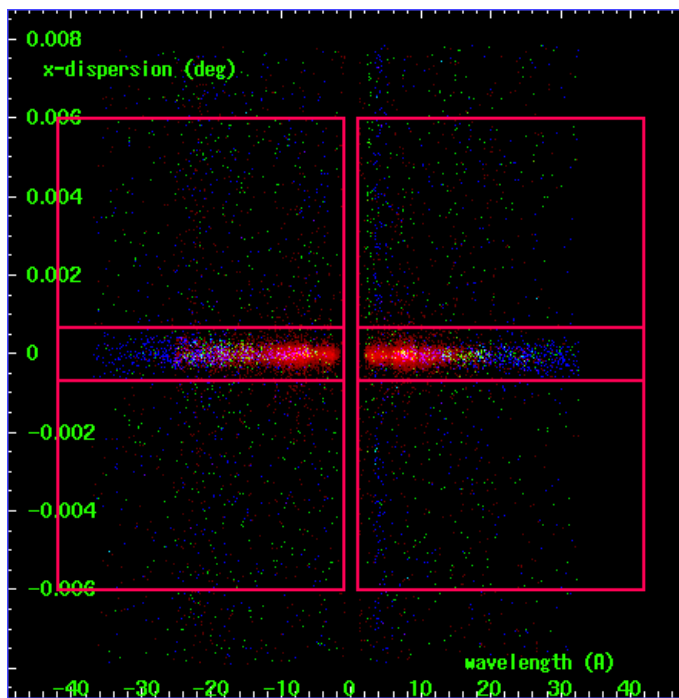
MEG Order Sort 123



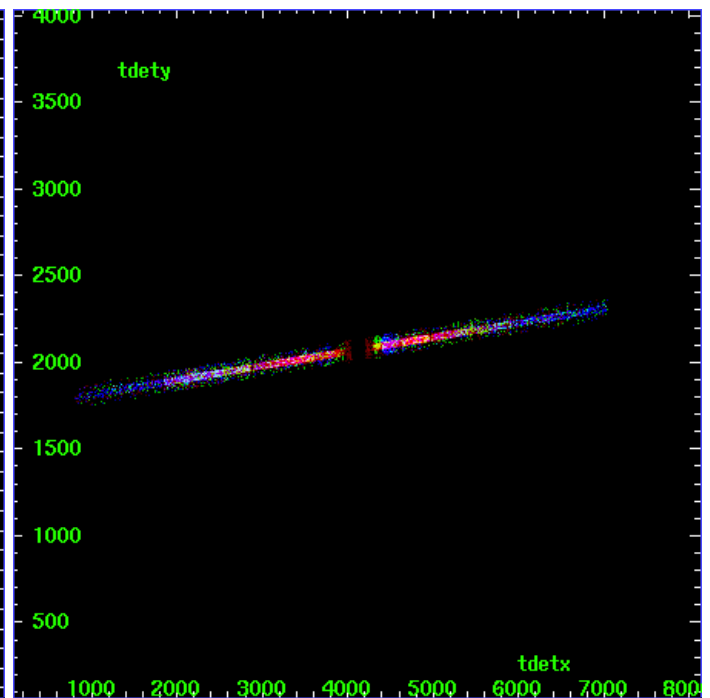
MEG Zero Order



MEG Order Sort ALL

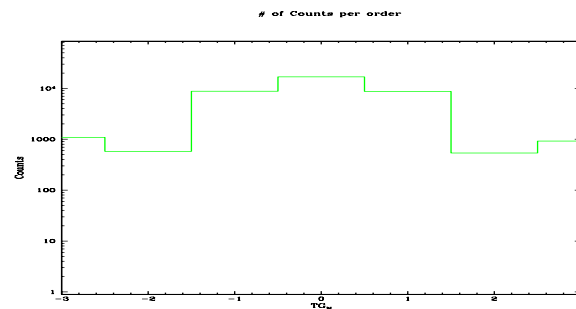


Spot Image MEG

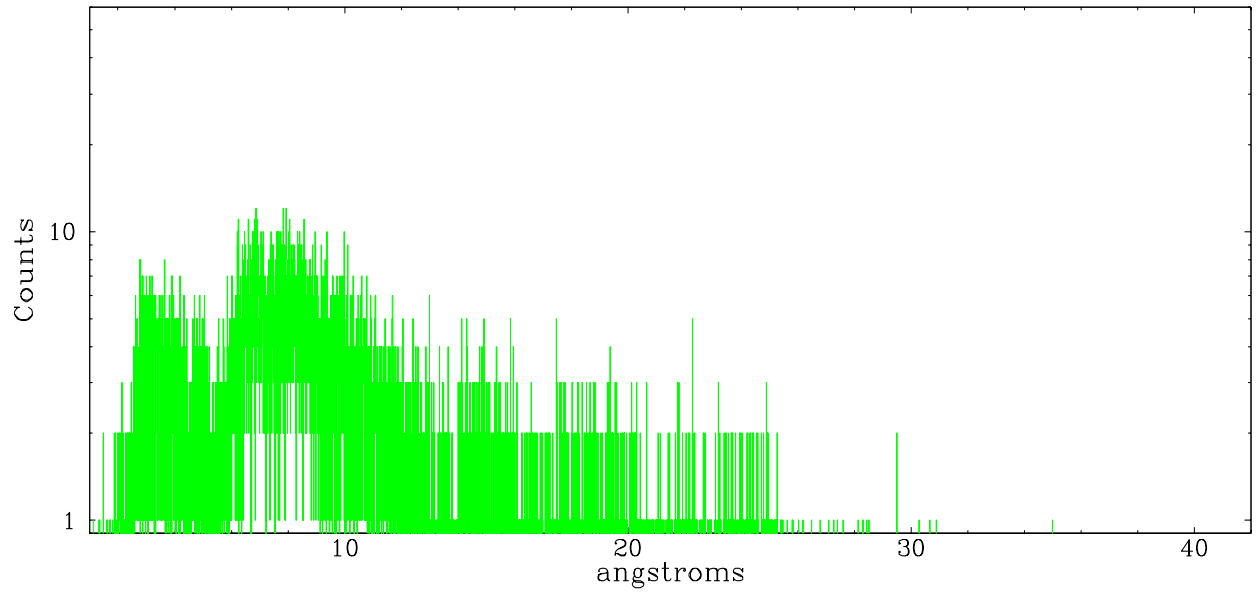


Full Detector MEG

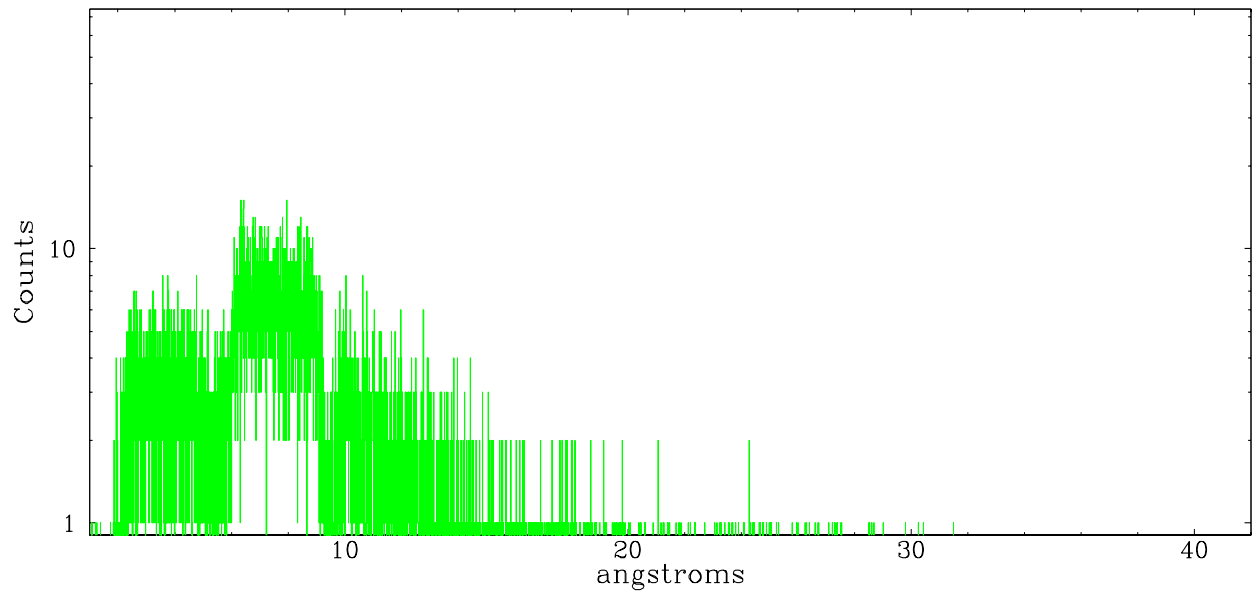
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1093	582	8797	16862	8708	537	922



meg order -1



meg order +1



# A Summary

## A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2006.08.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	85.142

## A.2 Comments