

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 8935 - L2 Version 2  
Chandra X-Ray Center

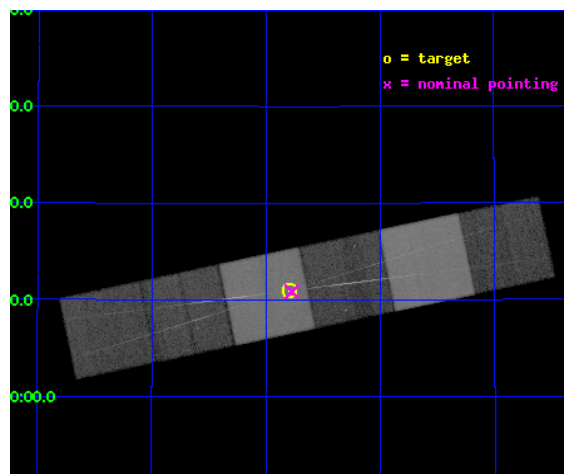
L2 Processing Date : May 12 2012

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
2.1	OBI . . . . .	3
2.1.1	Images . . . . .	3
2.1.2	Bias . . . . .	3
2.1.3	Parameters . . . . .	4
2.1.4	Events . . . . .	4
2.2	Compared Parameters . . . . .	5
2.3	Aspect . . . . .	6
2.4	Star Slots . . . . .	9
2.4.1	Slot 3 . . . . .	9
2.4.2	Slot 4 . . . . .	10
2.4.3	Slot 5 . . . . .	11
2.4.4	Slot 6 . . . . .	12
2.4.5	Slot 7 . . . . .	13
2.5	FID Slots . . . . .	14
2.5.1	Slot 0 . . . . .	14
2.5.2	Slot 1 . . . . .	15
<b>3</b>	<b>Gratings</b>	<b>16</b>
3.1	HEG Arm . . . . .	16
3.2	MEG Arm . . . . .	18
<b>A</b>	<b>Summary</b>	<b>20</b>
A.1	Status . . . . .	20
A.2	Comments . . . . .	20

# 1 Front

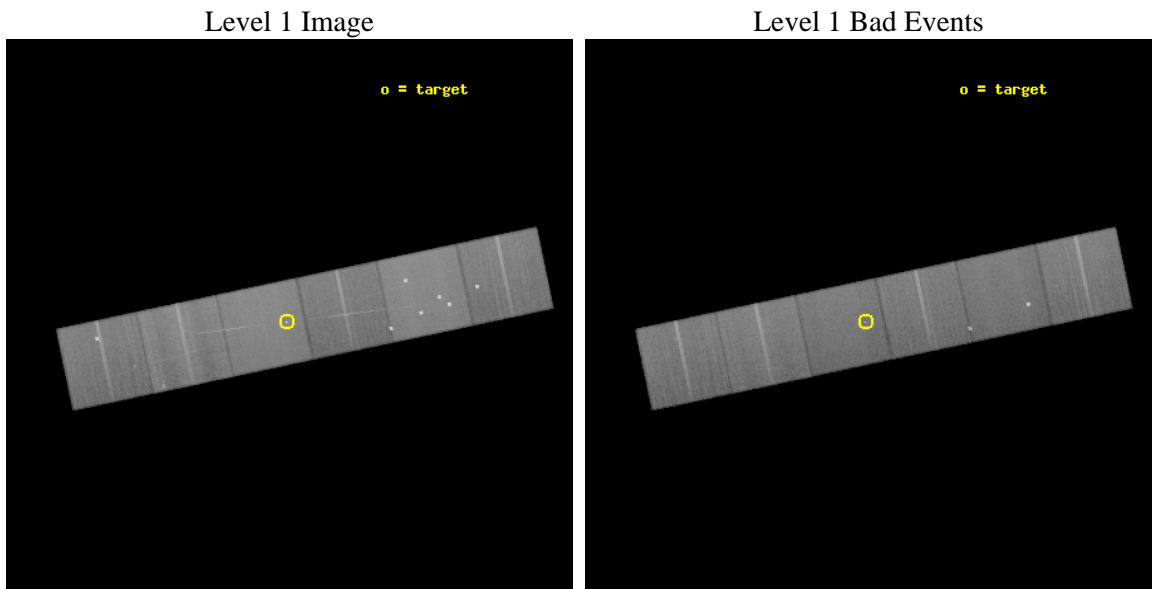
seq_num	200516	Sequence number
obs_id	8935	Observation id
title	Polar Exploration and Coronal Structure in the Active Binary HR 5110	&#160
observer	Dr. rachel osten	Principal investigator
object	HR 5110	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	203.699167	Observer's specified target RA [deg]
dec_targ	37.182417	Observer's specified target Dec [deg]
ra_nom	203.69343570748	Nominal RA [deg]
dec_nom	37.180774001971	Nominal Dec [deg]
roll_nom	168.08405115545	Nominal Roll [deg]
revision	2	Processing version of data
ontime	40050.227189302	Sum of GTIs [s]
livetime	39543.08709728	Livetime [s]
ontime4	40047.027218997	Sum of GTIs [s]
ontime5	40050.186149299	Sum of GTIs [s]
ontime6	40050.145109296	Sum of GTIs [s]
ontime7	40050.227189302	Sum of GTIs [s]
ontime8	40050.104069293	Sum of GTIs [s]
ontime9	40050.063029289	Sum of GTIs [s]
l2events	651321	Number of level 2 events



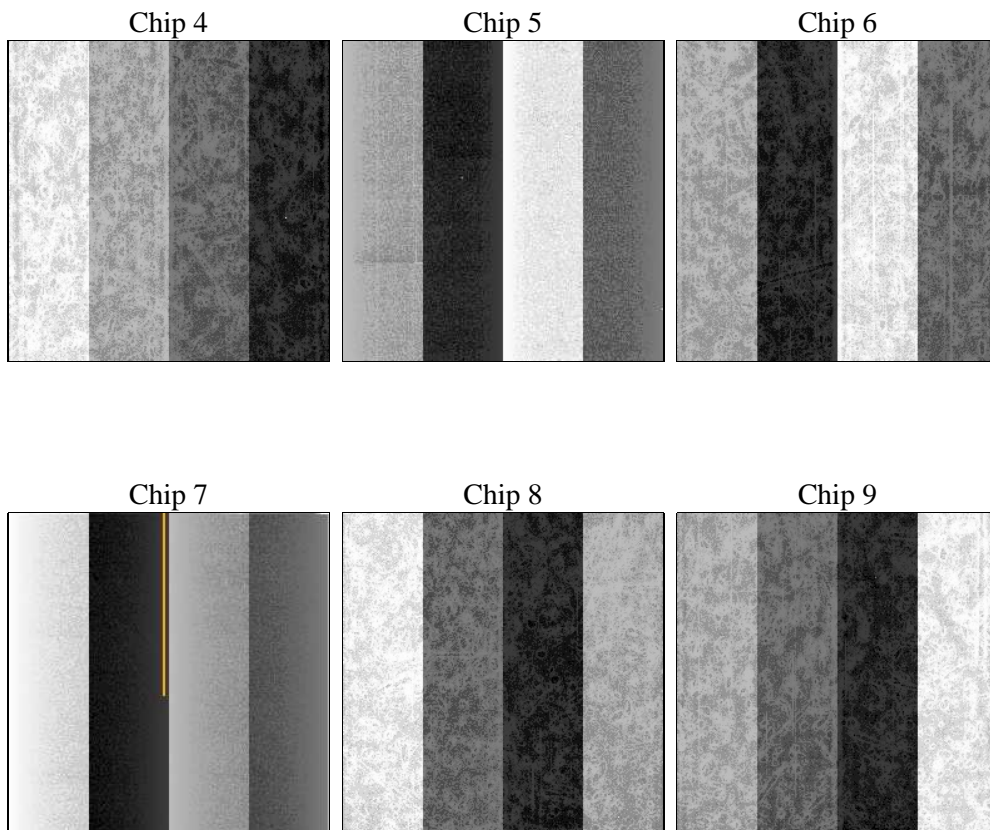
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	40000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	40050.227189302	Sum of GTIs [s]
caldbver	4.4.9	&#160	ontime4	40047.027218997	Sum of GTIs [s]
date	2012-05-12T15:19:44	Date and time of file creation	ontime5	40050.186149299	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	40050.145109296	Sum of GTIs [s]
			ontime7	40050.227189302	Sum of GTIs [s]
			ontime8	40050.104069293	Sum of GTIs [s]
			ontime9	40050.063029289	Sum of GTIs [s]
			l1events	2882975	Number of level 1 events

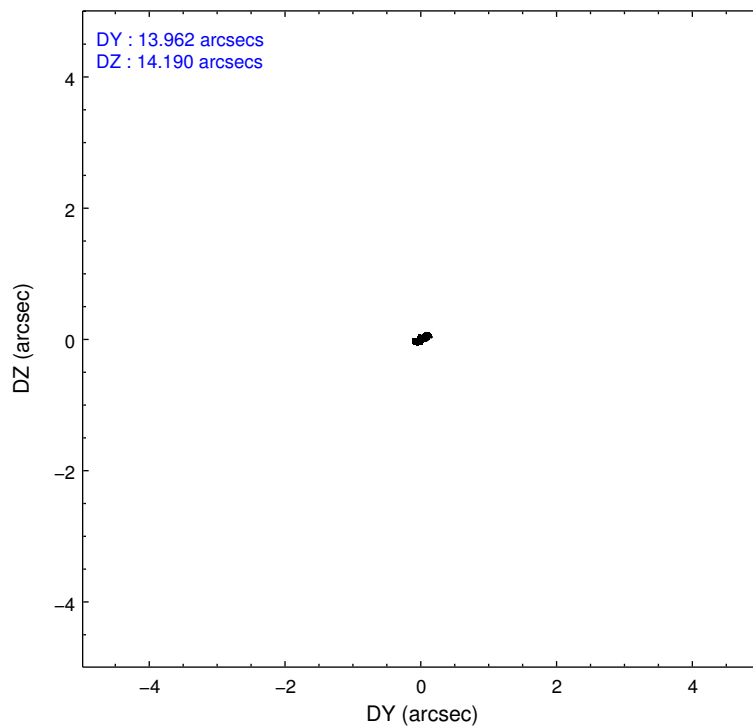
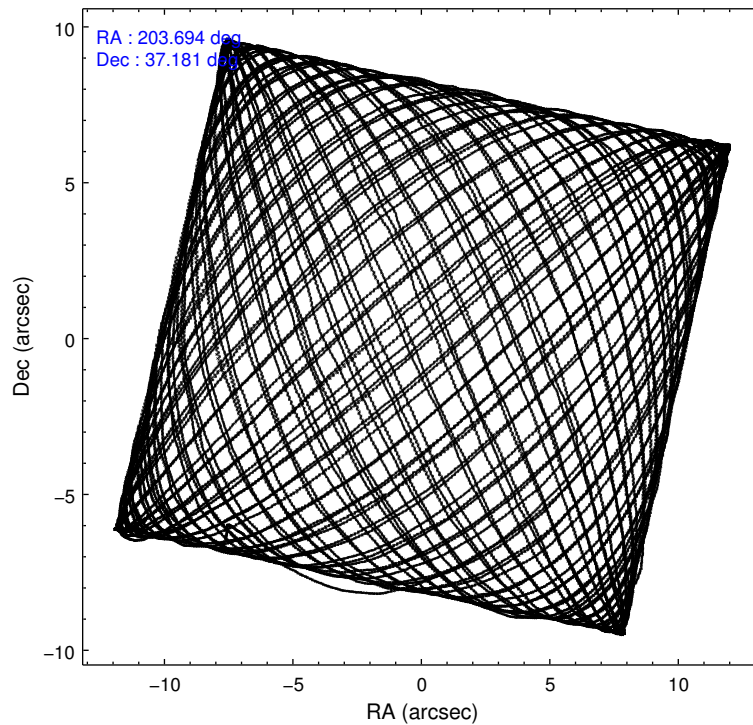
### 2.1.4 Events

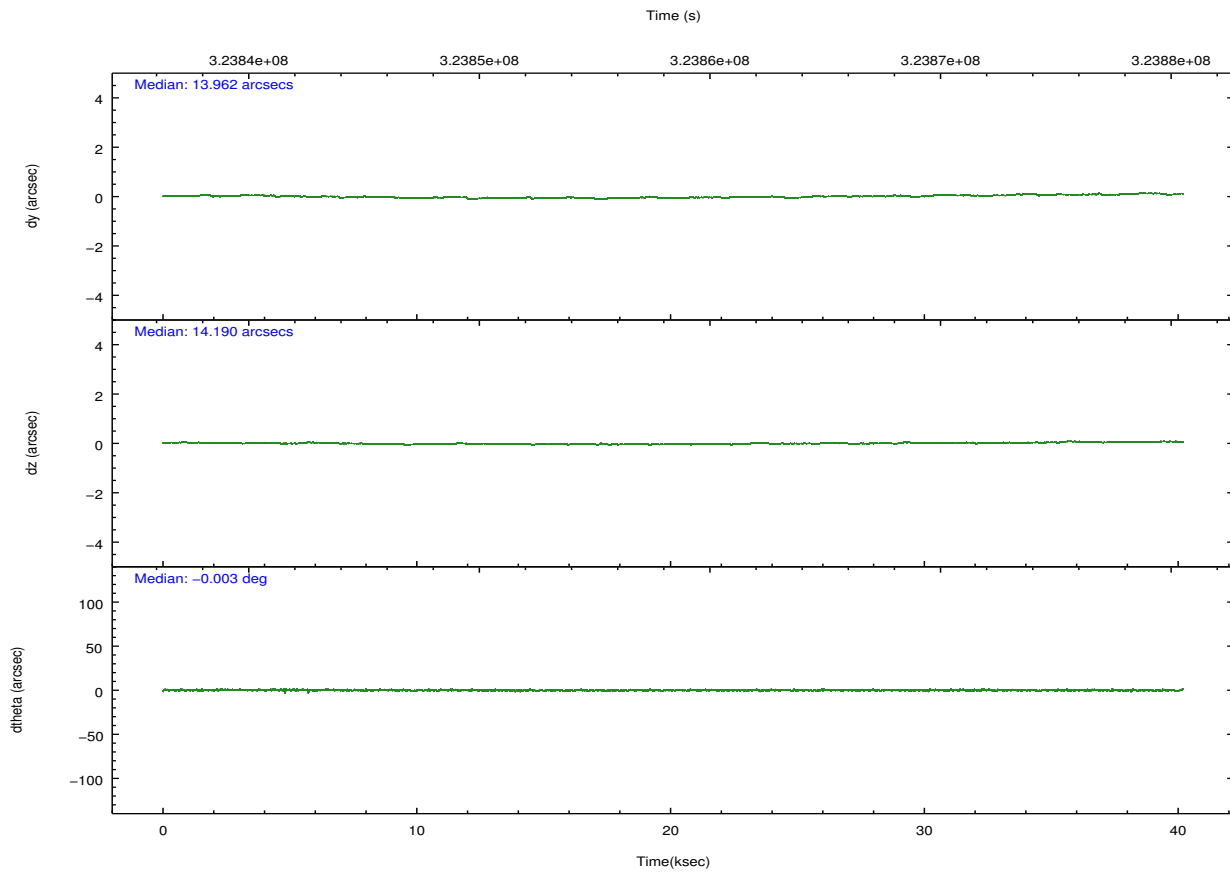
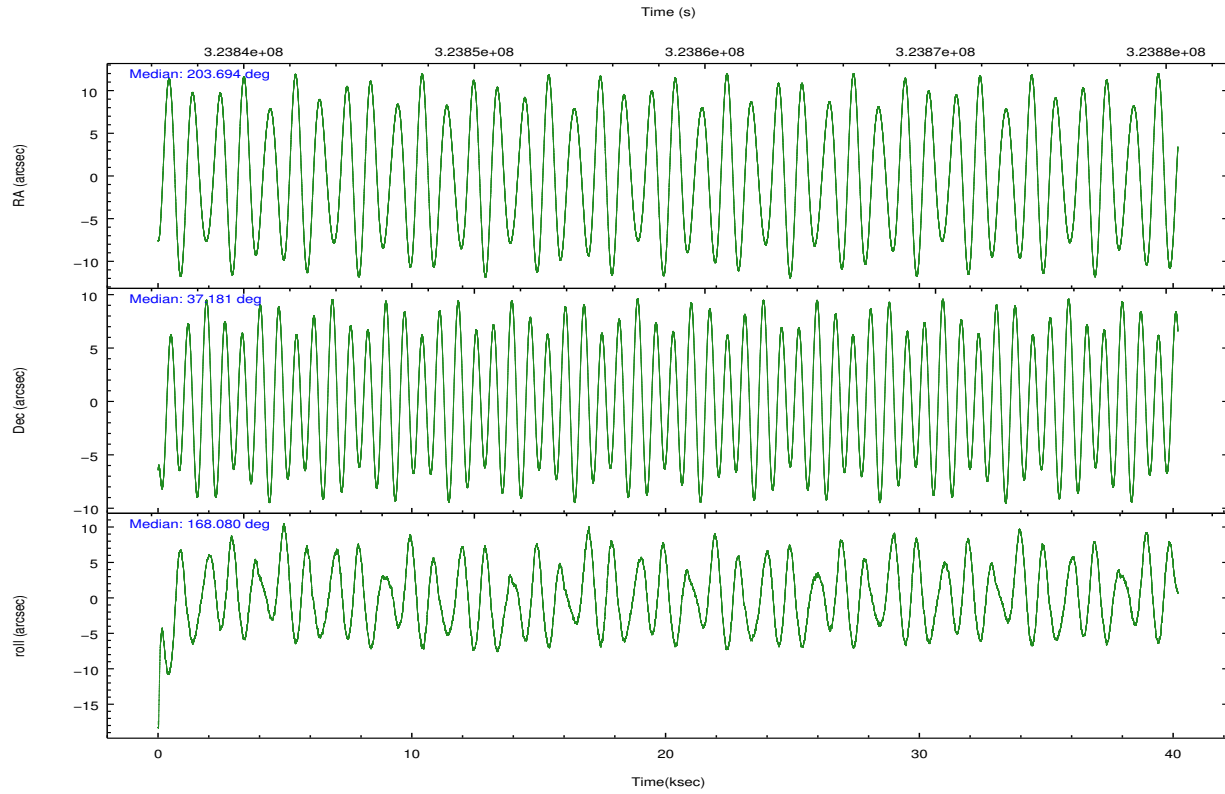
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	437062	629073	394413	536335	494179	391913	grade 0 events	33022	51748	23307	20685	39687	31477
rejected events	377154	329549	341754	309619	377640	332389		7%	8%	5%	3%	8%	8%
rejected %	86%	52%	86%	57%	76%	84%	grade 1 events	454	2609	212	674	412	495
								0%	0%	0%	0%	0%	0%
							grade 2 events	10034	83995	10906	47150	25678	9616
								2%	13%	2%	8%	5%	2%
							grade 3 events	4735	9966	4423	19076	11495	4519
								1%	1%	1%	3%	2%	1%
							grade 4 events	4710	8996	4446	19083	10726	4624
								1%	1%	1%	3%	2%	1%
							grade 5 events	17317	41303	17753	49651	24486	19303
								3%	6%	4%	9%	4%	4%
							grade 6 events	7416	144861	9582	120764	28980	9297
								1%	23%	2%	22%	5%	2%
							grade 7 events	359374	285595	323784	259252	352715	312582
								82%	45%	82%	48%	71%	79%

## 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	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	203.725920	203.6934357074776	CCD I2 on	N	N
[deg] Pointing Dec	37.189609	37.1807740019712	CCD I3 on	N	N
[deg] Pointing Roll	167.907793	168.0840511554545	CCD S0 on	O1	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	Y	Y
[s] Observation start time (MET)	323838493.184000	323837335.65606	CCD S5 on	Y	Y
Observation start date	2008-04-06T03:07:08	2008-04-06T02:48:55	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	323878493.184000	323879264.82061	On-chip summing requested	N	N
Observation end date	2008-04-06T14:13:48	2008-04-06T14:27:44	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



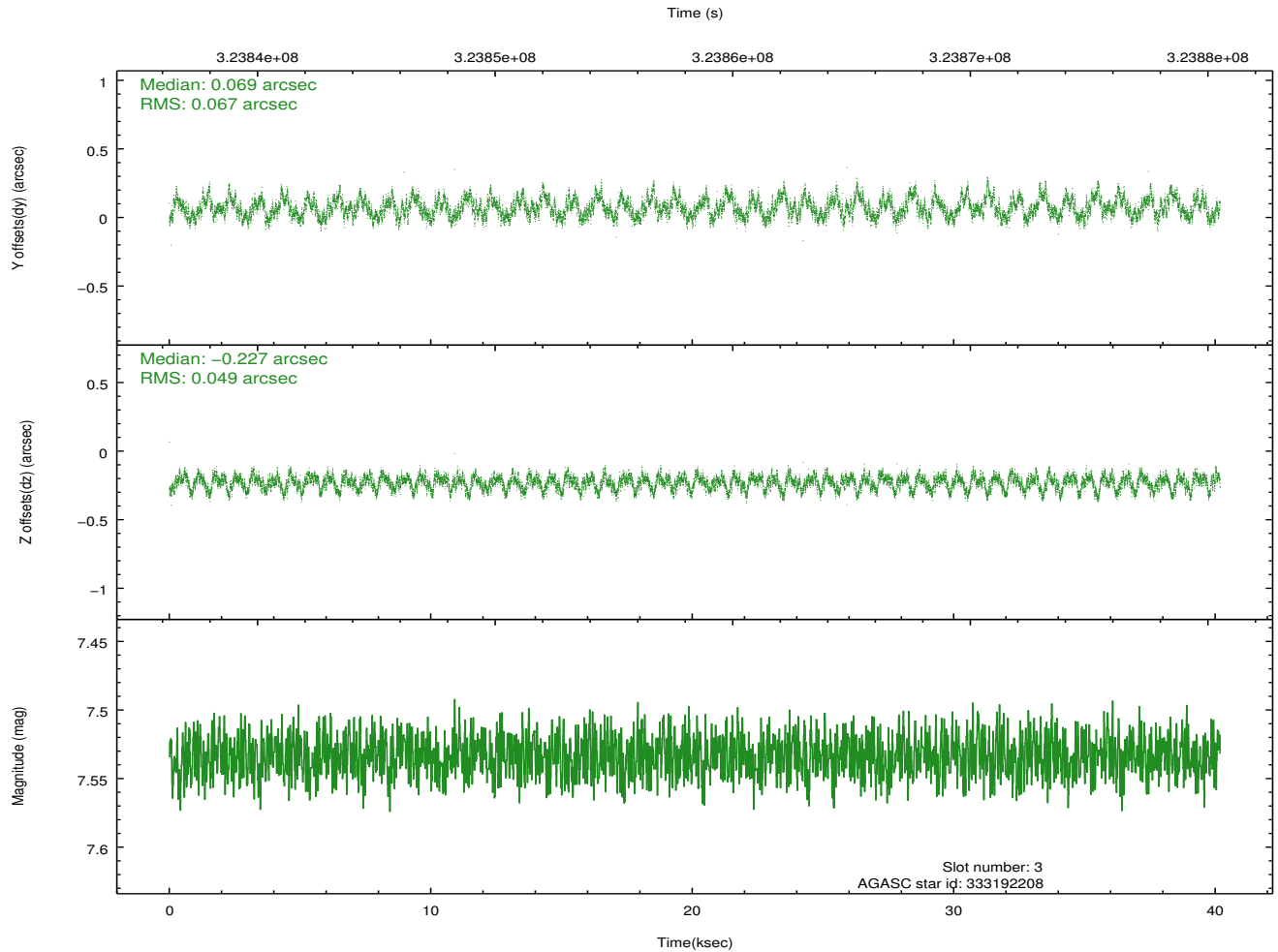
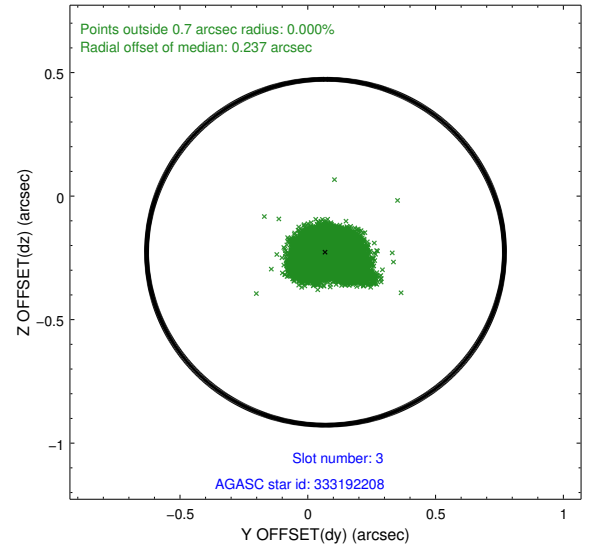
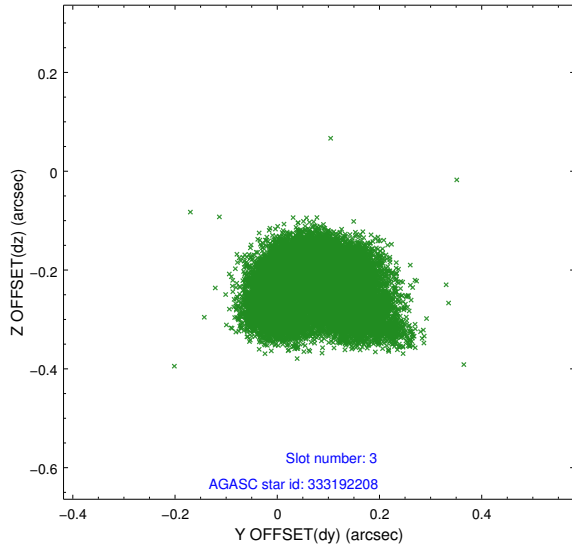


### Slot Statistics

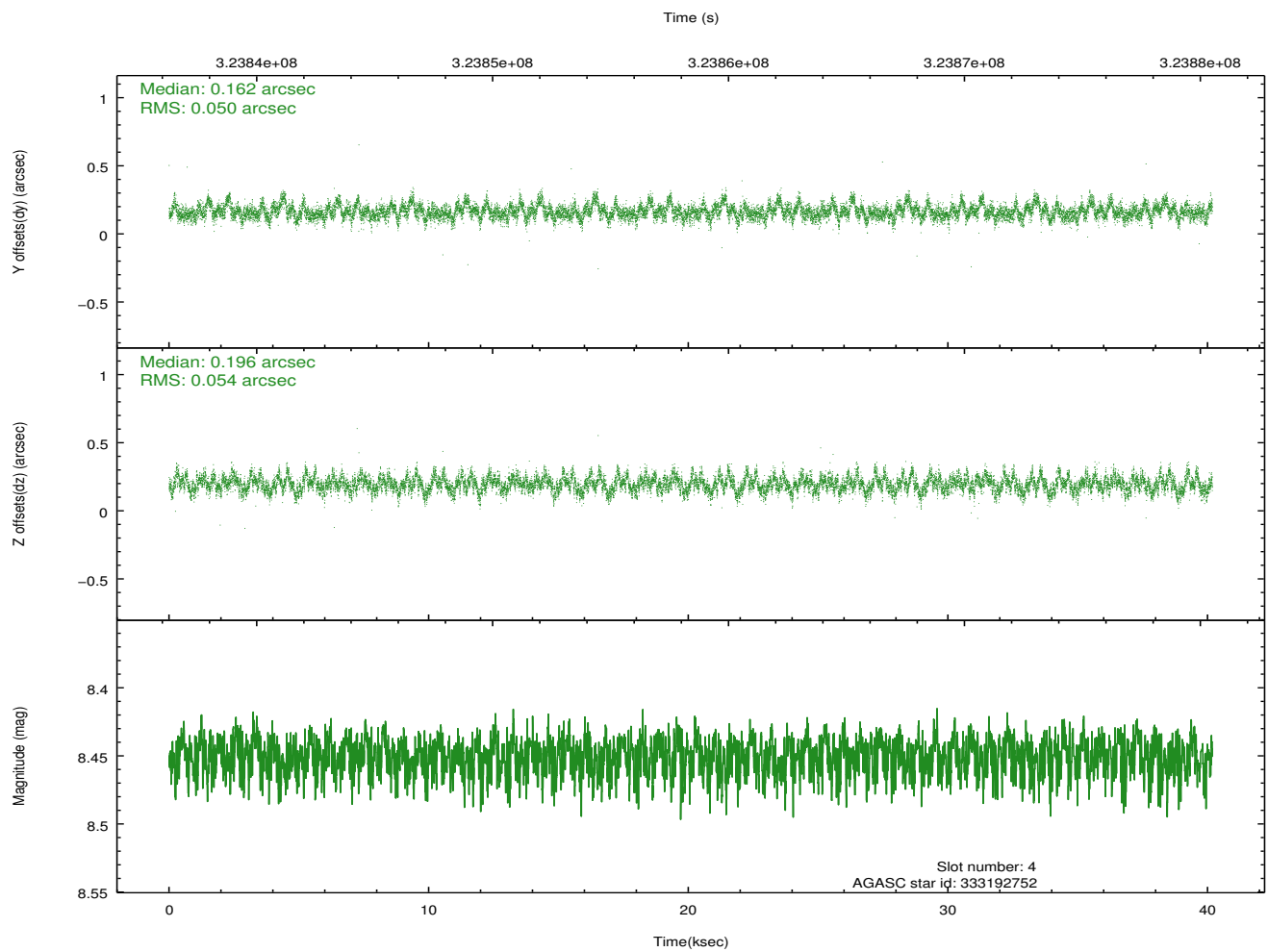
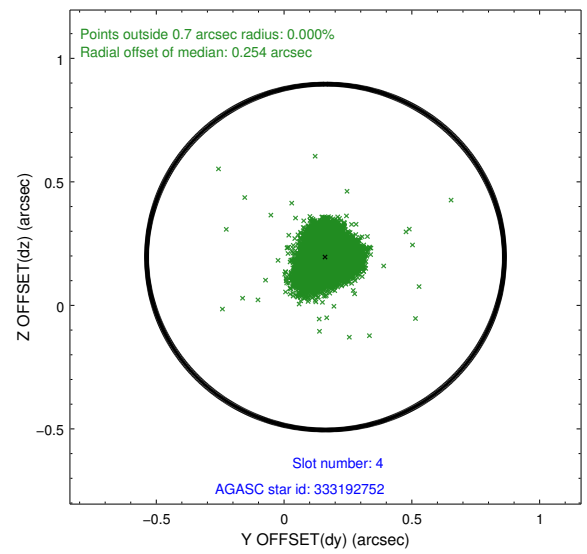
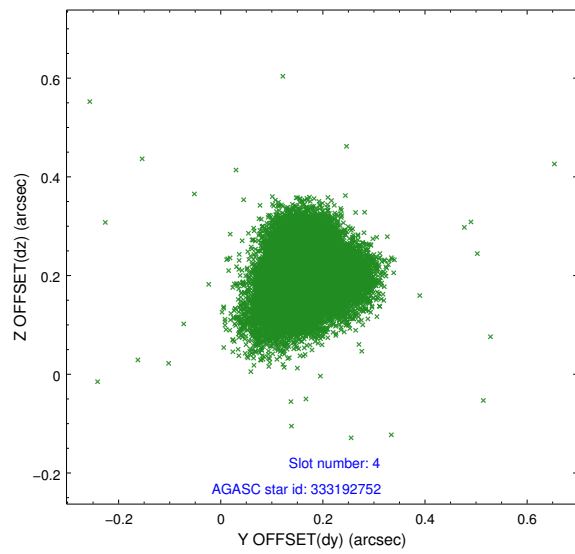
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	9800	-0.129	-0.080	0.005	0.010	0.000000	0.000000	-767.06	-1735.57
1	FID	ACIS-S-4	7.19	9801	0.108	0.083	0.005	0.010	0.000000	0.000000	2146.47	173.02
2	UNUSED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
3	GUIDE	333192208	7.53	19600	0.069	-0.227	0.089	0.142	202.900060	37.113876	2264.01	752.91
4	GUIDE	333192752	8.45	19595	0.162	0.196	0.077	0.125	203.839277	37.405848	-153.34	-828.80
5	GUIDE	396631480	8.02	19598	-0.016	0.025	0.088	0.136	203.891262	37.702710	-73.18	-1905.00
6	GUIDE	333190472	9.26	19578	-0.022	0.200	0.104	0.171	203.664903	37.181947	165.51	63.95
7	BAD	333322496	9.71	15215	-0.239	-0.236	0.159	0.263	204.479493	36.978676	-2274.20	281.60

## 2.4 Star Slots

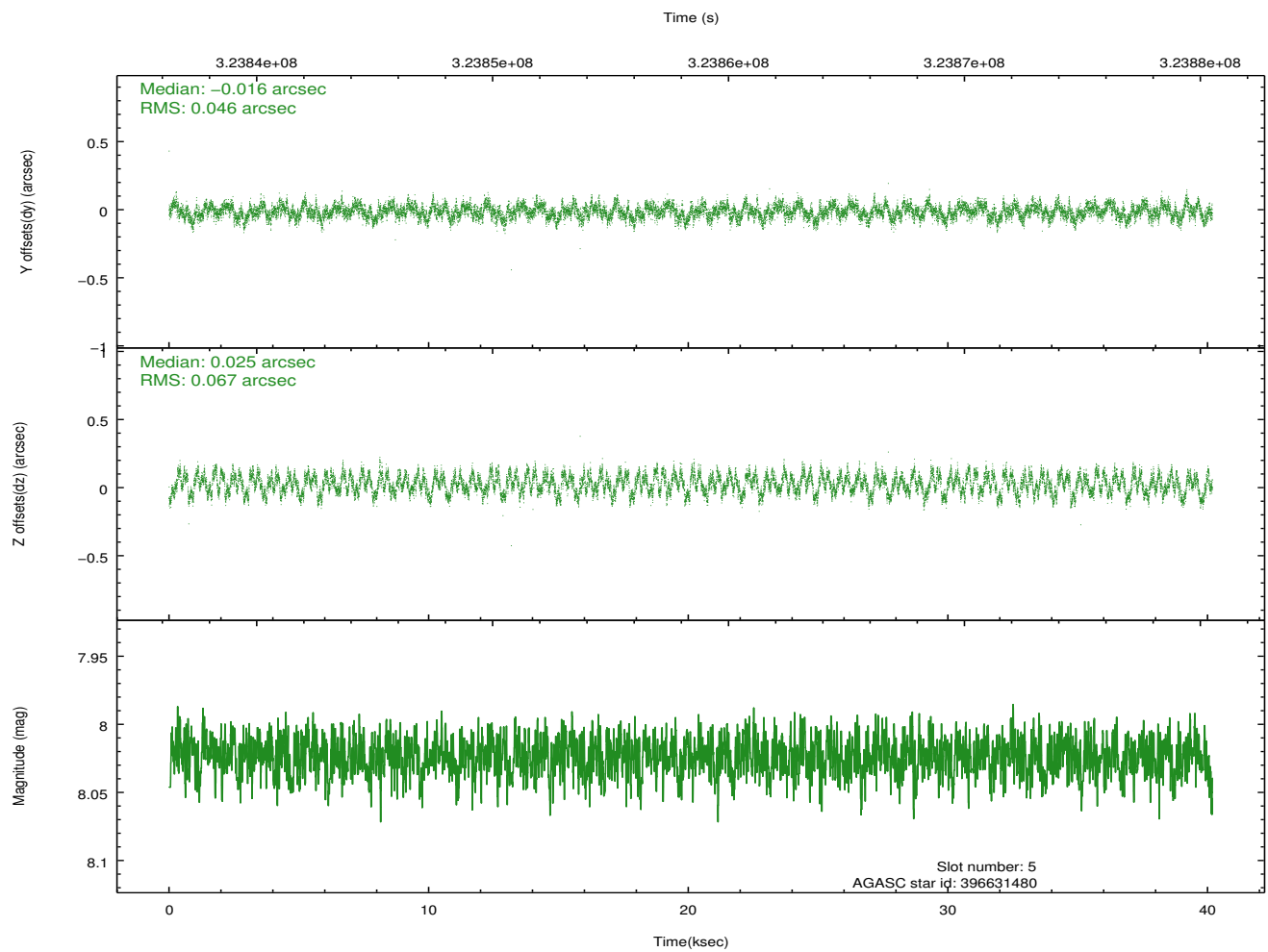
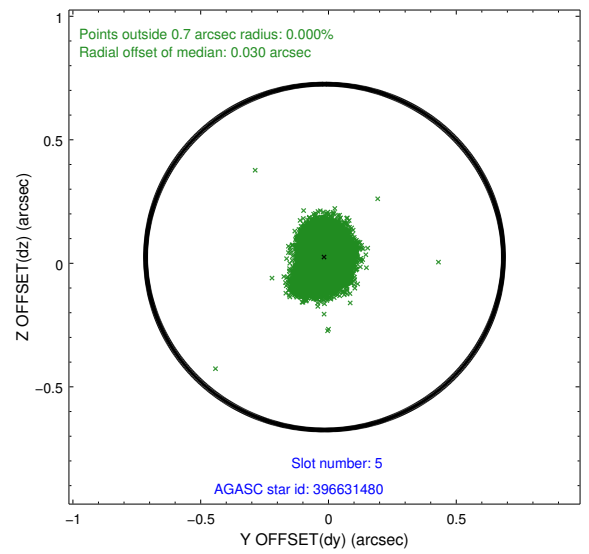
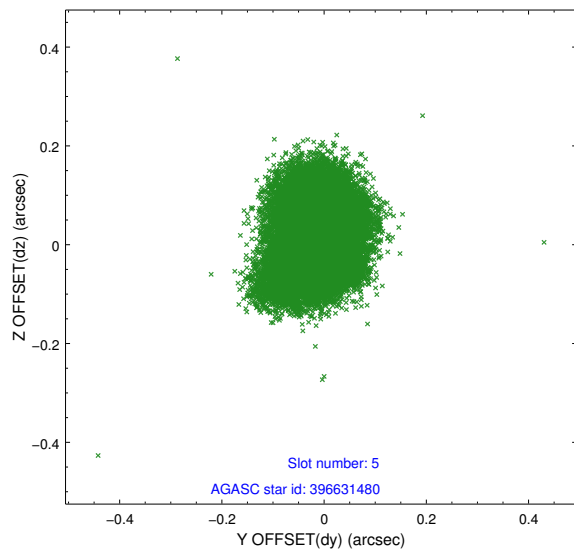
### 2.4.1 Slot 3



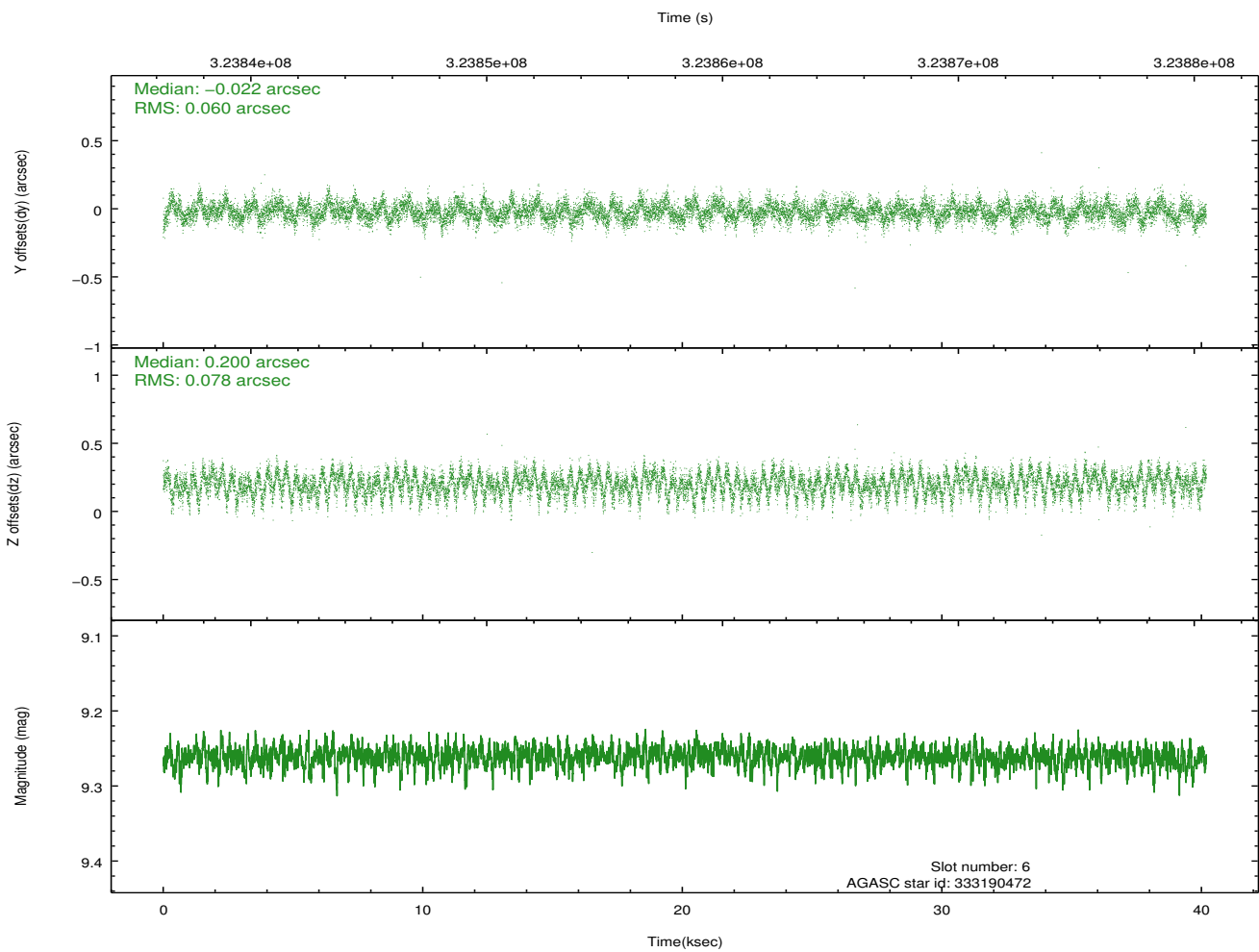
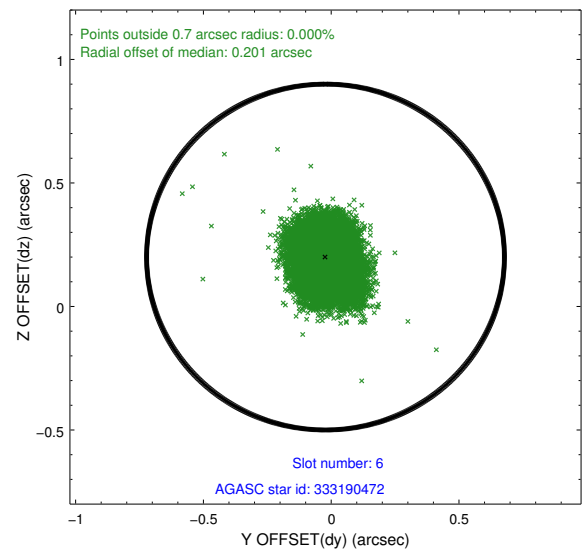
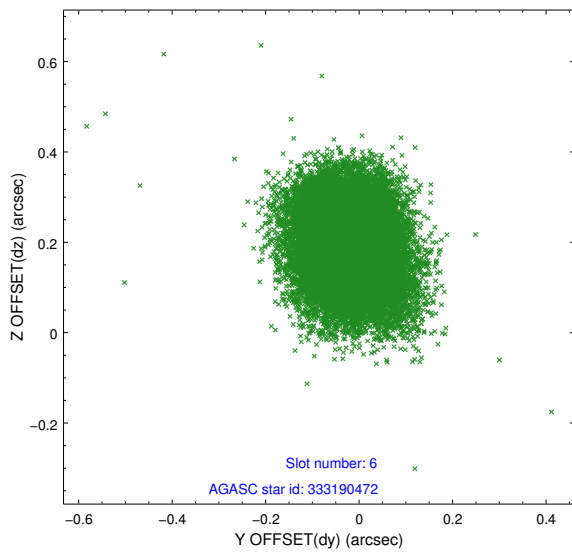
## 2.4.2 Slot 4



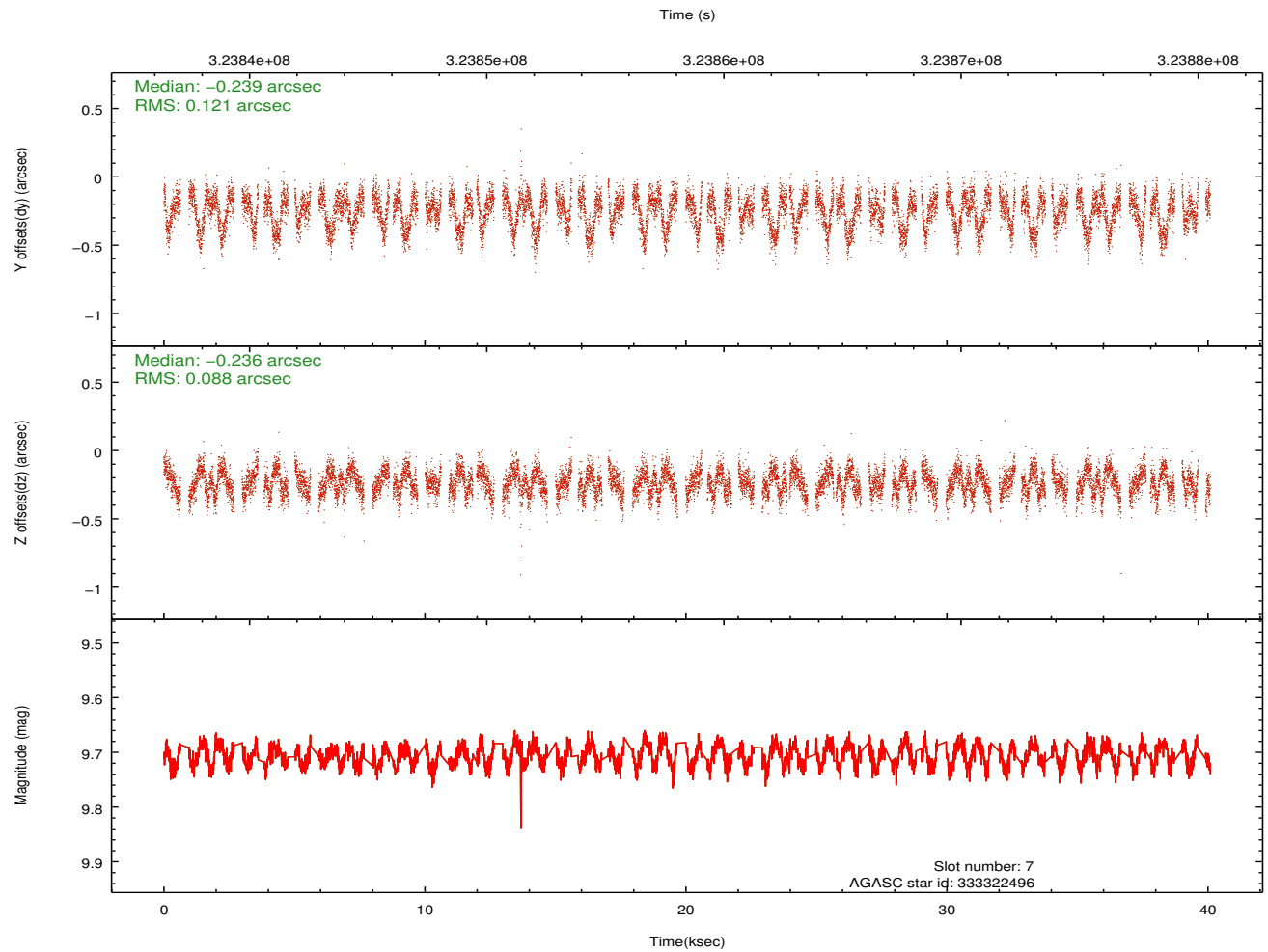
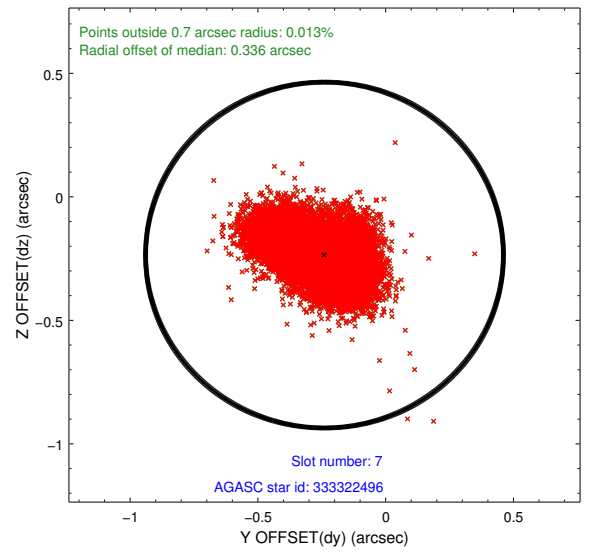
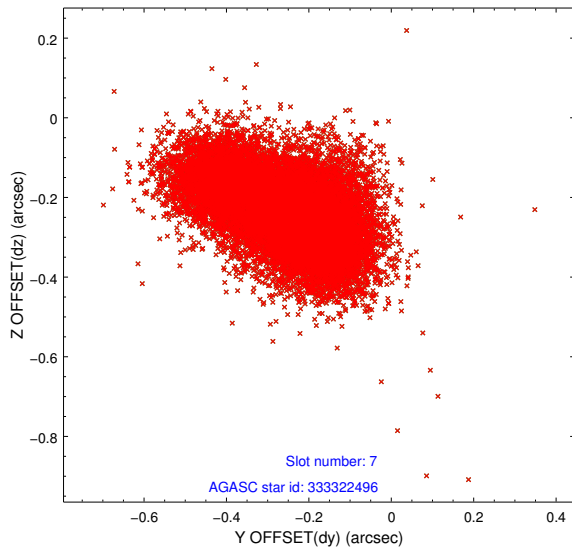
### 2.4.3 Slot 5



## 2.4.4 Slot 6

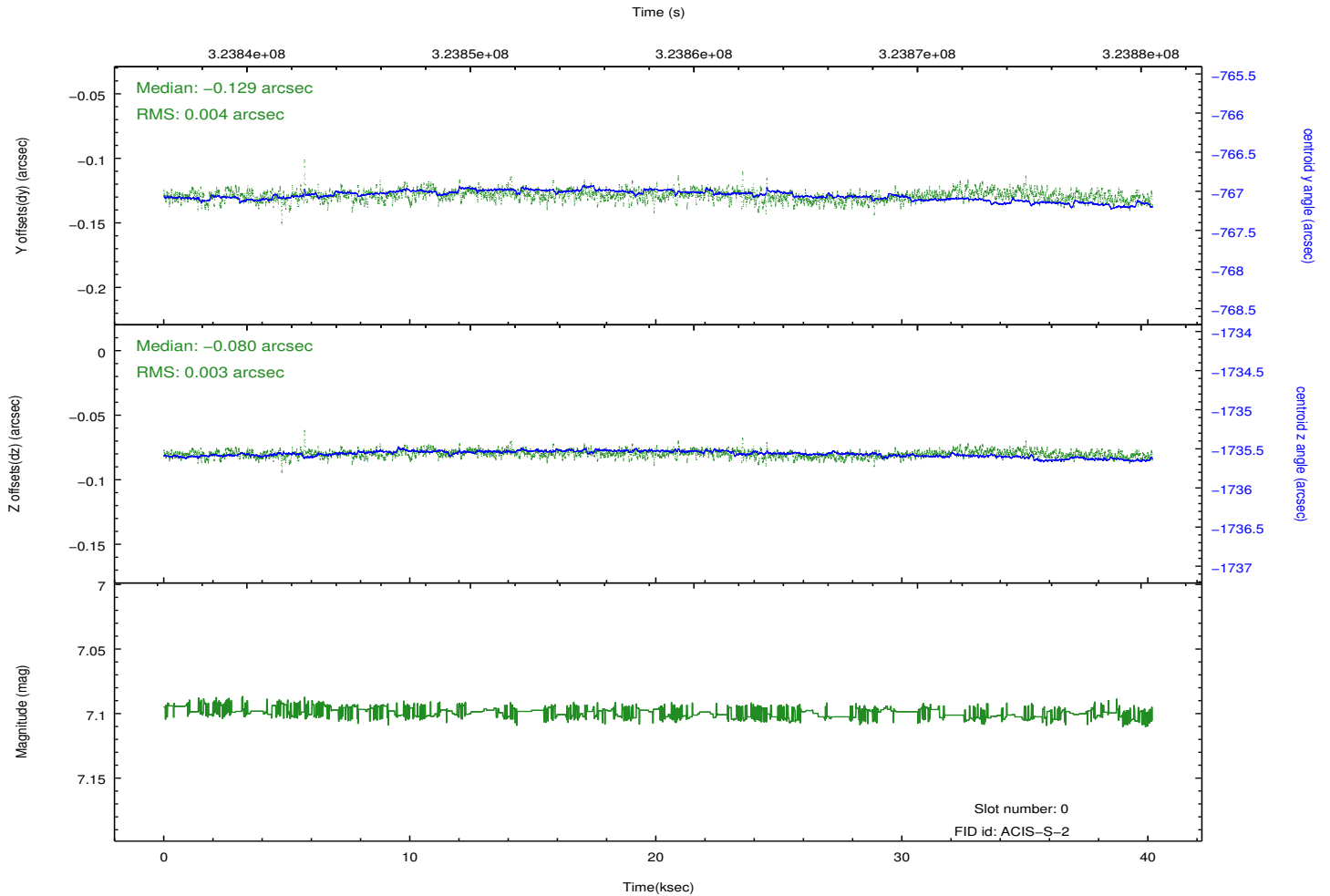
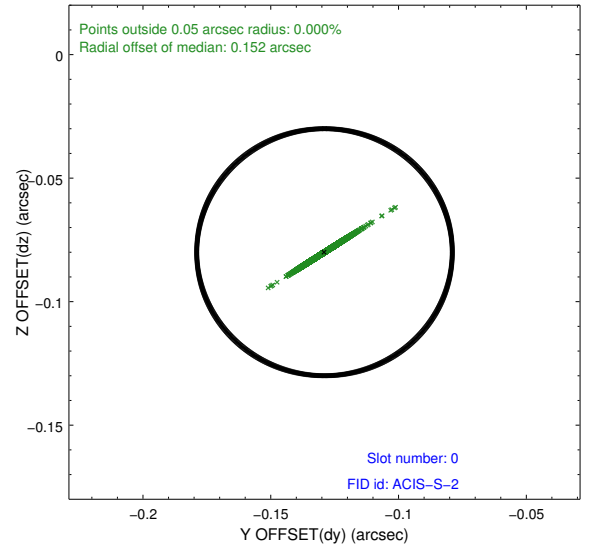
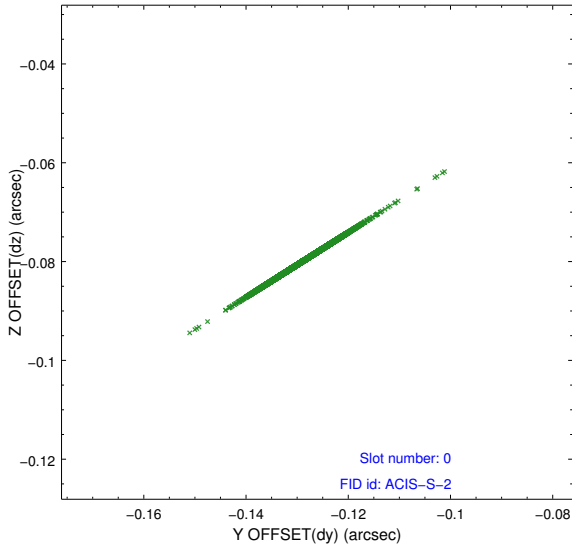


## 2.4.5 Slot 7

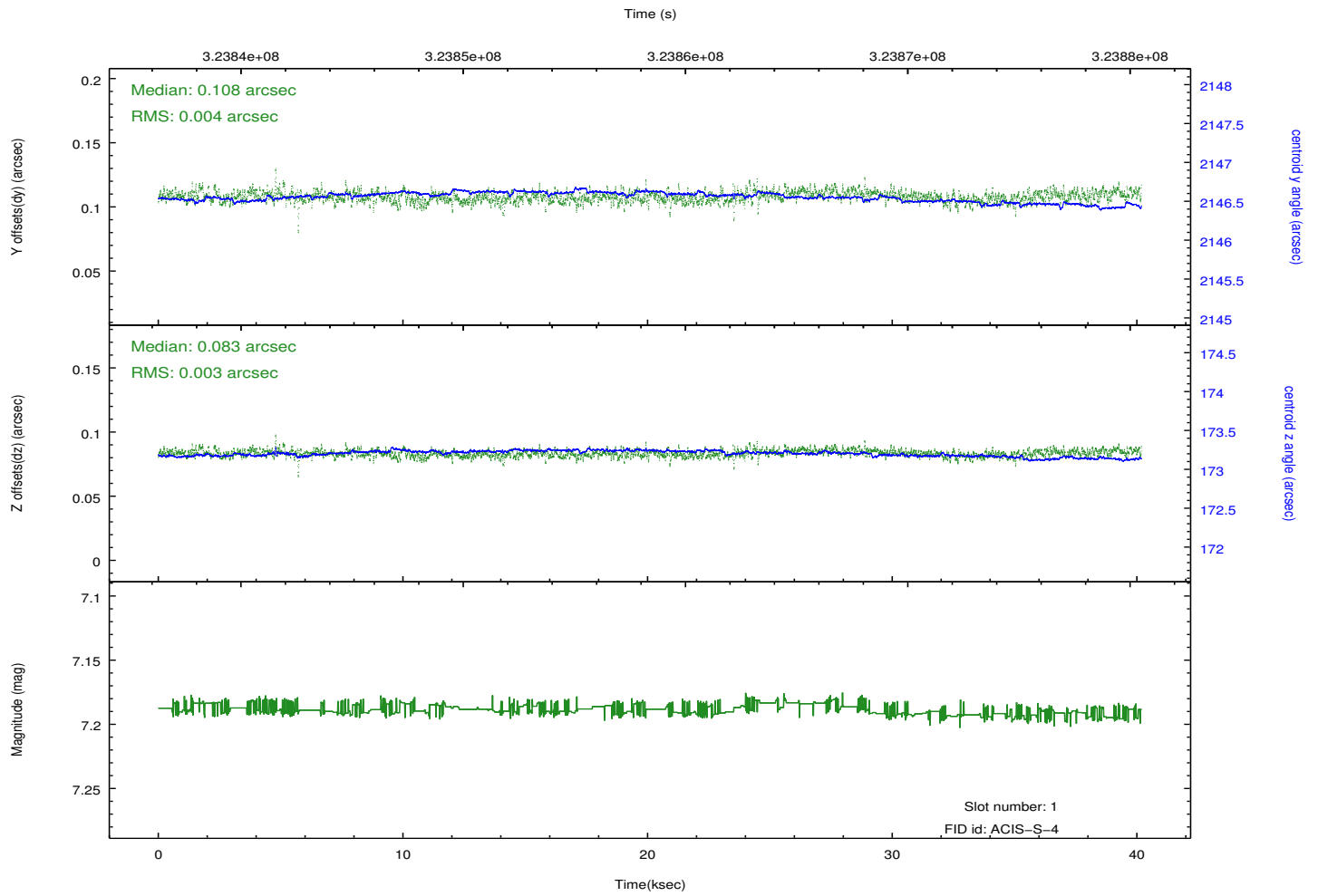
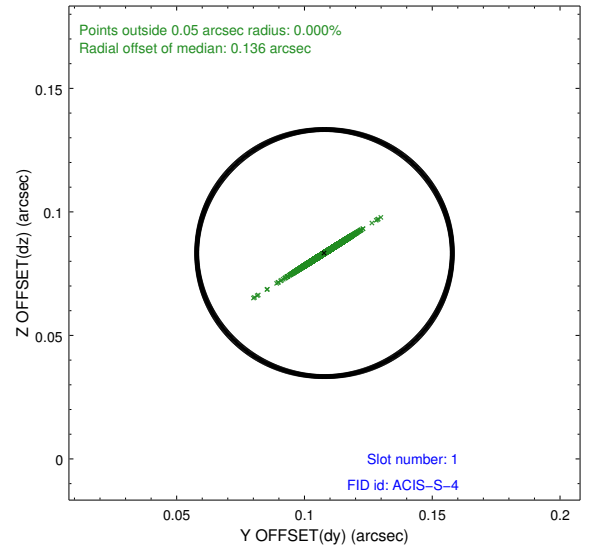
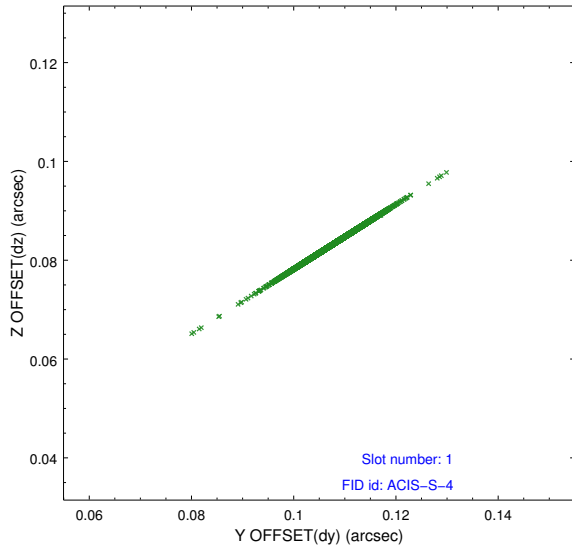


## 2.5 FID Slots

### 2.5.1 Slot 0

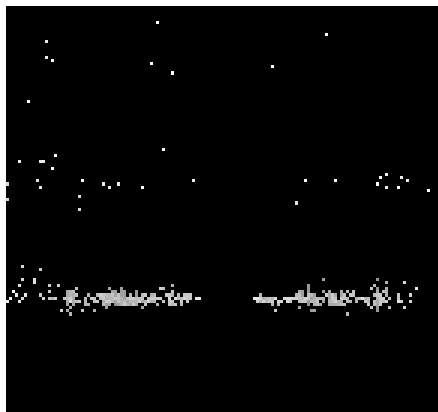


## 2.5.2 Slot 1

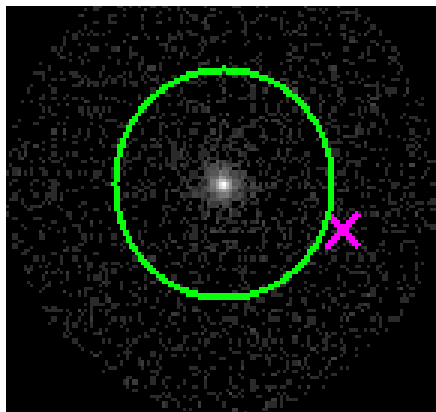


### 3 Gratings

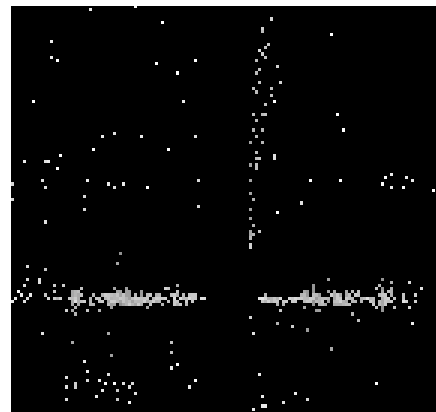
#### 3.1 HEG Arm



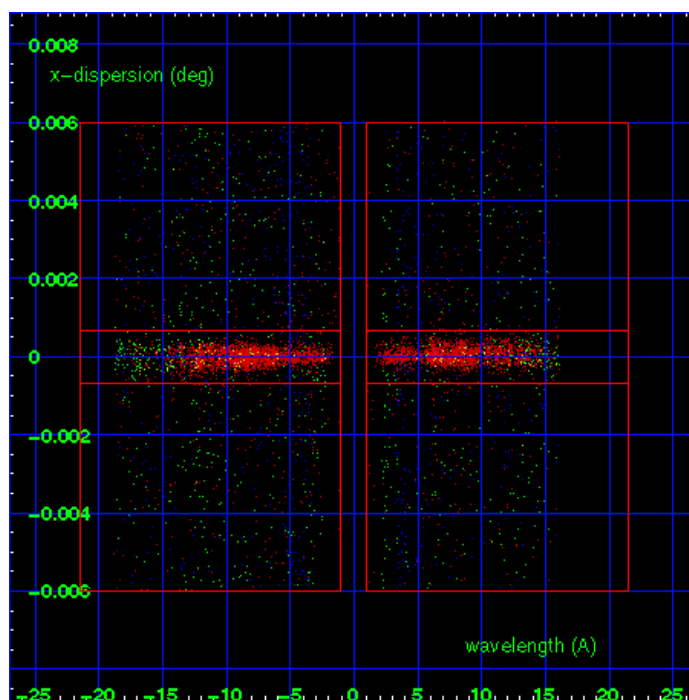
HEG Order Sort 123



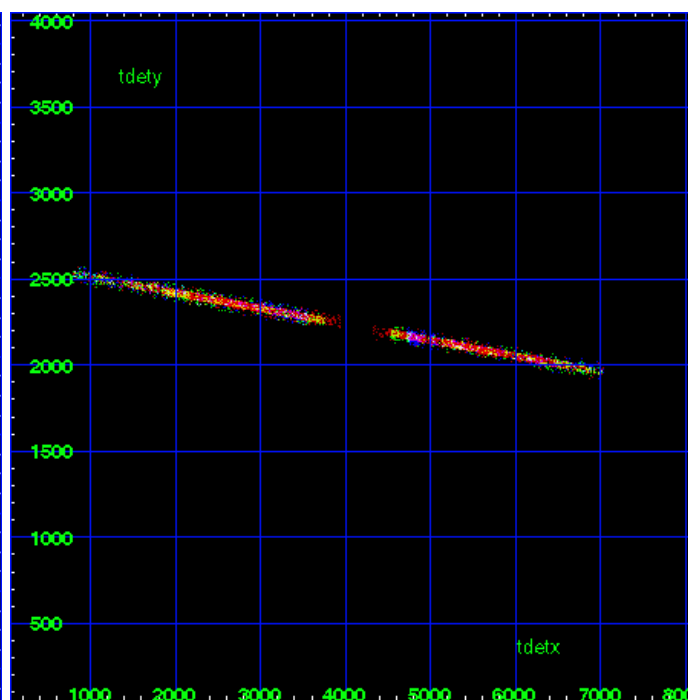
HEG Zero Order



HEG Order Sort ALL

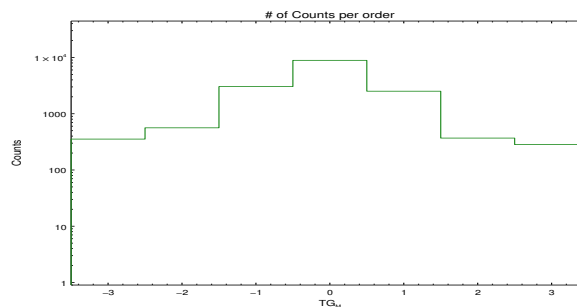


Spot Image HEG

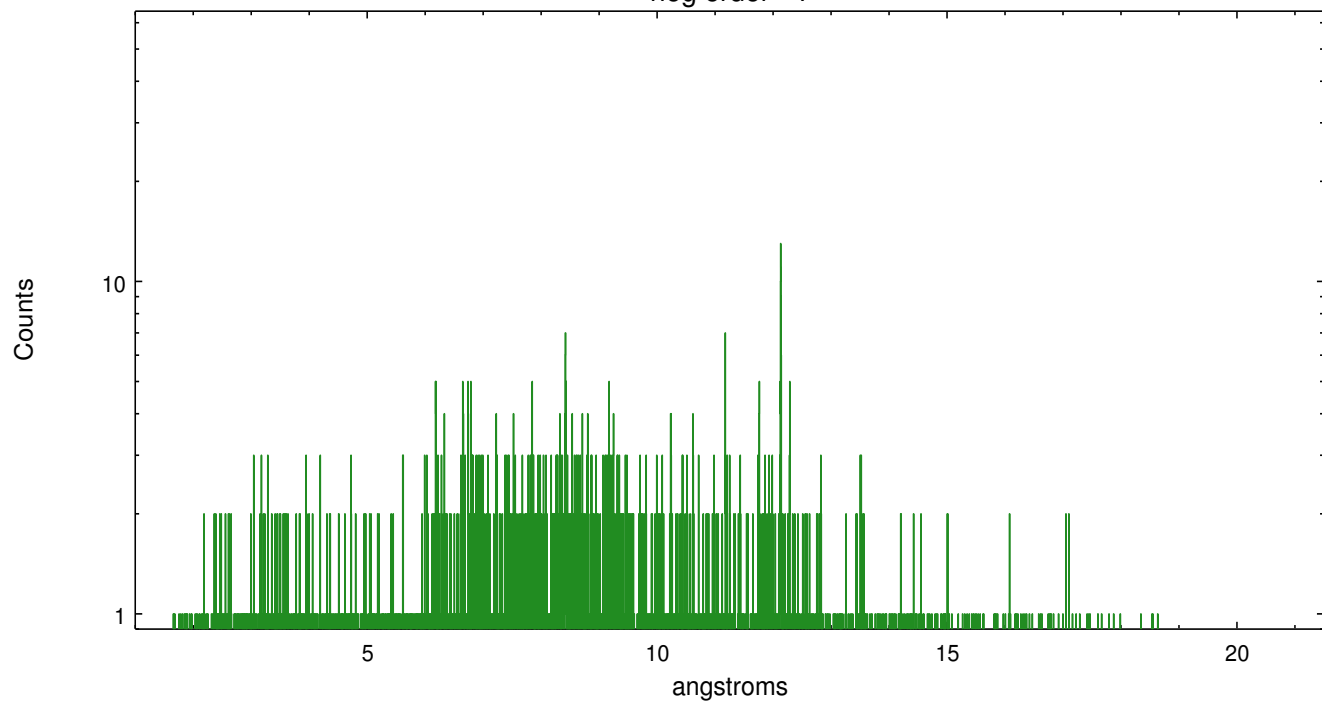


Full Detector HEG

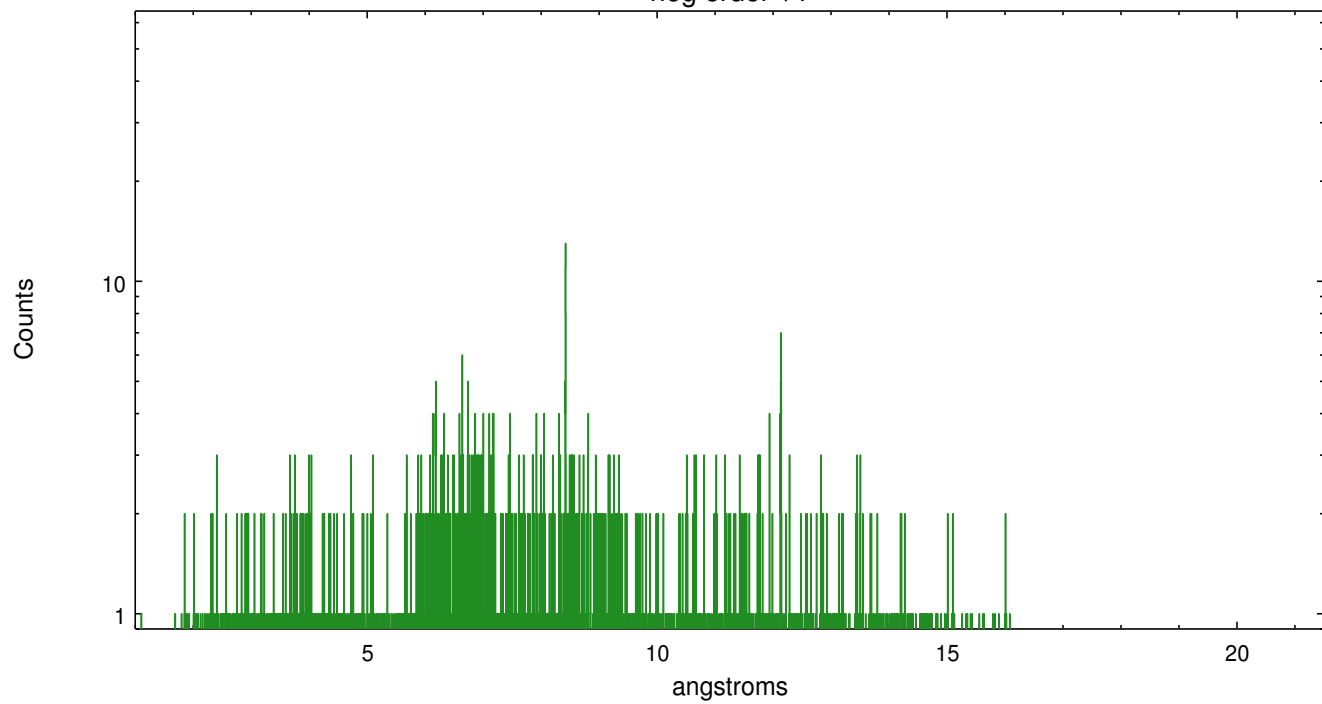
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	354	562	3039	8891	2514	369	283



heg order -1



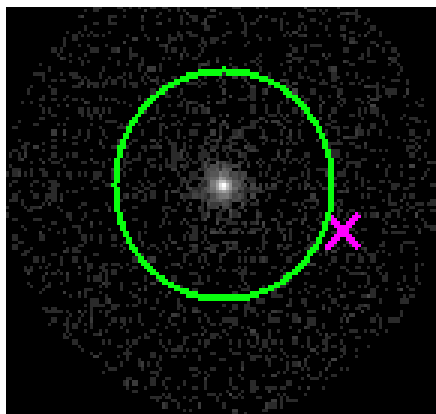
heg order +1



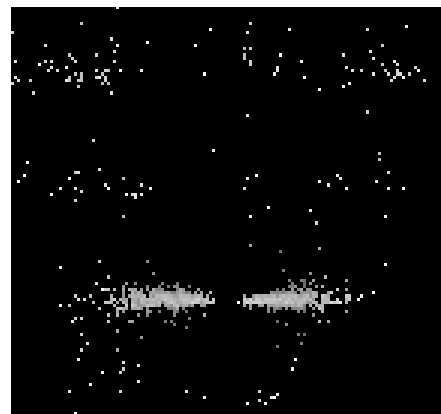
### 3.2 MEG Arm



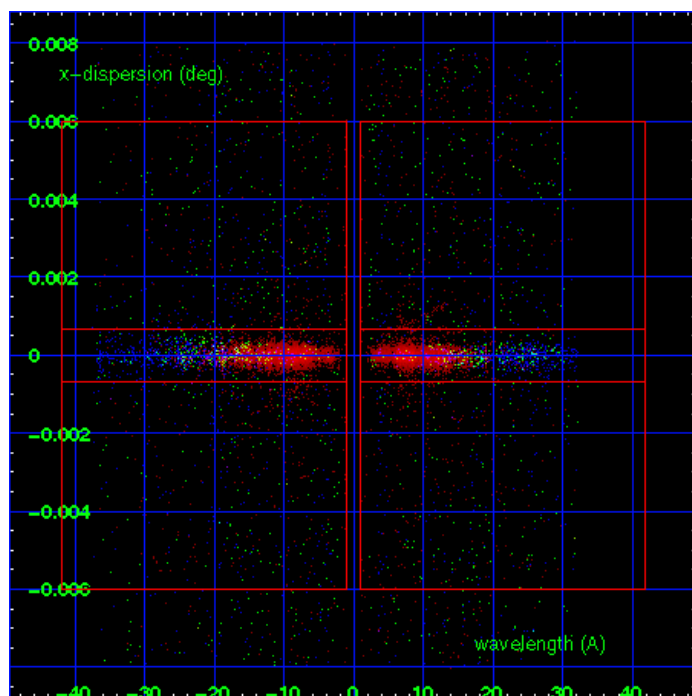
MEG Order Sort 123



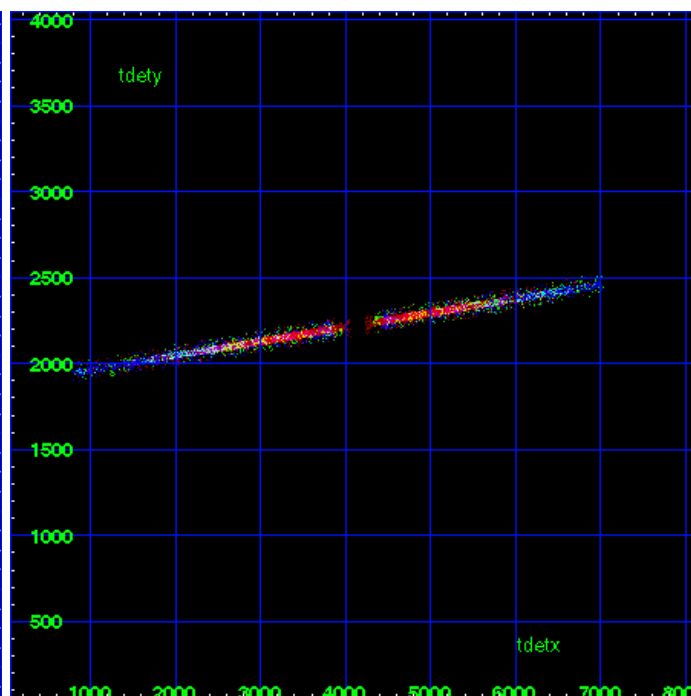
MEG Zero Order



MEG Order Sort ALL

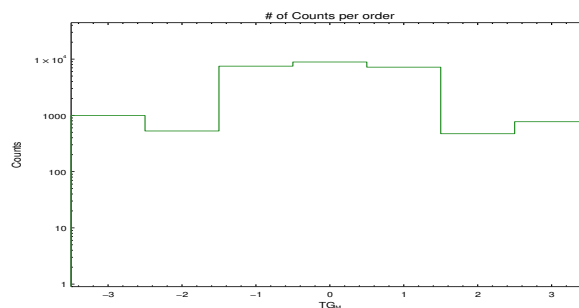


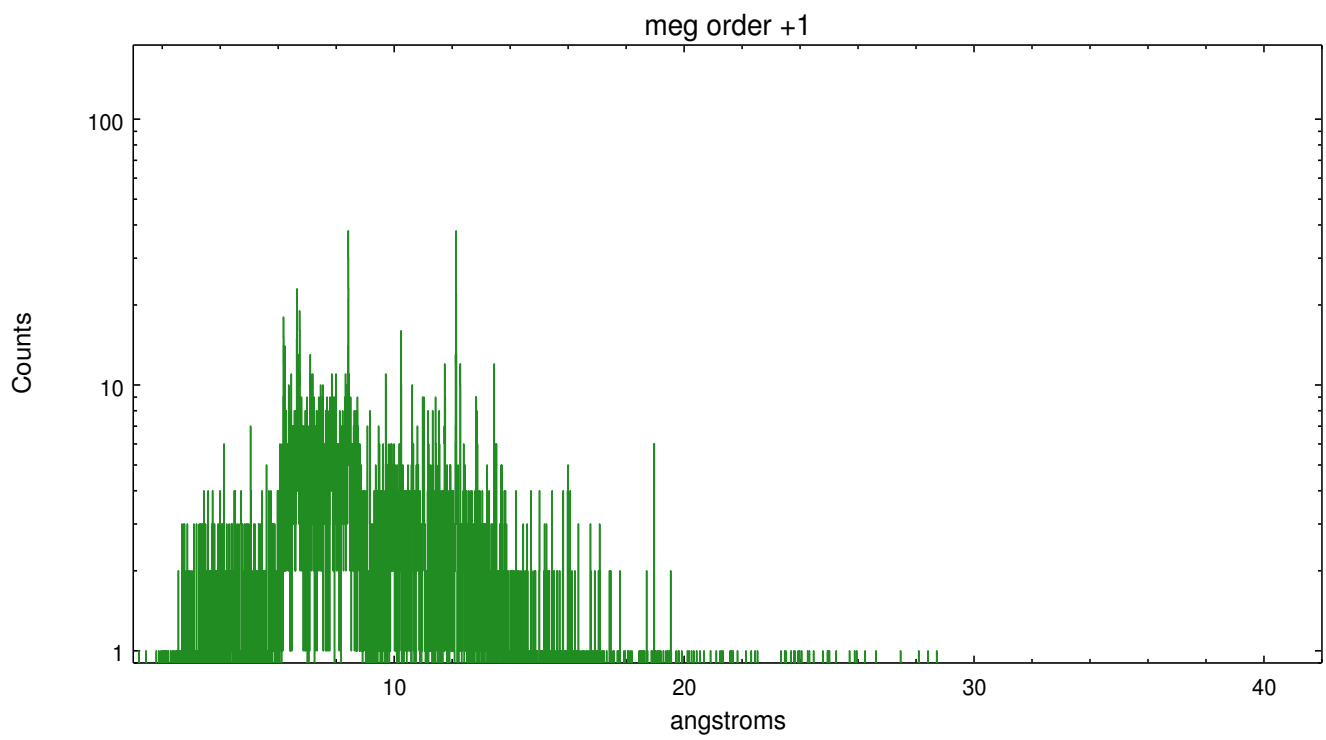
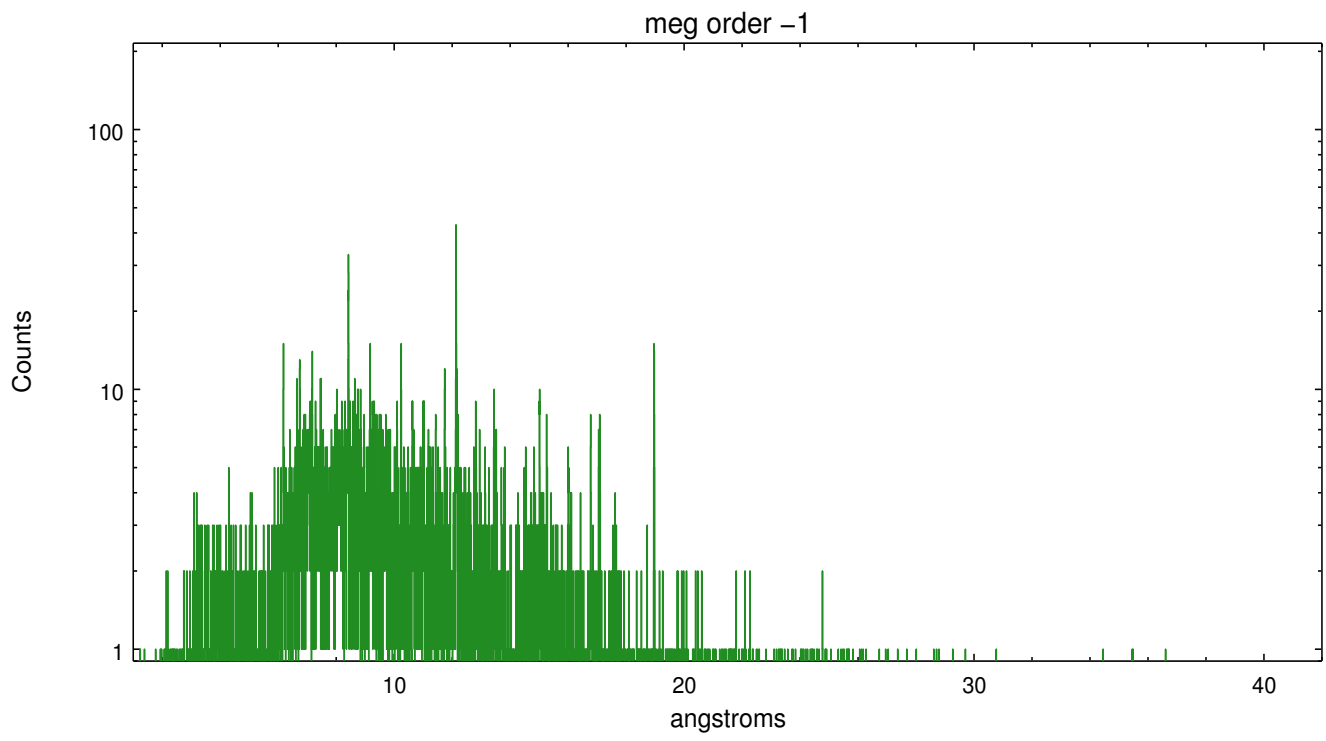
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	992	528	7497	8891	7194	472	772





# A Summary

## A.1 Status

V&V Scientist	John Houck
V&V Date (YYYY-MM-DD)	2012.05.16
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	40.0511998

## A.2 Comments

Fid light in slot 2 was lost. Guide star in slot 7 was not well tracked. The aspect solution is not expected to be degraded by loss of one fid light and one guide star from the solution.

===== Focal plane temperature is warmer than -118.7 C degrees during the entire observation. The ACIS spectral response calibration for the front-illuminated chips is less accurate at these warmer temperatures than it is at -119.7 C. The back-illuminatd chips are not affected at the focal plane temperatures recorded for this observation. Users whose science objectives depend on the most accurate spectral response (i.e.: fitting line-rich spectra) may notice an effect. Users whose science objectives do not depend on the most accurate spectral response should not notice an effect.