

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 5419 - L2 Version 2  
Chandra X-Ray Center

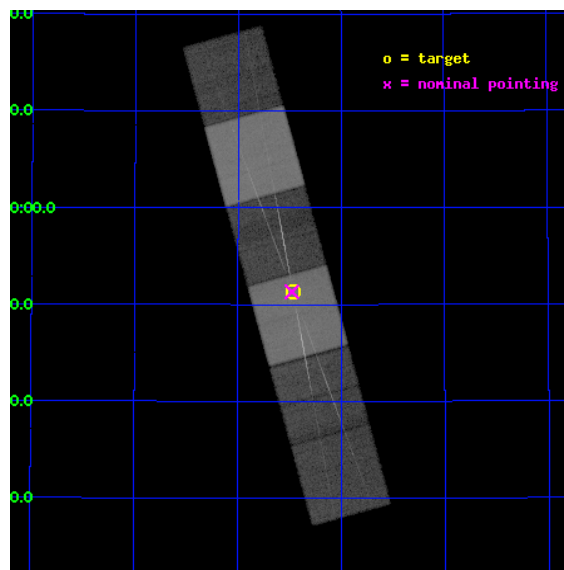
L2 Processing Date : Mar 29 2012

## 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
2.5	FID Slots . . . . .	13
2.5.1	Slot 0 . . . . .	13
2.5.2	Slot 1 . . . . .	14
2.5.3	Slot 2 . . . . .	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

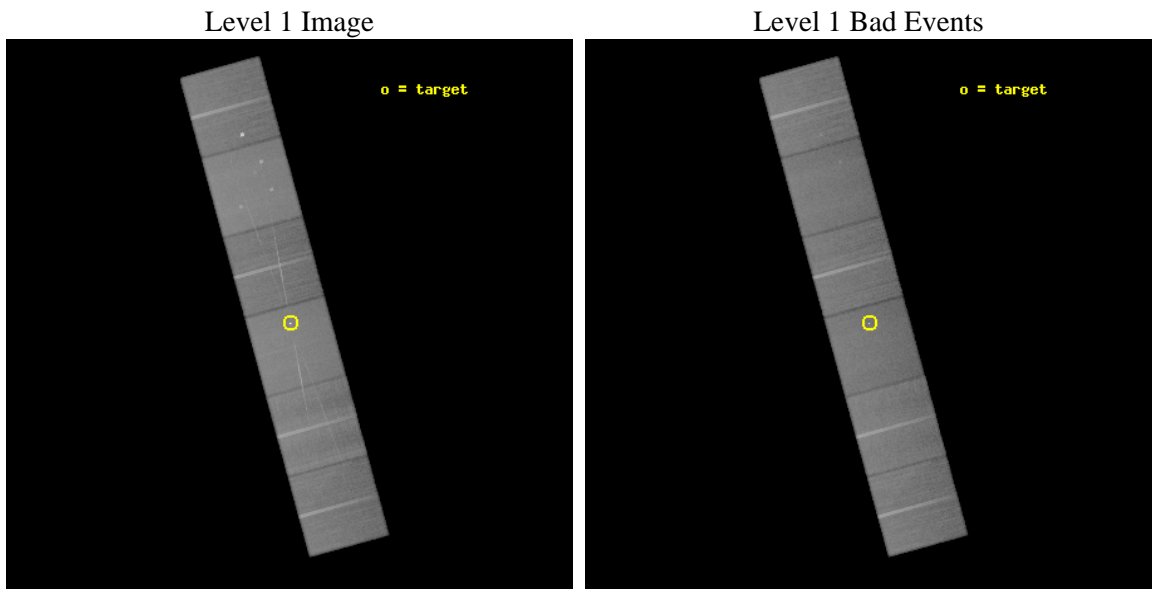
seq_num	200352	Sequence number
obs_id	5419	Observation id
title	Doppler Imaging of WR140's Collisionless Shocks at Apastron	Propo
observer	Dr Andrew Pollock	Principal investigator
object	WR 140	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	305.116667	Observer's specified target RA [deg]
dec_targ	43.854528	Observer's specified target Dec [deg]
ra_nom	305.11938277694	Nominal RA [deg]
dec_nom	43.855302154049	Nominal Dec [deg]
roll_nom	74.635398099792	Nominal Roll [deg]
revision	2	Processing version of data
ontime	45679.808249593	Sum of GTIs [s]
livetime	45101.383012458	Livetime [s]
ontime4	45679.849289596	Sum of GTIs [s]
ontime5	45679.767209589	Sum of GTIs [s]
ontime6	45676.485189259	Sum of GTIs [s]
ontime7	45679.808249593	Sum of GTIs [s]
ontime8	45676.444169313	Sum of GTIs [s]
ontime9	45679.644089609	Sum of GTIs [s]
l2events	701962	Number of level 2 events



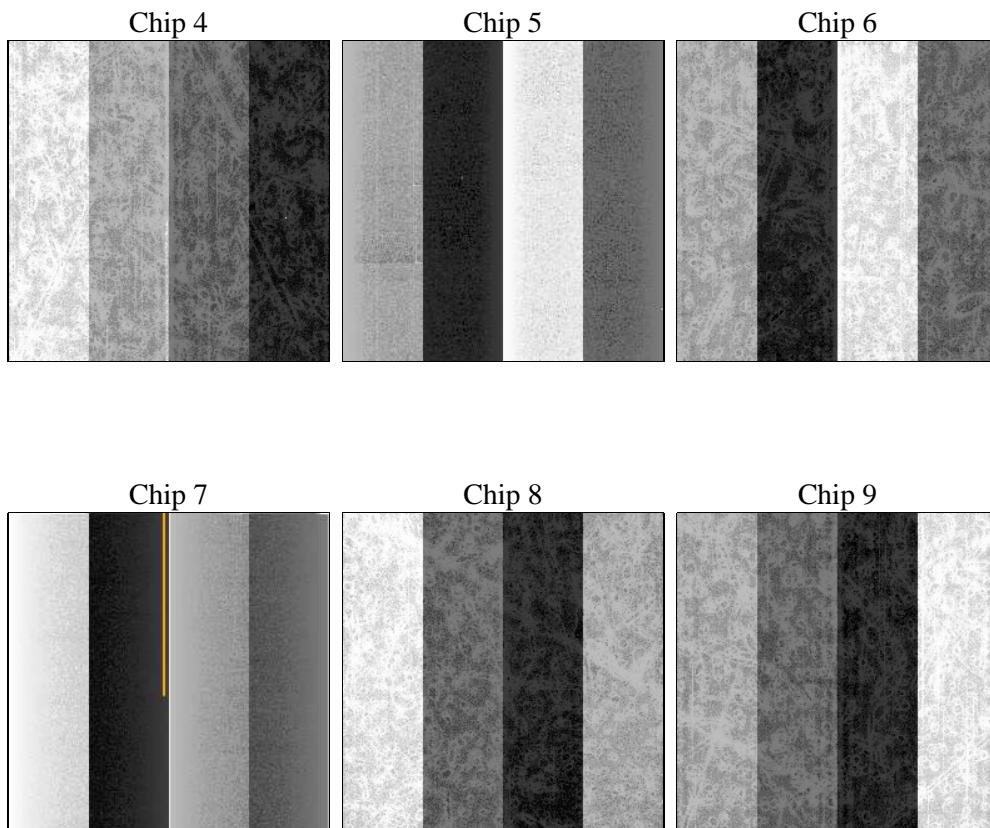
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	45694.300000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	45679.808249593	Sum of GTIs [s]
caldbver	4.4.8	&#160	ontime4	45679.849289596	Sum of GTIs [s]
date	2012-03-29T01:45:22	Date and time of file creation	ontime5	45679.767209589	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	45676.485189259	Sum of GTIs [s]
			ontime7	45679.808249593	Sum of GTIs [s]
			ontime8	45676.444169313	Sum of GTIs [s]
			ontime9	45679.644089609	Sum of GTIs [s]
			l1events	3004205	Number of level 1 events

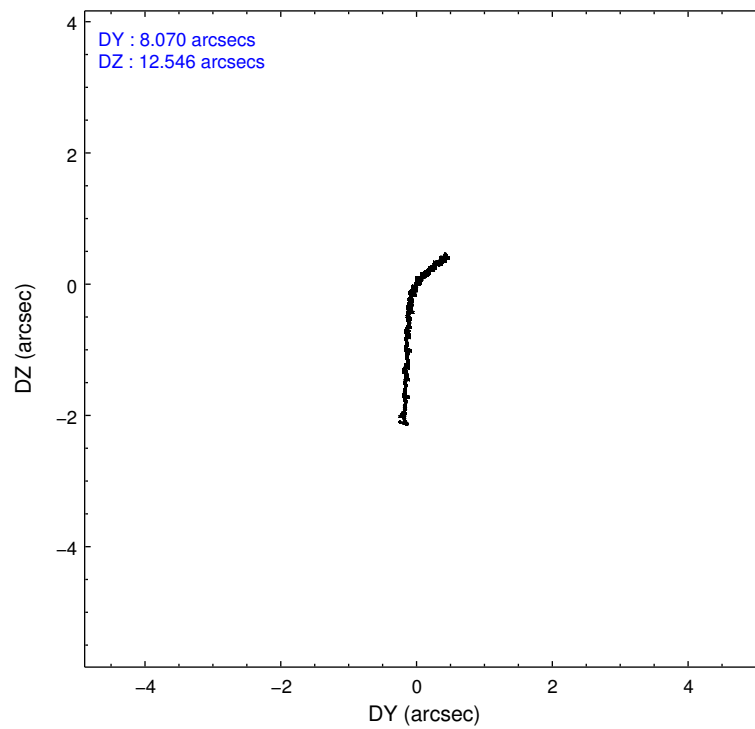
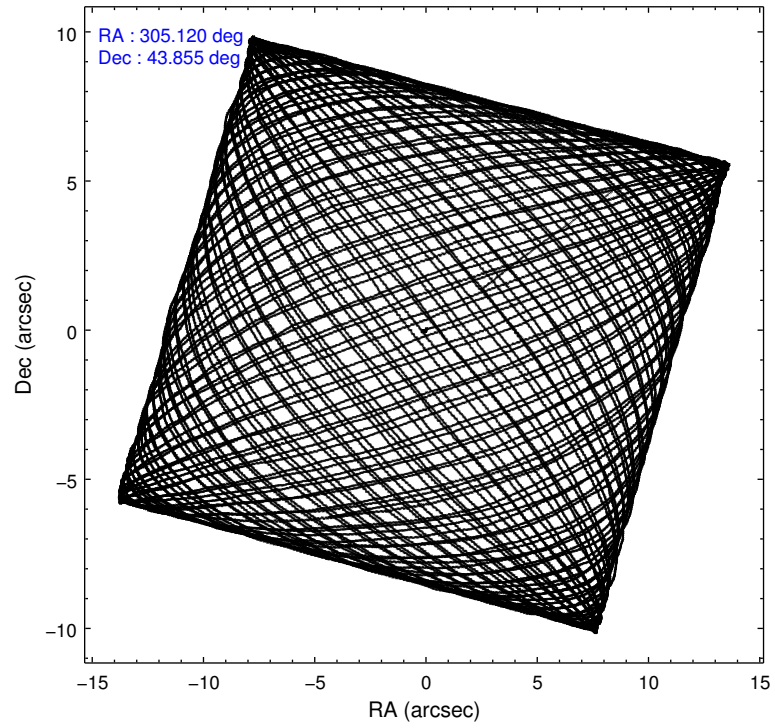
### 2.1.4 Events

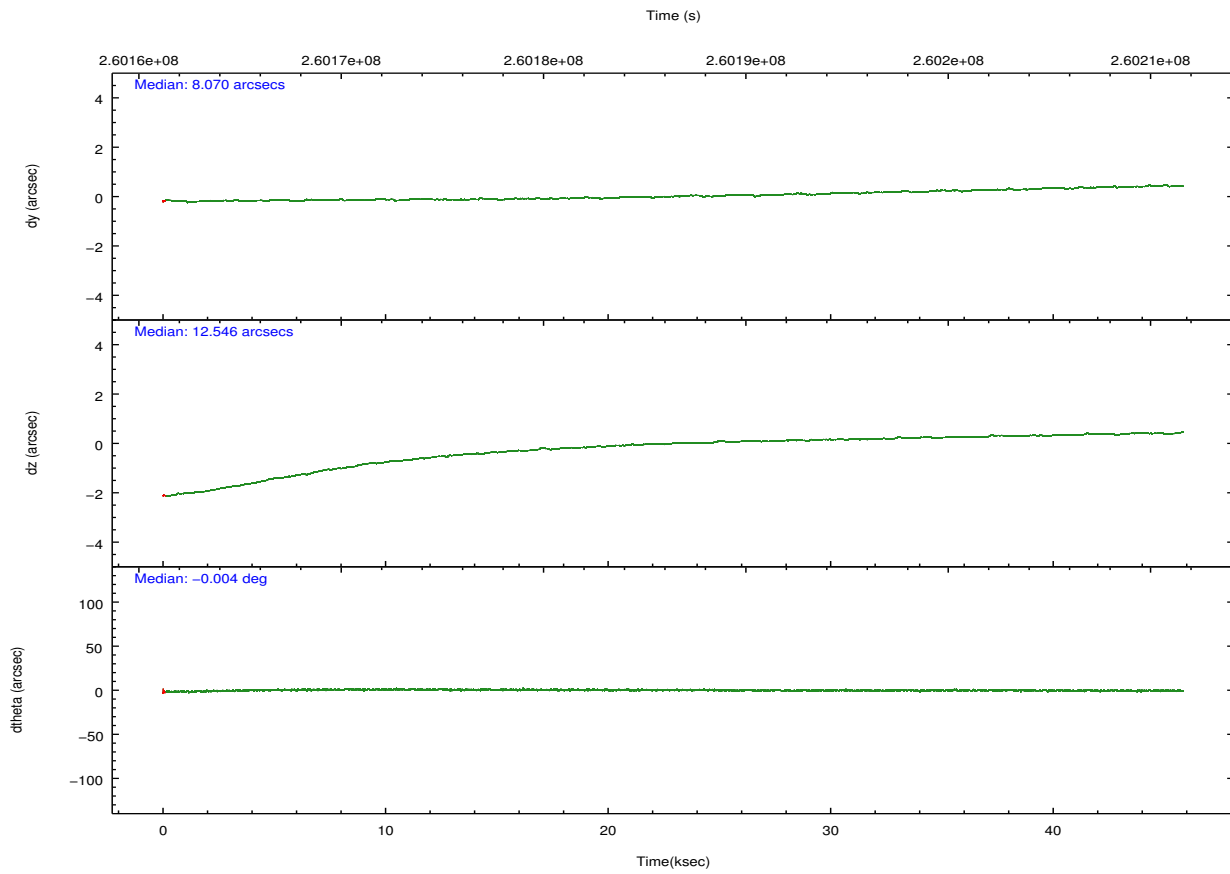
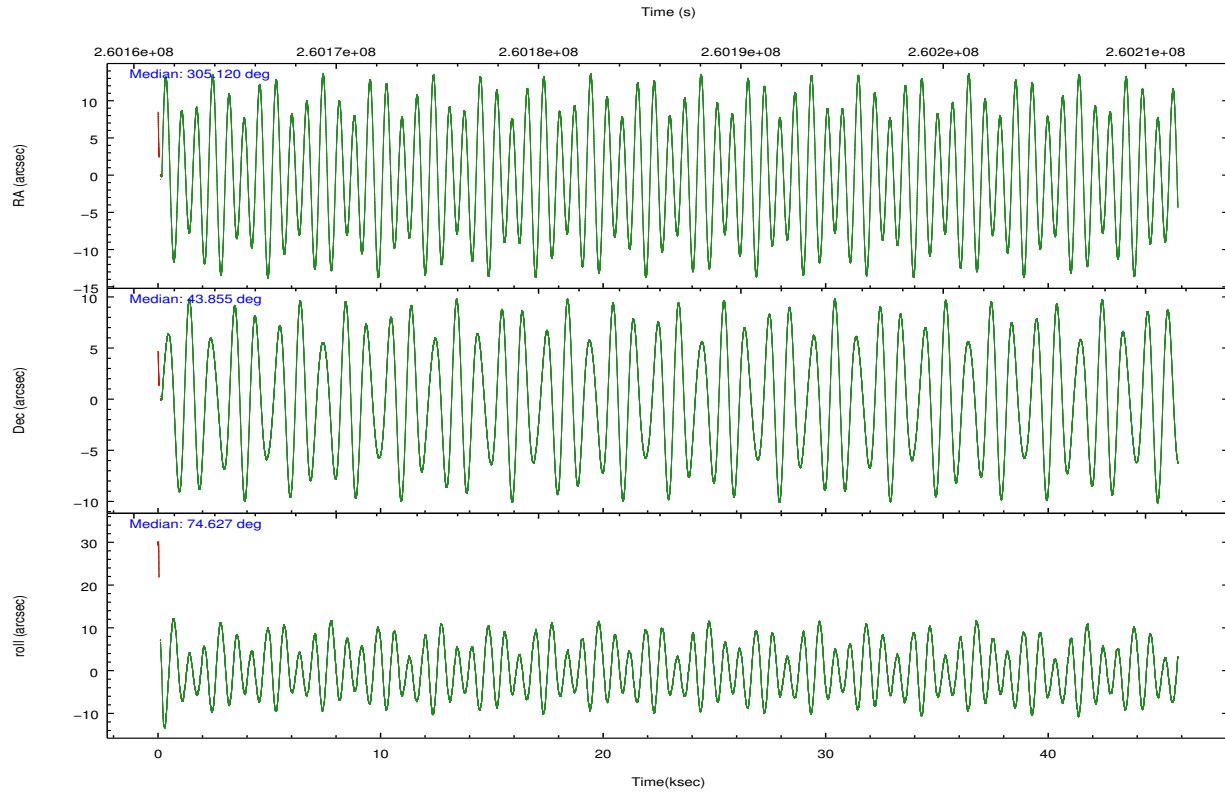
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	469255	610366	422373	573210	518772	410229	grade 0 events	34814	21961	28131	23675	40439	21531
rejected events	405634	331928	362712	324444	399301	359341		7%	3%	6%	4%	7%	5%
rejected %	86%	54%	85%	56%	76%	87%	grade 1 events	566	790	270	727	387	246
								0%	0%	0%	0%	0%	0%
							grade 2 events	10749	84955	11392	50968	25822	9659
								2%	13%	2%	8%	4%	2%
							grade 3 events	5191	11017	5011	21924	12270	5058
								1%	1%	1%	3%	2%	1%
							grade 4 events	4889	10585	5013	21744	11401	4847
								1%	1%	1%	3%	2%	1%
							grade 5 events	18488	44494	18613	52991	24929	20022
								3%	7%	4%	9%	4%	4%
							grade 6 events	7983	149972	10127	130495	29565	9800
								1%	24%	2%	22%	5%	2%
							grade 7 events	386575	286592	343816	270686	373959	339066
								82%	46%	81%	47%	72%	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	305.129389	305.1193827769446	Subarray requested	NONE	NONE
[deg] Pointing Dec	43.829030	43.85530215404924	Alternating exposures requested	N	N
[deg] Pointing Roll	74.471833	74.63539809979177	[s] Primary exposure time	0.000000	3.2
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1400660498719			
[mm] SIM translation stage offset	0	0.00754346686406393			
[s] Observation start time (MET)	260163622.184000	260162497.87359			
Observation start date	2006-03-31T03:39:17	2006-03-31T03:21:37			
[s] Observation end time (MET)	260209317.184000	260209533.07578			
Observation end date	2006-03-31T16:20:52	2006-03-31T16:25:33			
Read mode	TIMED	TIMED			

## 2.3 Aspect



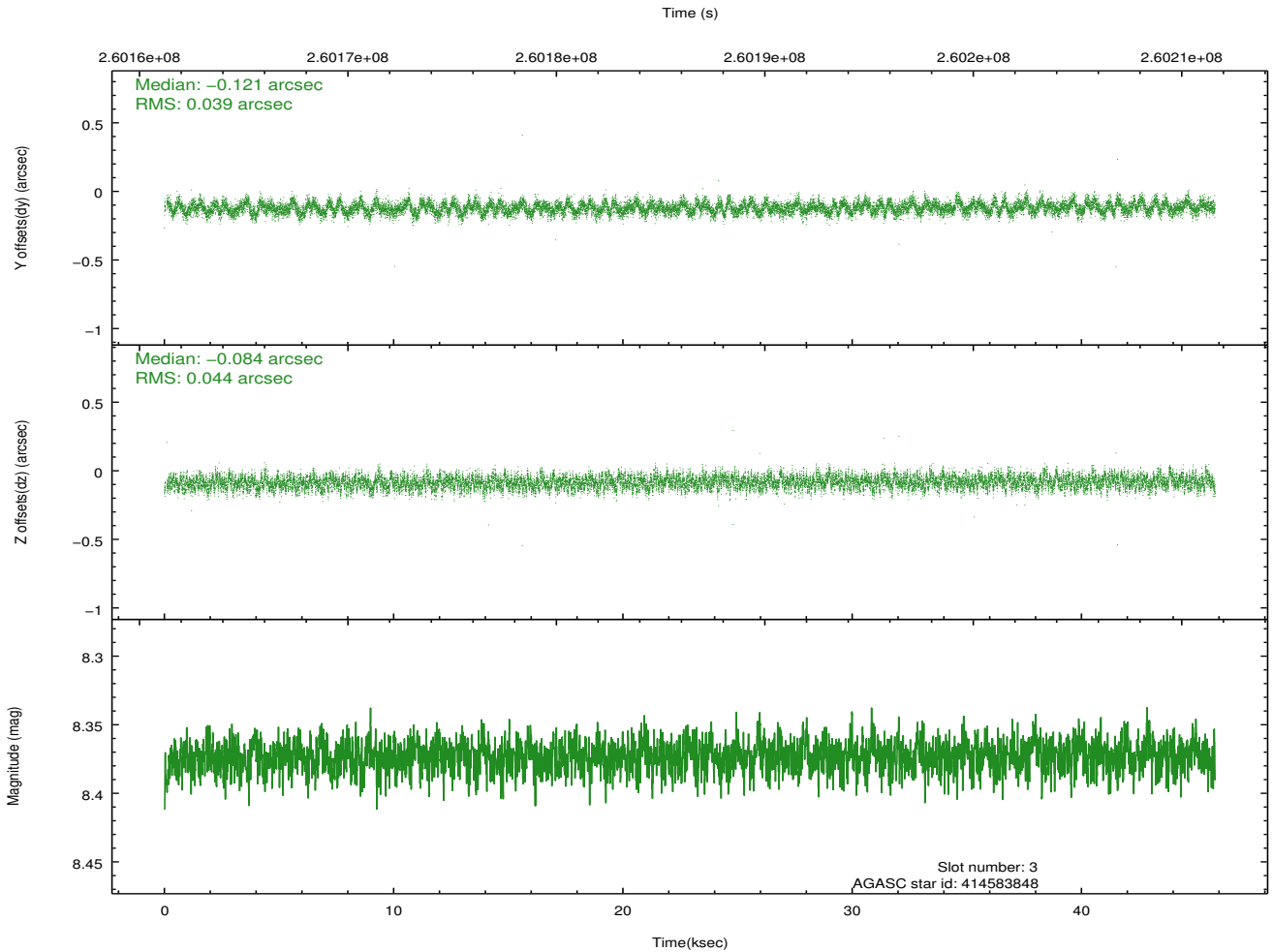
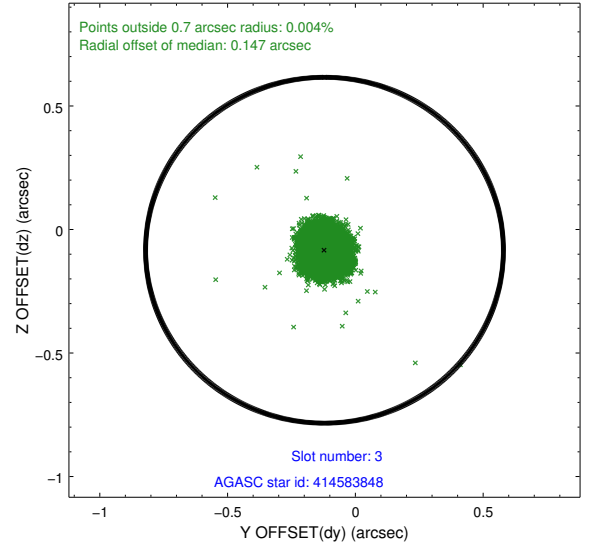
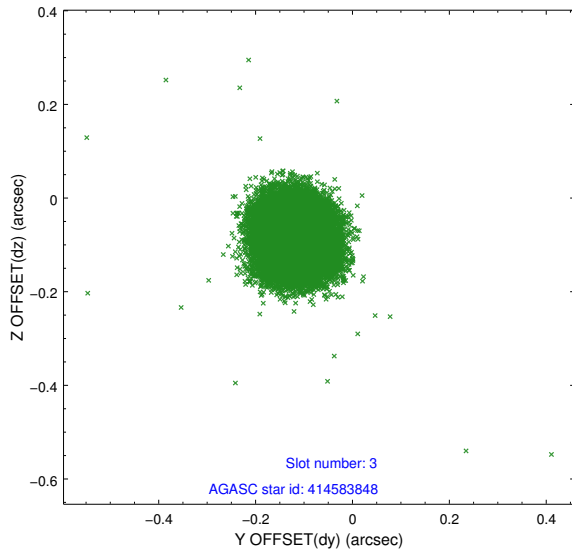


### Slot Statistics

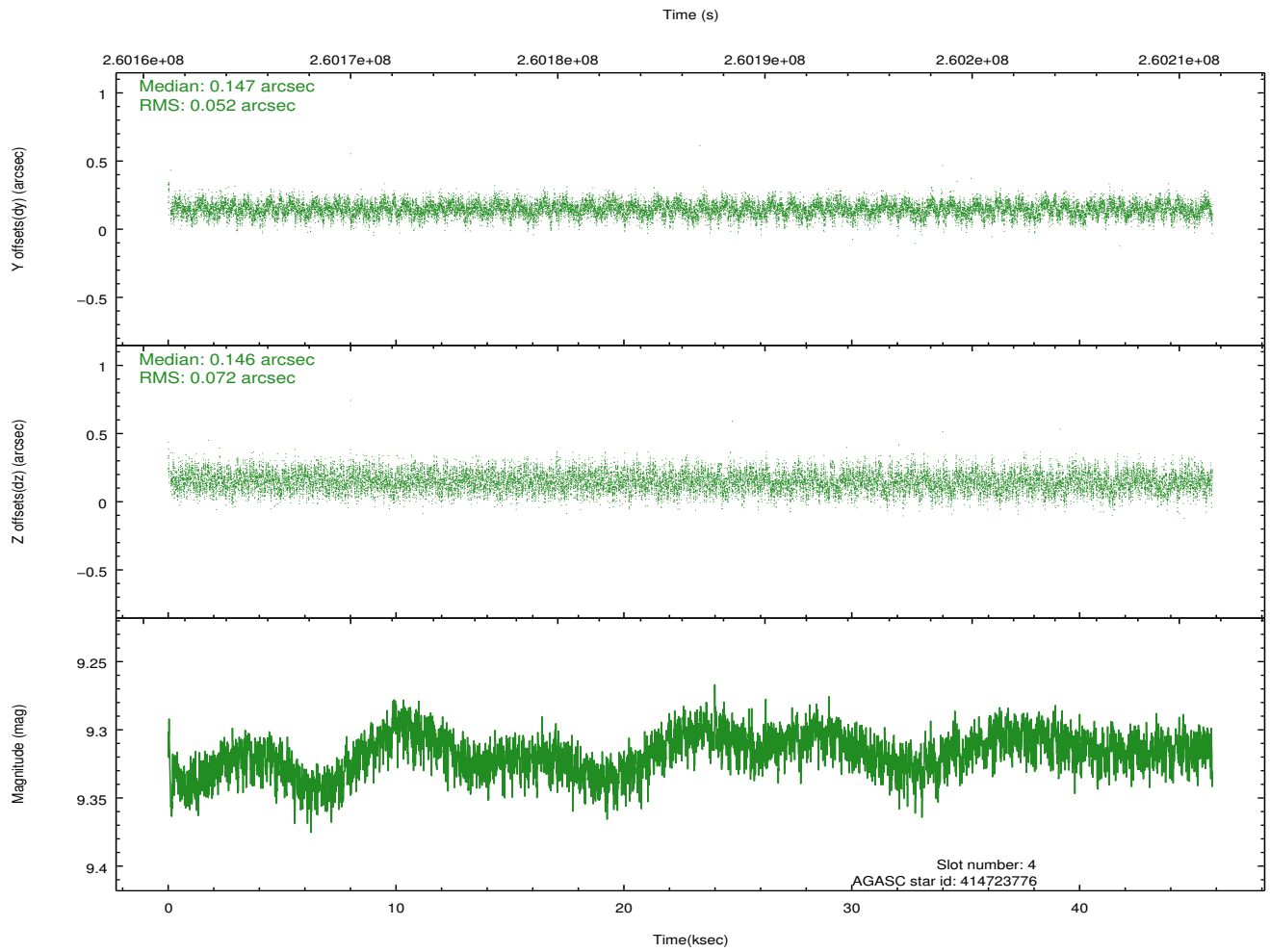
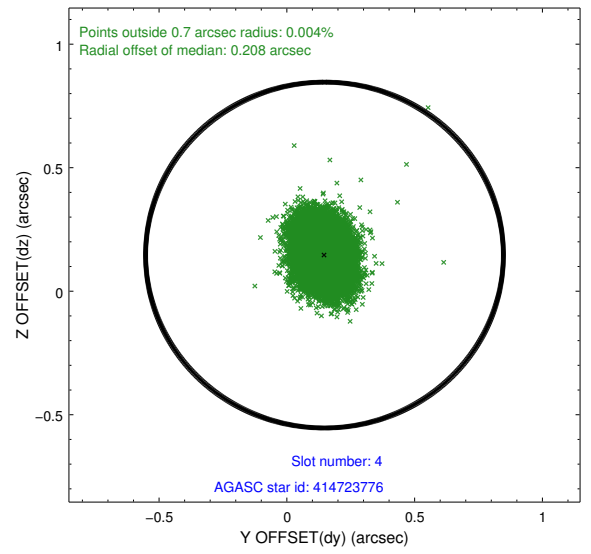
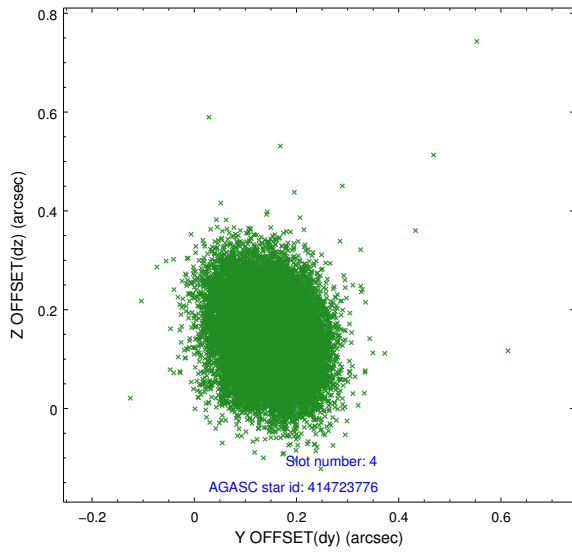
	status	id	mag	n_pts	med_dy	med_dz	dr1
	FID	ACIS-S-1	7.19	11162	0.054	-0.051	0.025
	FID	ACIS-S-2	7.10	11160	-0.053	0.006	0.010
	FID	ACIS-S-6	7.35	11162	-0.021	0.046	0.023
	GUIDE	414583848	8.37	22314	-0.121	-0.084	0.062
	GUIDE	414723776	9.32	22303	0.147	0.146	0.094
	GUIDE	414189728	8.40	22314	-0.042	0.130	0.059
	GUIDE	414585176	8.27	22313	0.014	-0.193	0.073
0.000	0.000	0.000	0.000000	0.000000	0.00	0.00	

## 2.4 Star Slots

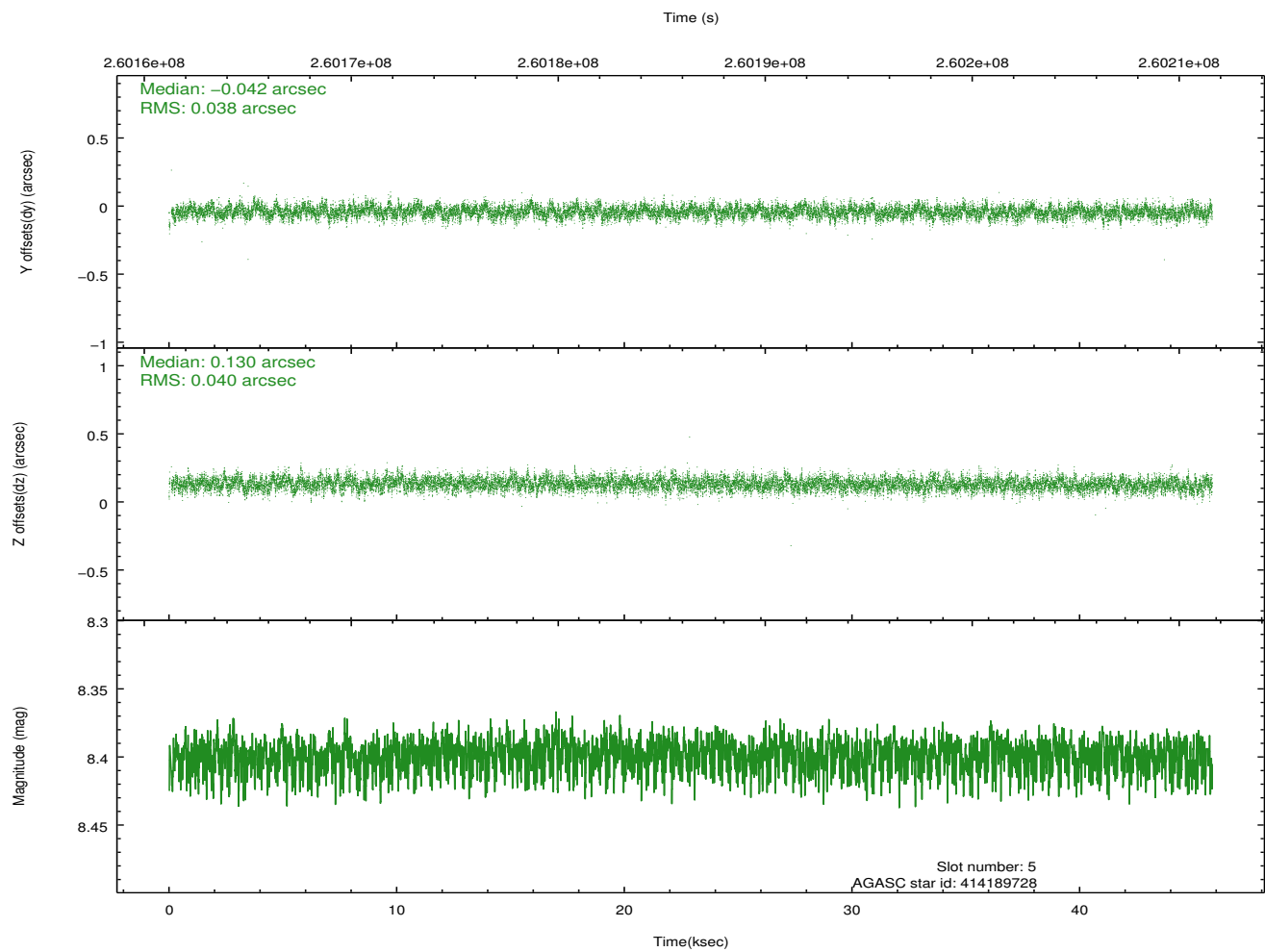
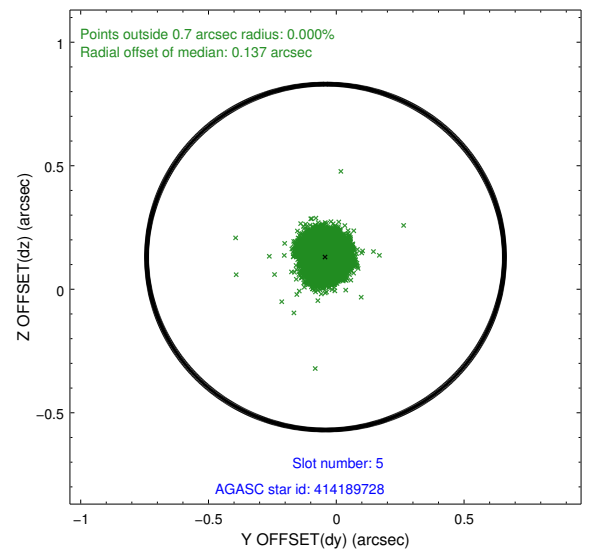
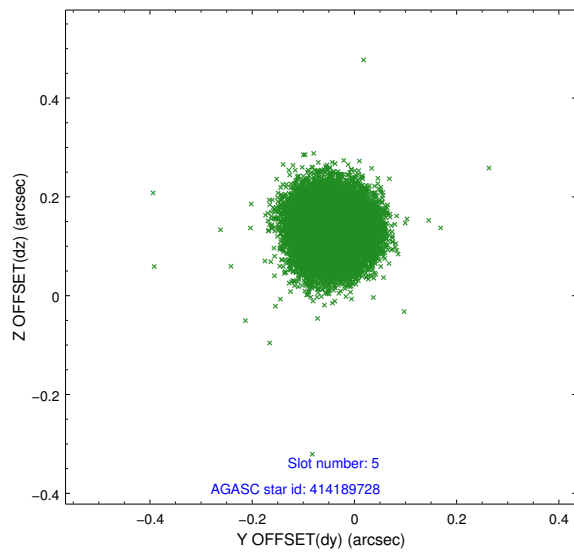
### 2.4.1 Slot 3



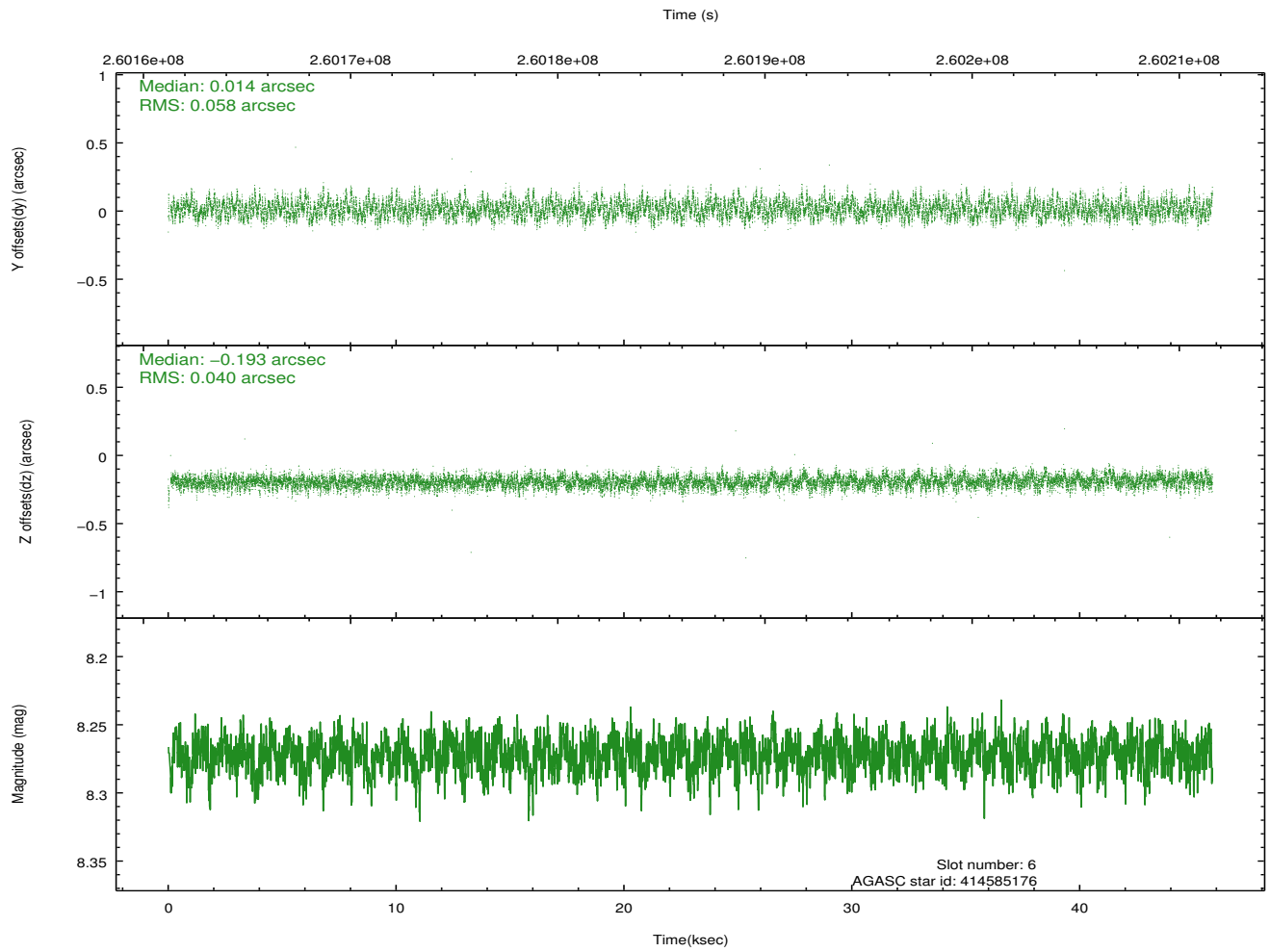
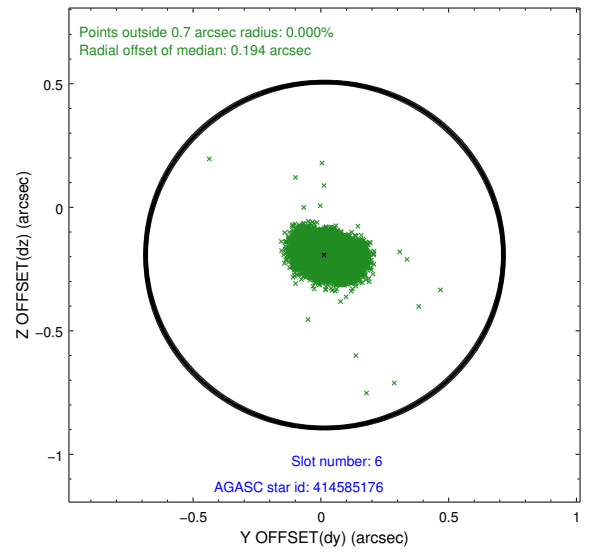
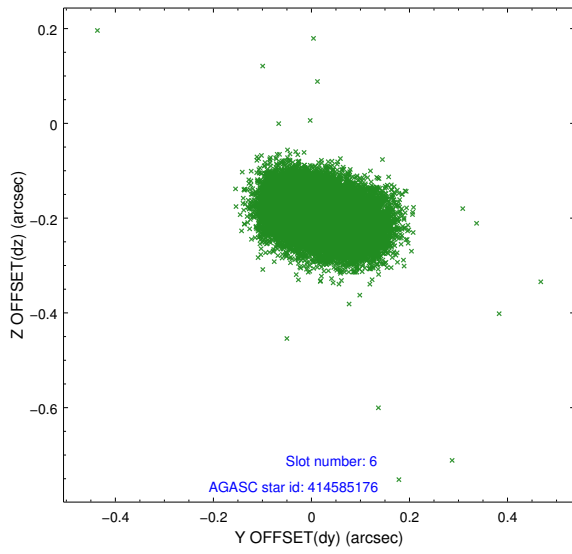
### 2.4.2 Slot 4



### 2.4.3 Slot 5

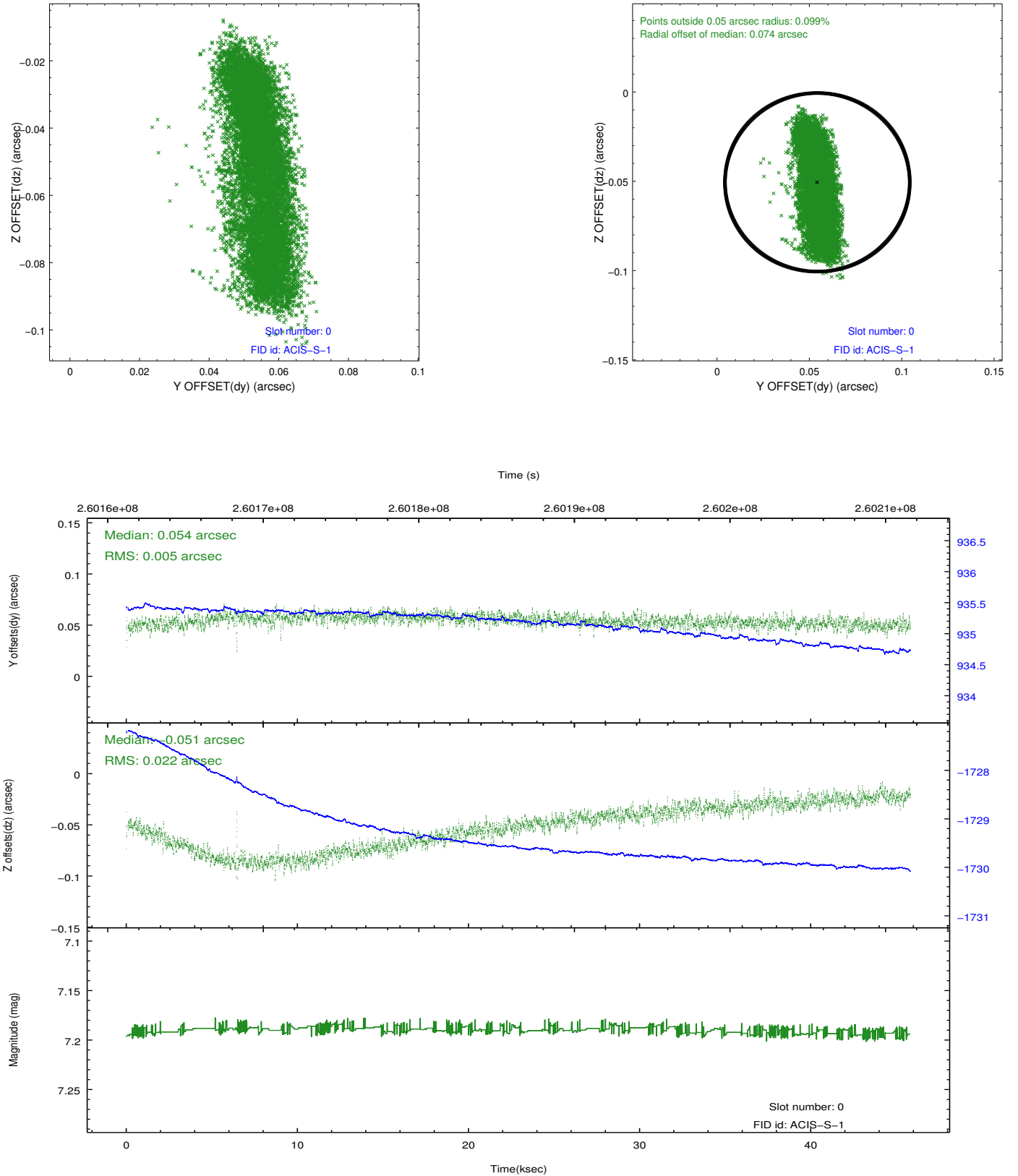


## 2.4.4 Slot 6

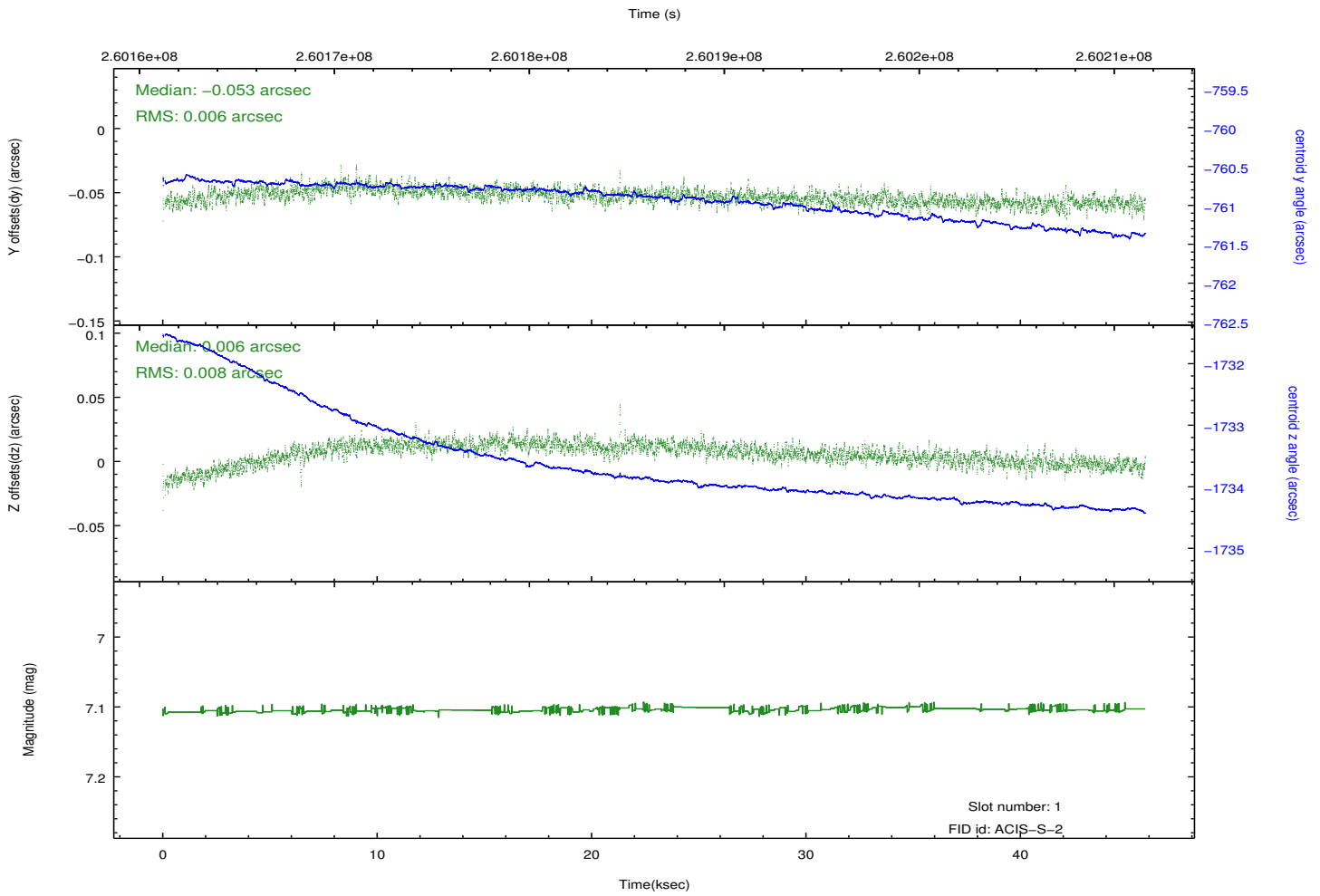
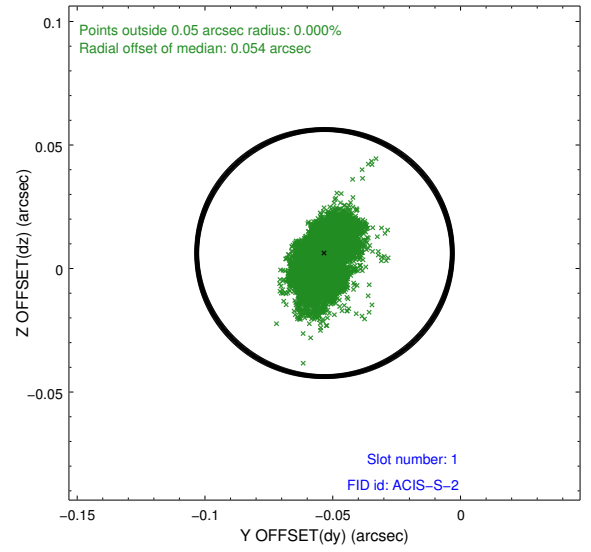
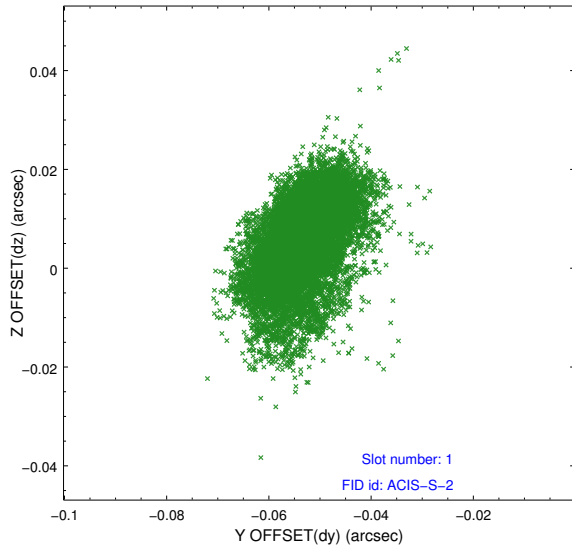


## 2.5 FID Slots

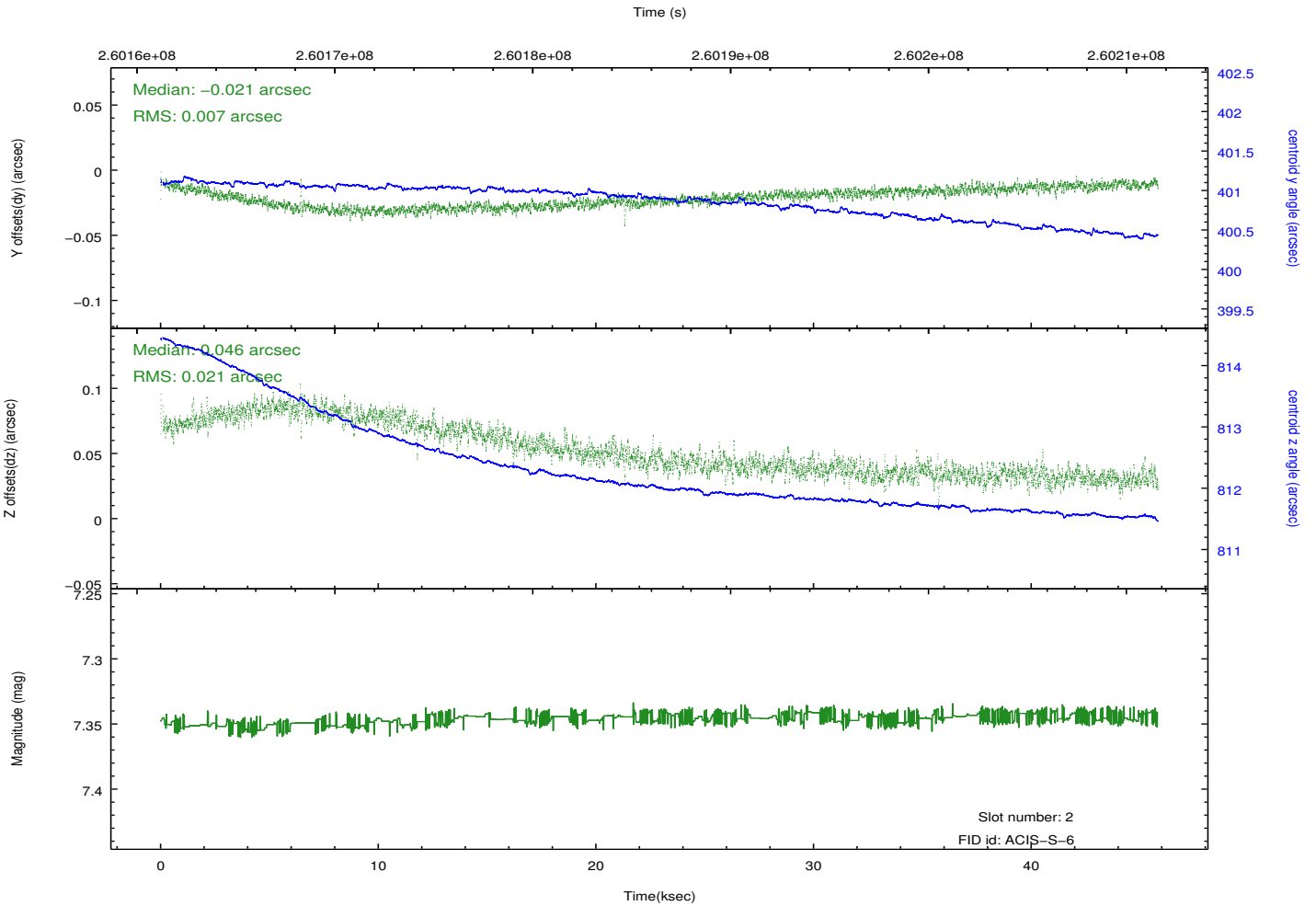
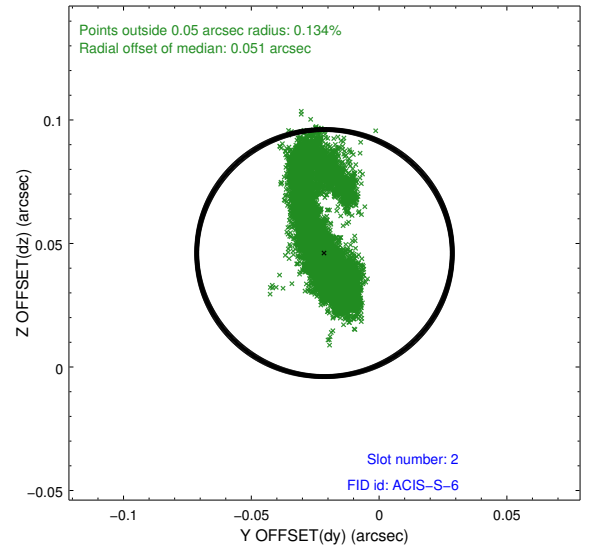
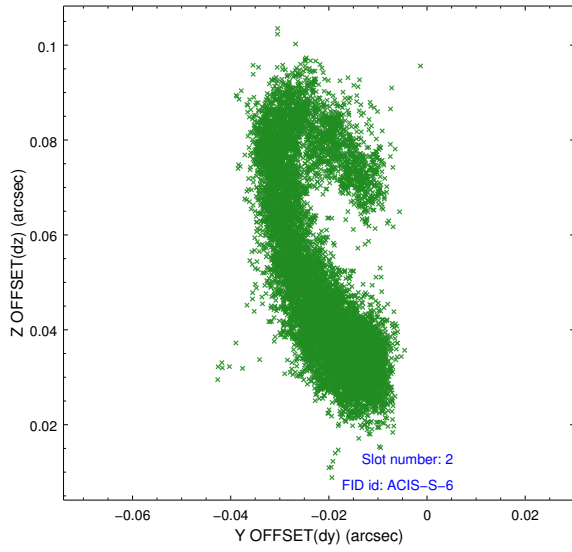
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

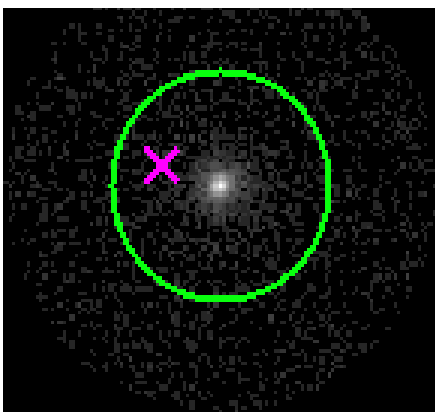


### 3 Gratings

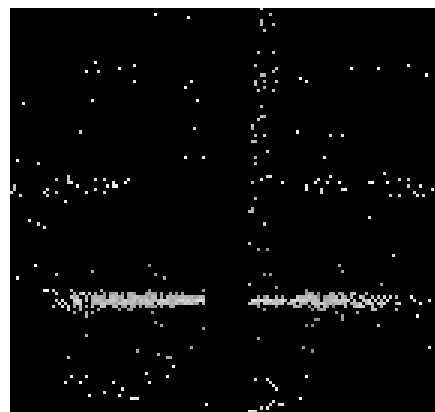
#### 3.1 HEG Arm



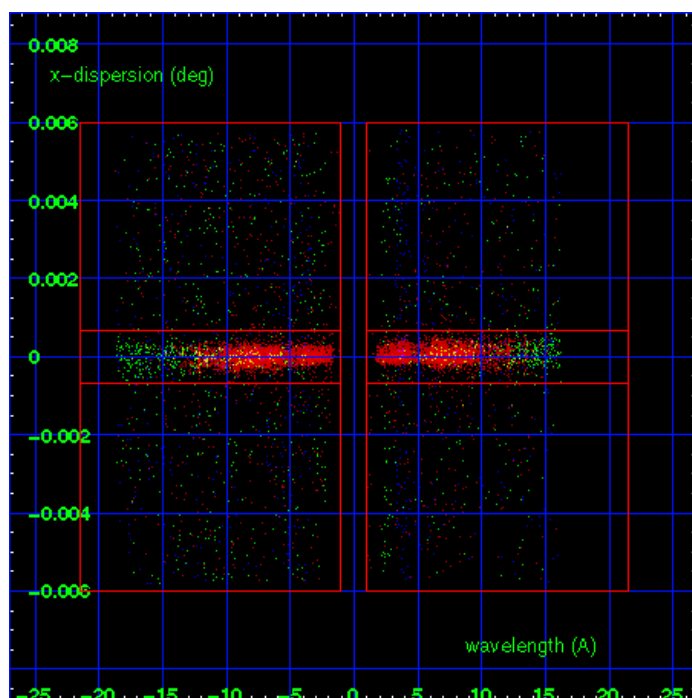
HEG Order Sort 123



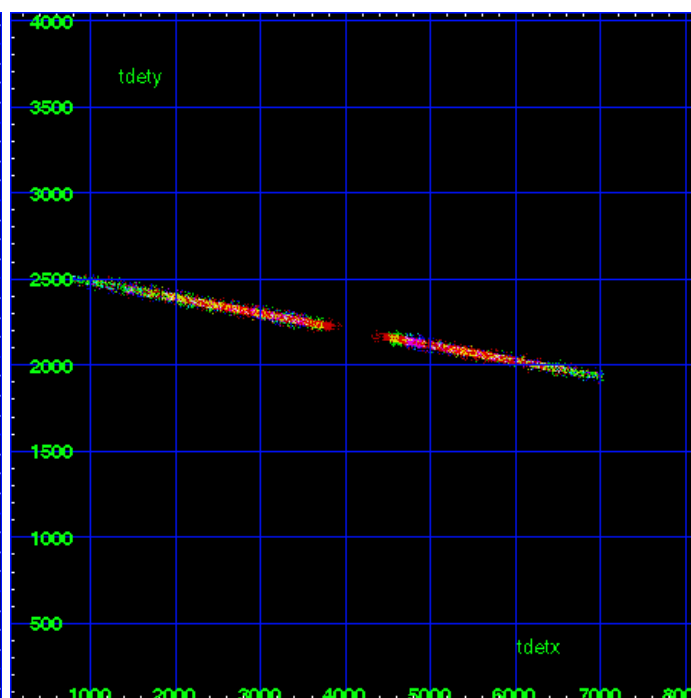
HEG Zero Order



HEG Order Sort ALL

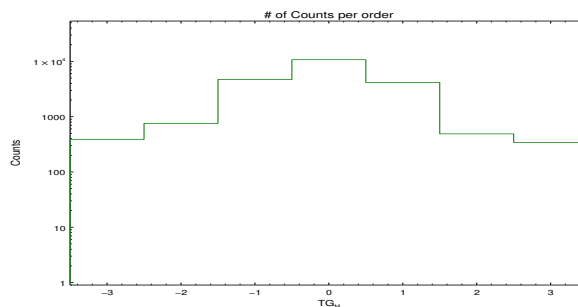


Spot Image HEG

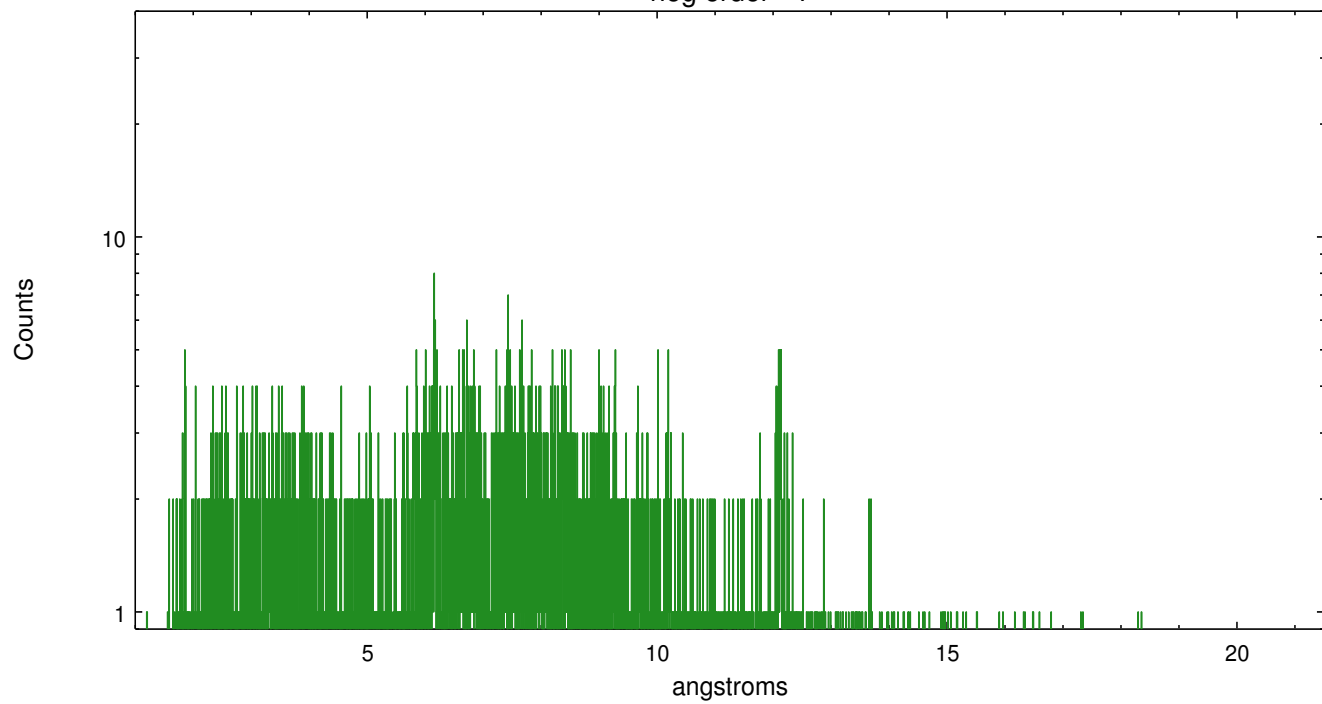


Full Detector HEG

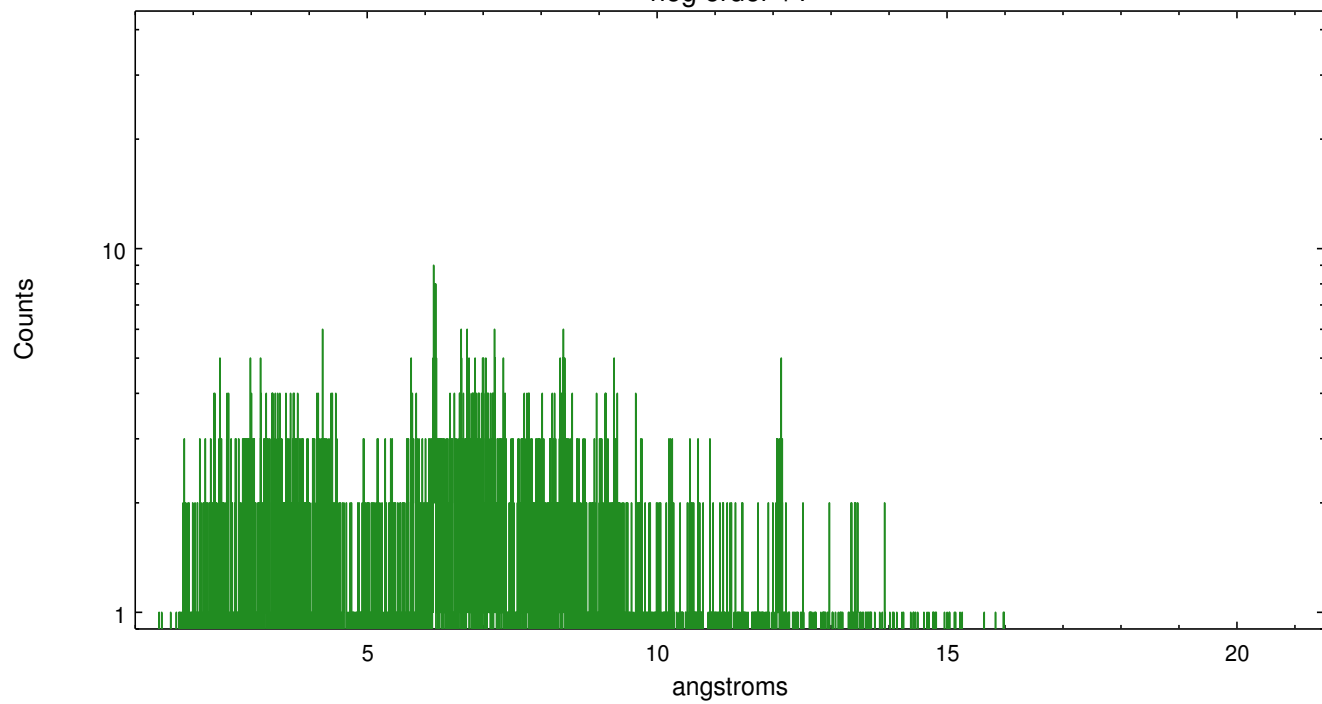
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	389	755	4697	10729	4160	489	342



heg order -1



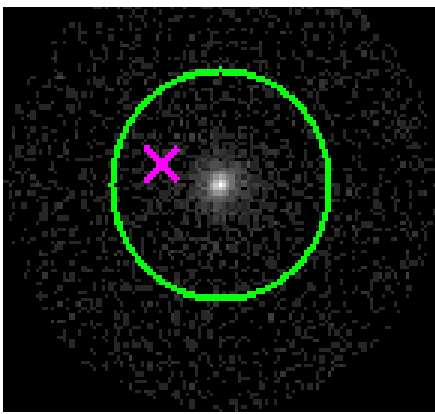
heg order +1



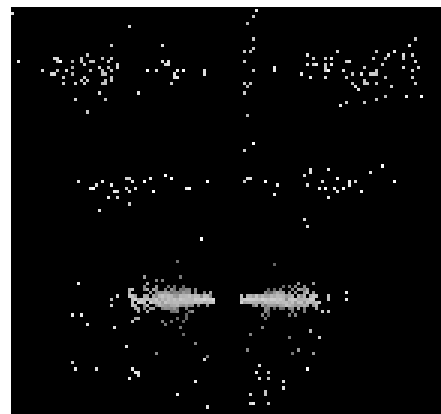
### 3.2 MEG Arm



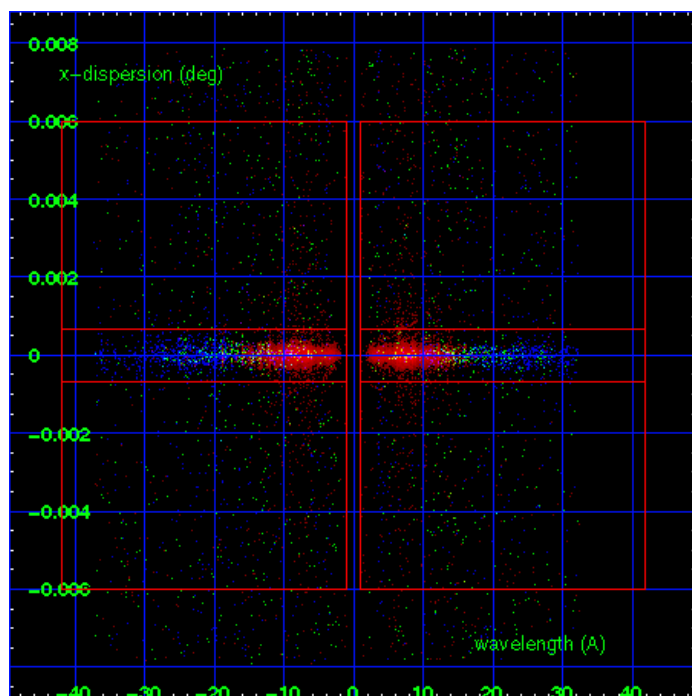
MEG Order Sort 123



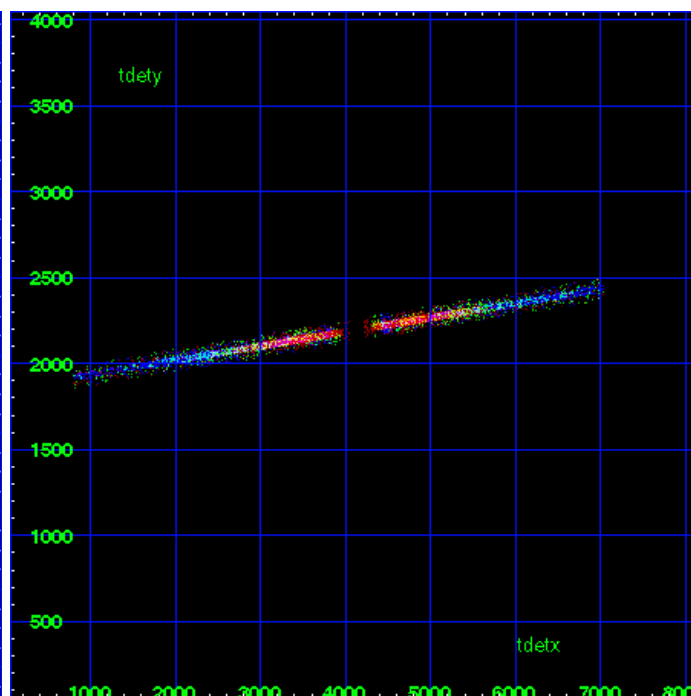
MEG Zero Order



MEG Order Sort ALL

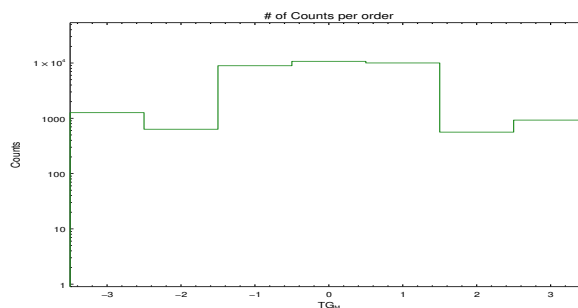


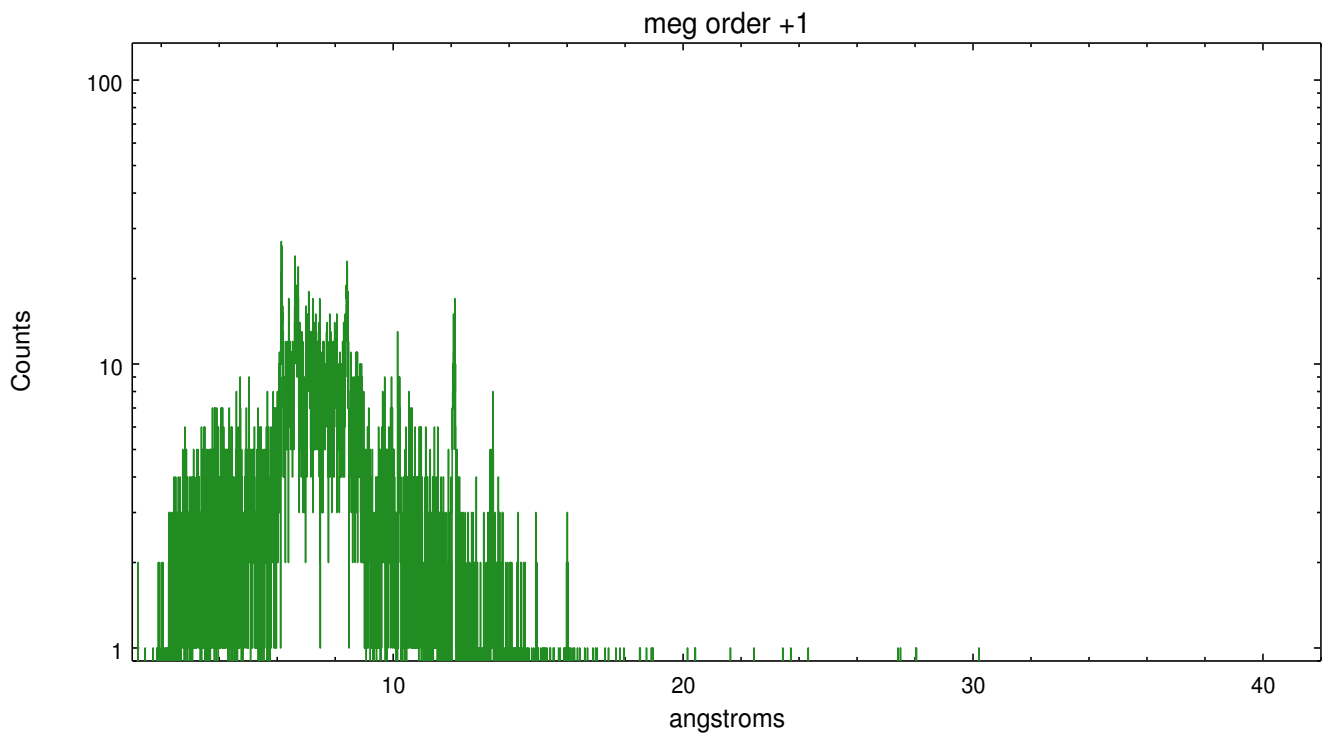
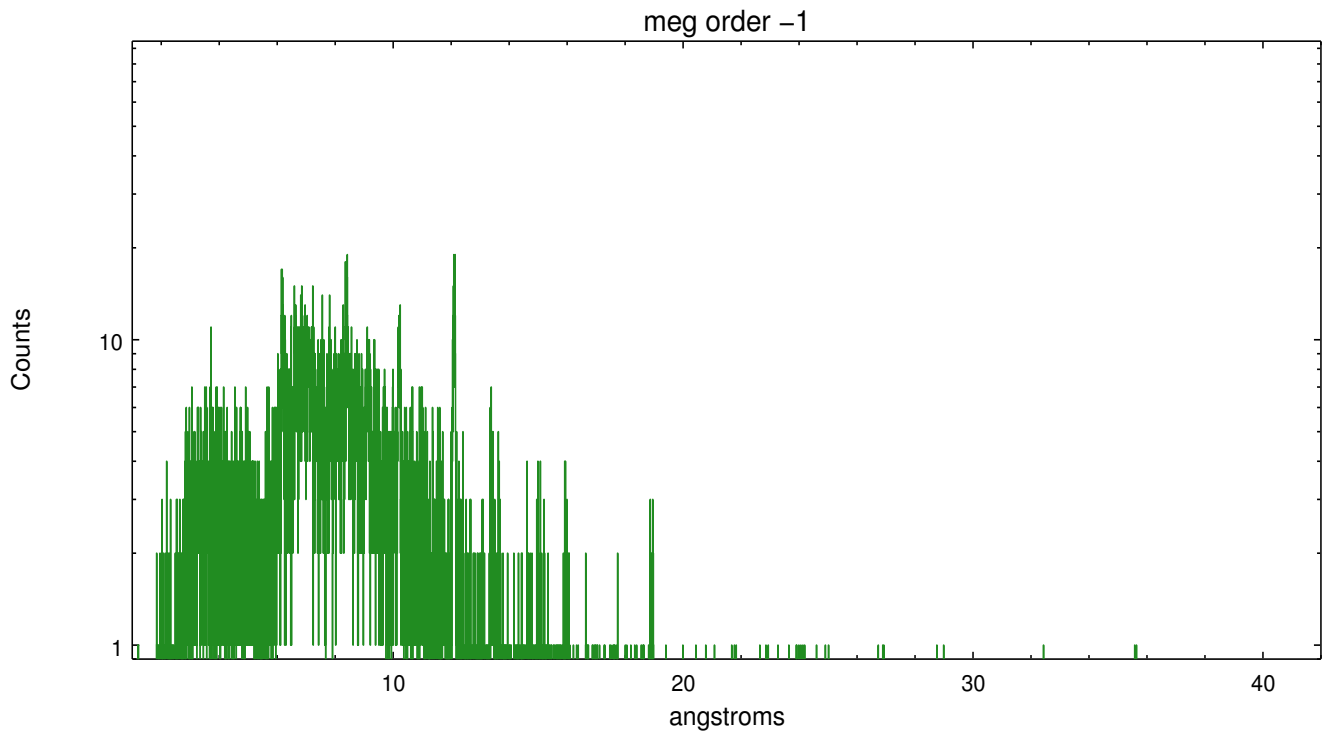
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1265	634	8932	10729	10028	562	928





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.04.04
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	45.6799998

## A.2 Comments

Optical monitoring of target during observation in slot 7.