

# V&V Reference Report

## L2 ASCDS Version : 8.5

Observation 4624 - L2 Version 3  
Chandra X-Ray Center

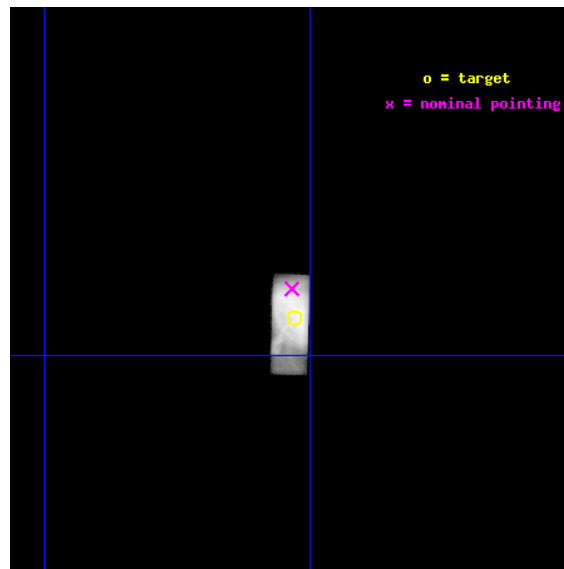
L2 Processing Date : Dec 10 2012

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# 1 Front

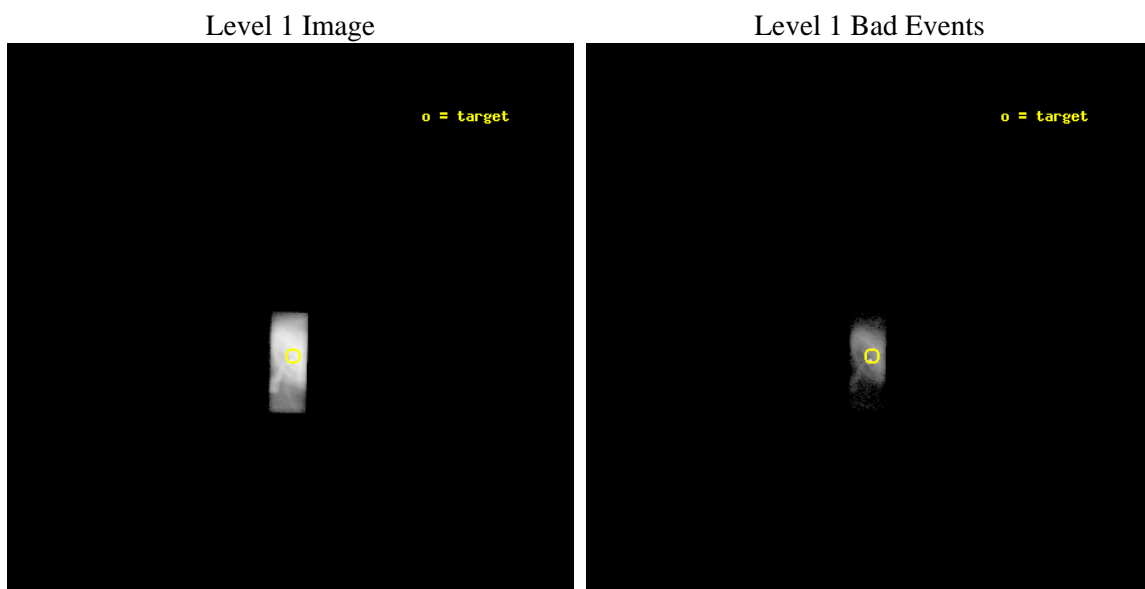
seq_num	500449	Sequence number
obs_id	4624	Observation id
title	Spectroscopic Study of the Dynamic Shock in the Pulsar Wind of the Crab Nebula	Proposal title
observer	Dr Koji Mori	Principal investigator
object	The Crab Nebula	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.632083	Observer's specified target RA [deg]
dec_targ	22.016472	Observer's specified target Dec [deg]
ra_nom	83.633564837637	Nominal RA [deg]
dec_nom	22.028889735686	Nominal Dec [deg]
roll_nom	91.479961731104	Nominal Roll [deg]
revision	3	Processing version of data
ontime	10681.800424457	Sum of GTIs [s]
liveltime	9396.3761650744	Livetime [s]
ontime7	10681.800424457	Sum of GTIs [s]
l2events	2555490	Number of level 2 events



## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



### 2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	10500.000000	[s] Scheduled observation exposure time
ascdsver	8.5	Processing system revision	ontime	10681.800424457	Sum of GTIs [s]
caldsver	4.5.4	&#160	ontime7	10681.800424457	Sum of GTIs [s]
date	2012-12-10T13:07:45	Date and time of file creation	l1events	2720963	Number of level 1 events
revision	3	Processing version of data			

### 2.1.3 Events

	<b>ccd 7</b>
level 1 events	2720963
rejected events	125734
rejected %	4%

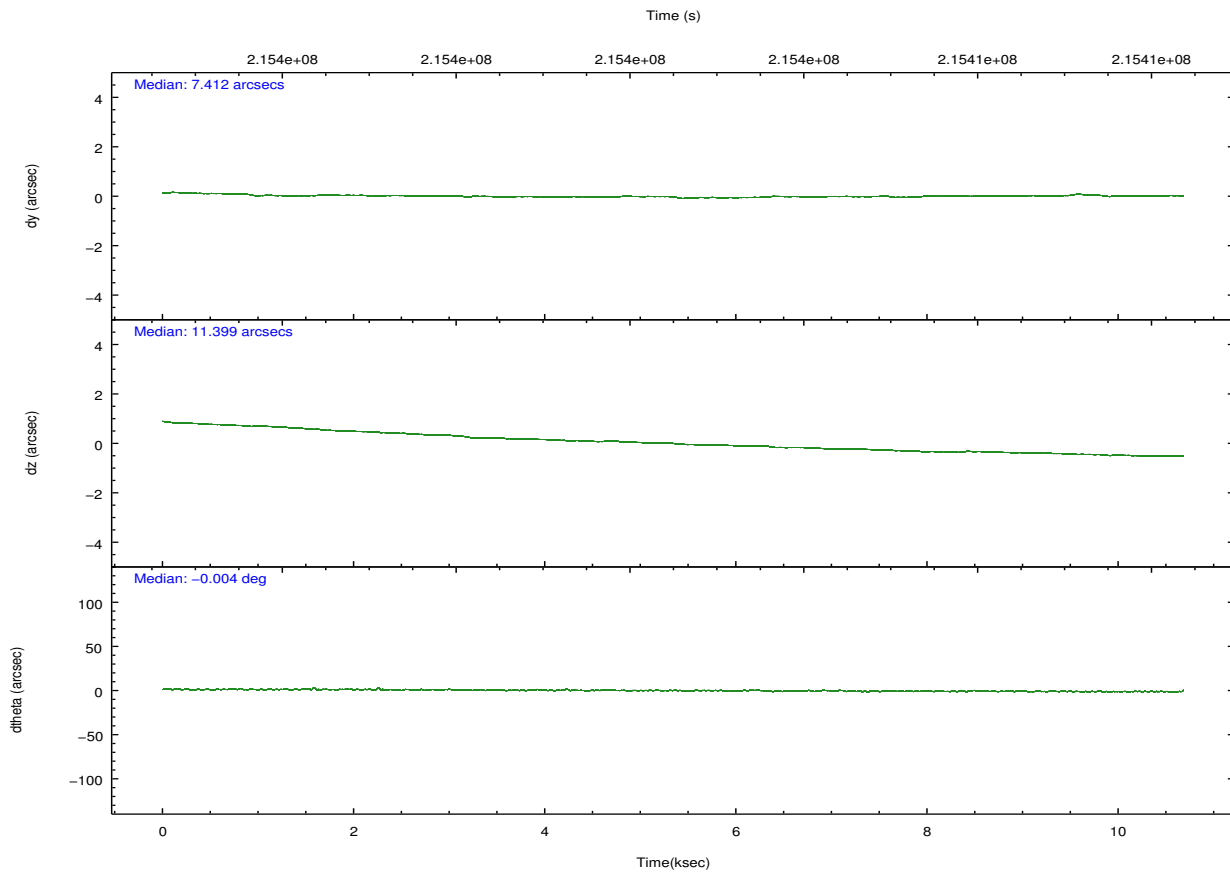
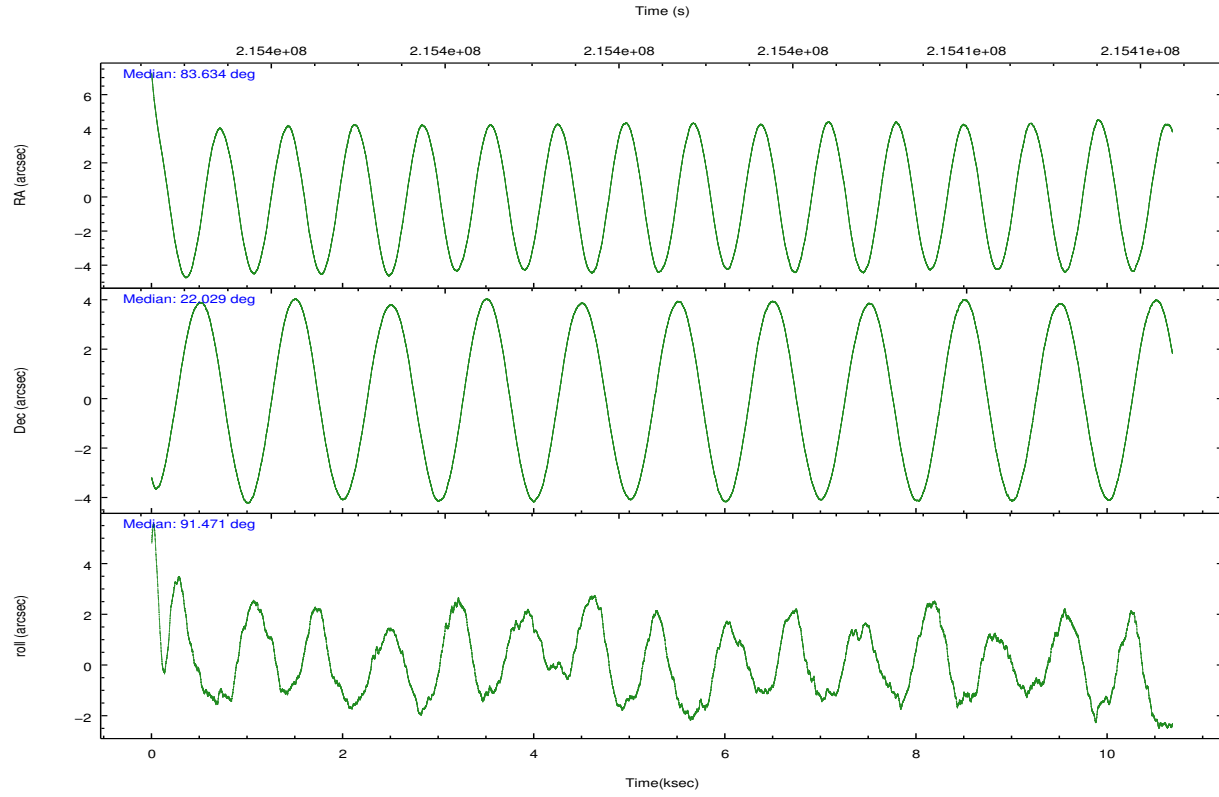
	<b>ccd 7</b>
grade 0 events	522321
	19%
grade 1 events	9688
	0%
grade 2 events	668348
	24%
grade 3 events	296963
	10%
grade 4 events	286483
	10%
grade 5 events	40528
	1%
grade 6 events	847546
	31%
grade 7 events	49086
	1%



## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-7	ACIS-7	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	GRADED	GRADED	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	83.649252	83.6335648376368	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	22.005833	22.02888973568576	Subarray start row	127	127
[deg] Pointing Roll	91.317447	91.4799617311043	Subarray row count	101	101
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	0.3
[mm] SIM translation stage pos	-182.132523	-182.1370004450064			
[mm] SIM translation stage offset	-8	-7.995522138001405			
[s] Observation start time (MET)	215397337.184000	215395785.33853			
Observation start date	2004-10-29T00:34:33	2004-10-29T00:09:45			
[s] Observation end time (MET)	215407837.184000	215408834.61411			
Observation end date	2004-10-29T03:29:33	2004-10-29T03:47:14			
Read mode	TIMED	TIMED			

## 2.3 Aspect

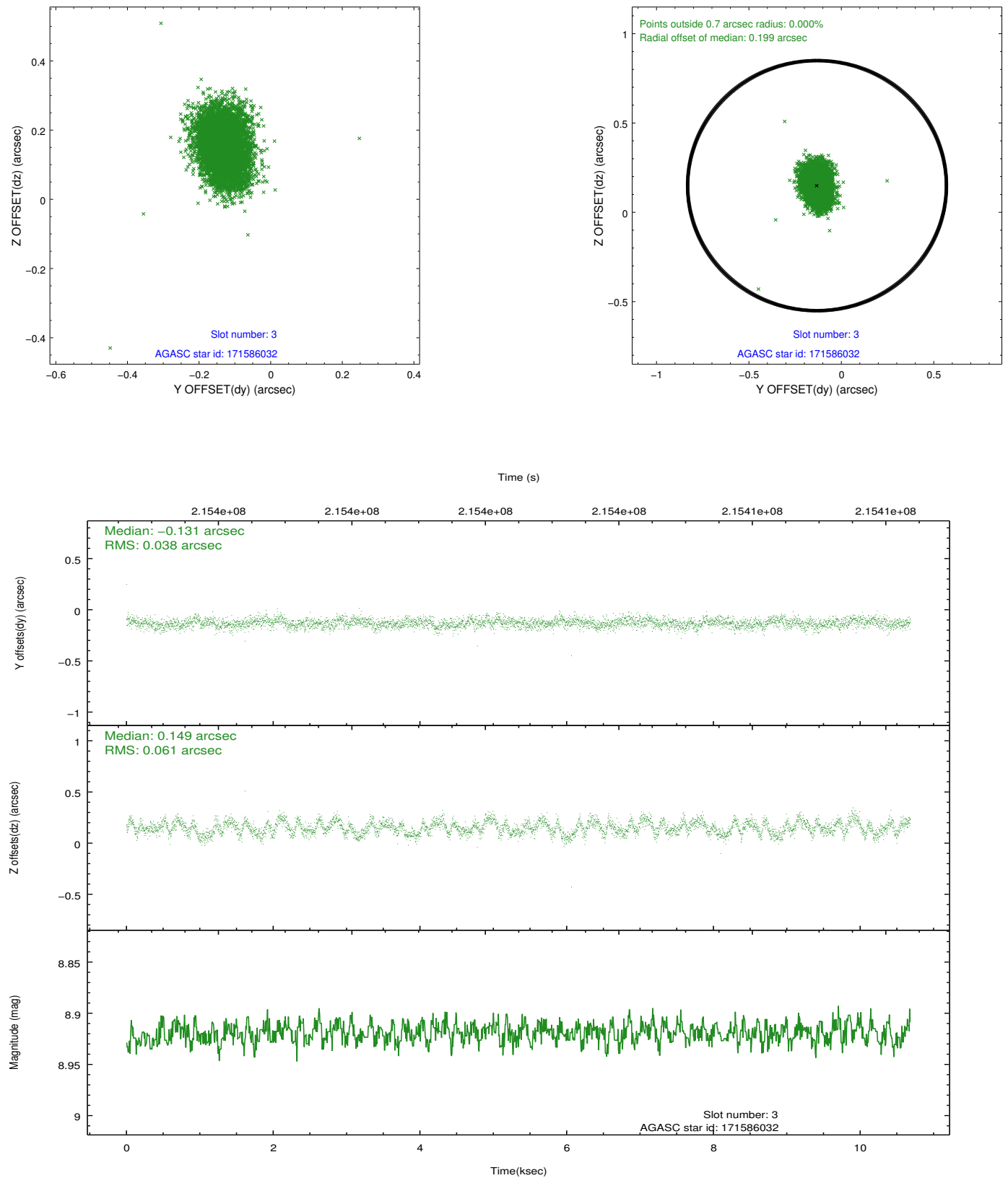


### Slot Statistics

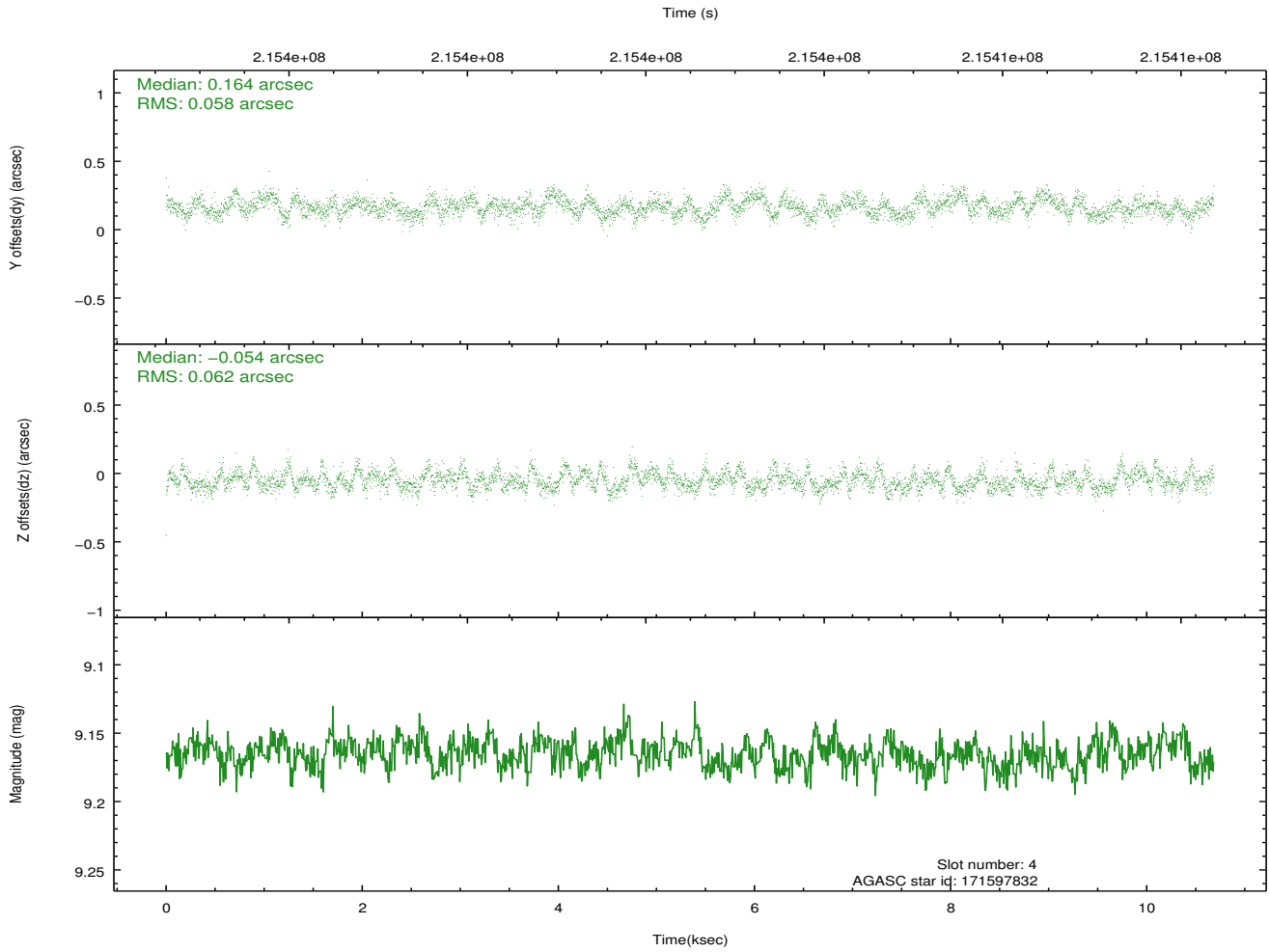
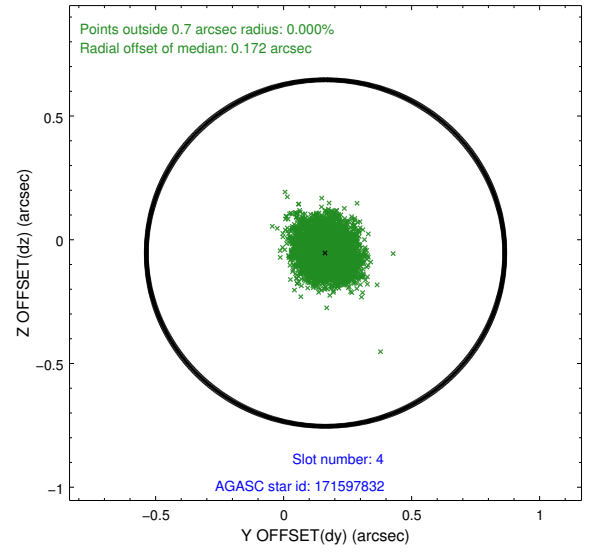
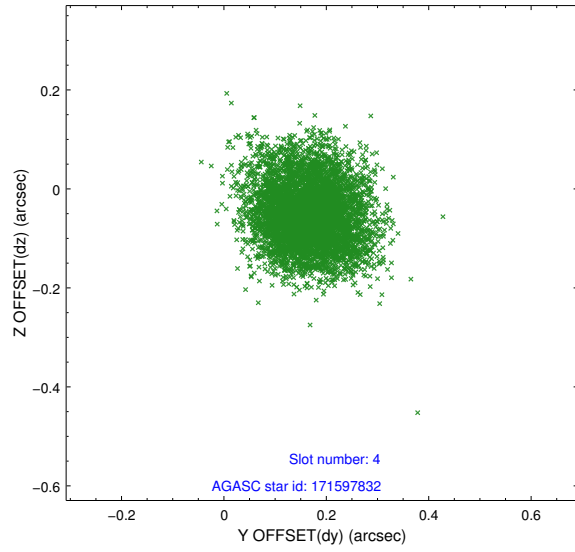
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.08	2606	-0.057	-0.140	0.021	0.031	0.000000	0.000000	-759.67	-1897.58
1	FID	ACIS-S-4	7.18	2606	0.090	0.065	0.007	0.013	0.000000	0.000000	2153.54	10.52
2	FID	ACIS-S-5	7.22	2605	-0.064	0.083	0.019	0.027	0.000000	0.000000	-1811.88	4.77
3	GUIDE	171586032	8.92	5206	-0.131	0.149	0.076	0.123	83.950197	22.083225	256.64	-1009.75
4	GUIDE	171597832	9.17	5211	0.164	-0.054	0.091	0.145	83.183230	21.366702	-2261.88	1614.45
5	GUIDE	171721904	9.18	5208	-0.040	0.126	0.106	0.157	84.272676	22.116922	356.29	-2087.29
6	GUIDE	243941560	8.32	5208	-0.139	0.119	0.058	0.091	83.733264	22.568598	2019.15	-325.57
7	GUIDE	171600224	9.67	5201	0.143	-0.340	0.102	0.164	82.941815	21.636094	-1270.54	2396.78

## 2.4 Star Slots

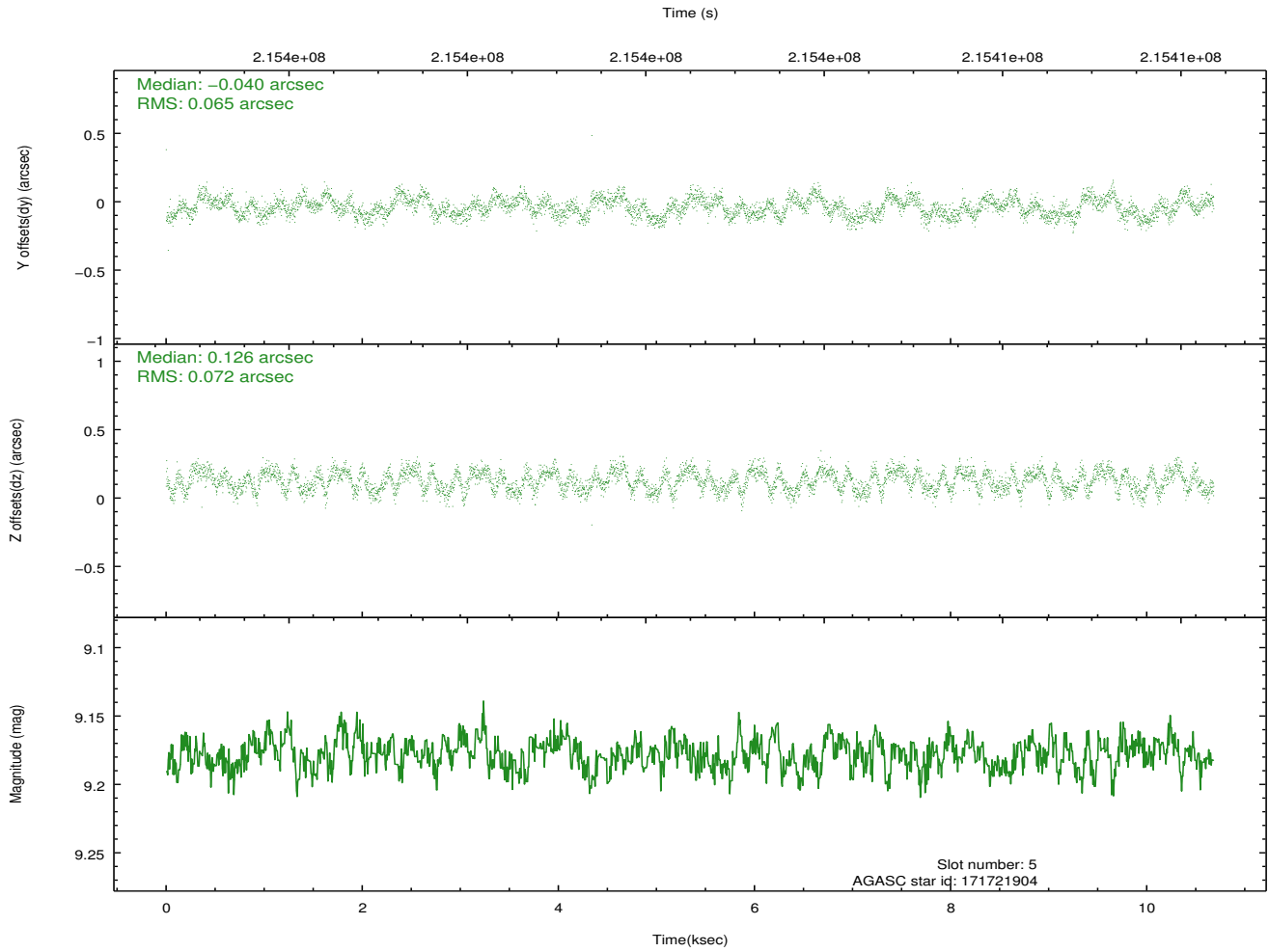
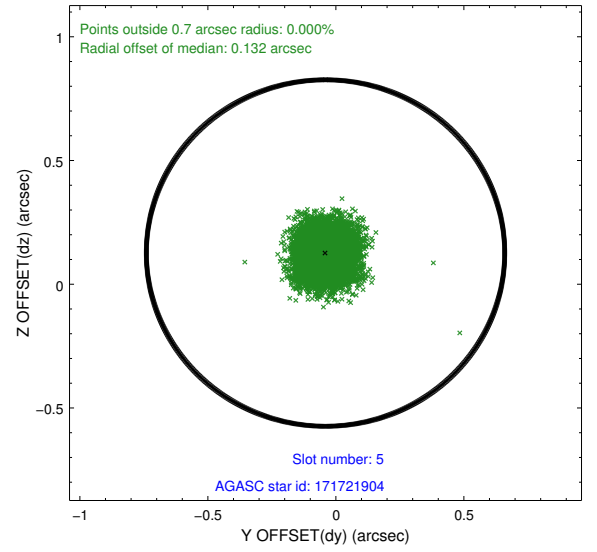
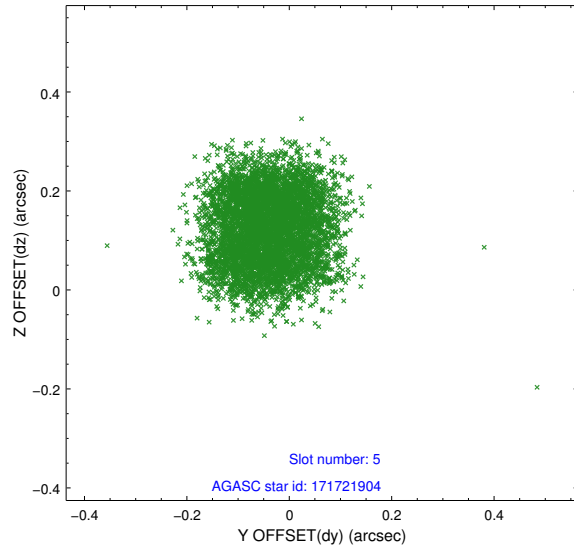
### 2.4.1 Slot 3



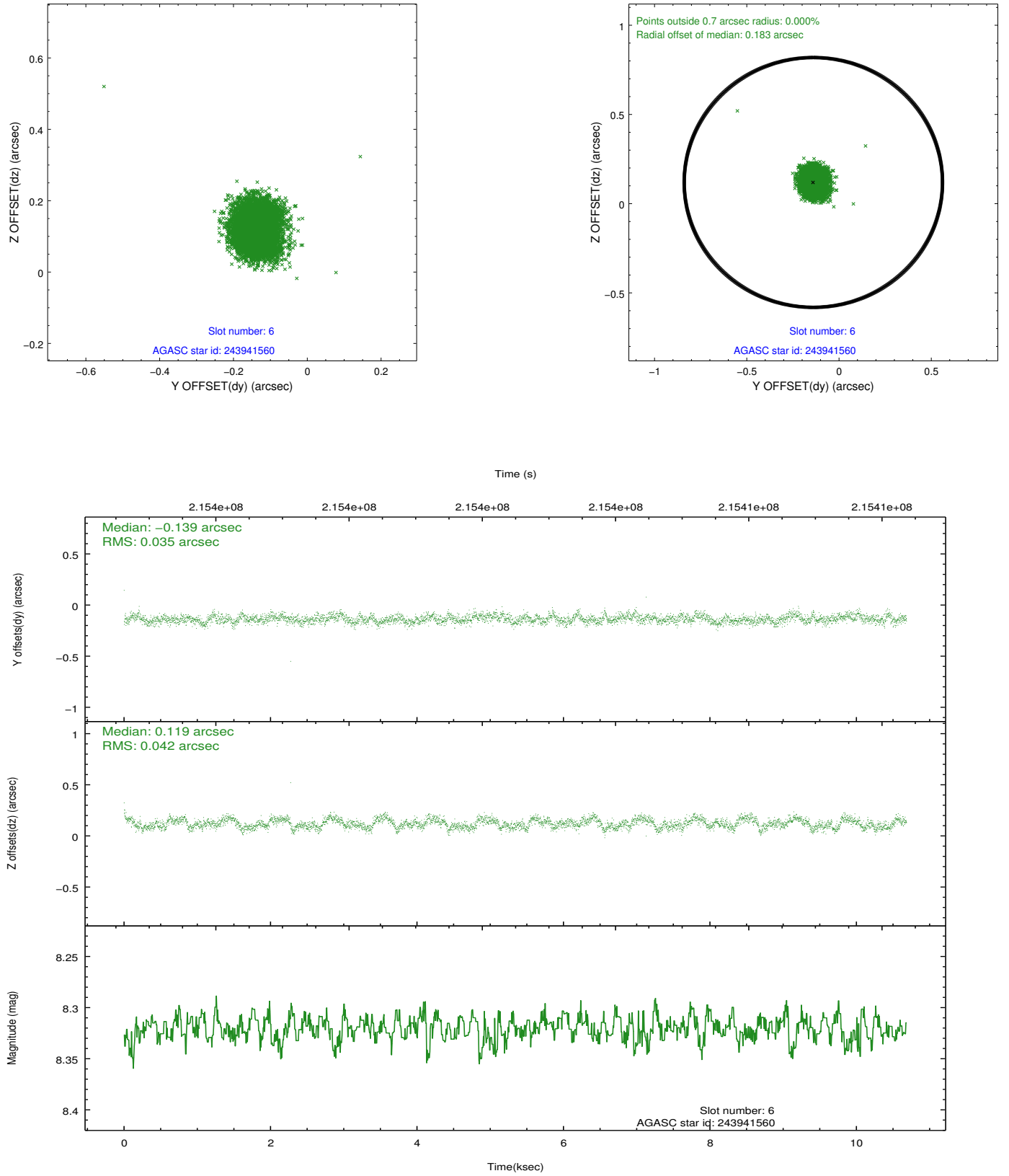
## 2.4.2 Slot 4



### 2.4.3 Slot 5

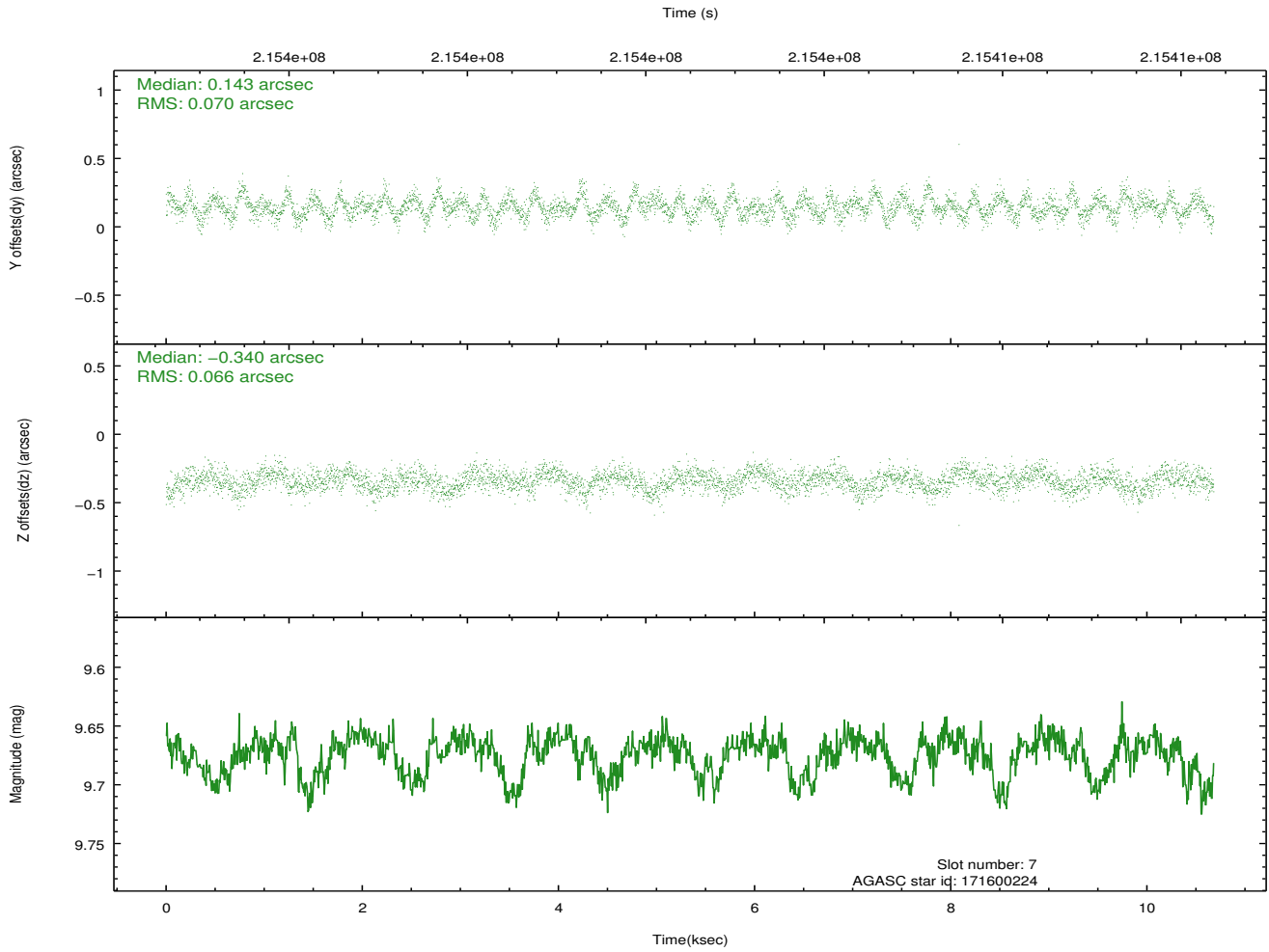
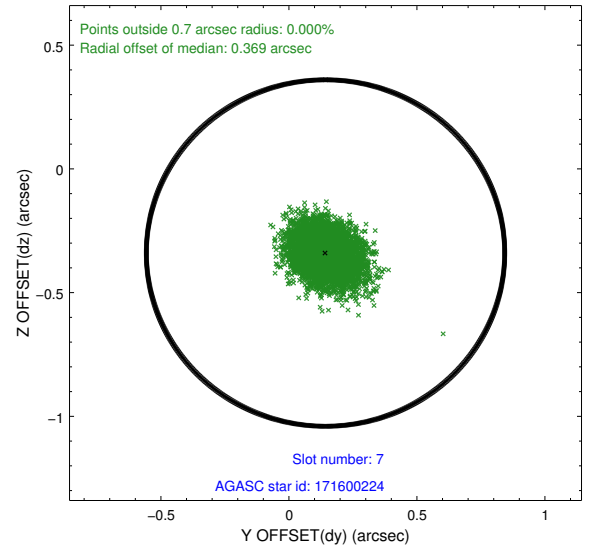
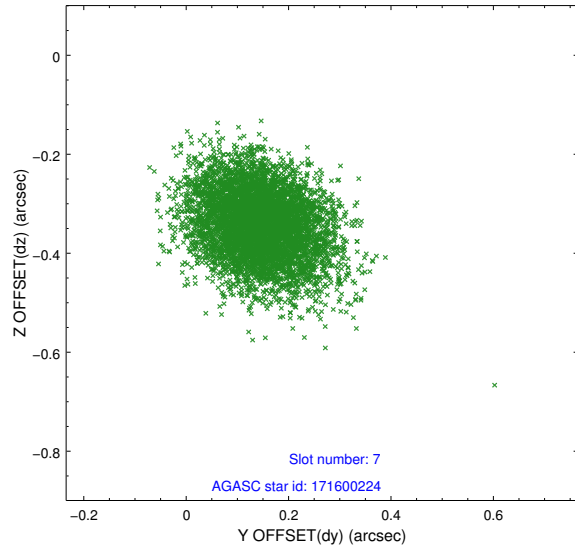


## 2.4.4 Slot 6



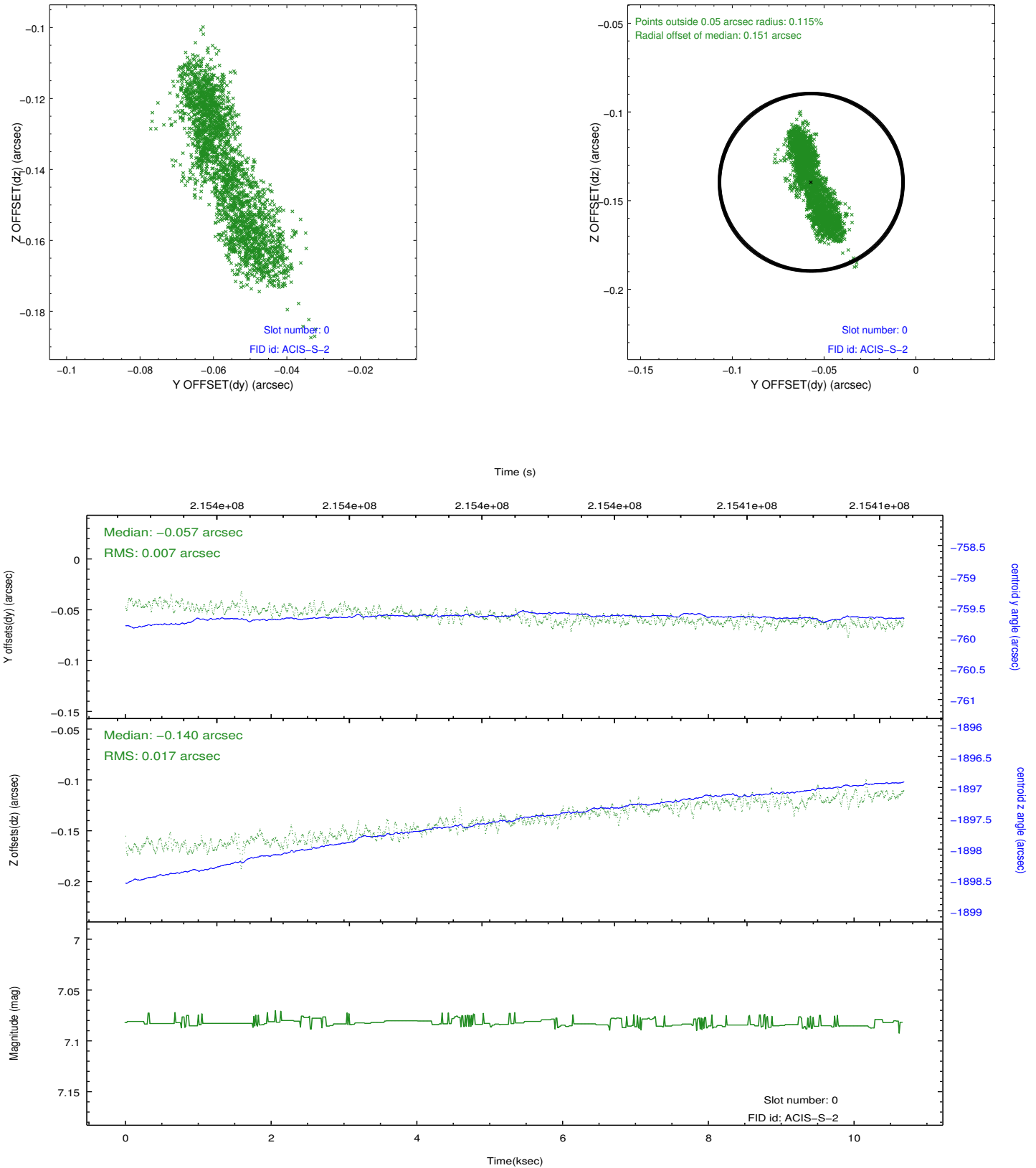


## 2.4.5 Slot 7

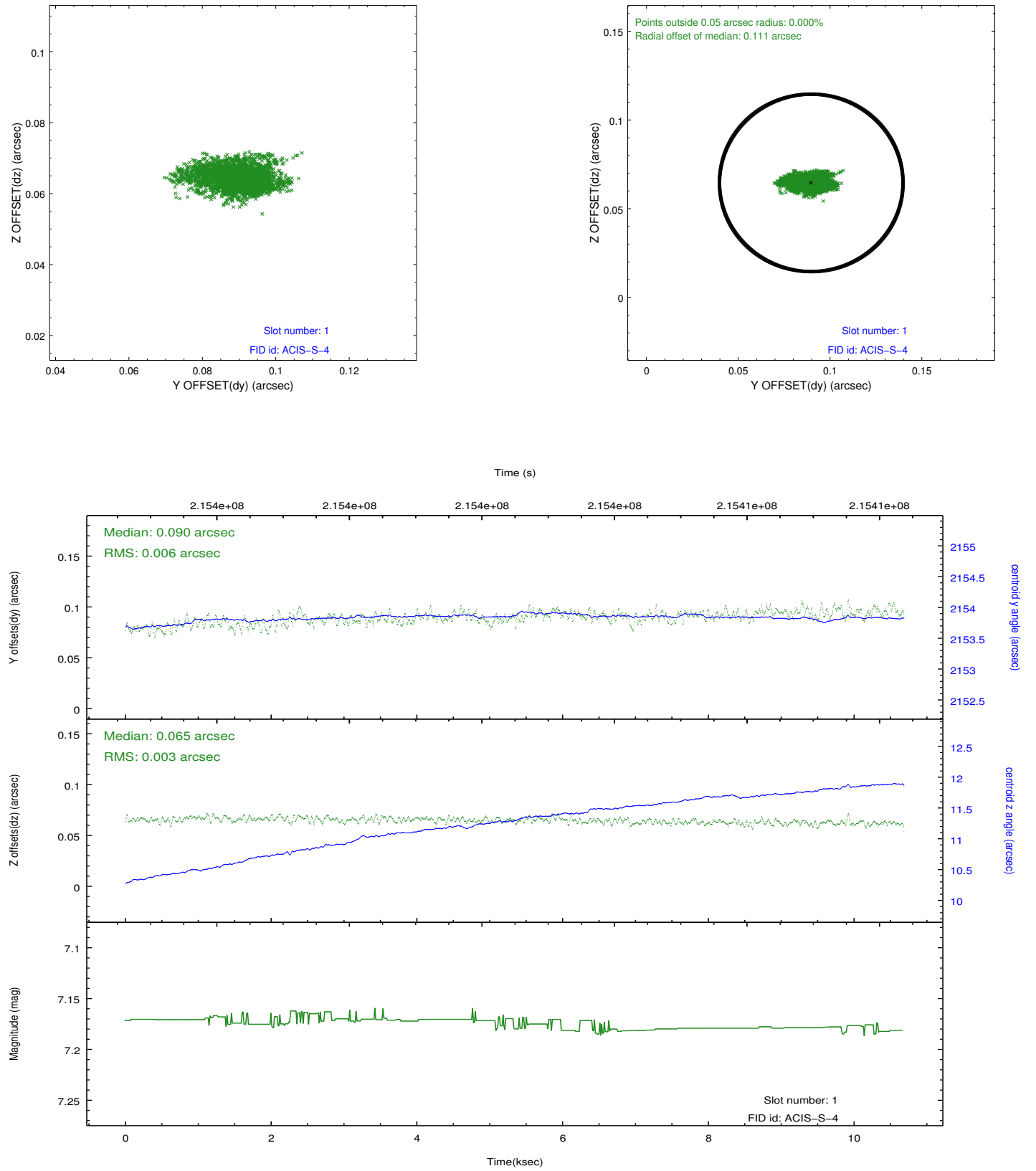


## 2.5 FID Slots

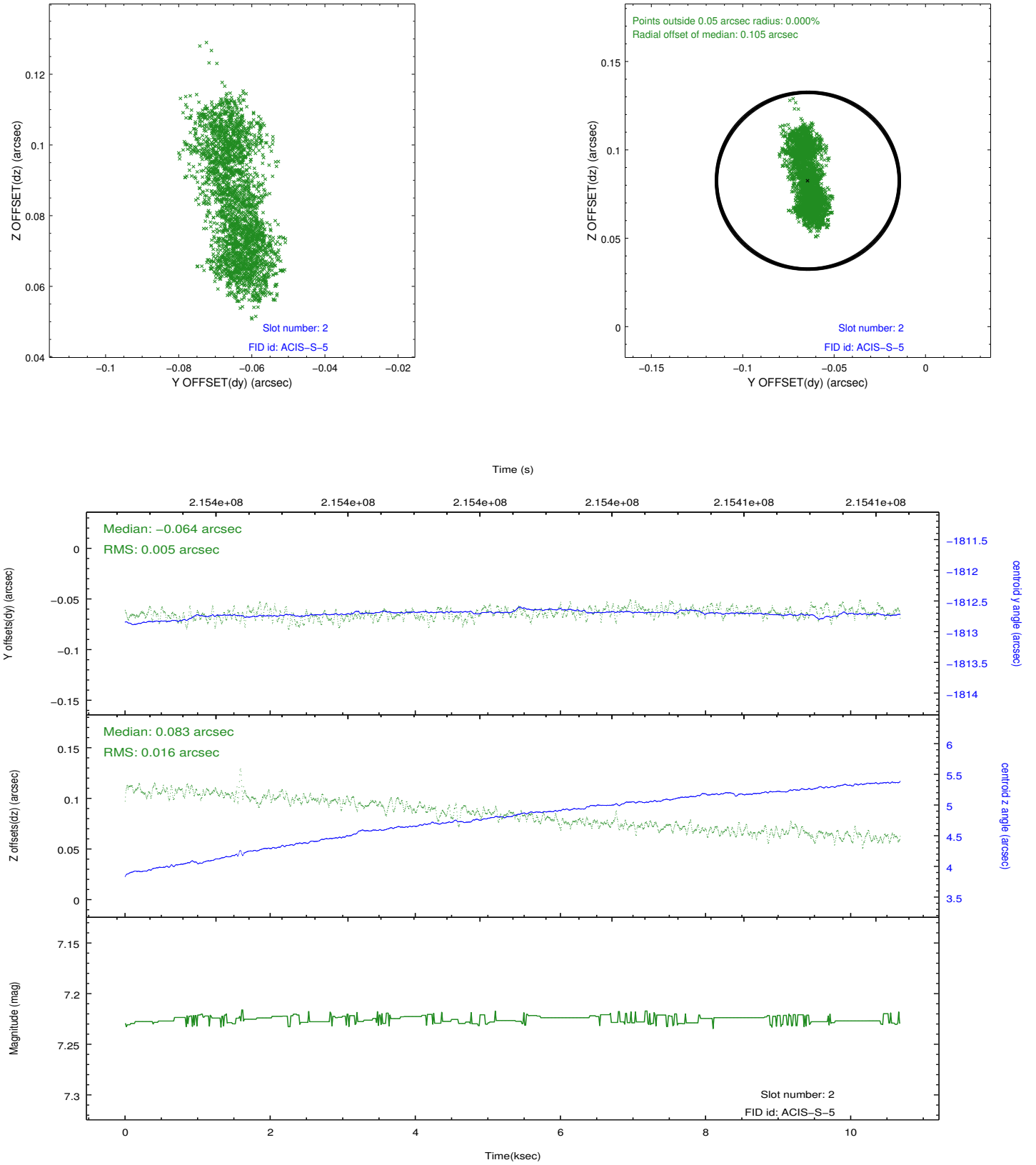
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

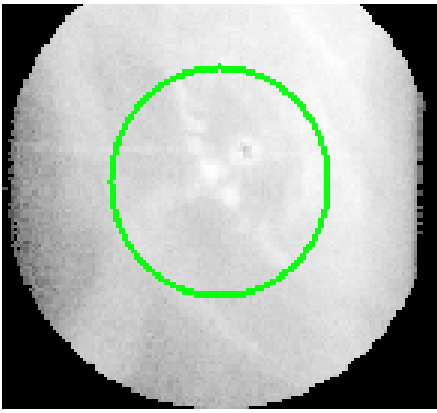


# 3 Gratings

## 3.1 HEG Arm



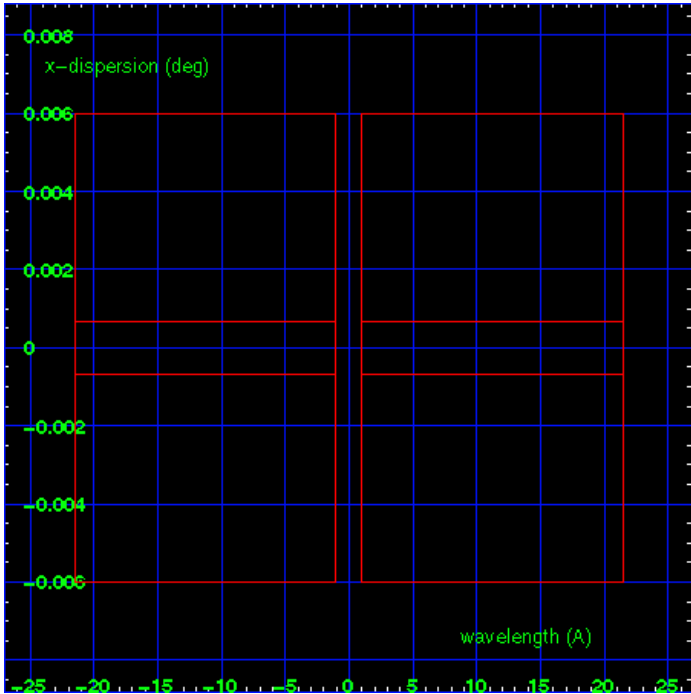
HEG Order Sort 123



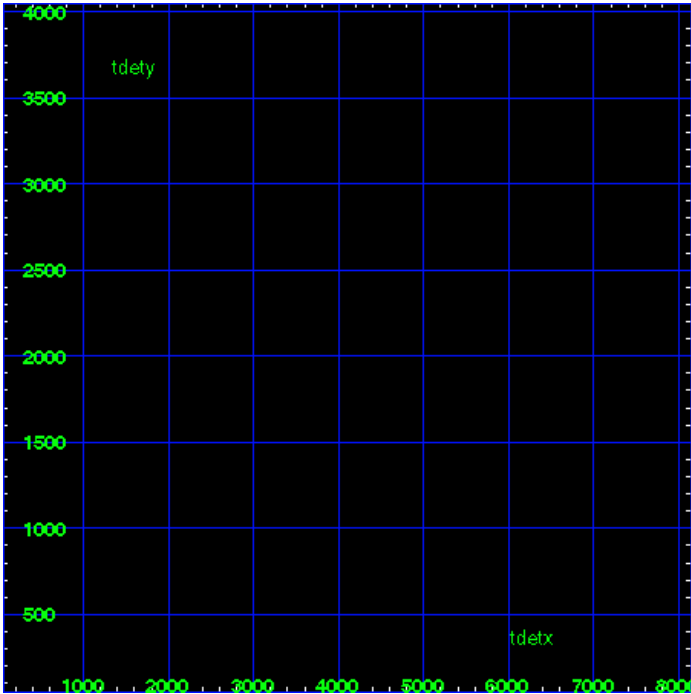
HEG Zero Order



HEG Order Sort ALL

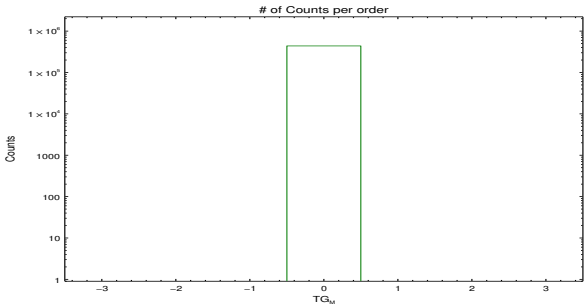


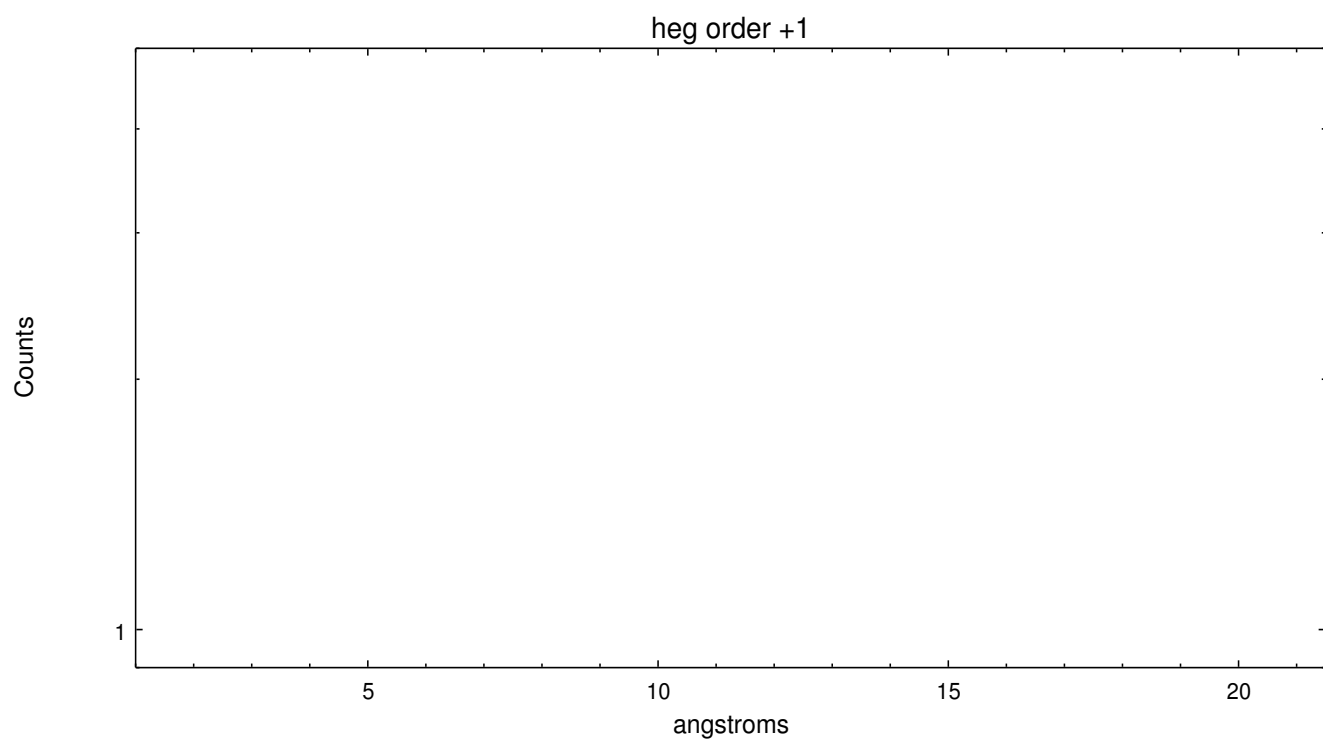
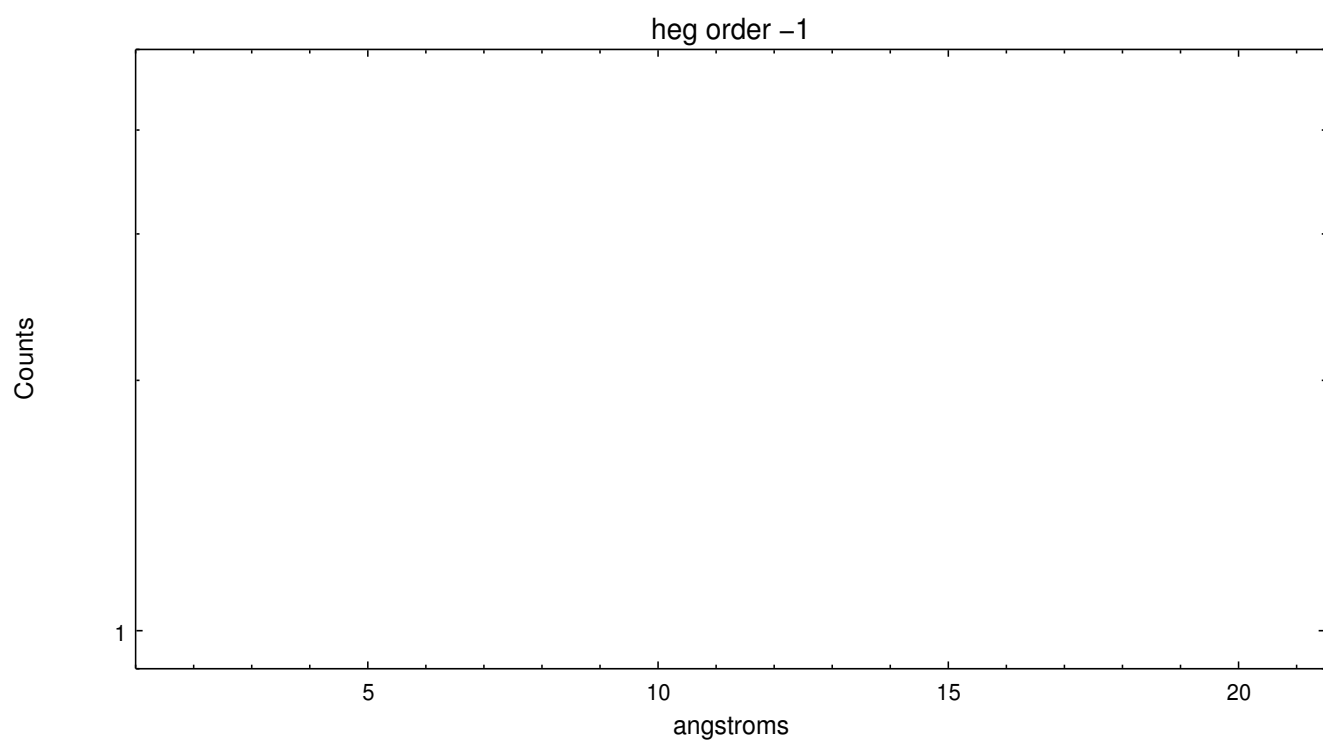
Spot Image HEG



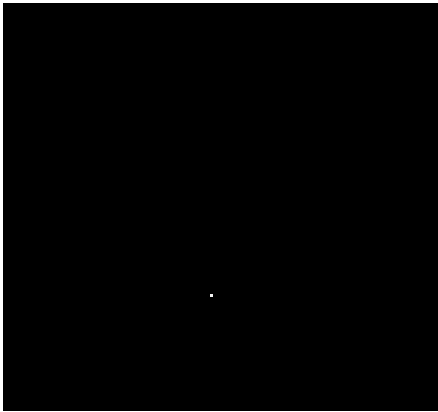
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	0	443416	0	0	0

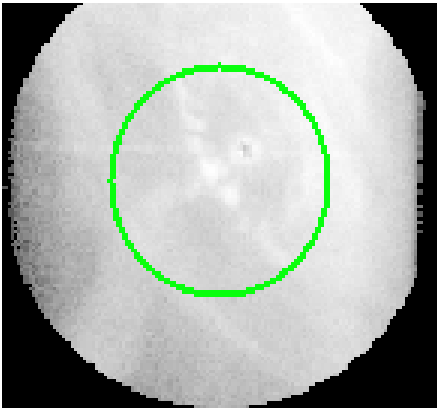




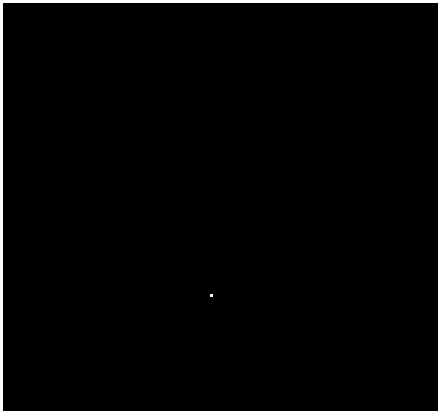
3.2 MEG Arm



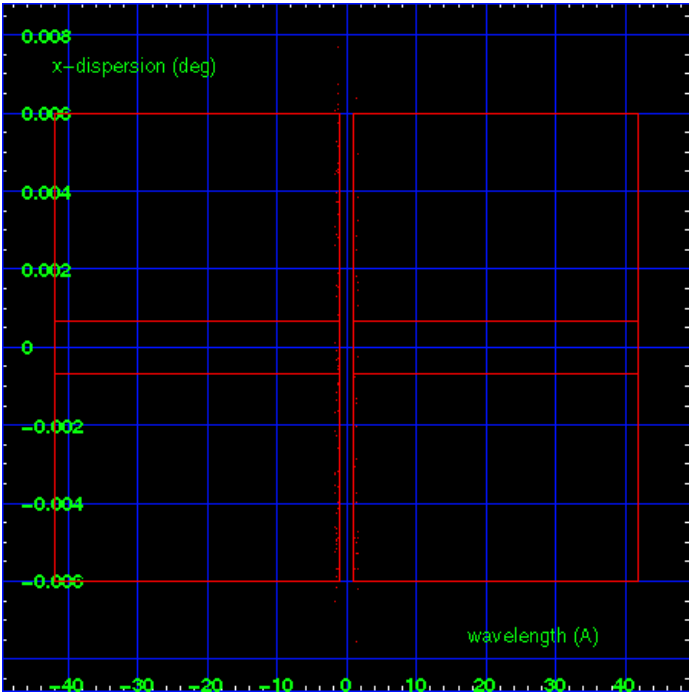
MEG Order Sort 123



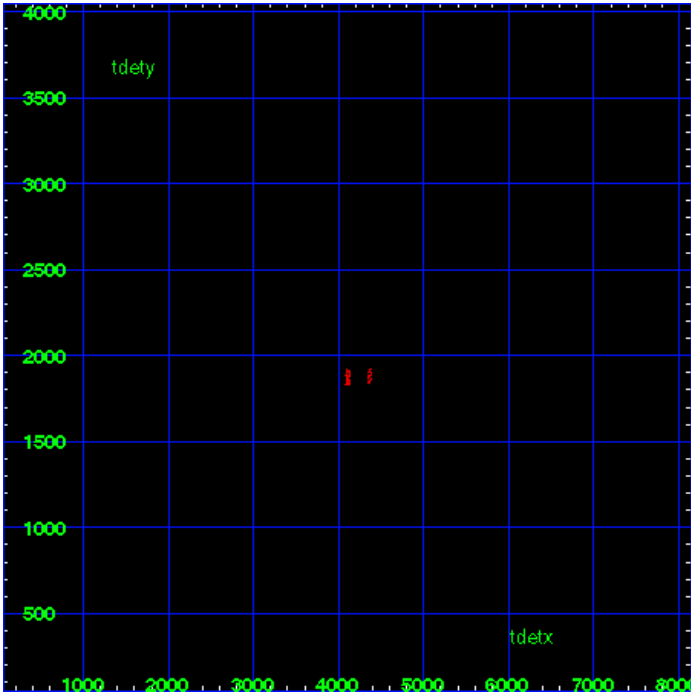
MEG Zero Order



MEG Order Sort ALL

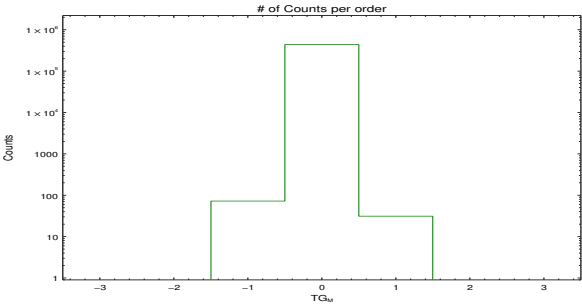


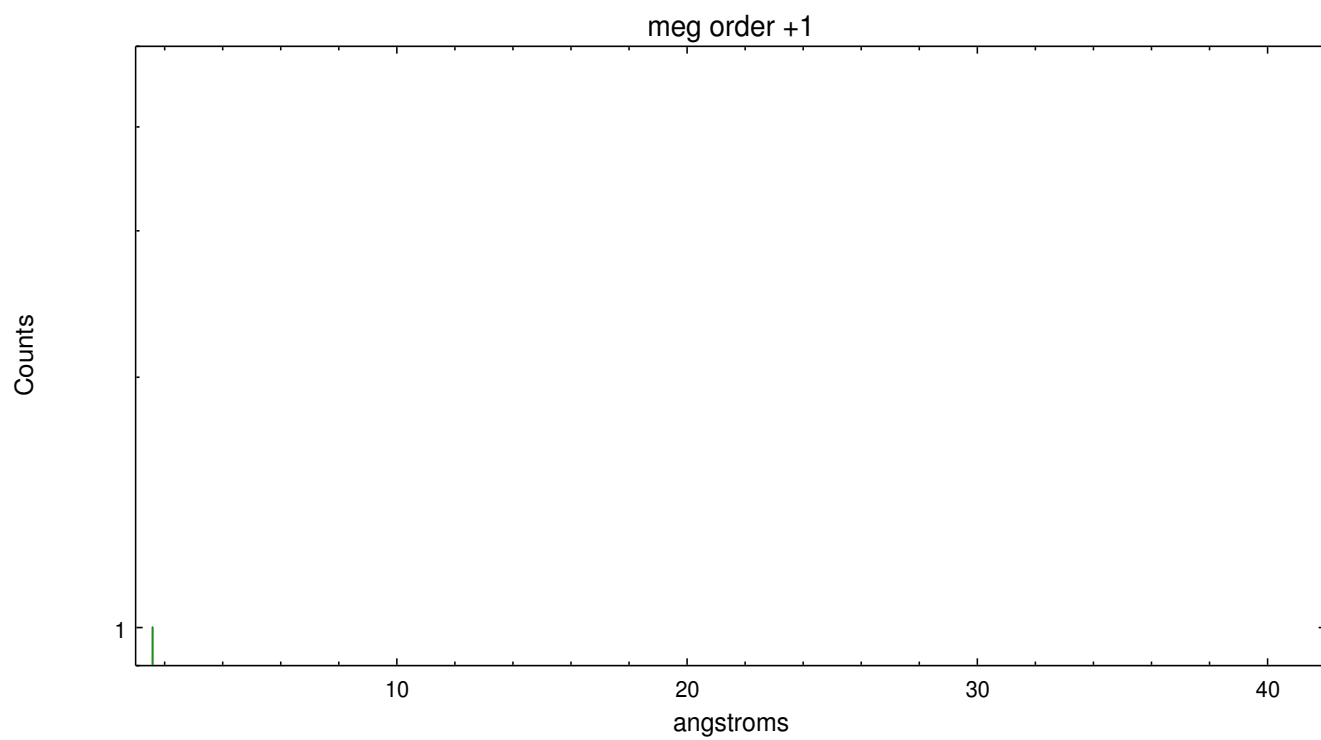
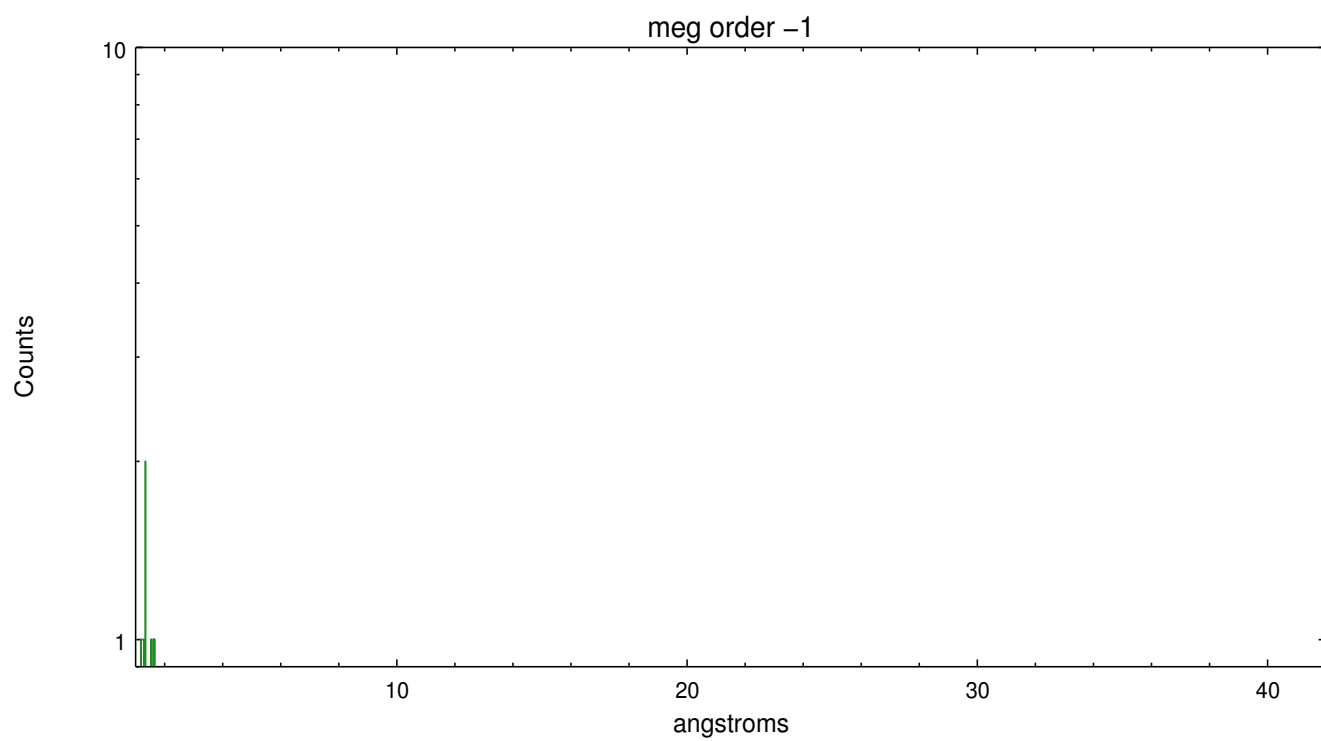
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	72	443416	31	0	0







# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.681

## A.2 Comments

HETG is inserted as a filter; there is very little useful gratings information in the observation. The zeroth order position used in the grating extraction

is NOT at the position of the pulsar, but is near some bright emission knots to the SE. If the dispersed grating spectrum is to be analyzed, it should be re-extracted using the exact position of the pulsar as the zeroth order position.

The dispersed spectrum only contains data for the meg orders between 1-2 A.