

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 1005 - L2 Version 4  
Chandra X-Ray Center

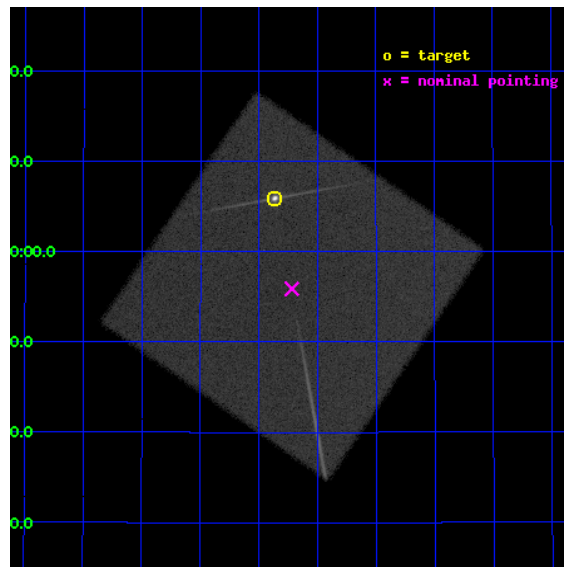
L2 Processing Date : Sep 21 2012

## 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	Parameters . . . . .	4
2.1.3	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
2.5.3	Slot 2 . . . . .	16
<b>3</b>	<b>Gratings</b>	<b>17</b>
3.1	LETG Arm . . . . .	17
<b>A</b>	<b>Summary</b>	<b>19</b>
A.1	Status . . . . .	19
A.2	Comments . . . . .	19

# 1 Front

seq_num	290086	Sequence number
obs_id	1005	Observation id
title	LETG/HRC-I CALIBRATION OBSERVATIONS OF HZ43	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	HZ43	Source name
ra_targ	199.092083	Observer's specified target RA [deg]
dec_targ	29.099	Observer's specified target Dec [deg]
ra_nom	199.05469225012	Nominal RA [deg]
dec_nom	28.93163882555	Nominal Dec [deg]
roll_nom	259.41824750742	Nominal Roll [deg]
revision	4	Processing version of data
ontime	15482.881857947	[s]
livetime	15399.200049473	Ontime multiplied by DTCOR
l2events	453021	Number of level 2 events

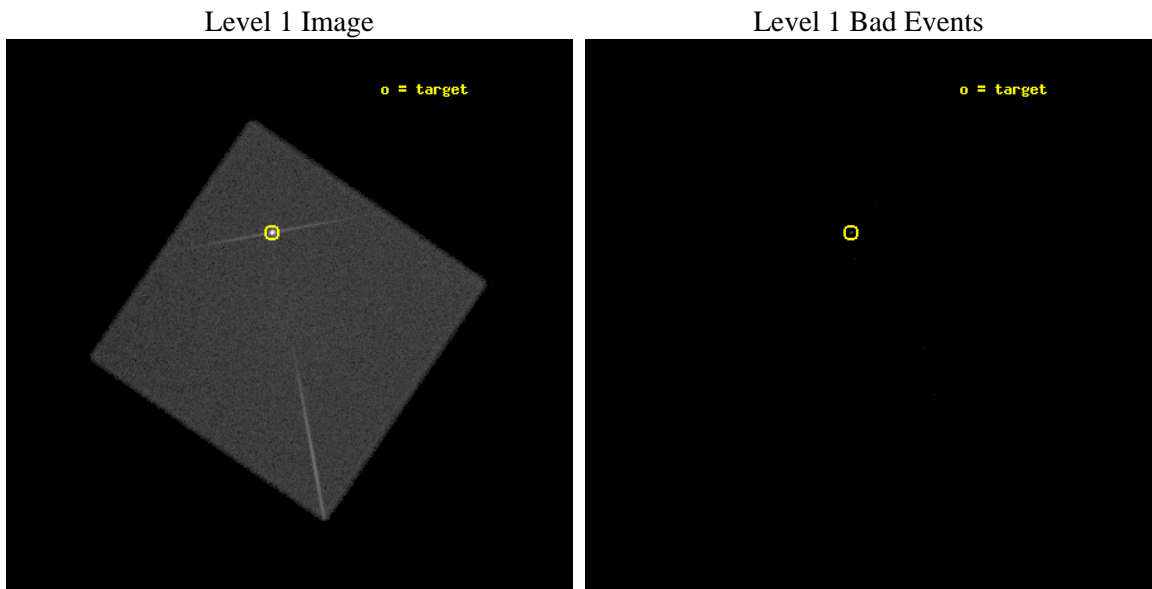




## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



### 2.1.2 Parameters

obi_num	1	Obi number	sched_exp_time	15300.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	15482.881857947	[s]
caldbver	4.5.1.1	&#160	l1events	664623	Number of level 1 events
date	2012-09-21T08:58:42	Date and time of file creation			
revision	4	Processing version of data			

### 2.1.3 Events

#### Level 1 Events

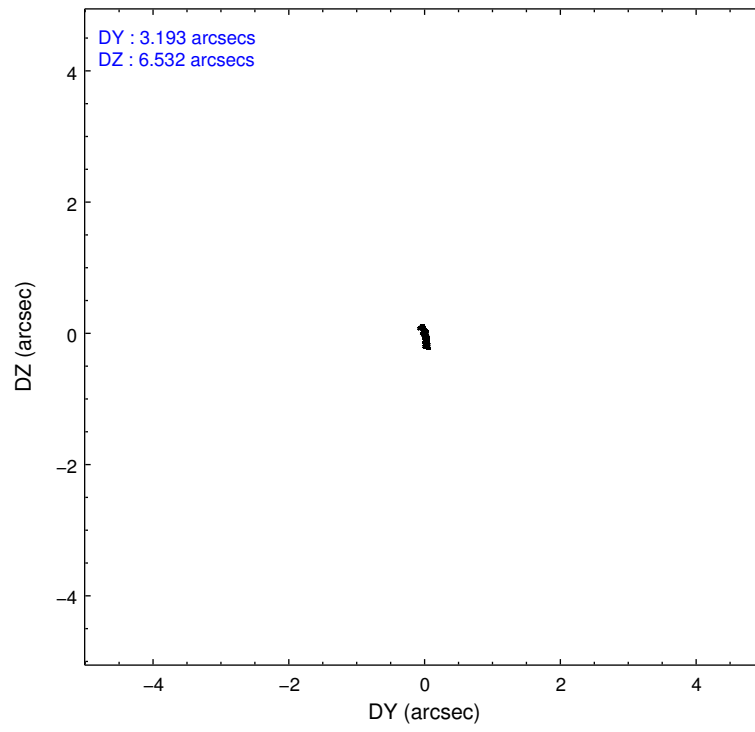
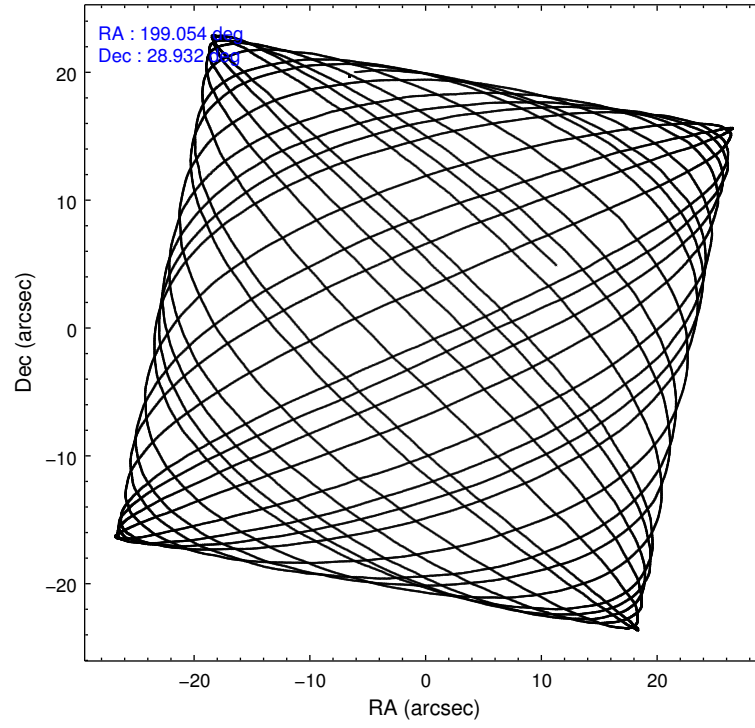
	<b>segment 0</b>
level 1 events	664623
rejected events	10967
rejected %	1%

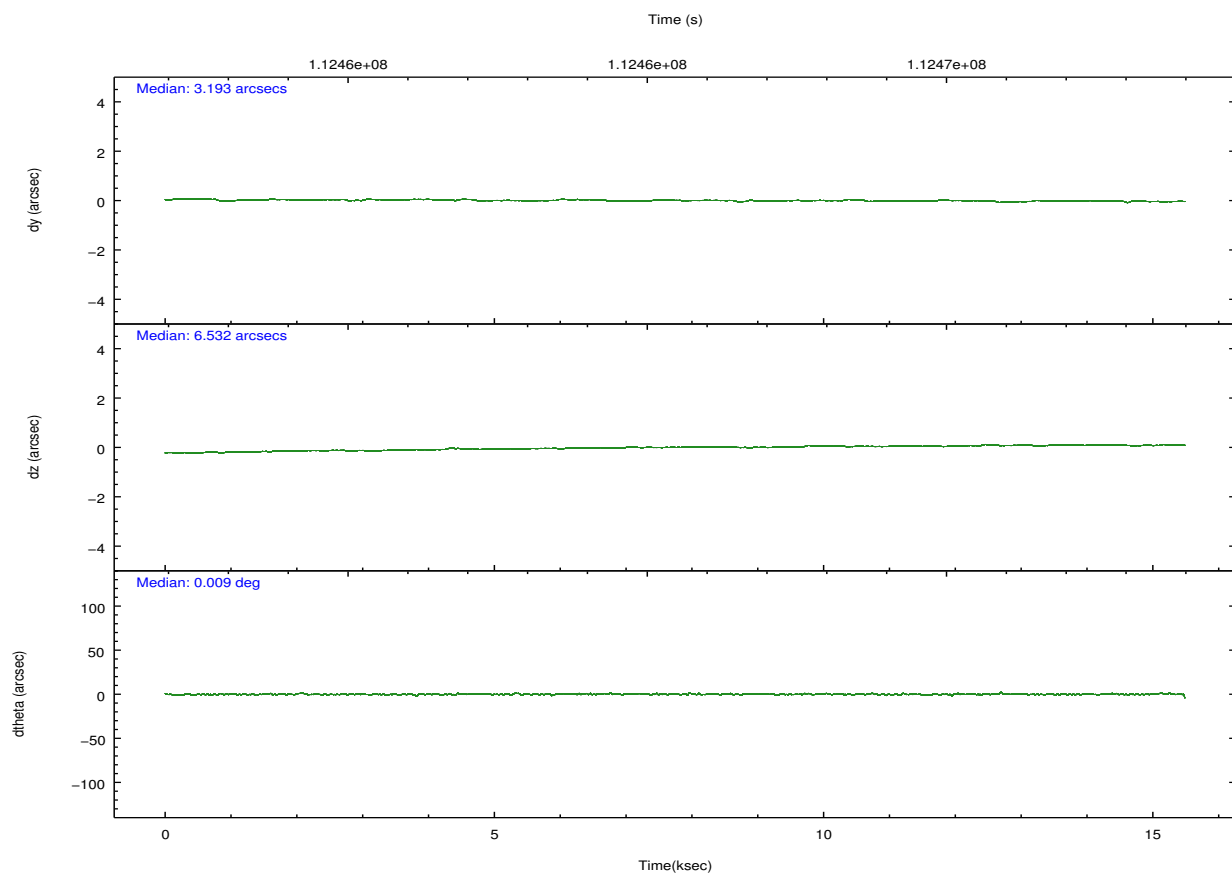
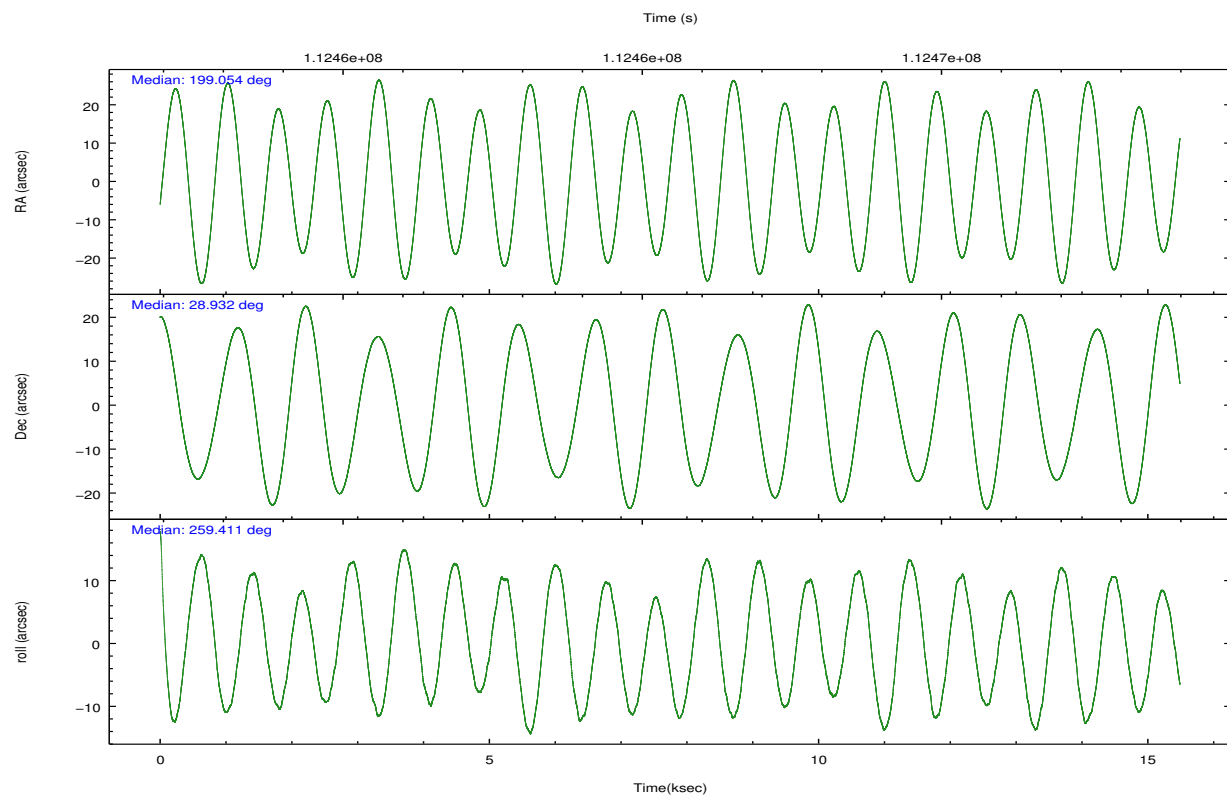
## 2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	HRC	HRC
Detector	HRC-I	HRC-I
Grating	LETG	LETG
Data mode	OBSERVING	OBSERVING
Observation mode	POINTING	POINTING
[deg] Pointing RA	199.043779	199.0546922501209
[deg] Pointing Dec	28.956989	28.9316388255497
[deg] Pointing Roll	259.519021	259.4182475074215
[s] Window start time (MET)	110332864.184000	110332864.184000
[s] Window stop time (MET)	112838464.184000	112838464.184000
[mm] SIM focus pos	-1.040293	-1.038866356238299
[mm] SIM defocus	0	0.001426264420575141
[mm] SIM translation stage pos	126.985494	126.9854943052878
[mm] SIM translation stage offset	0	-5.413686238853188e-06
[s] Observation start time (MET)	112457908.184000	112457532.5148
Observation start date	2001-07-25T14:17:24	2001-07-25T14:12:12
[s] Observation end time (MET)	112473208.184000	112473926.36544
Observation end date	2001-07-25T18:32:24	2001-07-25T18:45:26

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED

## 2.3 Aspect



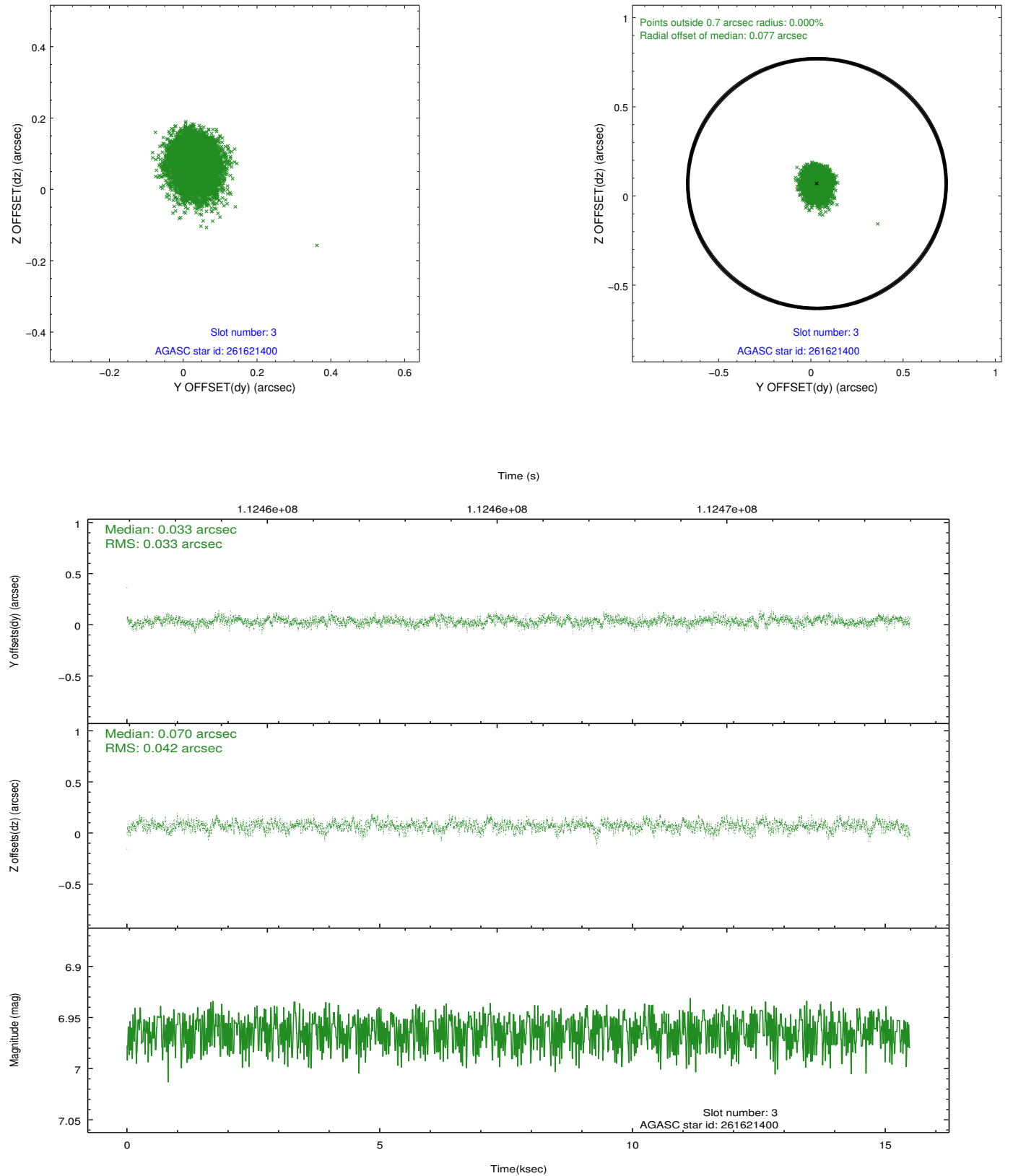


### Slot Statistics

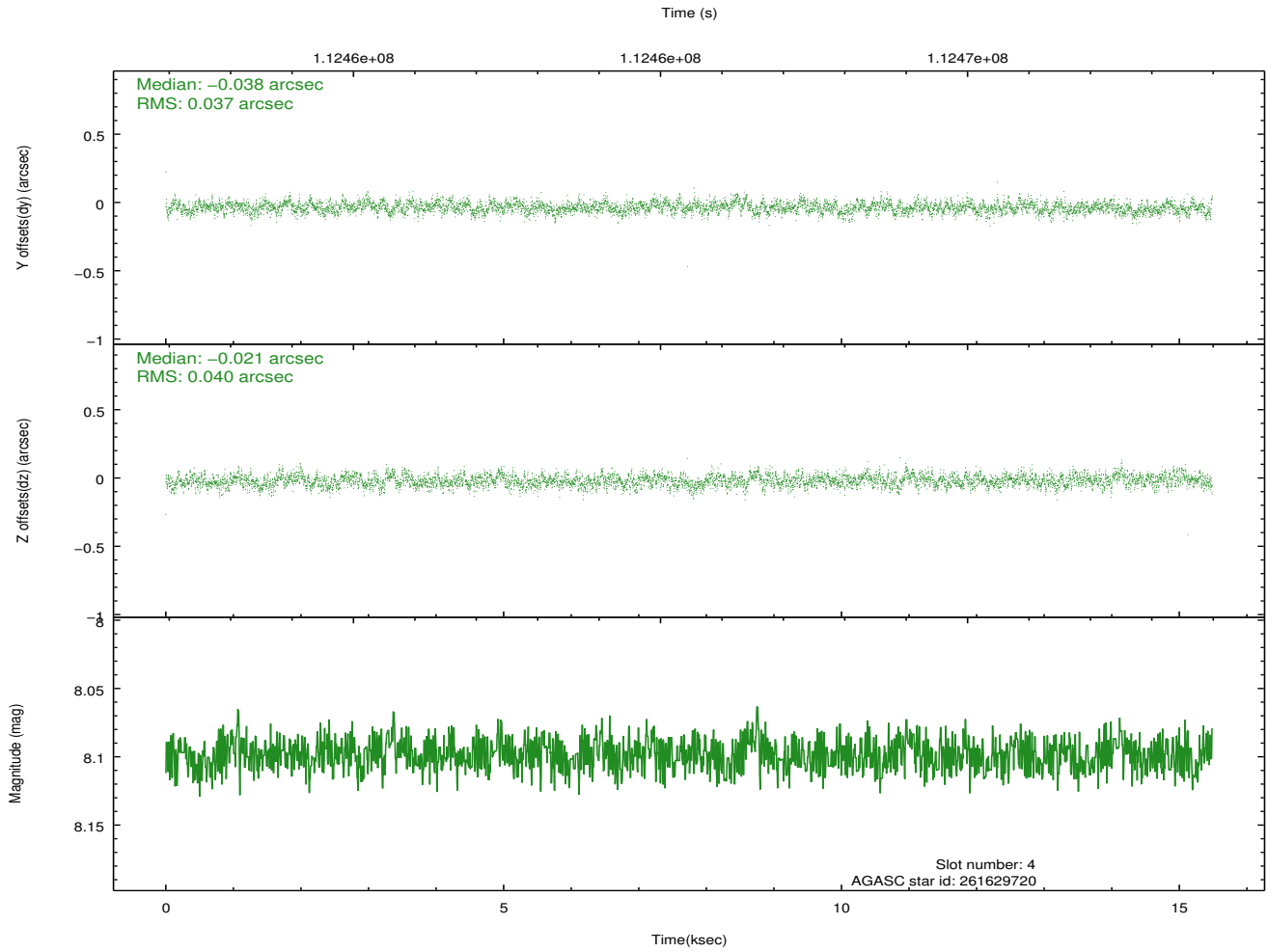
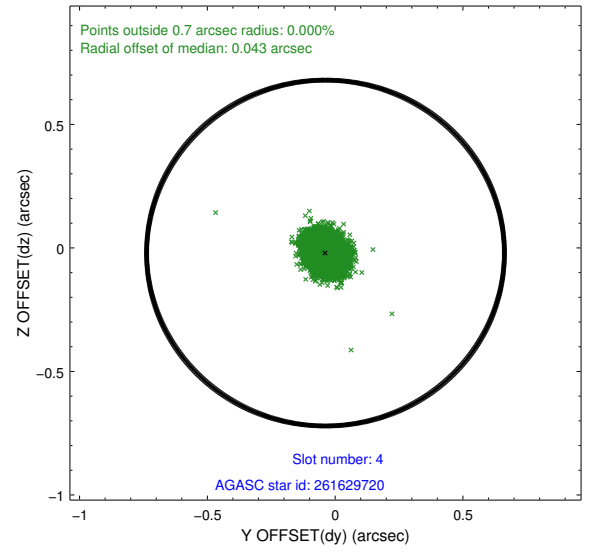
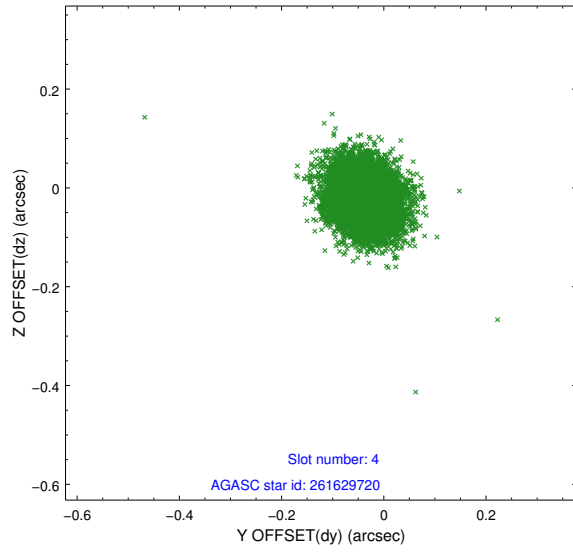
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	HRC-I-1	6.97	3777	0.060	0.032	0.010	0.020	0.000000	0.000000	-758.64	-1294.35
1	FID	HRC-I-3	7.06	3776	0.009	-0.058	0.010	0.016	0.000000	0.000000	-1187.34	1009.79
2	FID	HRC-I-4	7.00	3777	0.045	-0.062	0.009	0.016	0.000000	0.000000	1283.86	1007.96
3	GUIDE	261621400	6.96	7555	0.033	0.070	0.057	0.092	198.901600	28.741982	842.46	-299.26
4	GUIDE	261629720	8.10	7555	-0.038	-0.021	0.058	0.094	199.236176	29.044452	-420.34	539.11
5	GUIDE	261619776	8.80	7553	-0.099	-0.072	0.081	0.128	198.654383	29.401174	-1352.25	-1491.10
6	GUIDE	261619992	9.32	7554	0.036	0.014	0.087	0.141	198.395553	28.647634	1462.16	-1811.07
7	GUIDE	261623624	9.12	7552	0.067	0.011	0.104	0.160	199.611555	28.454113	1448.97	2096.81

## 2.4 Star Slots

### 2.4.1 Slot 3

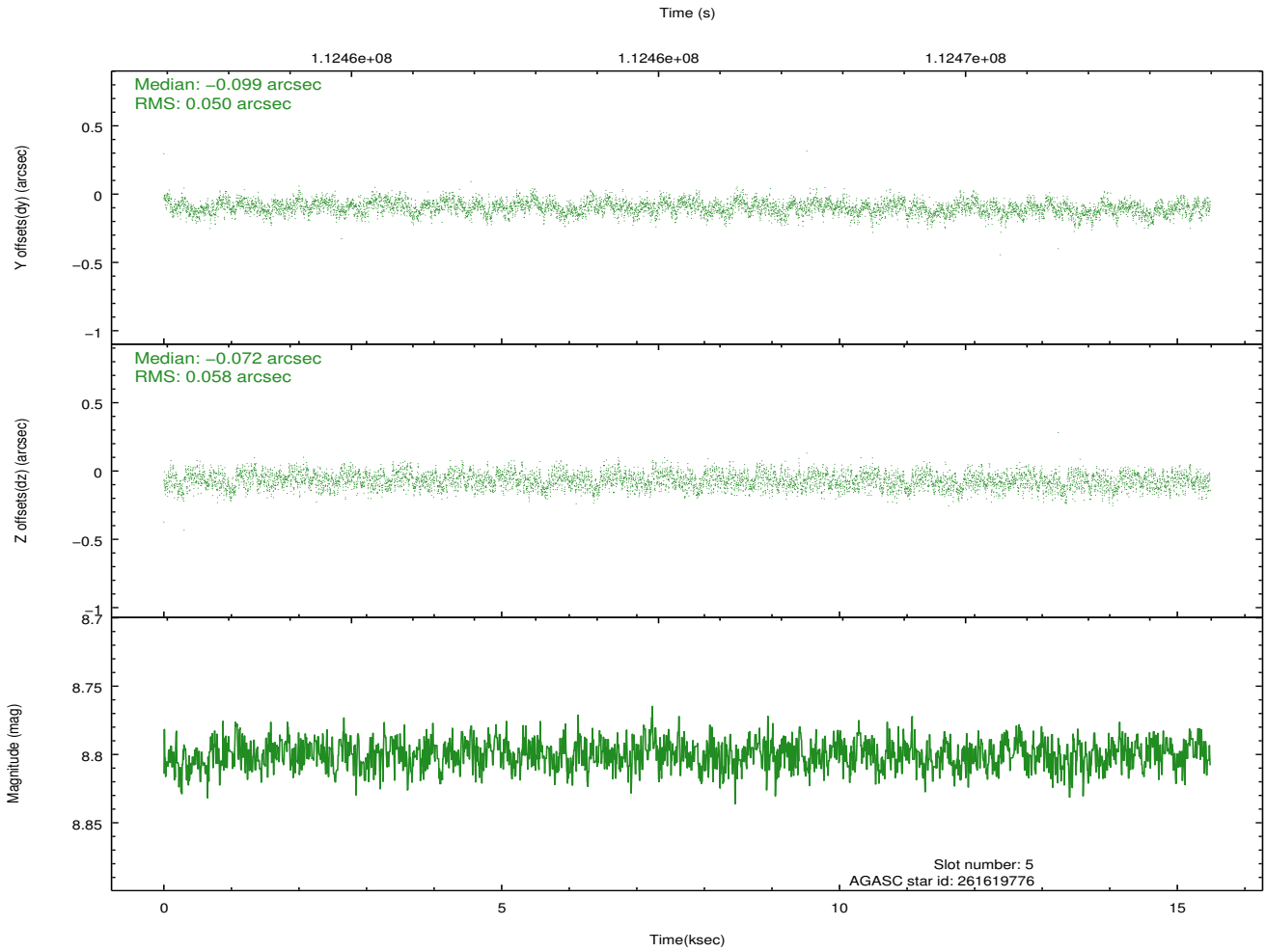
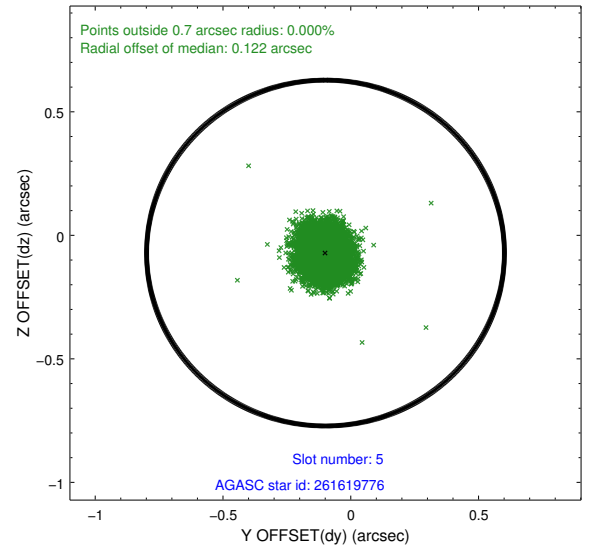
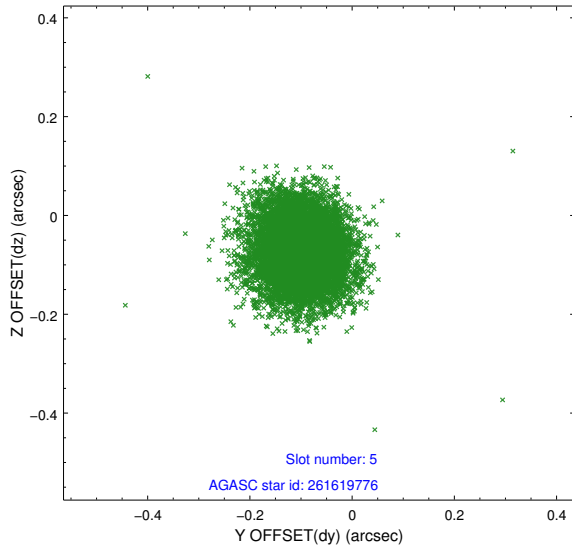


## 2.4.2 Slot 4

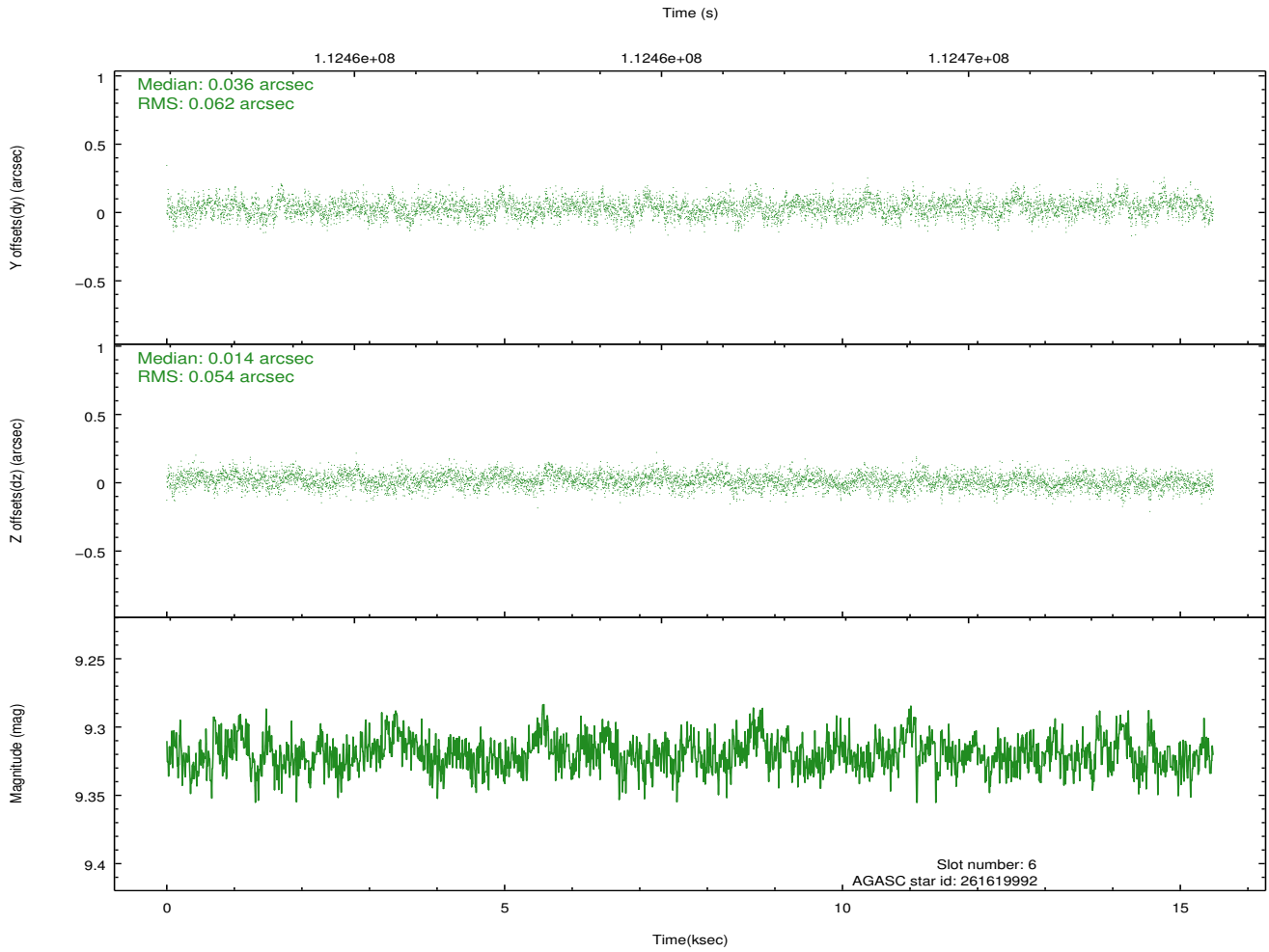
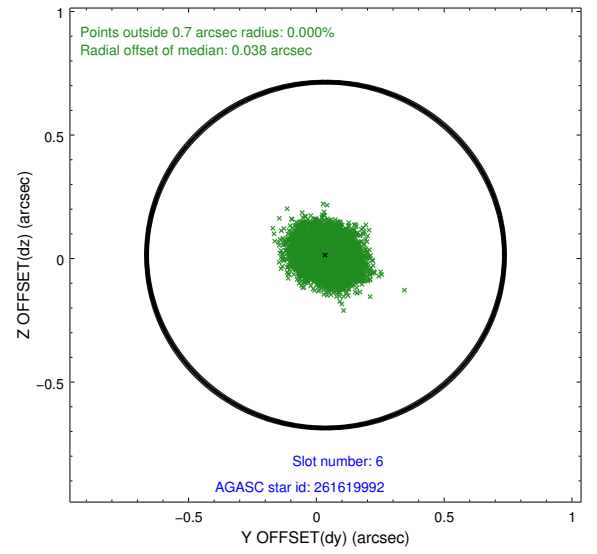
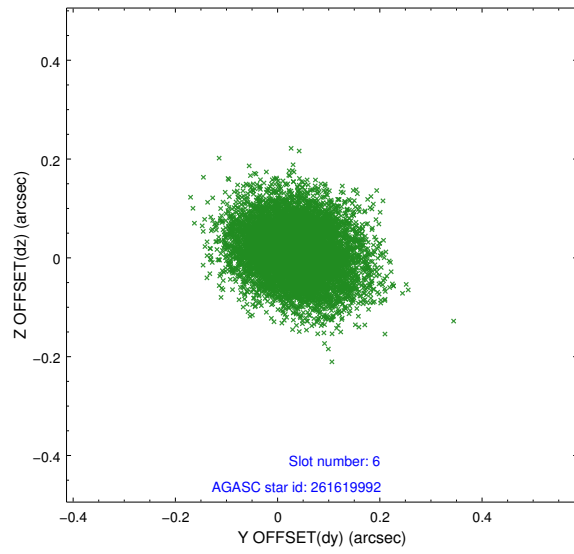




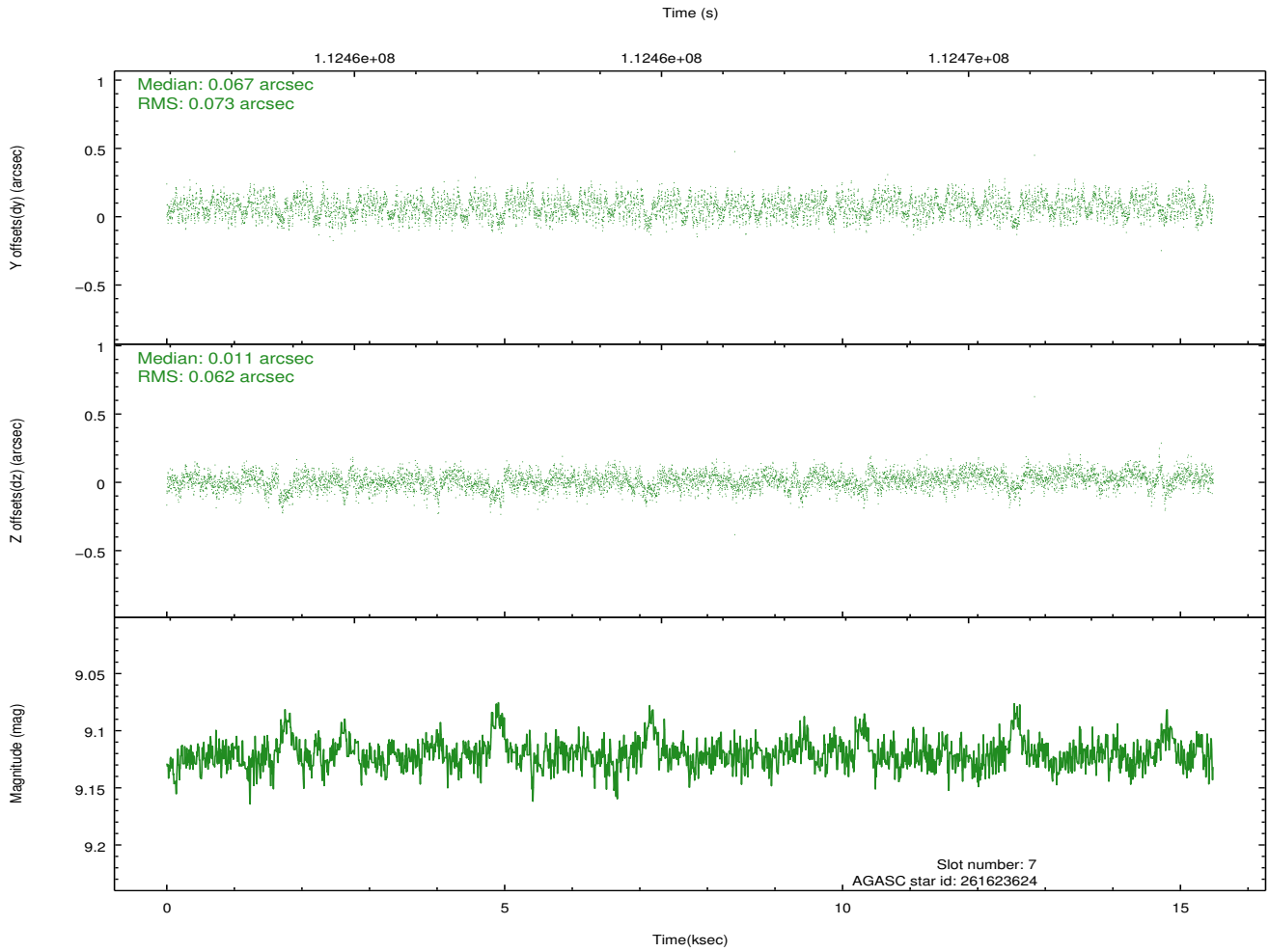
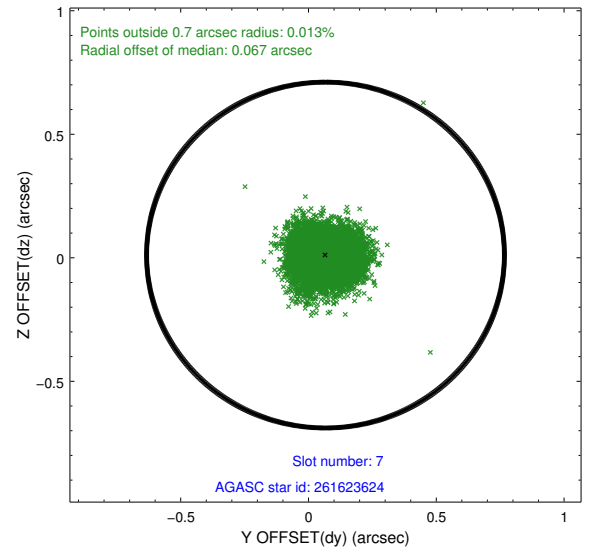
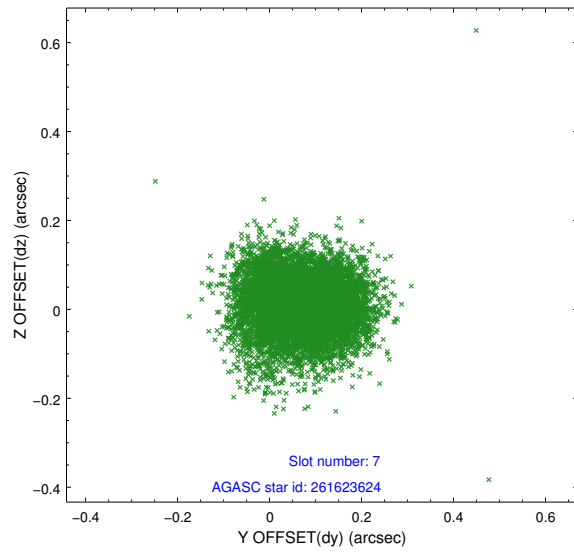
### 2.4.3 Slot 5



## 2.4.4 Slot 6

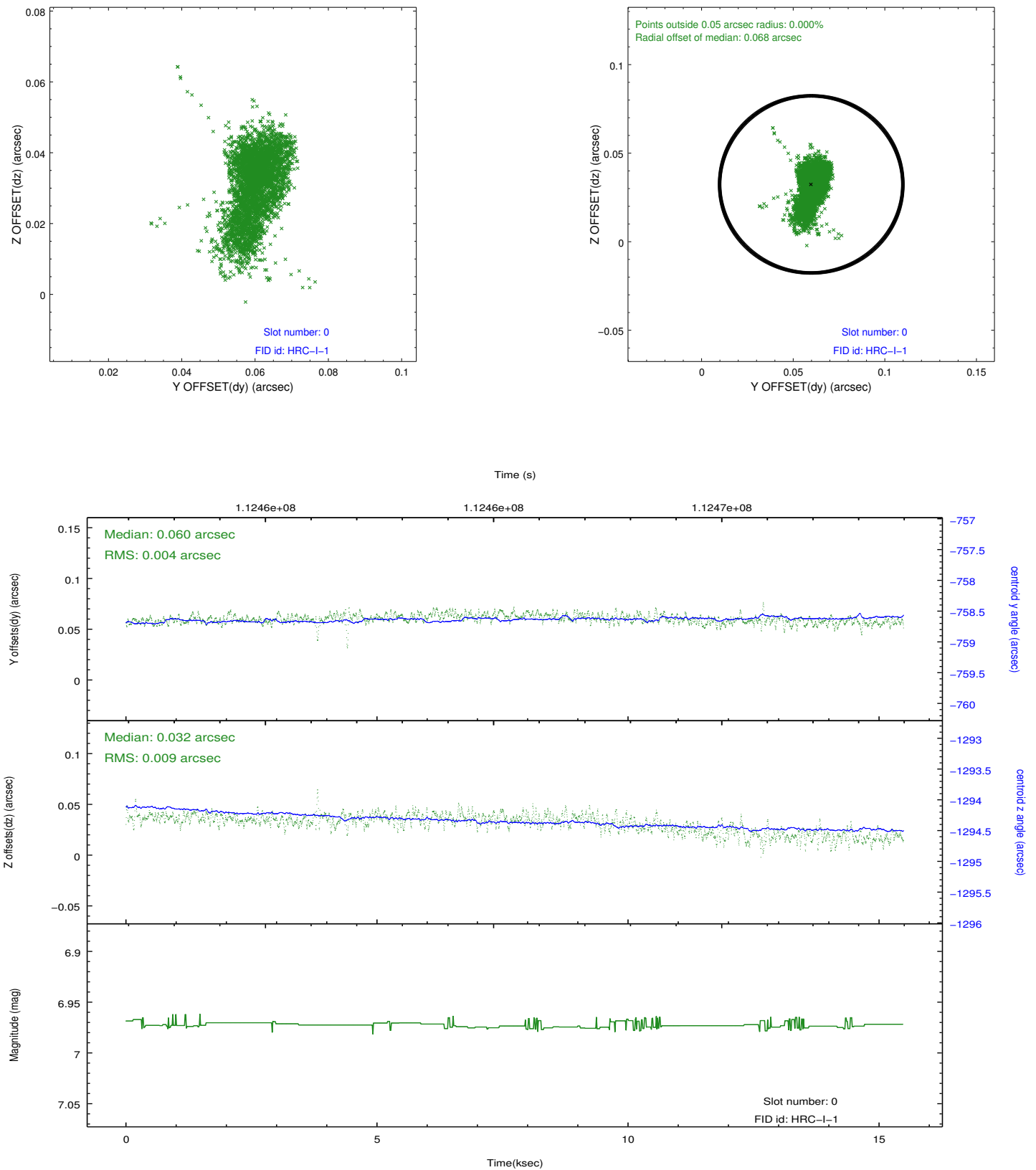


## 2.4.5 Slot 7

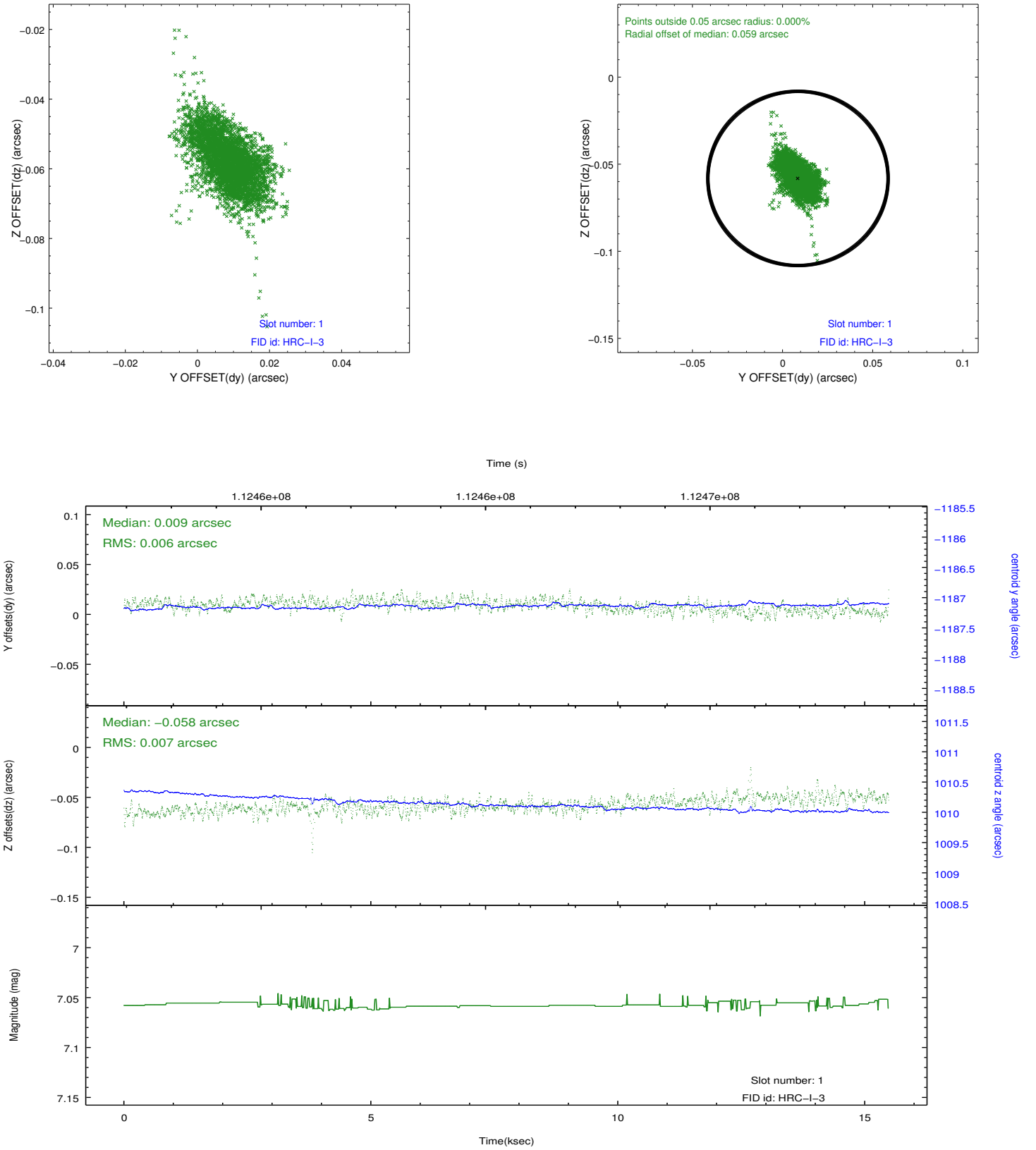


## 2.5 FID Slots

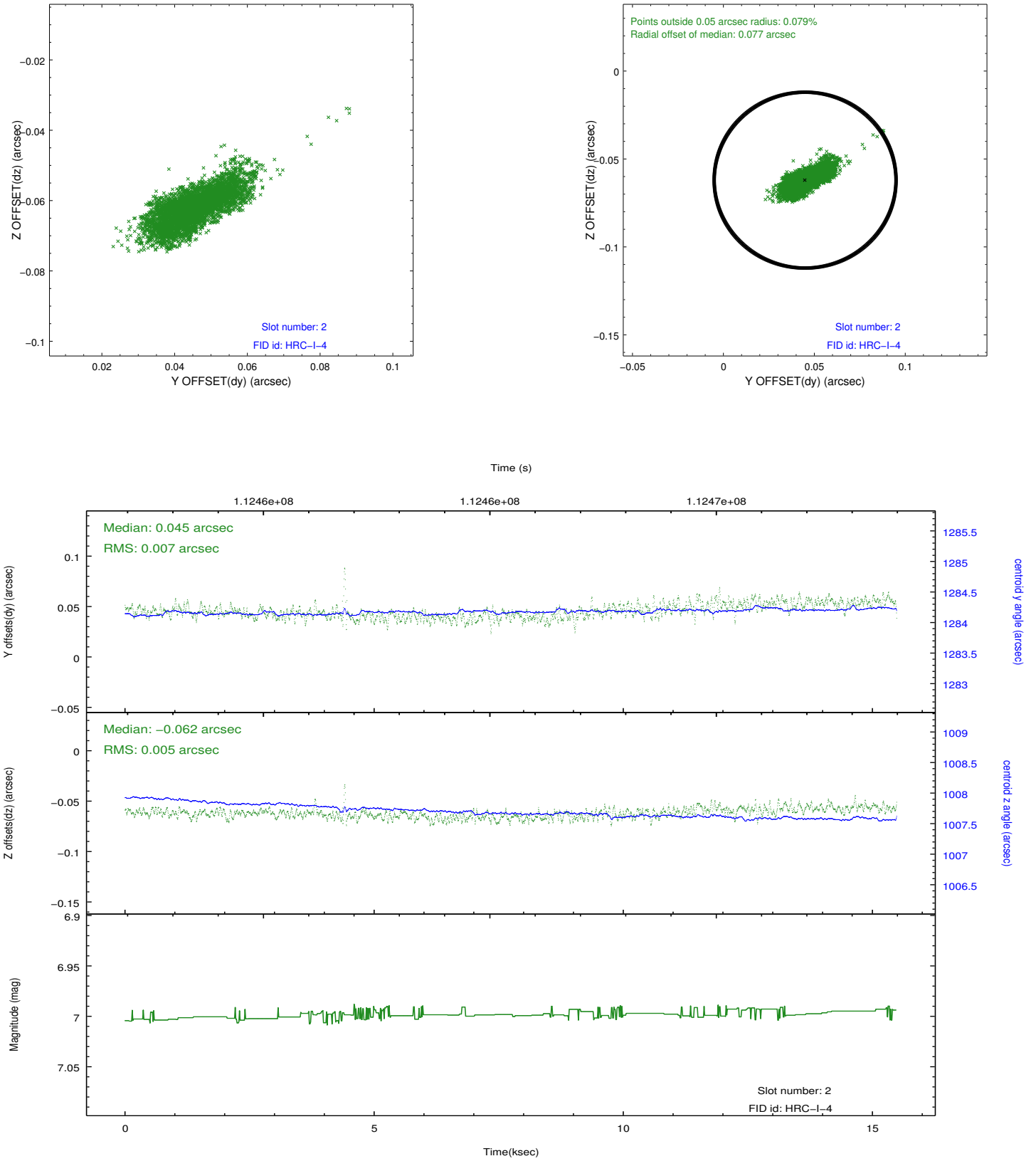
### 2.5.1 Slot 0



## 2.5.2 Slot 1

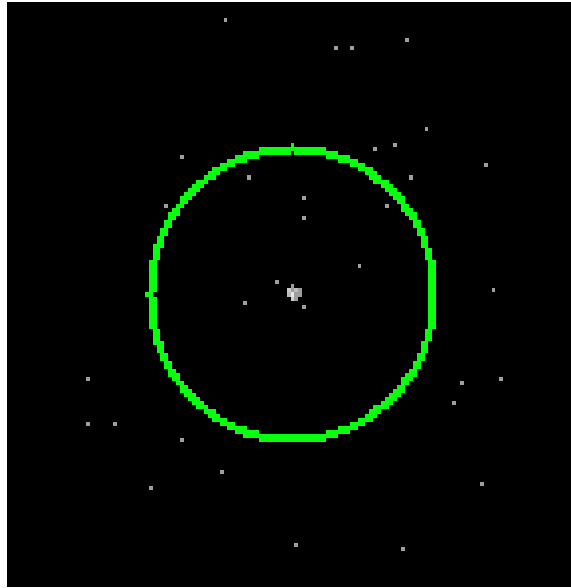


### 2.5.3 Slot 2

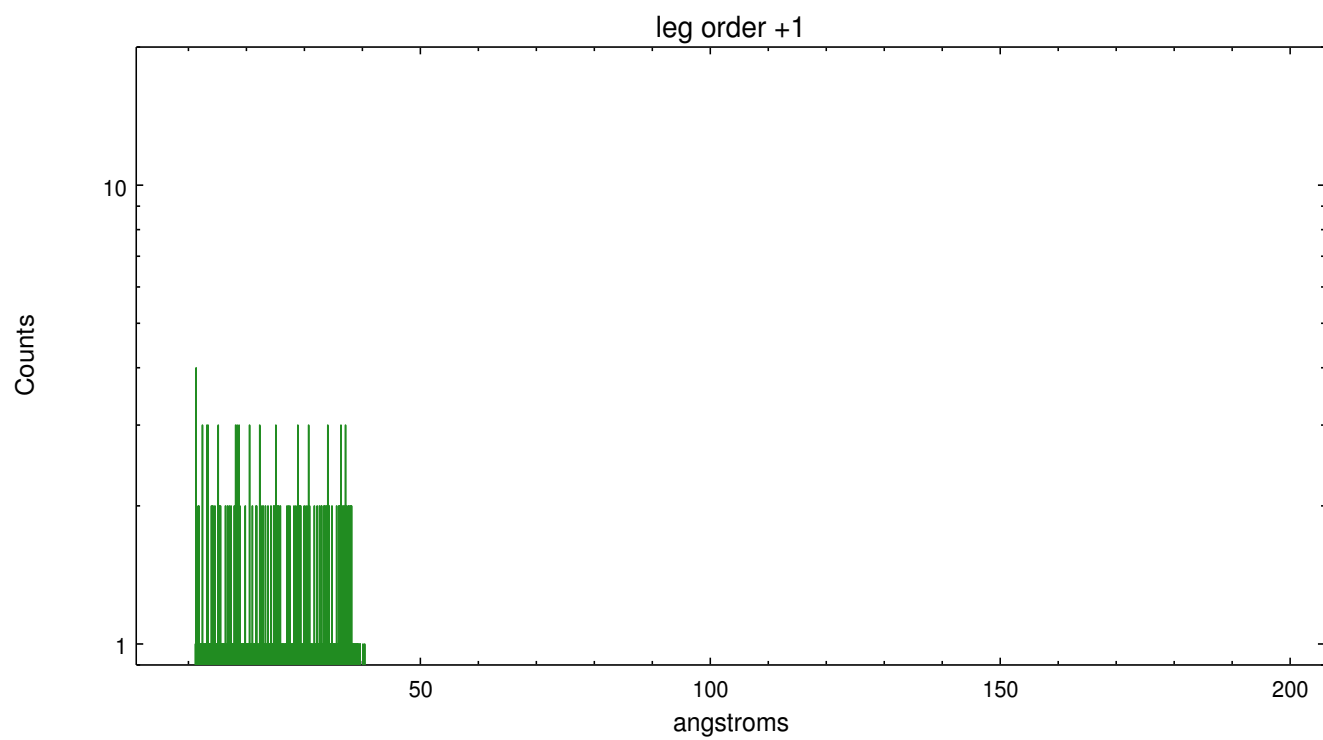
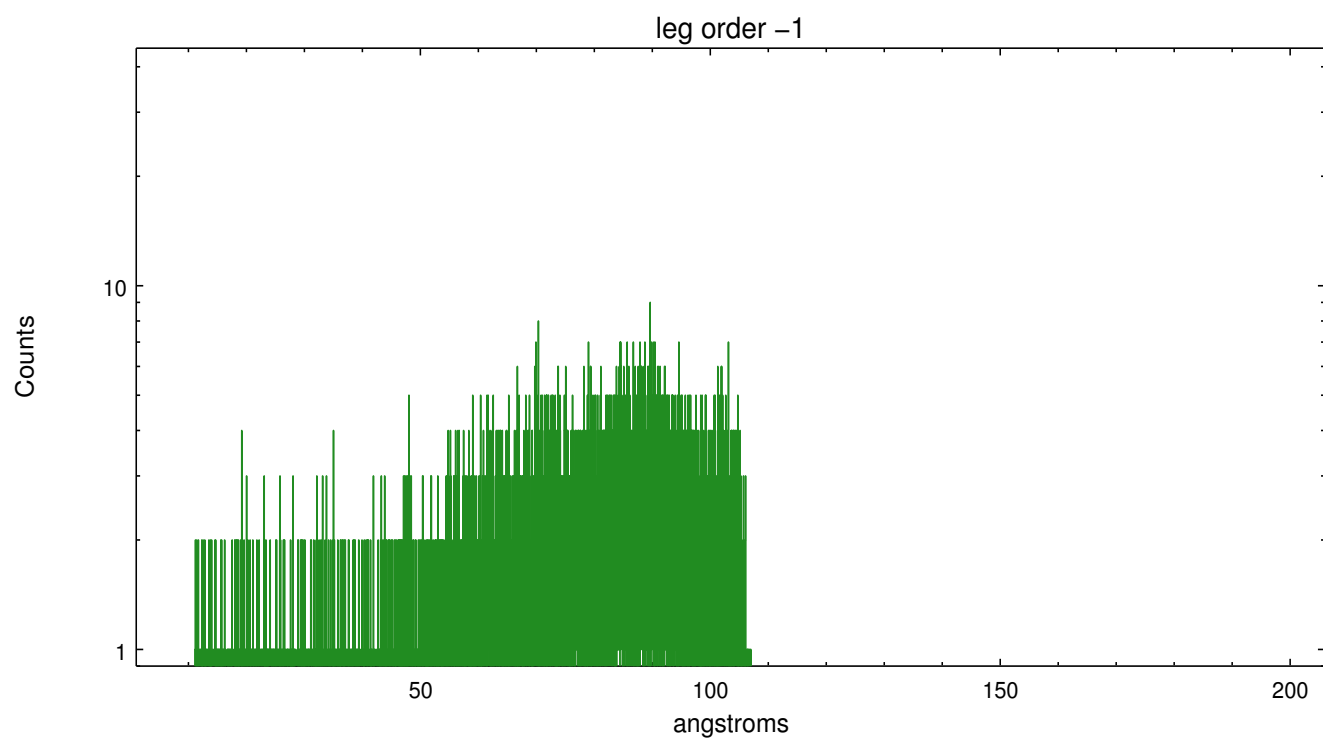


## 3 Gratings

### 3.1 LETG Arm



LETG Zero Order





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.28
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	15.476

## A.2 Comments

Source is placed about 12 arcmin off-axis toward the corner of the detector. The point spread function is significantly extended by this off-axis position. The zeroth order position found by the software is not at the precise center of the PSF, but is within about 1 arcsec. The off-axis position yields a minus side spectrum with energies beyond 100 A. The plus side spectrum is truncated.

===

WARNING: there are no standard CIAO tools for analysis of grating spectra from extended sources. The shape of an emission 'line' will be the shape of the zero order spatial structure convolved with the instrumental LSF. Grating extractions can be used, but need to be combined with custom spatial-spectral analysis, since wavelength is multi-valued at any particular diffraction angle. WARNING: The user will need to deconvolve the PSF of the off-axis source to get an accurate determination of the zeroth order position, then use software tools such as CIAO to specify the coordinates of the zeroth order before running the tools to resolve the dispersed events. The spectral data supplied in this processing are only energy-calibrated for the zeroth order position found by tgdetect, which is not necessarily correct.