

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 14686 - L2 Version 3  
Chandra X-Ray Center

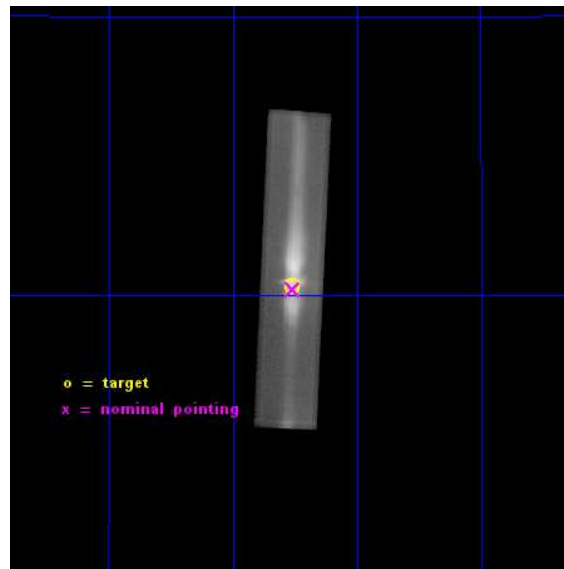
L2 Processing Date : Dec 19 2014

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# 1 Front

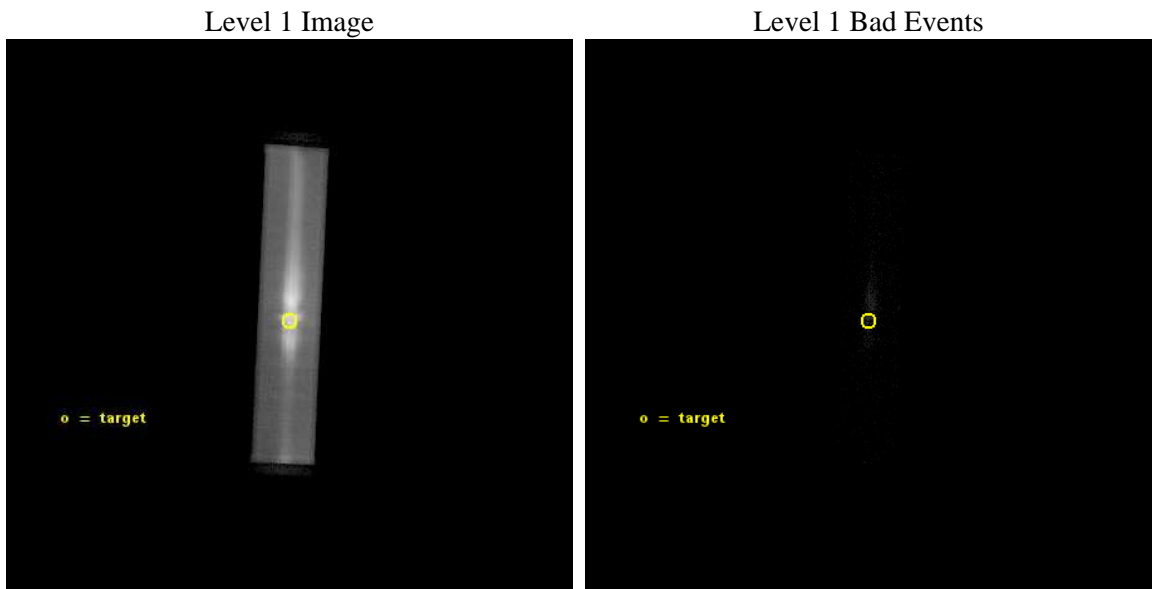
seq_num	501820	Sequence number
obs_id	14686	Observation id
title	Pre-planned Target of Opportunity Observations of the Crab Nebula upon the Occurrence of a Gamma-Ray Flare	Proposal title
observer	Dr. Martin Weisskopf	Principal investigator
object	Crab	Source name
ra_targ	83.631667	Observer's specified target RA [deg]
dec_targ	22.015667	Observer's specified target Dec [deg]
ra_nom	83.631812318204	Nominal RA [deg]
dec_nom	22.01089492967	Nominal Dec [deg]
roll_nom	272.72933463917	Nominal Roll [deg]
revision	3	Processing version of data
ontime	20180.969842374	[s]
livetime	20005.18712186	Ontime multiplied by DTCOR
l2events	2367228	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	20000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	20180.969842374	[s]
caldbver	4.6.5	&#160	l1events	2609085	Number of level 1 events
date	2014-12-19T17:36:42	Date and time of file creation	tgmethod	TGDETECT	Method used to create src1a file
revision	3	Processing version of data	zo_pos	(32738.73, 32870.23)	src1a sky pixel position

### 2.1.3 Events

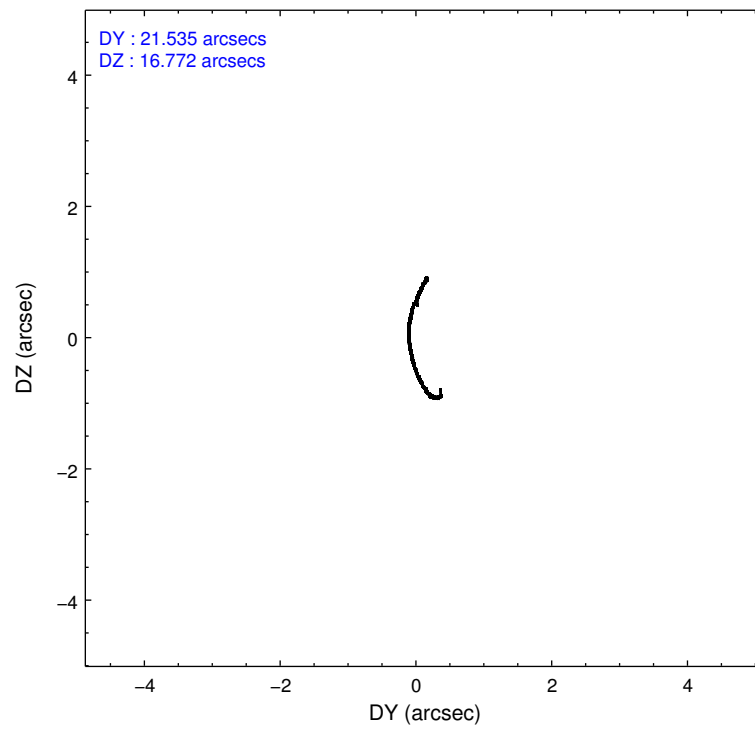
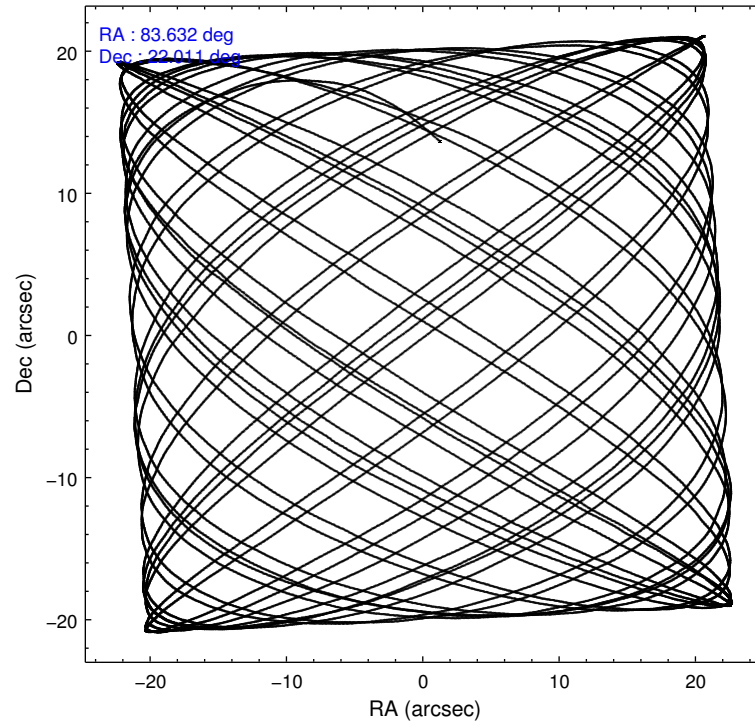
#### Level 1 Events

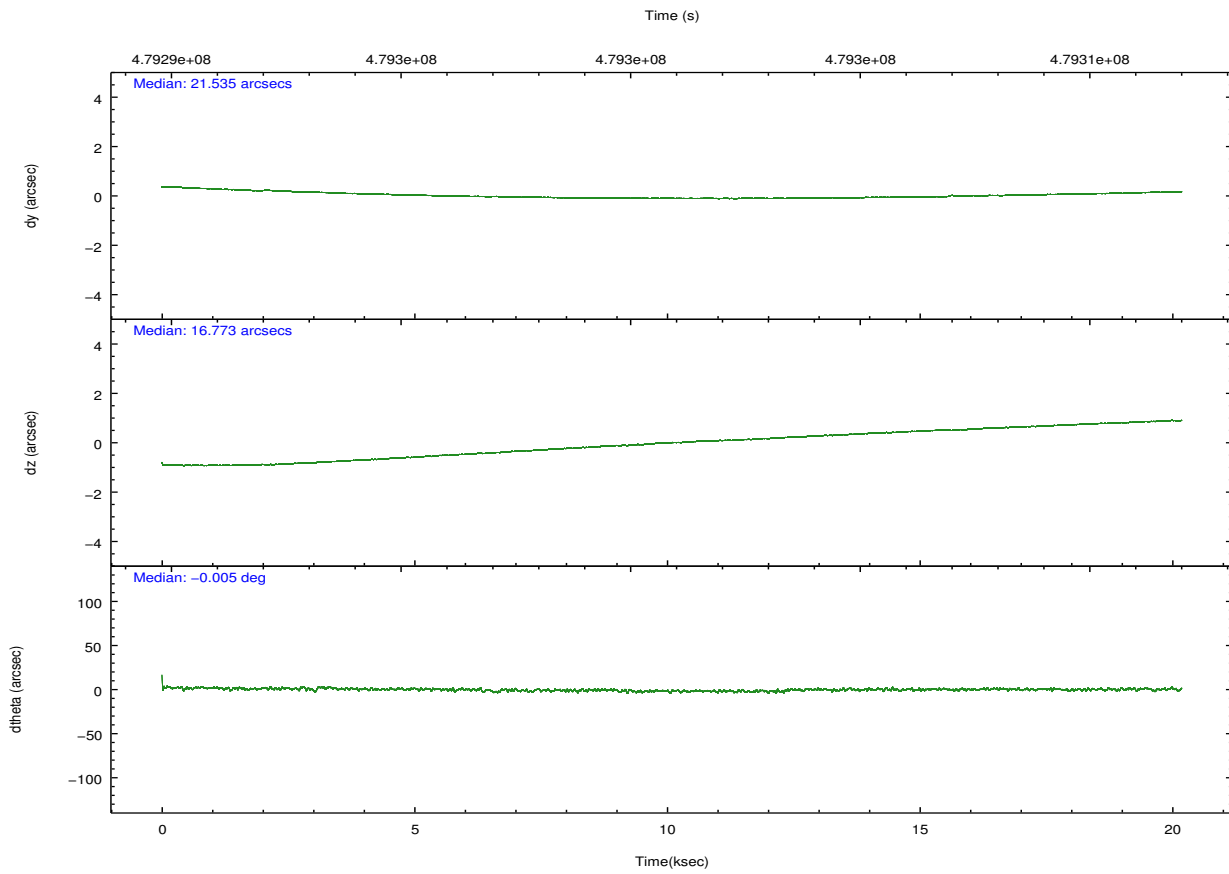
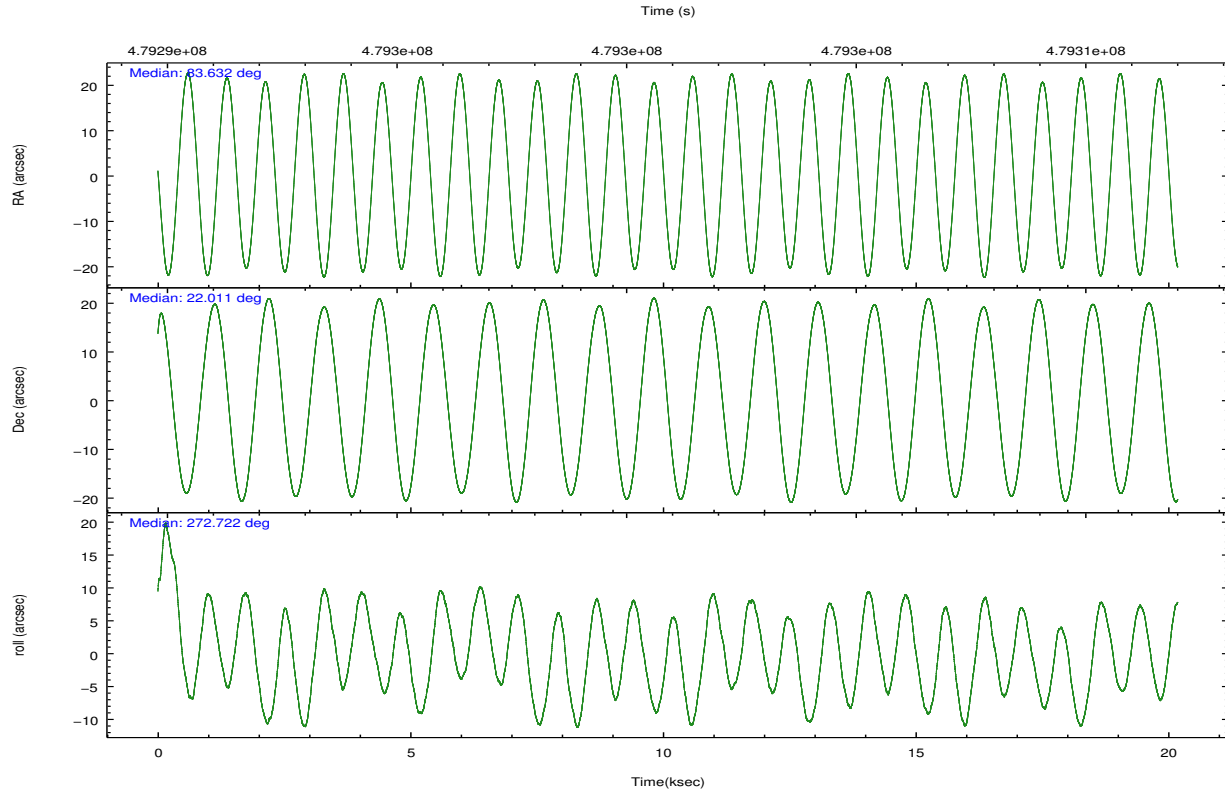
	<b>segment 1</b>	<b>segment 2</b>	<b>segment 3</b>
level 1 events	432	2608645	8
rejected events	22	42904	6
rejected %	5%	1%	75%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	HRC	HRC	Obspar format version number	7	7
Detector	HRC-S	HRC-S	Obspar file type	PREDICTED	ACTUAL
Grating	LETG	LETG	Obspar update status	NONE	UPDATED
Data mode	OBSERVING	OBSERVING			
Observation mode	POINTING	POINTING			
[deg] Pointing RA	83.613818	83.63181231820427			
[deg] Pointing Dec	22.034254	22.01089492966999			
[deg] Pointing Roll	272.668746	272.7293346391689			
[mm] SIM focus pos	-1.429586	-1.428180813131781			
[mm] SIM defocus	0.1037507710433287	0.1051558262725154			
[mm] SIM translation stage pos	250.455976	250.466033080201			
[mm] SIM translation stage offset	0	-0.01005468664627074			
[s] Observation start time (MET)	479290992.184000	479290038.9976			
Observation start date	2013-03-10T08:22:05	2013-03-10T08:07:18			
[s] Observation end time (MET)	479310992.184000	479311858.68628			
Observation end date	2013-03-10T13:55:25	2013-03-10T14:10:58			

## 2.3 Aspect



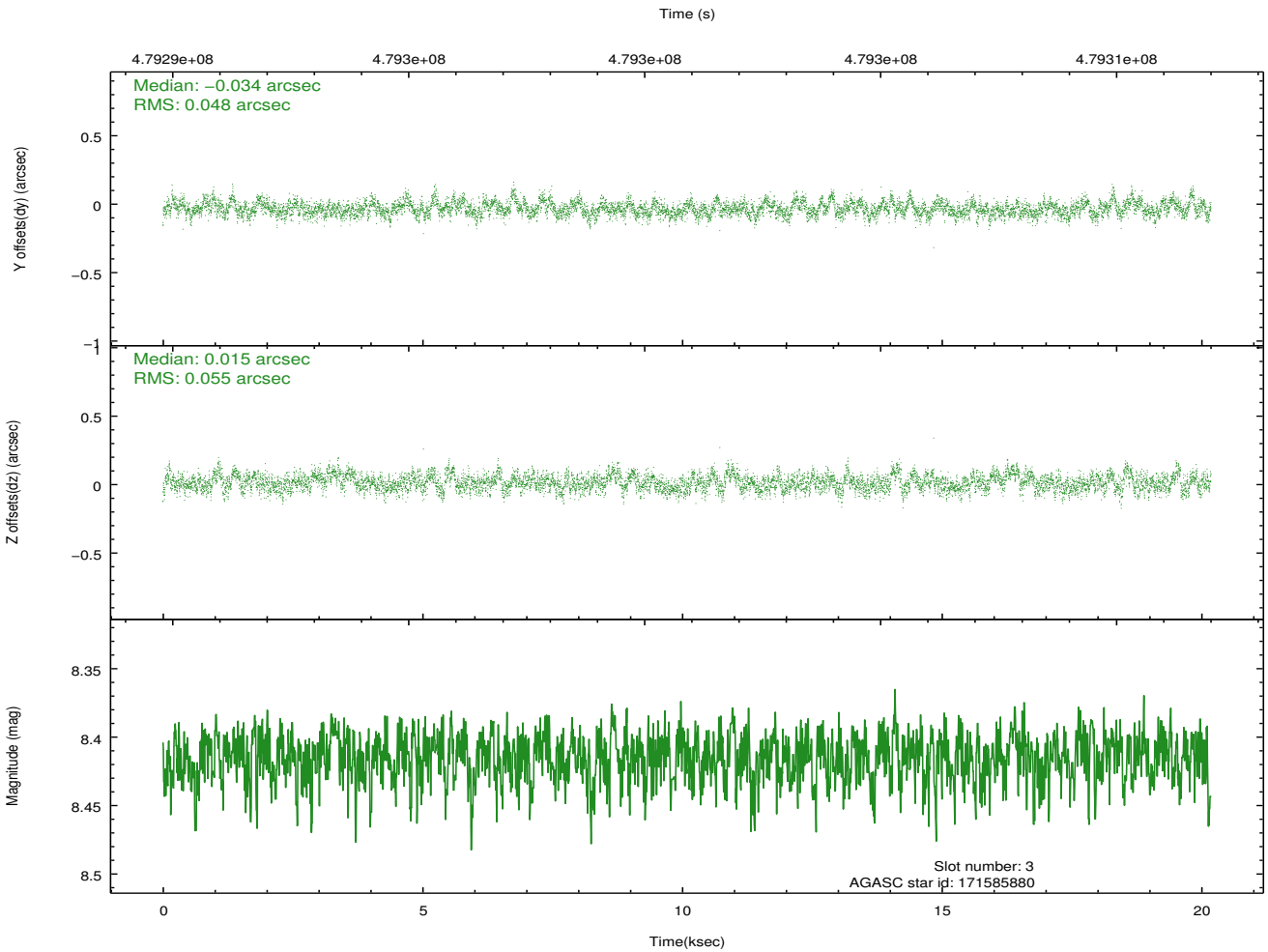
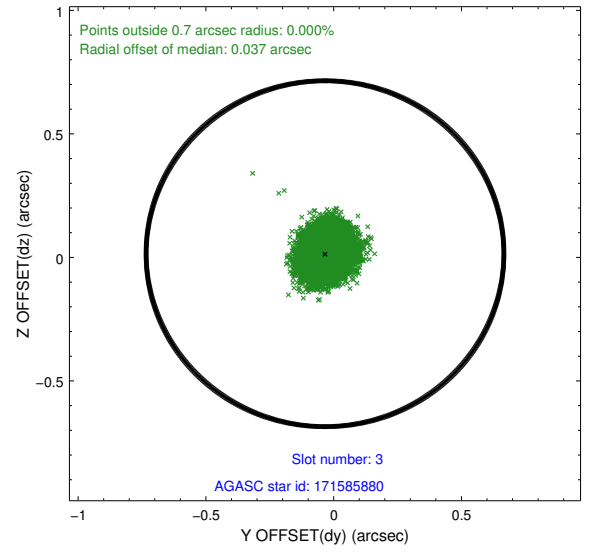
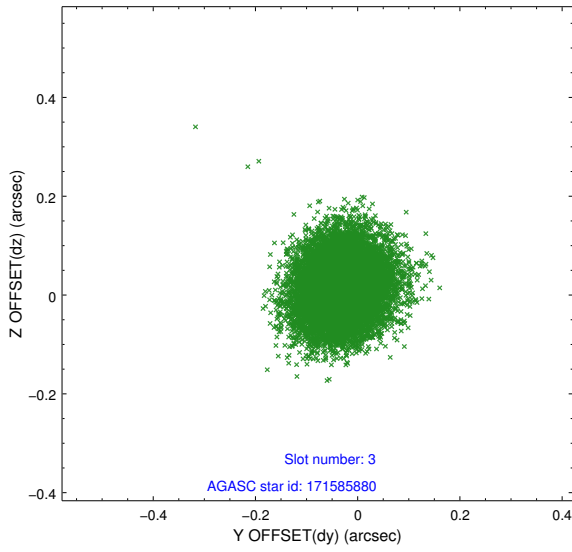


### Slot Statistics

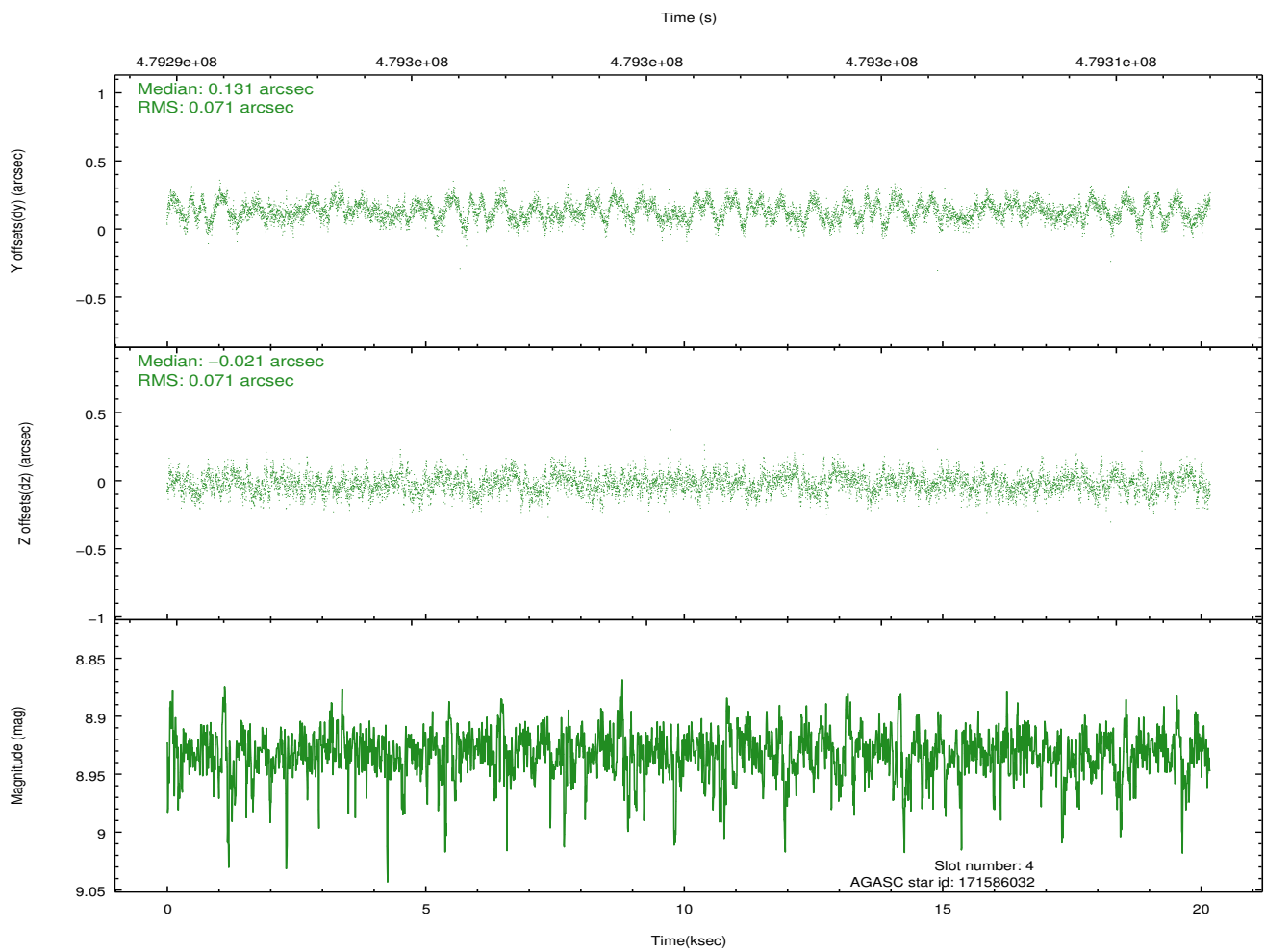
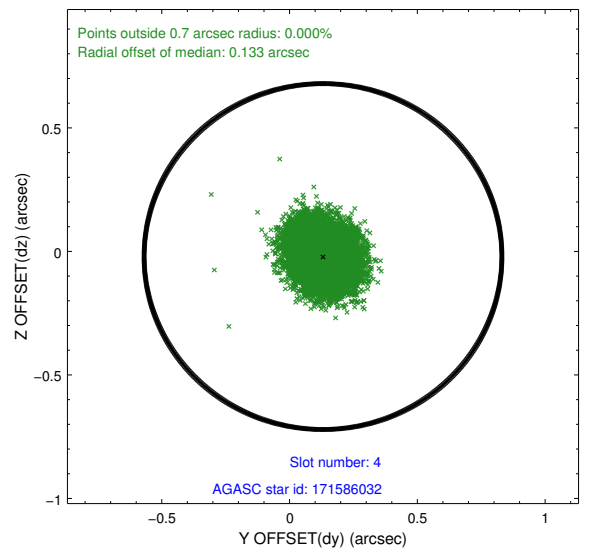
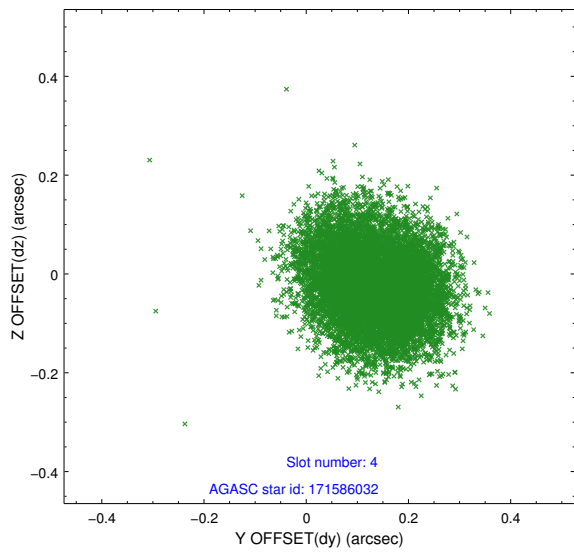
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		HRC-S-1	7.01	4922	-0.038	-0.186	0.019	0.040	0.000000	0.000000	-1176.25	-465.74
1	FID		HRC-S-3	7.02	4923	0.065	-0.084	0.018	0.042	0.000000	0.000000	-1179.14	563.81
2	FID		HRC-S-4	6.94	4923	0.361	-0.028	0.006	0.010	0.000000	0.000000	1222.13	566.72
3	GUIDE	used	171585880	8.41	9842	-0.034	0.015	0.079	0.124	83.676260	22.176319	-500.92	232.05
4	GUIDE	used	171586032	8.93	9837	0.131	-0.021	0.109	0.169	83.950197	22.083225	-124.78	1129.50
5	GUIDE	used	171721904	9.21	9824	-0.020	0.047	0.118	0.189	84.272676	22.116922	-199.65	2209.52
6	GUIDE	used	243941560	8.28	9835	-0.284	0.054	0.081	0.130	83.733264	22.568598	-1903.00	486.43
7	GUIDE	used	171597832	9.15	9810	0.202	-0.098	0.121	0.198	83.183230	21.366702	2332.01	-1553.31

## 2.4 Star Slots

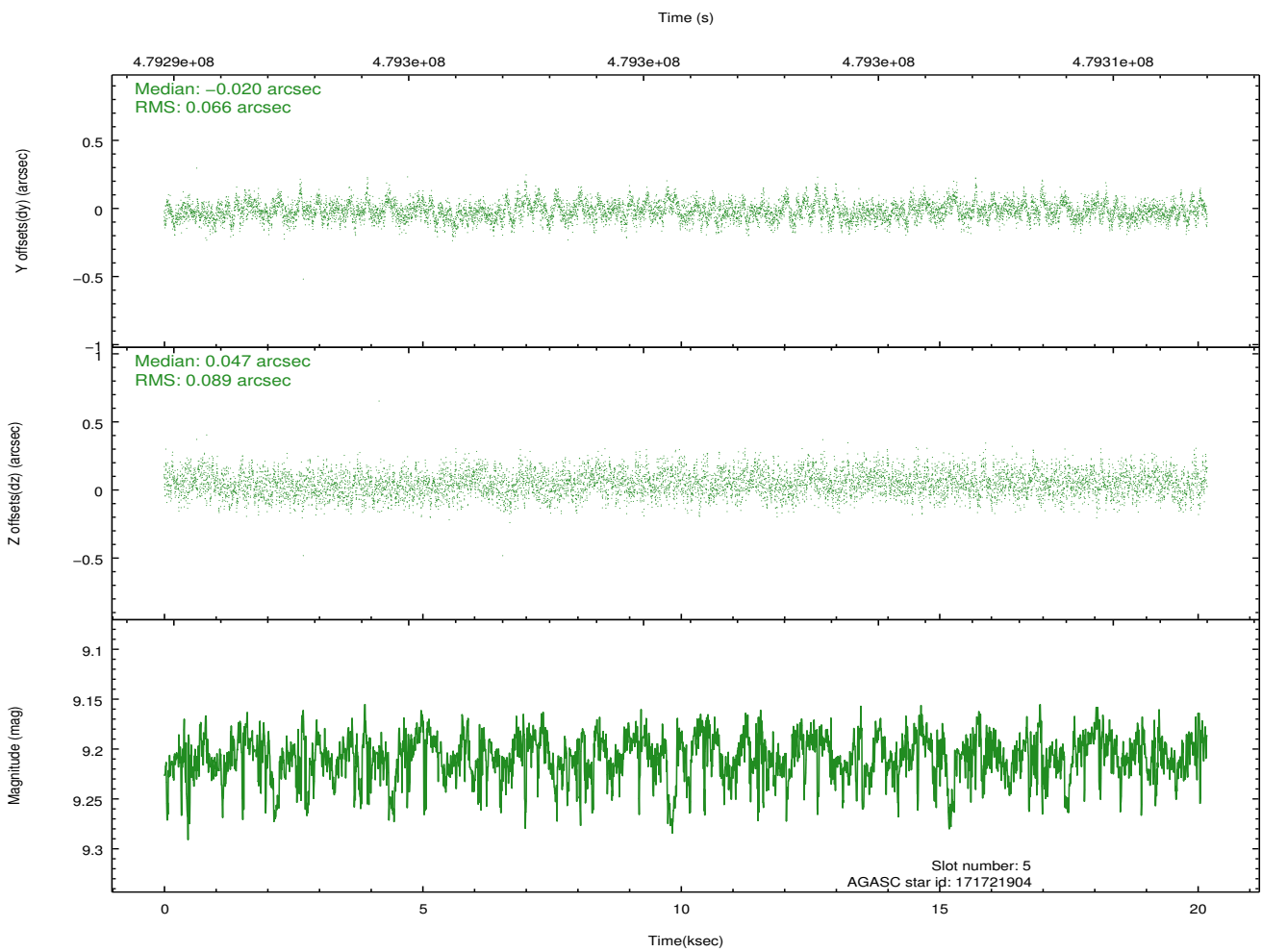
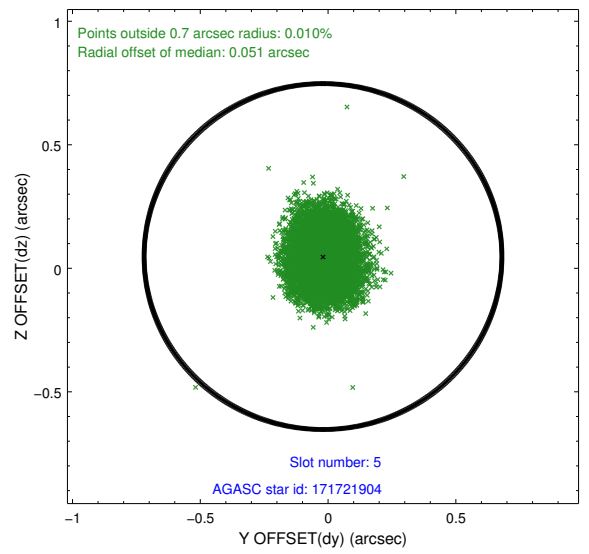
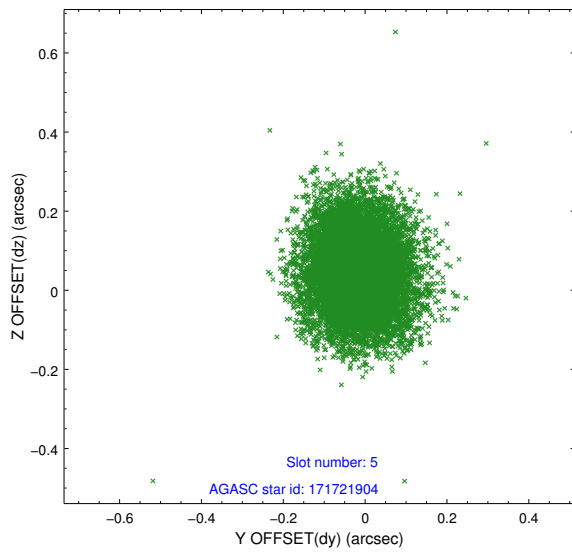
### 2.4.1 Slot 3



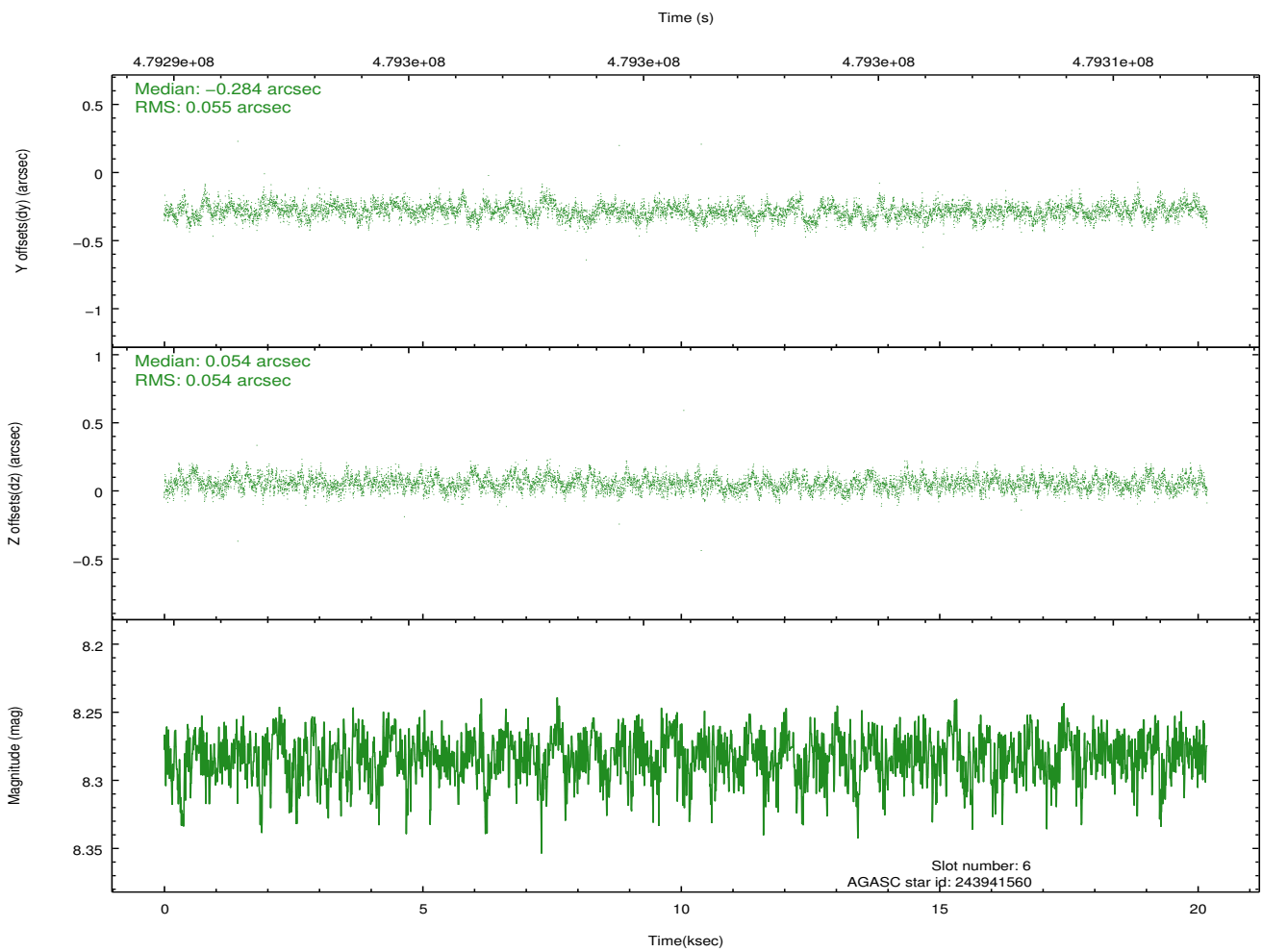
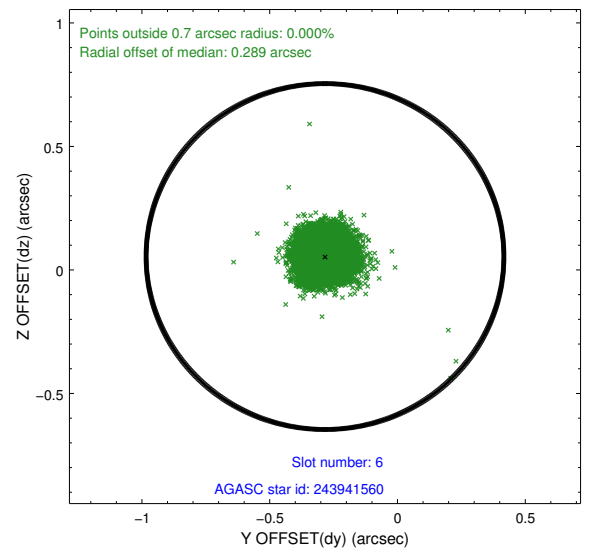
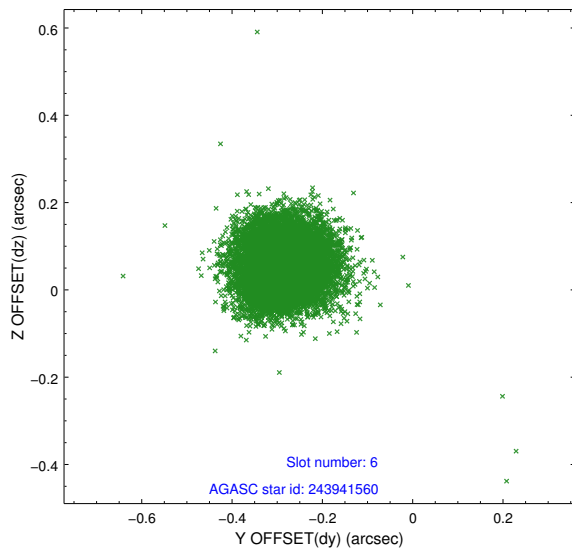
## 2.4.2 Slot 4



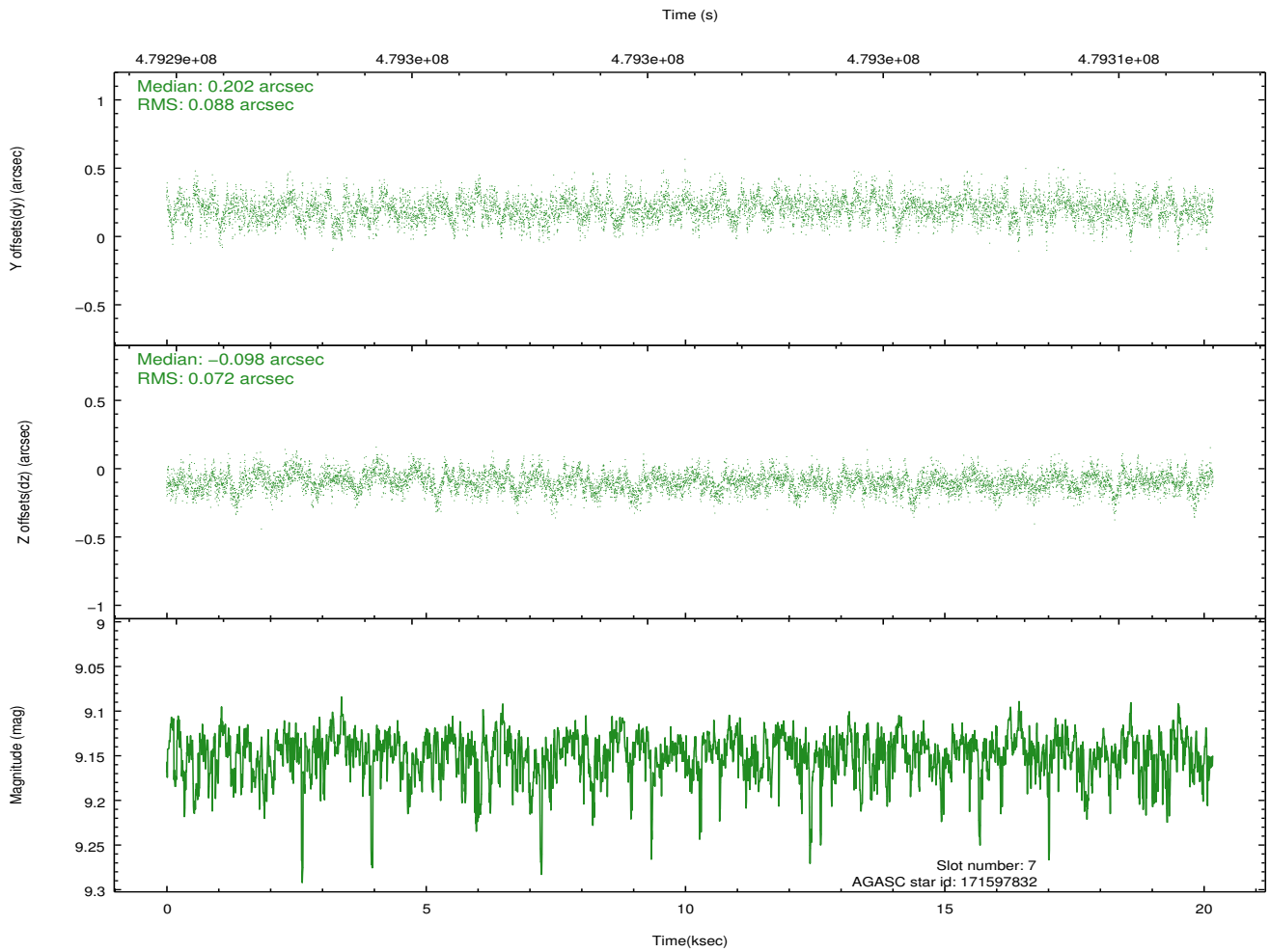
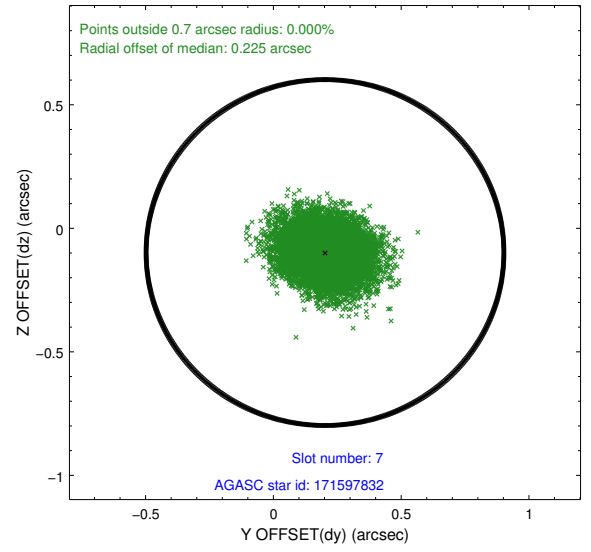
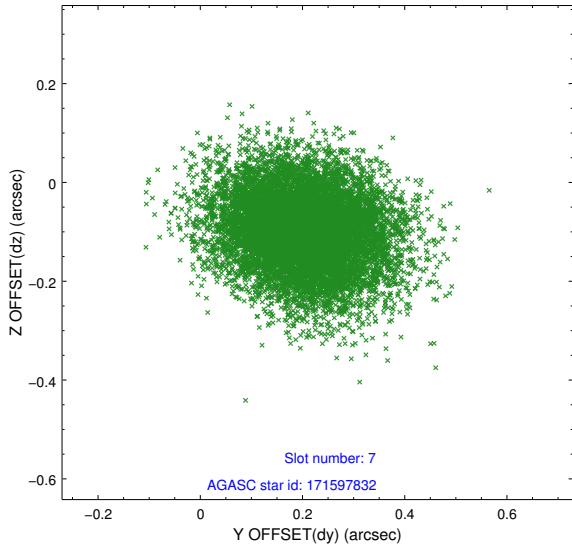
### 2.4.3 Slot 5



## 2.4.4 Slot 6

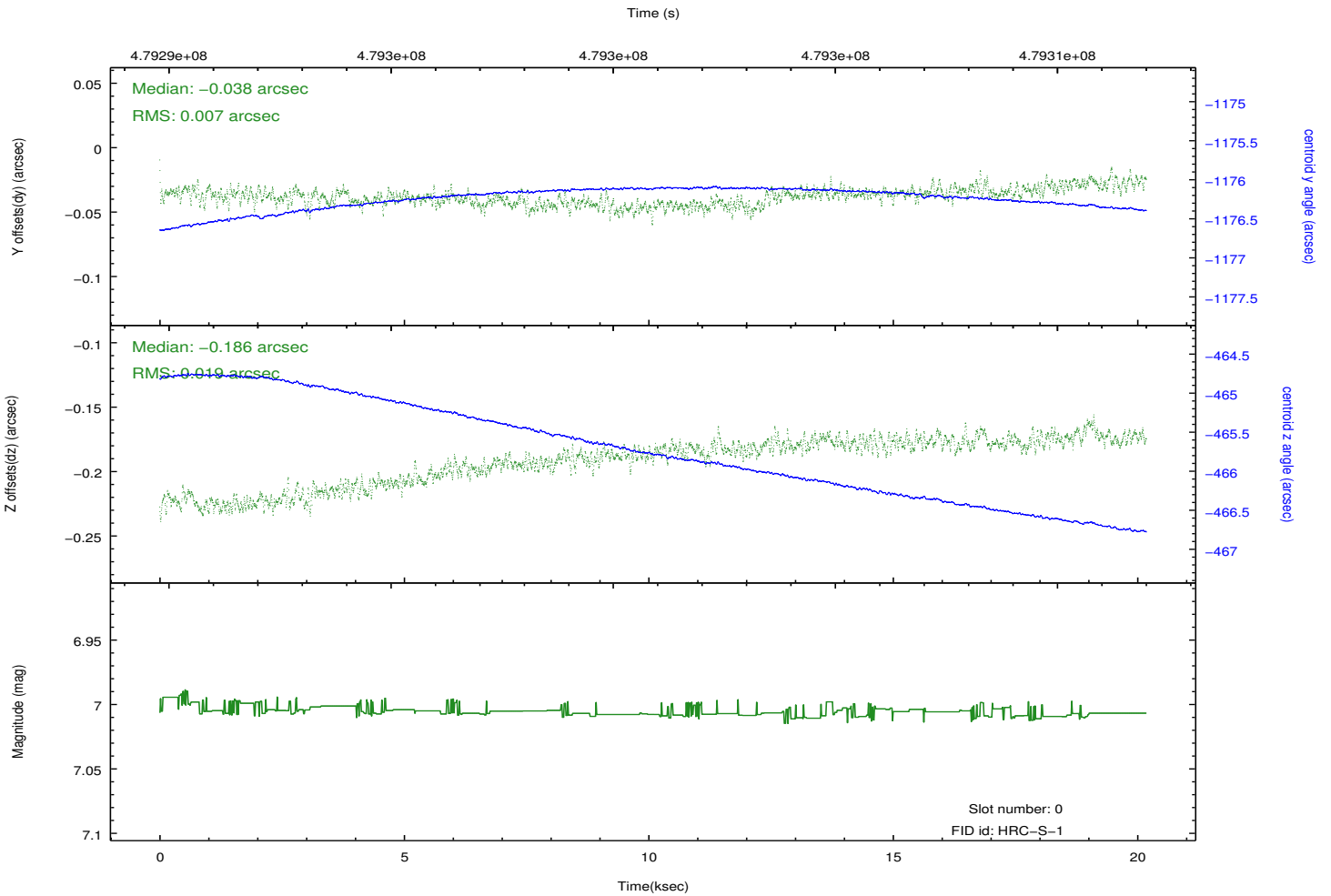
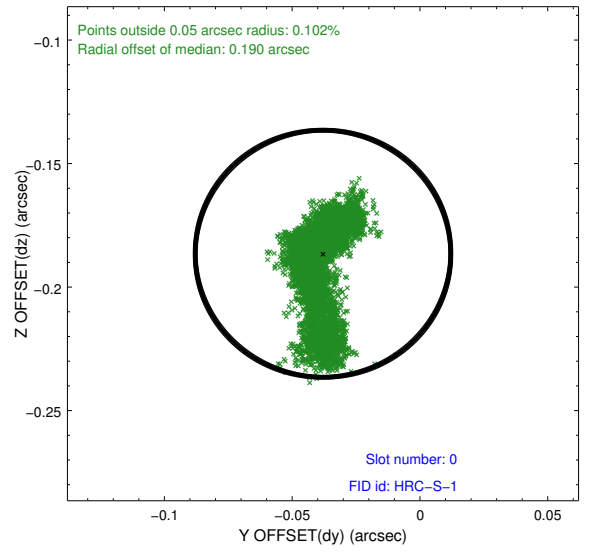
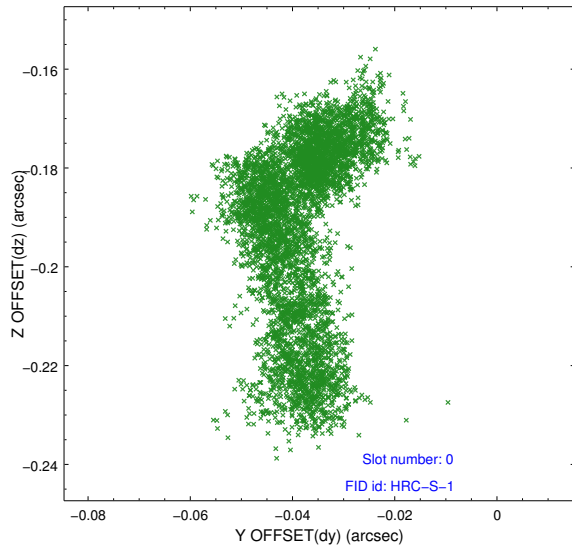


### 2.4.5 Slot 7

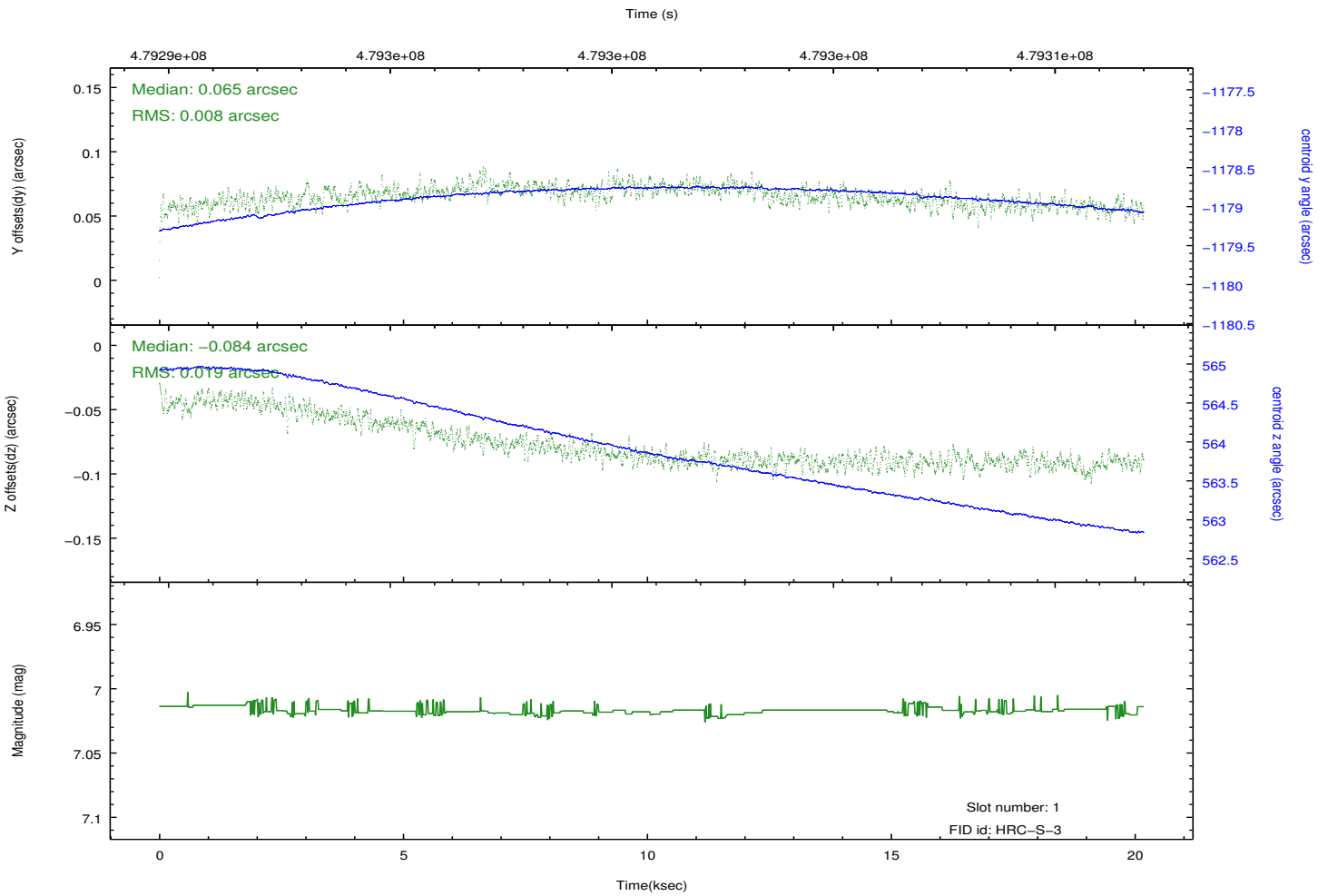
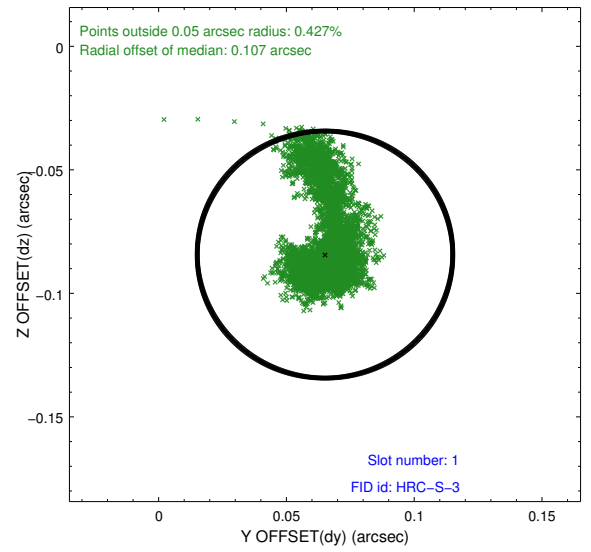
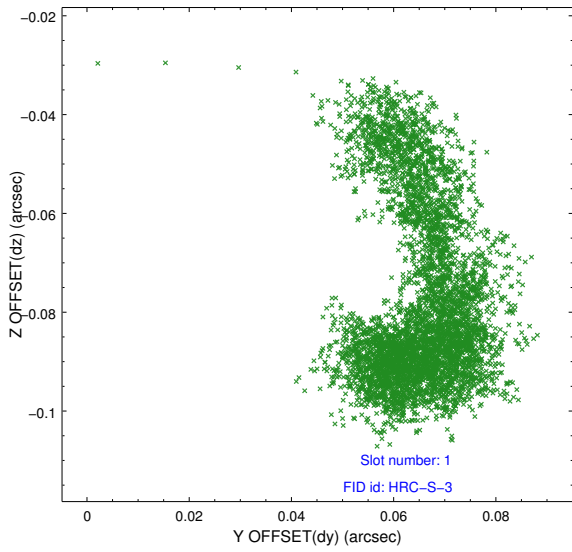


## 2.5 FID Slots

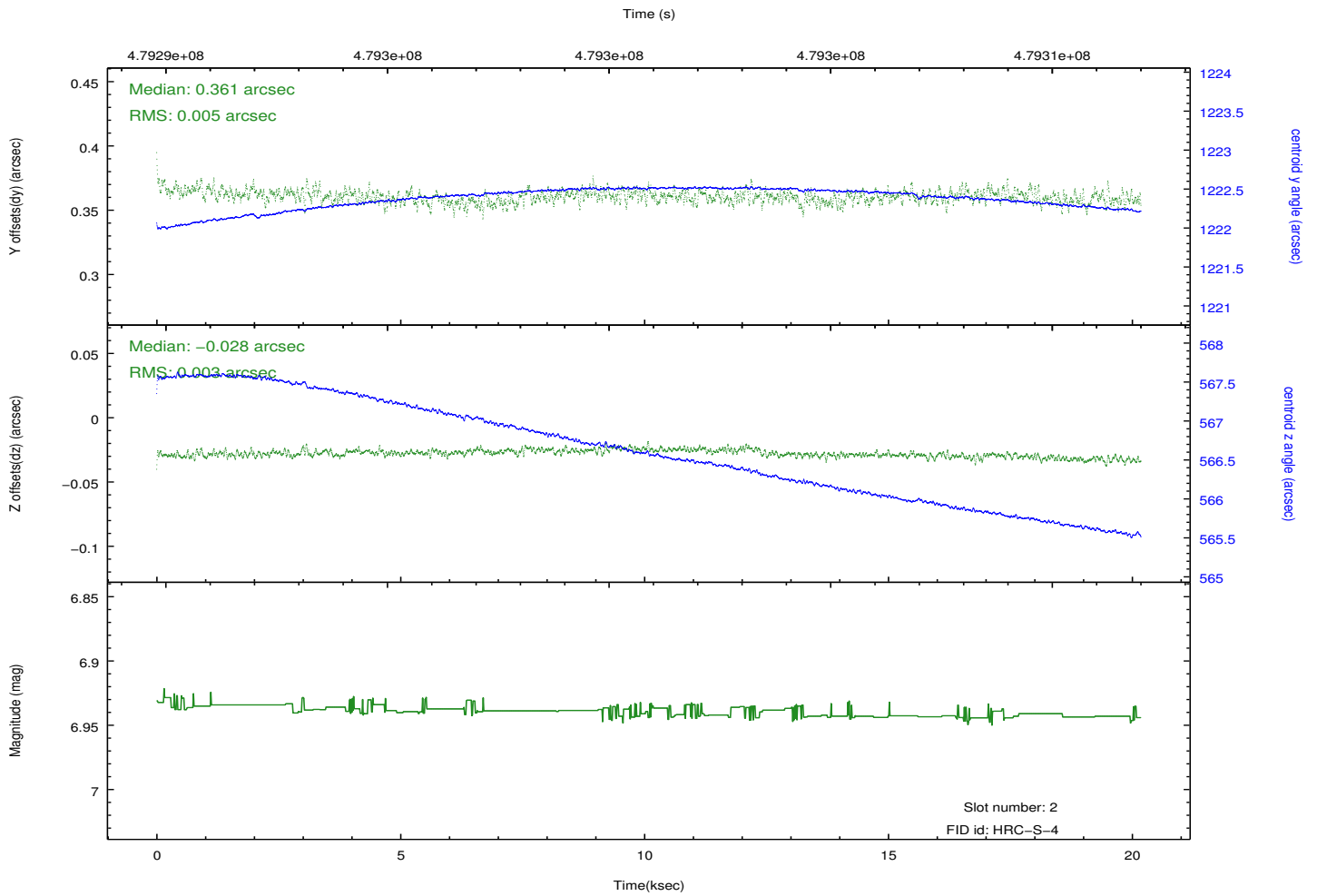
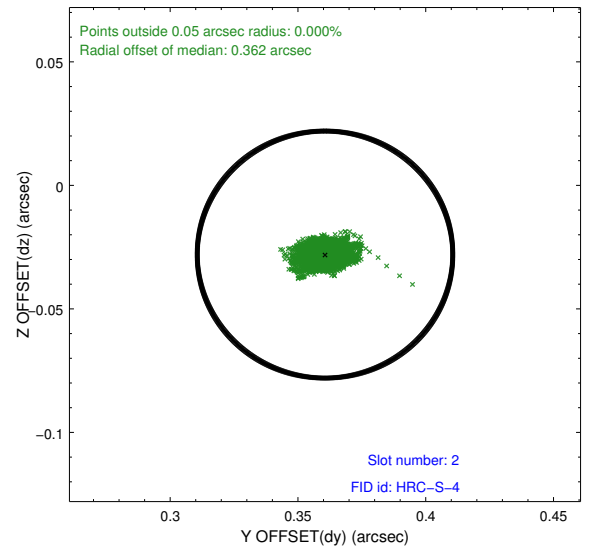
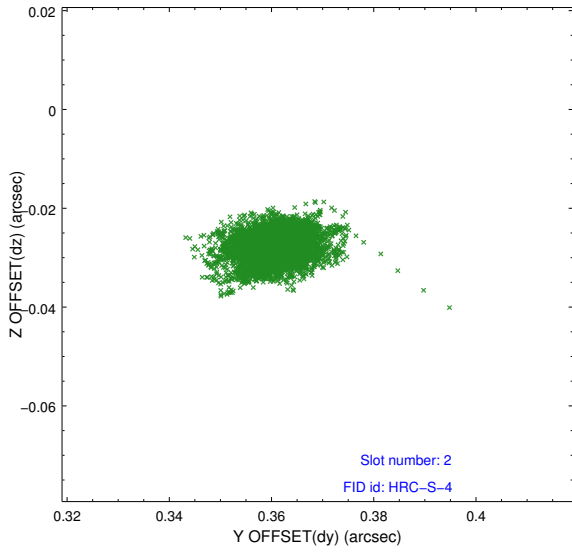
### 2.5.1 Slot 0



## 2.5.2 Slot 1

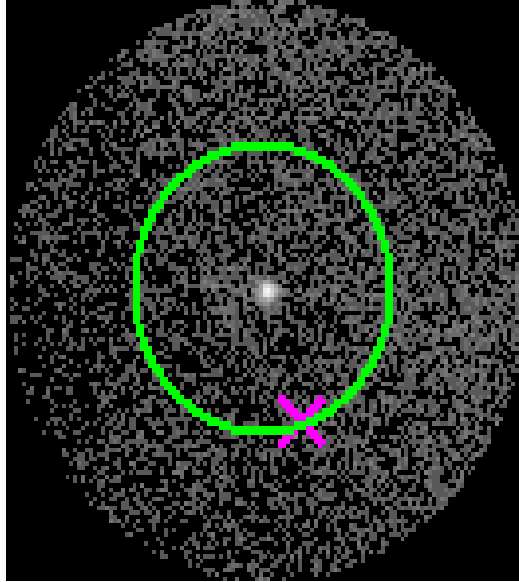


### 2.5.3 Slot 2

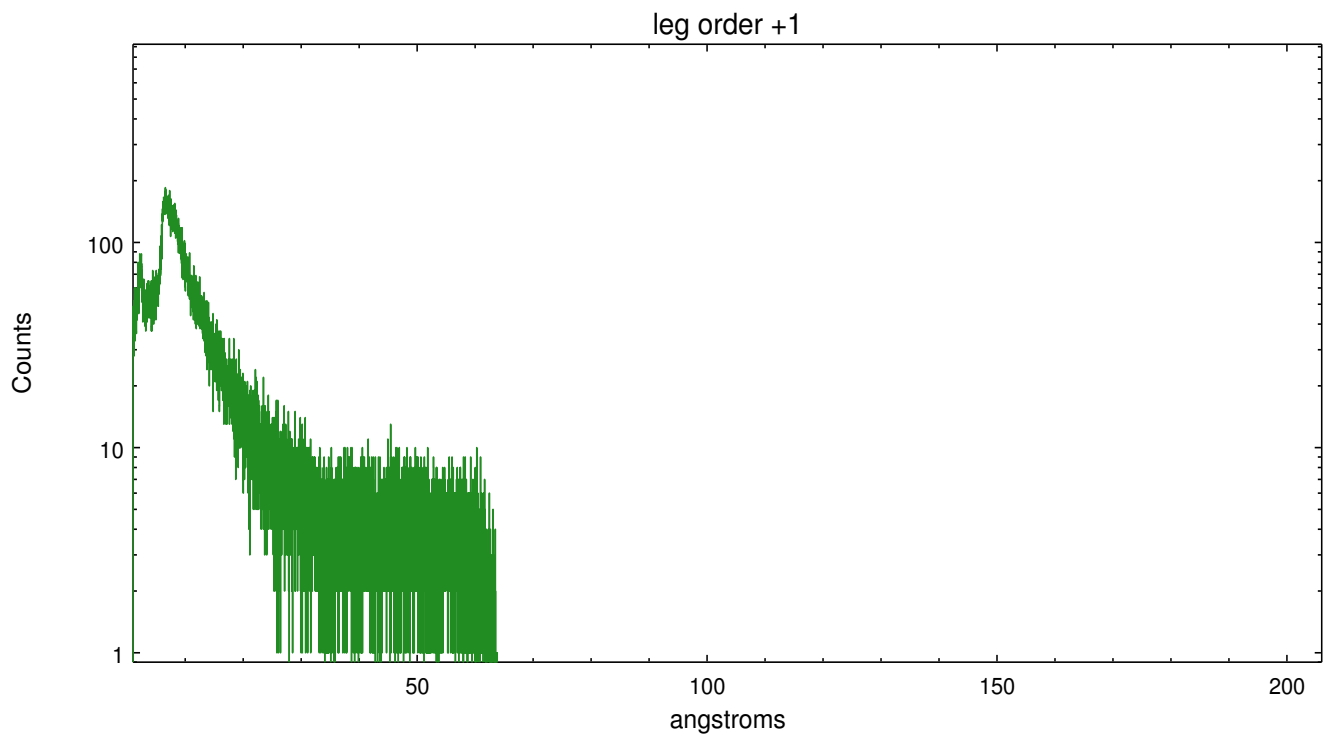
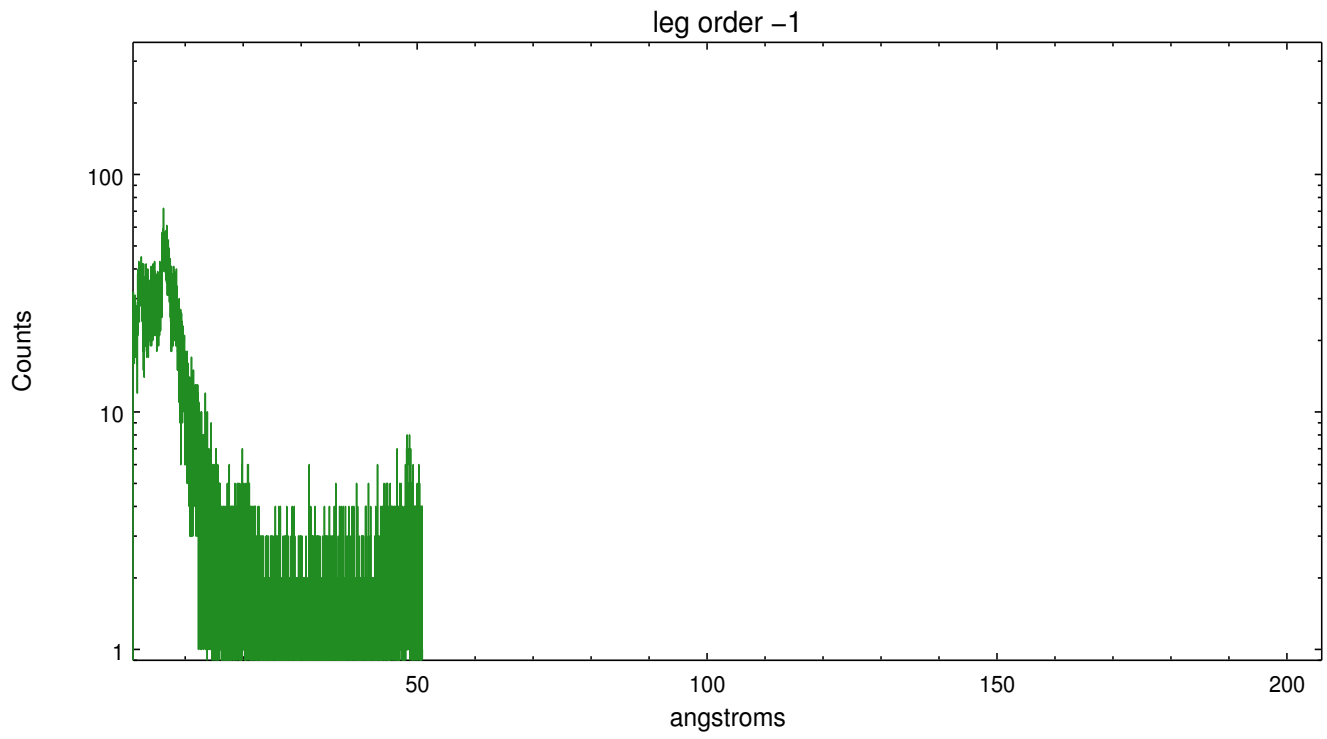


### 3 Gratings

#### 3.1 LETG Arm



LETG Zero Order



# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.11.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.180969842374

## A.2 Comments

Non-standard MCP HV setting used for this observation. The setting used is top=91, bottom=103. This setting is intermediate between the original default HV setting for HRC and the 2012 revised default HV setting. THERE IS NO DETECTOR GAIN CALIBRATION FOR THIS HV SETTING. The default CALDB gain map has been applied, but is not known to be an appropriate calibration. This observation was processed with custom gti-limit parameters to allow events from non-standard voltages to be included in gti. LETG grating inserted as a filter only.

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These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.