

# V&V Reference Report

## L2 ASCDS Version : 10.2.2

Observation 16428 - L2 Version 2  
Chandra X-Ray Center

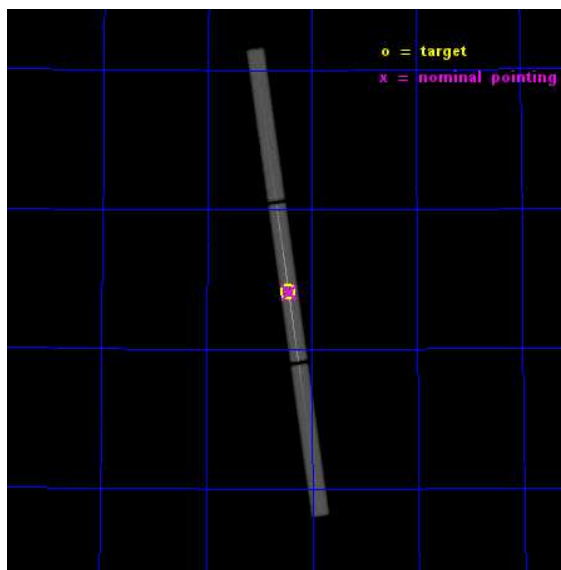
L2 Processing Date : Dec 12 2014

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# 1 Front

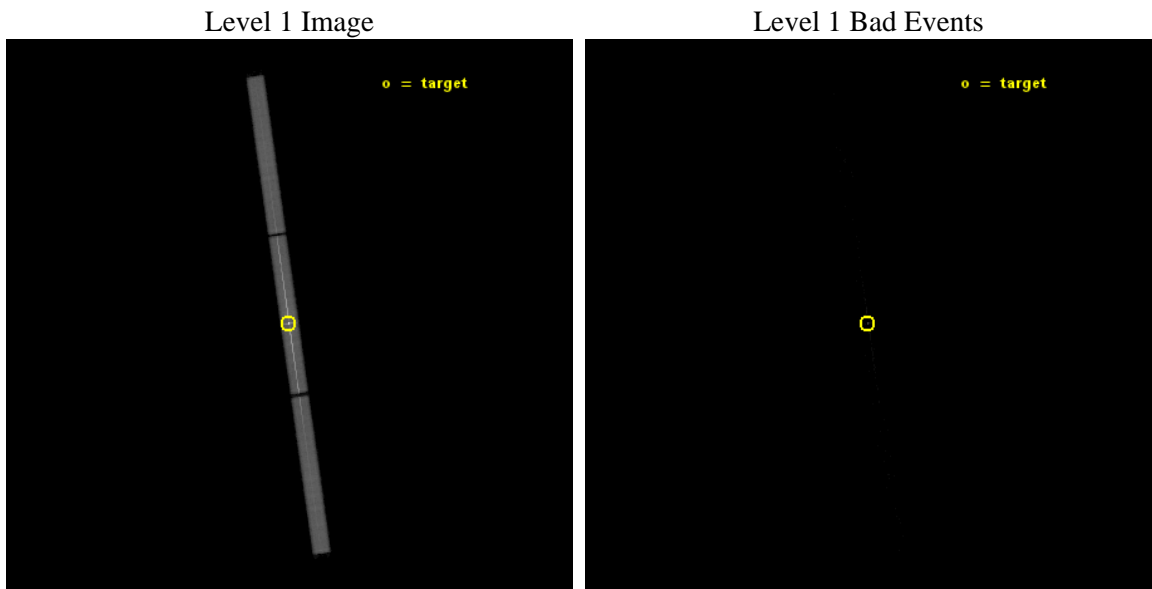
seq_num	790268	Sequence number
obs_id	16428	Observation id
title	AO-15 Calibration Observations of Mkn421	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	MKN421	Source name
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.11234002237	Nominal RA [deg]
dec_nom	38.204153017933	Nominal Dec [deg]
roll_nom	261.62313421517	Nominal Roll [deg]
revision	2	Processing version of data
ontime	10179.531813204	[s]
livedtime	10106.121204566	Ontime multiplied by DTCOR
l2events	685507	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	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	10179.531813204	[s]
caldsver	4.6.4	&#160	l1events	872857	Number of level 1 events
date	2014-12-12T06:35:04	Date and time of file creation	tgmethod	TGDETECT	Method used to create src1a file
revision	2	Processing version of data	zo_pos	(32737.90, 32900.07)	src1a sky pixel position

### 2.1.3 Events

Level 1 Events

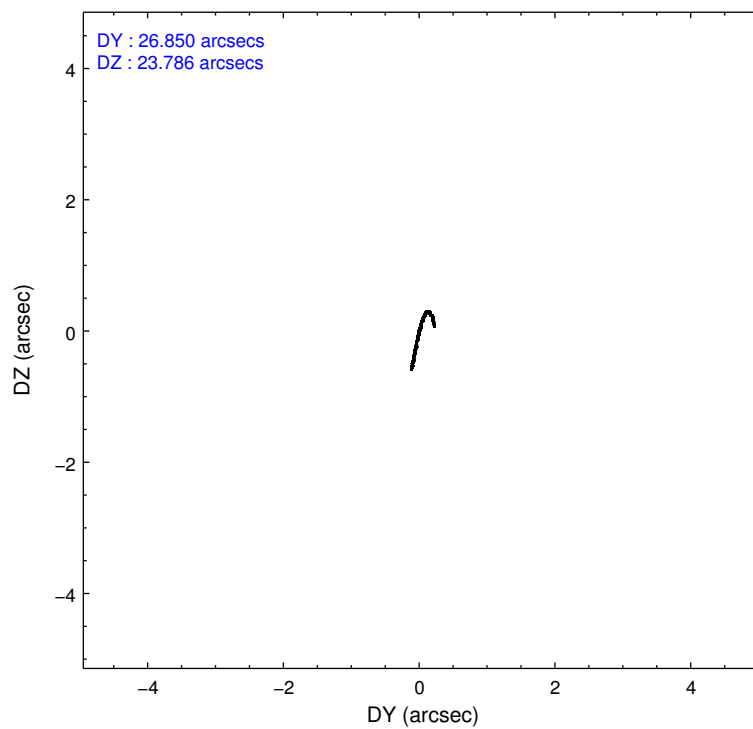
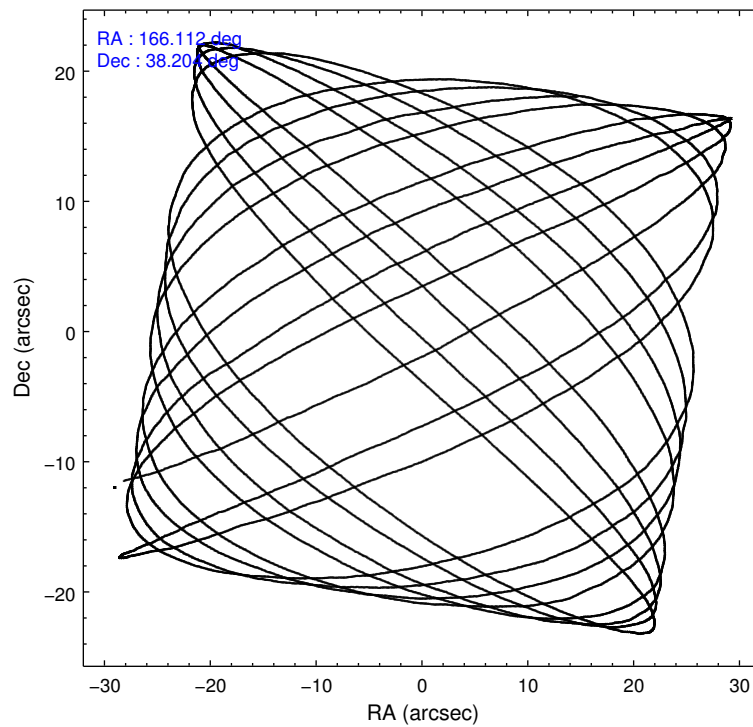
	<b>segment 1</b>	<b>segment 2</b>	<b>segment 3</b>
level 1 events	232356	403033	237468
rejected events	6886	9524	6965
rejected %	2%	2%	2%

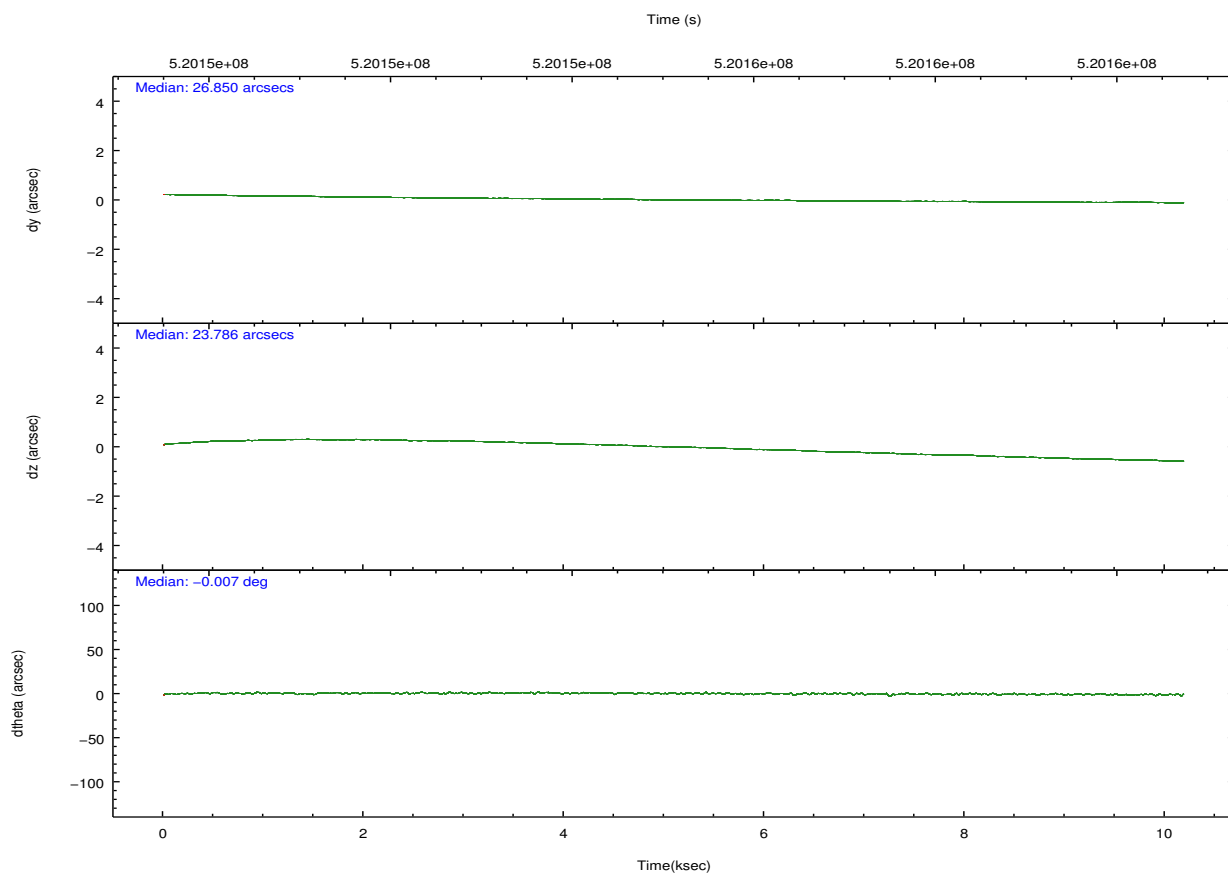
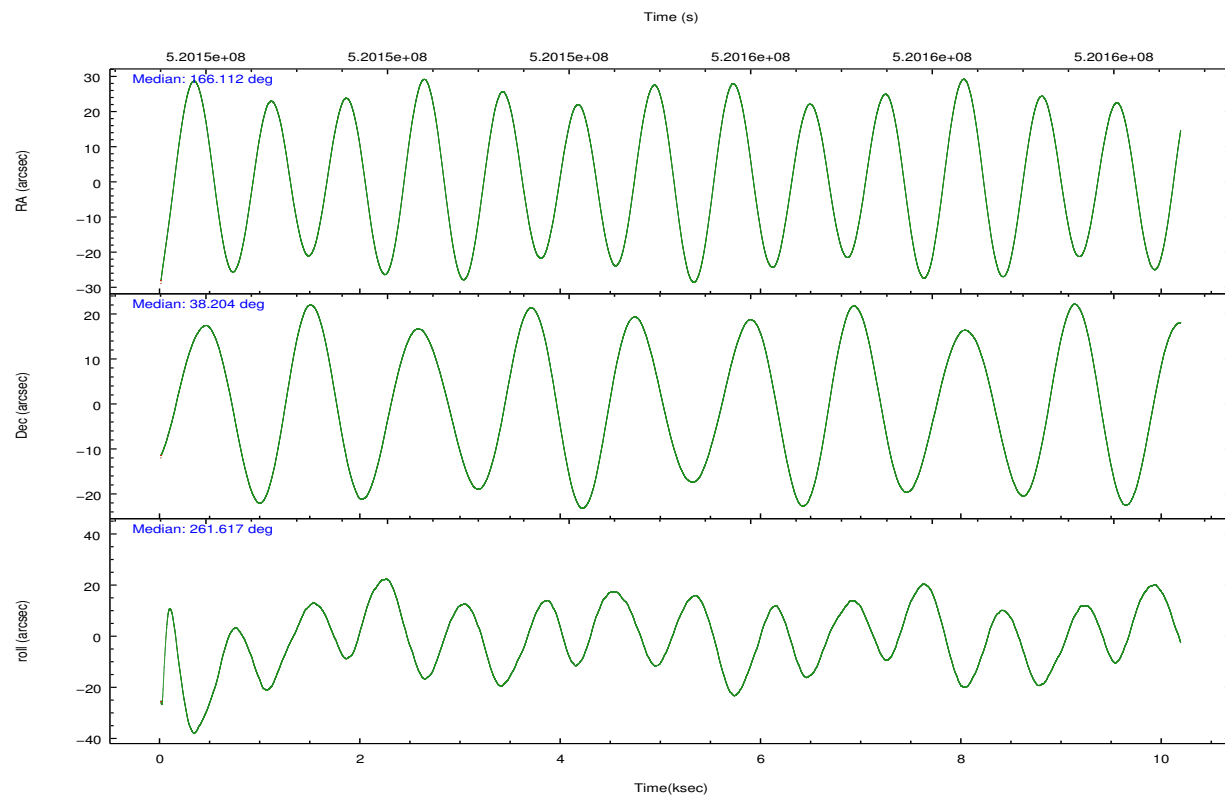


## 2.2 Compared Parameters

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	166.097219	166.1123400223663			
[deg] Pointing Dec	38.230228	38.20415301793289			
[deg] Pointing Roll	261.565238	261.6231342151738			
[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)	520150211.184000	520149746.92104			
Observation start date	2014-06-26T06:09:04	2014-06-26T06:02:26			
[s] Observation end time (MET)	520160211.184000	520160476.62164			
Observation end date	2014-06-26T08:55:44	2014-06-26T09:01:16			

## 2.3 Aspect



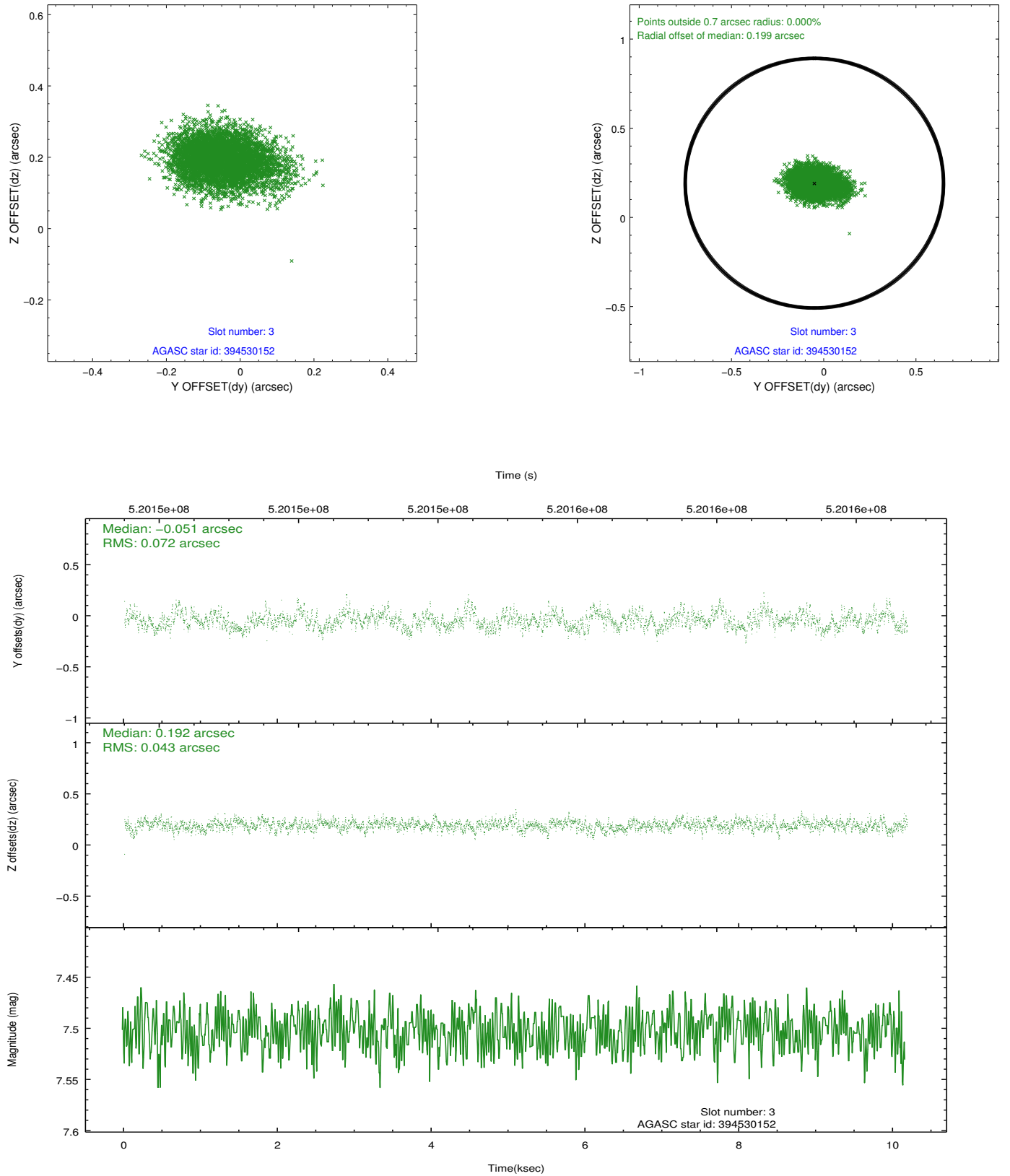


### Slot Statistics

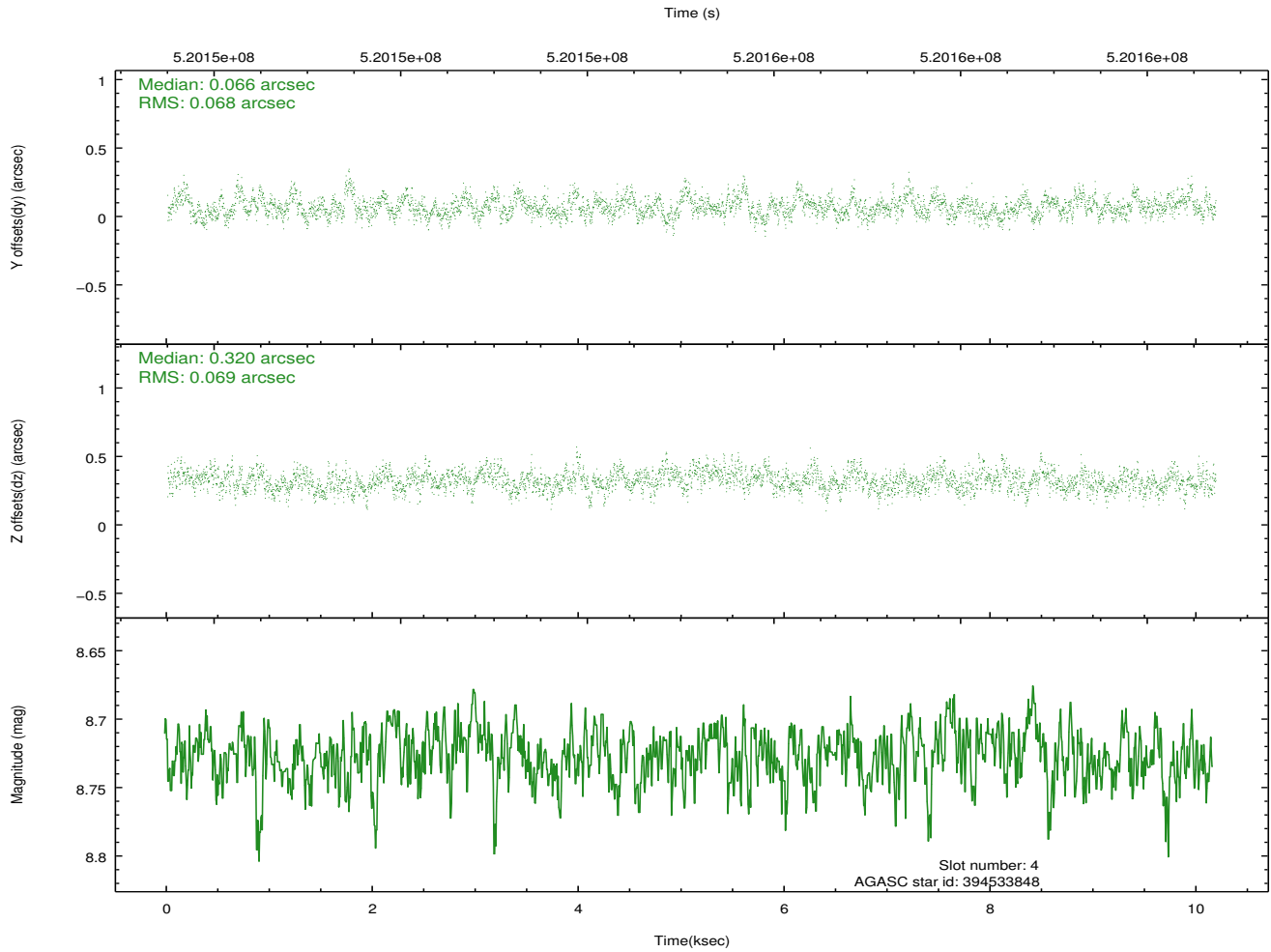
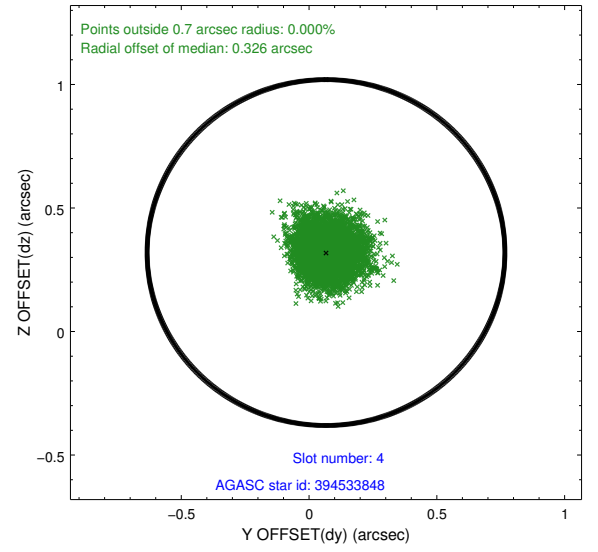
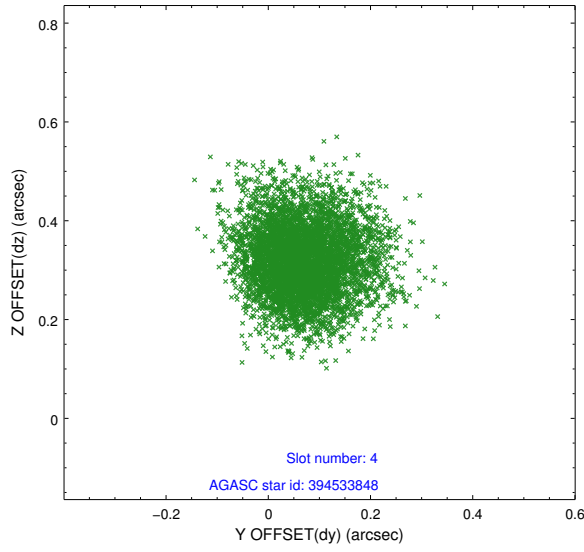
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		HRC-S-1	7.02	2484	-0.009	-0.151	0.013	0.024	0.000000	0.000000	-1181.64	-472.94
1	FID		HRC-S-2	7.00	2484	0.368	-0.142	0.005	0.009	0.000000	0.000000	1217.94	-465.62
2	FID		HRC-S-3	7.03	2484	0.031	-0.009	0.016	0.027	0.000000	0.000000	-1183.89	556.54
3	GUIDE	used	394530152	7.50	4966	-0.051	0.192	0.088	0.149	166.075805	38.868252	-2262.73	-396.02
4	GUIDE	used	394533848	8.73	4964	0.066	0.320	0.103	0.168	166.382906	38.276007	-282.80	769.91
5	GUIDE	used	394543960	9.78	4961	0.163	0.243	0.180	0.297	165.802757	37.787371	1699.31	-594.09
6	GUIDE	used	394546712	6.60	4967	-0.283	0.274	0.097	0.150	166.451462	38.394357	-732.10	901.12
7	GUIDE	used	394546720	6.43	4966	0.109	-1.022	0.130	0.193	166.130115	38.241361	-52.84	85.64

## 2.4 Star Slots

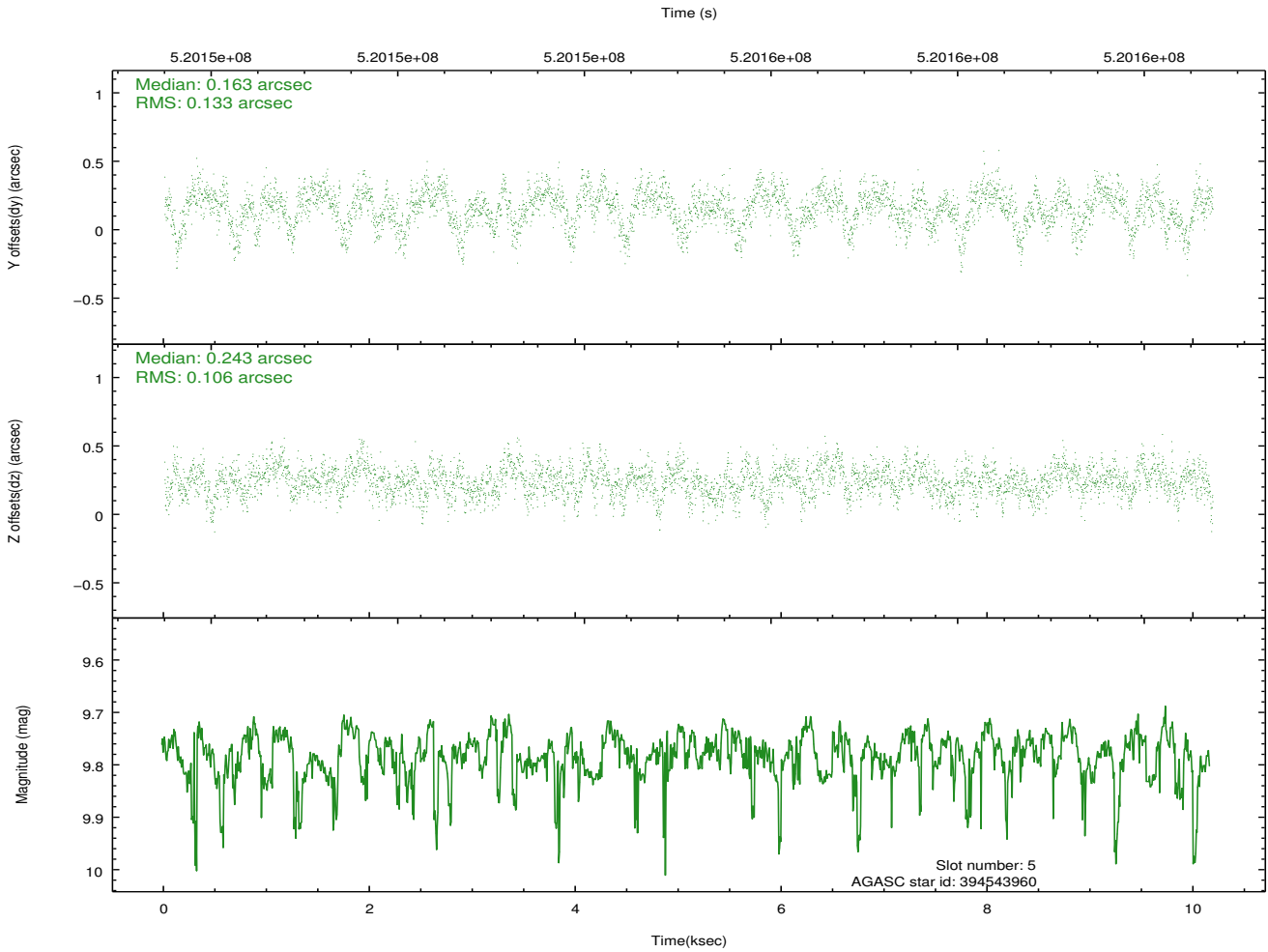
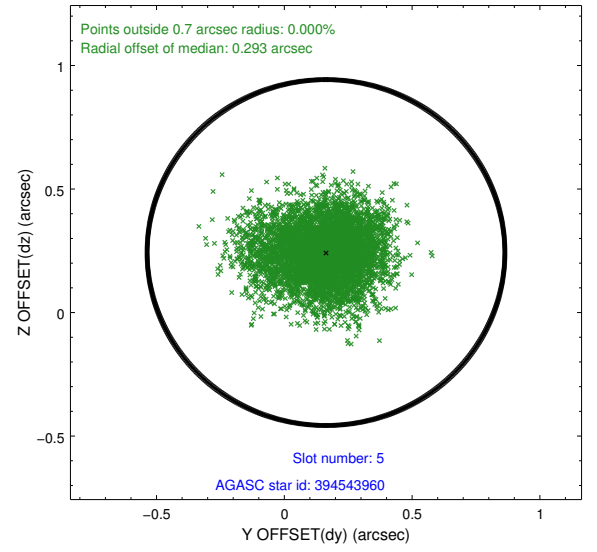
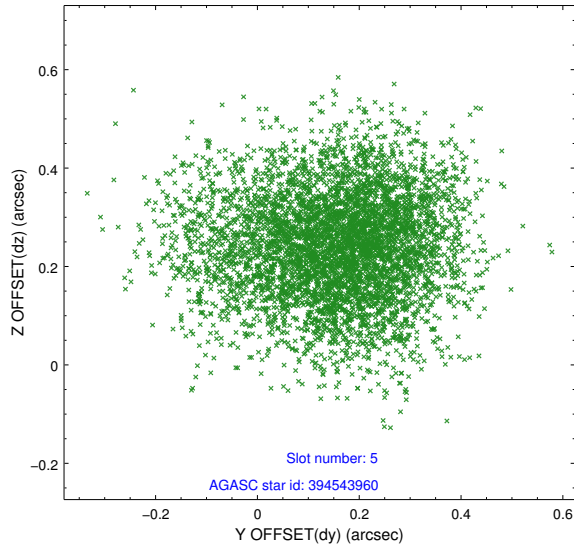
### 2.4.1 Slot 3



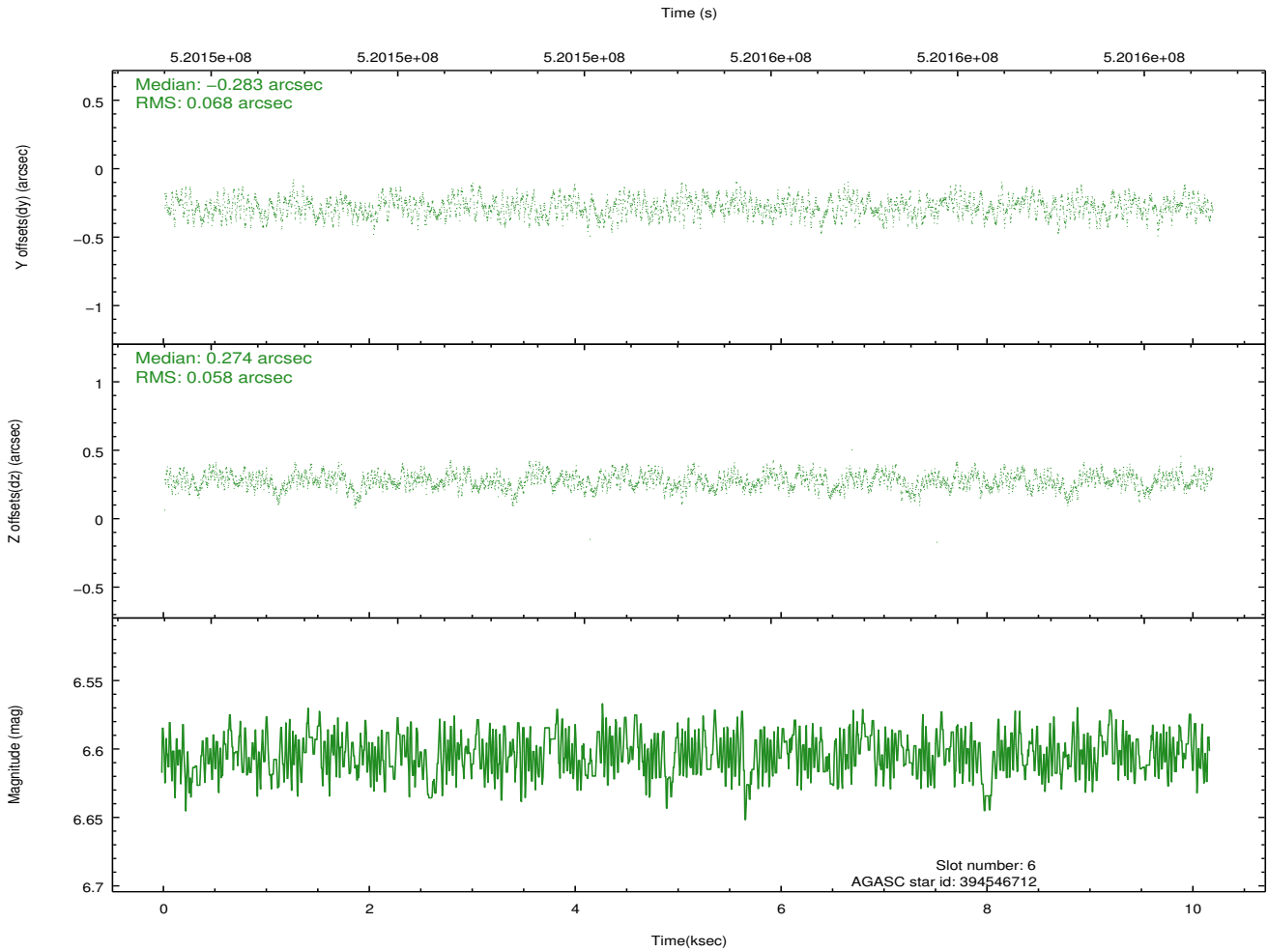
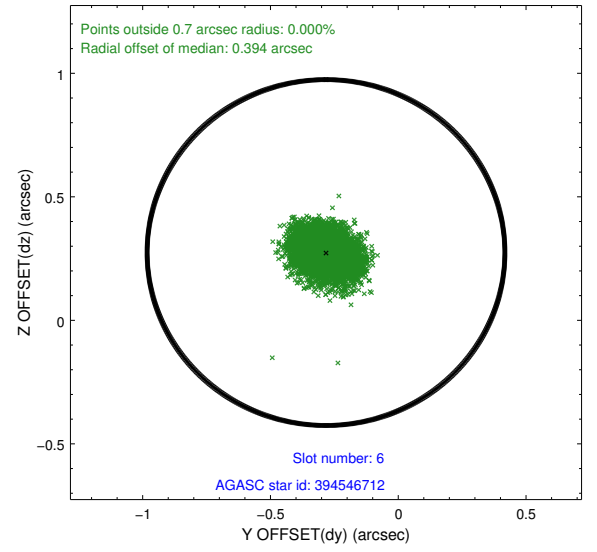
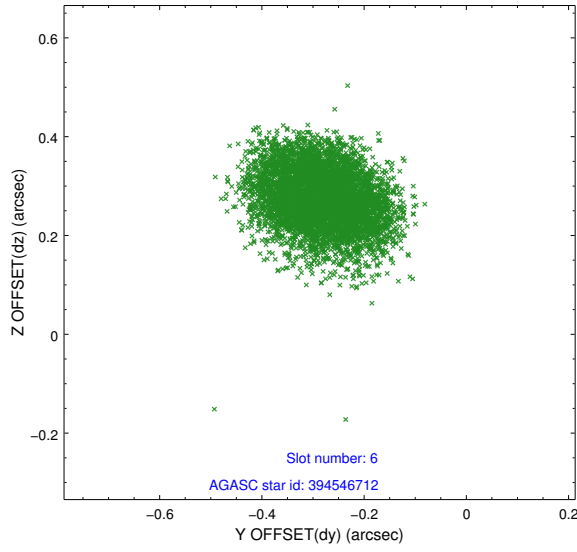
## 2.4.2 Slot 4



### 2.4.3 Slot 5

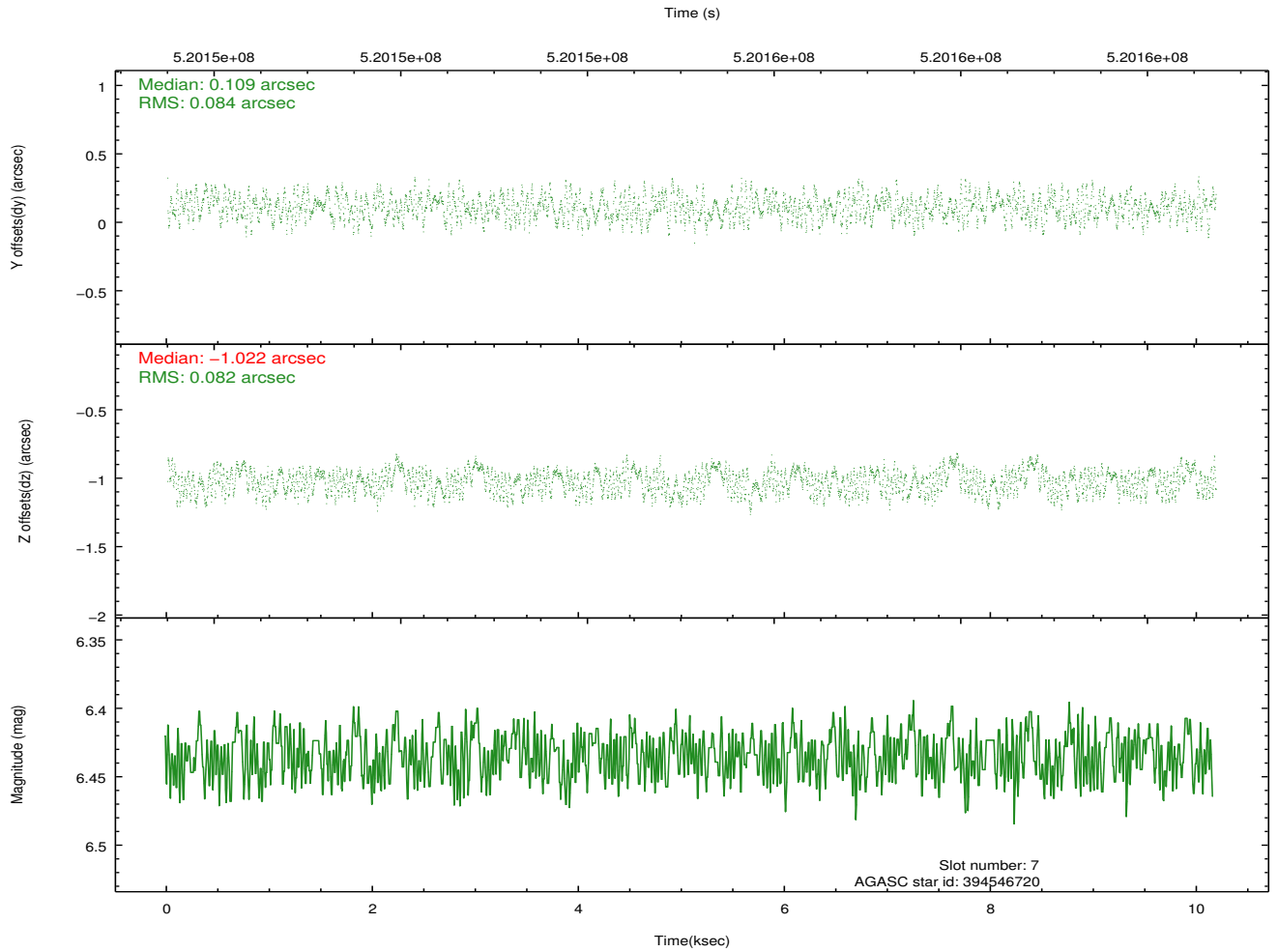
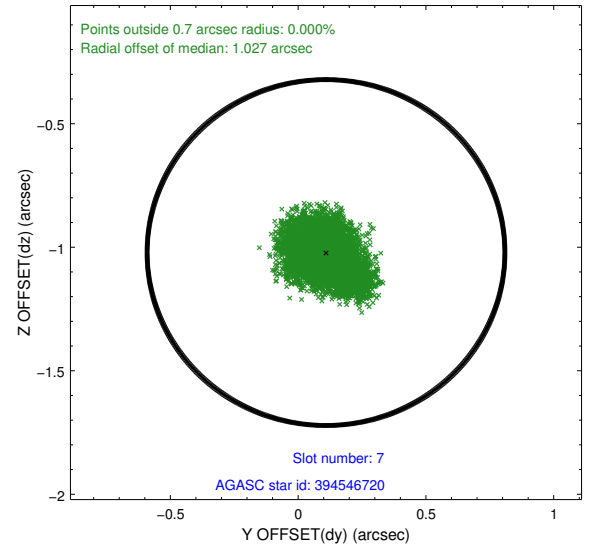
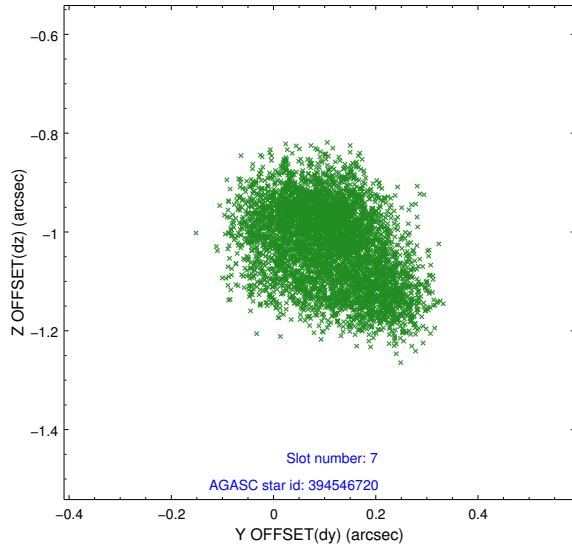


## 2.4.4 Slot 6



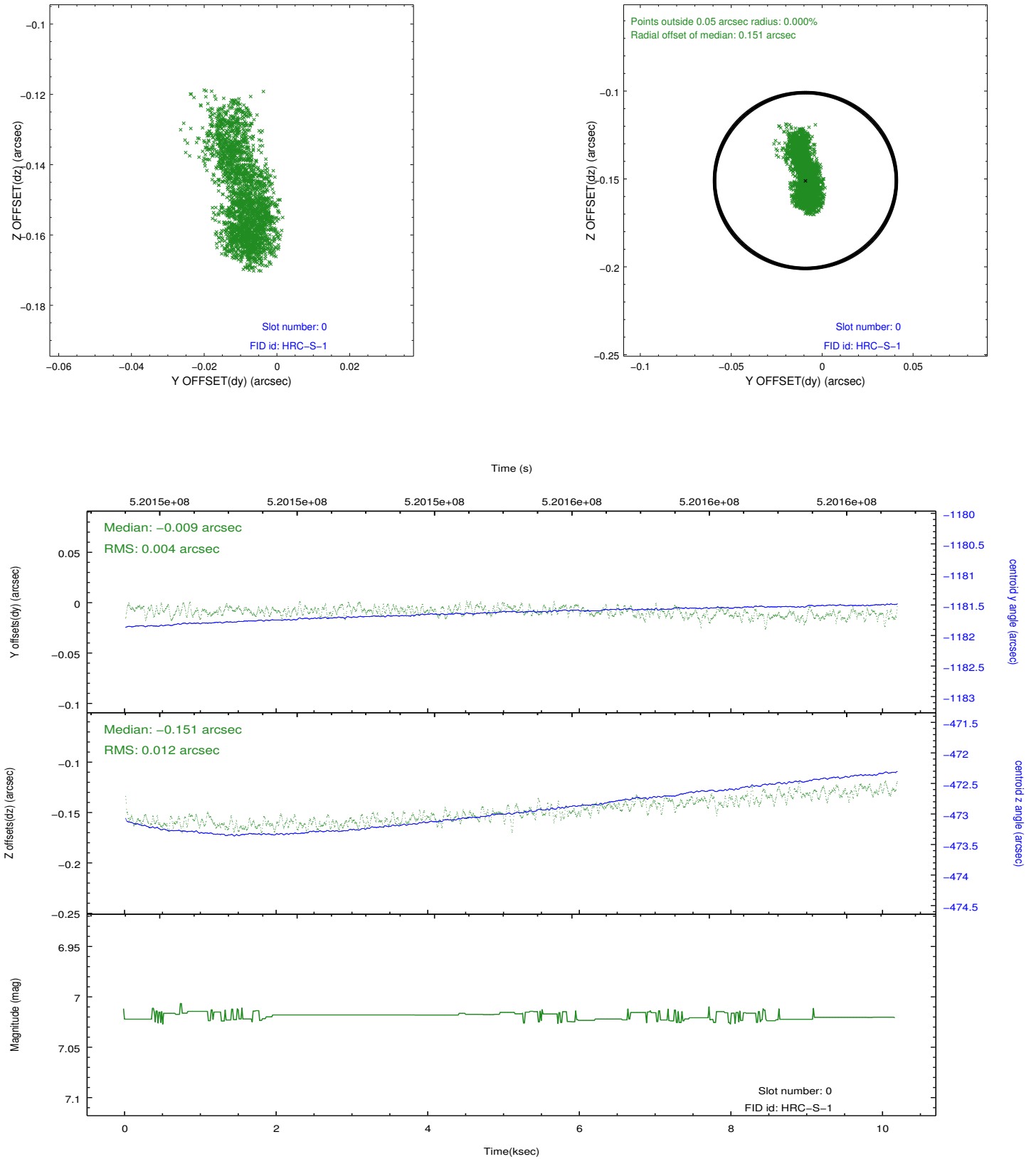


## 2.4.5 Slot 7

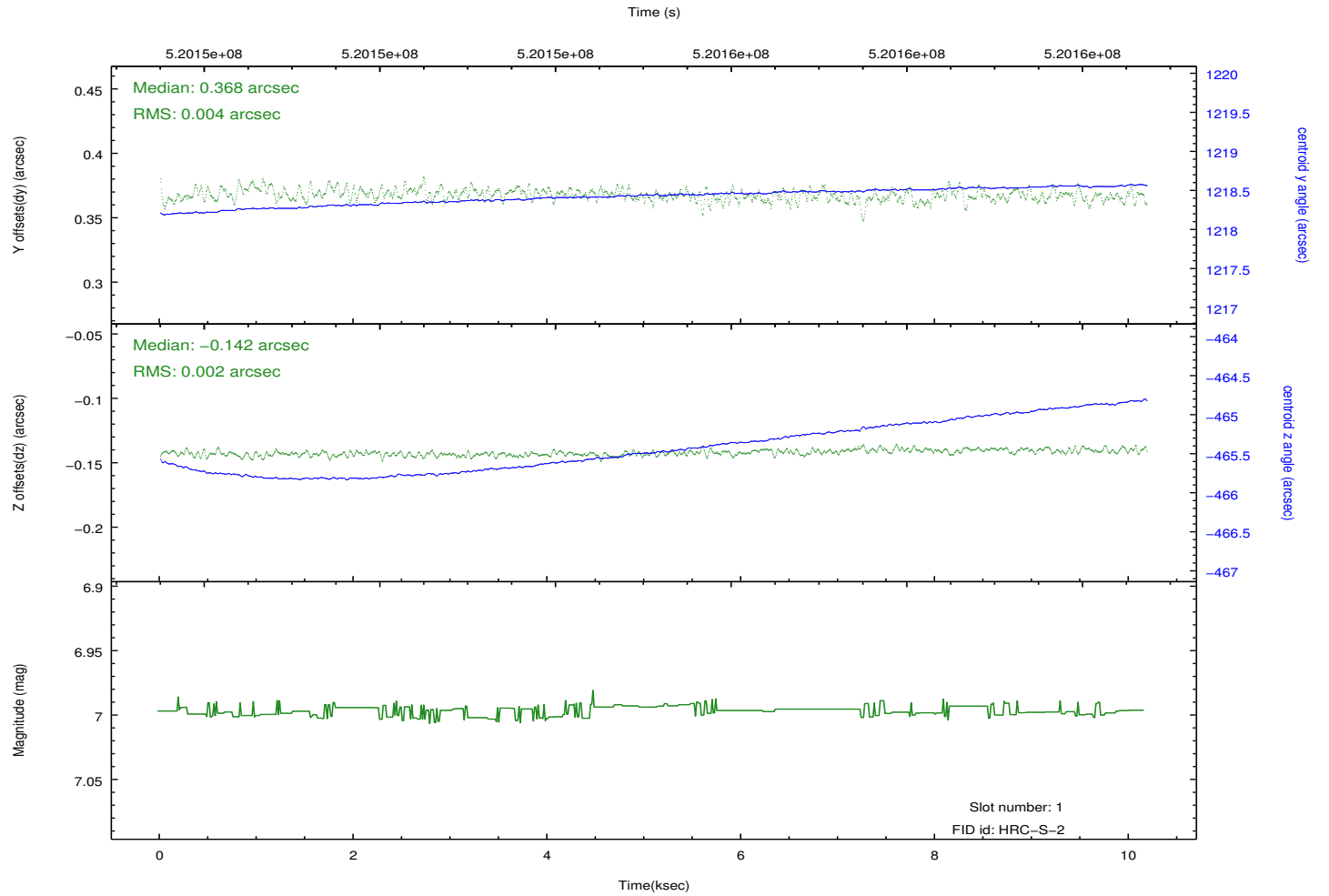
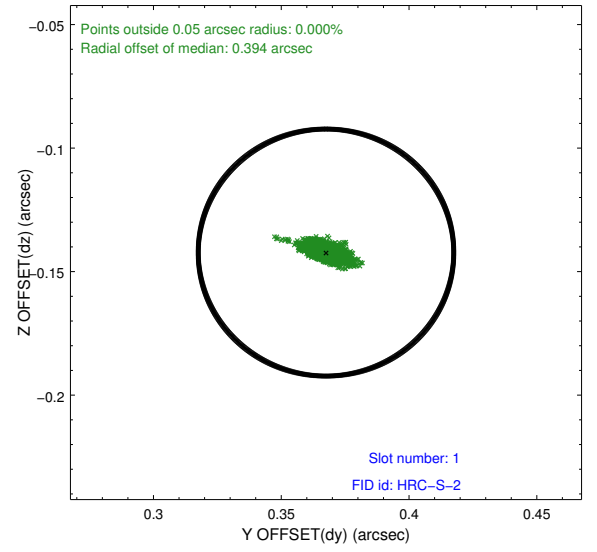
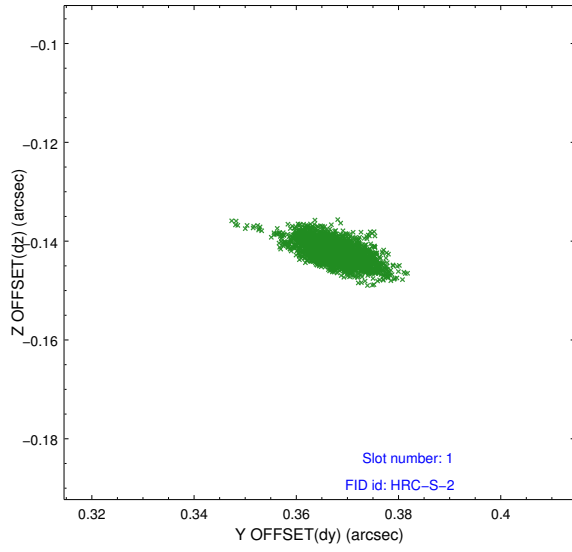


## 2.5 FID Slots

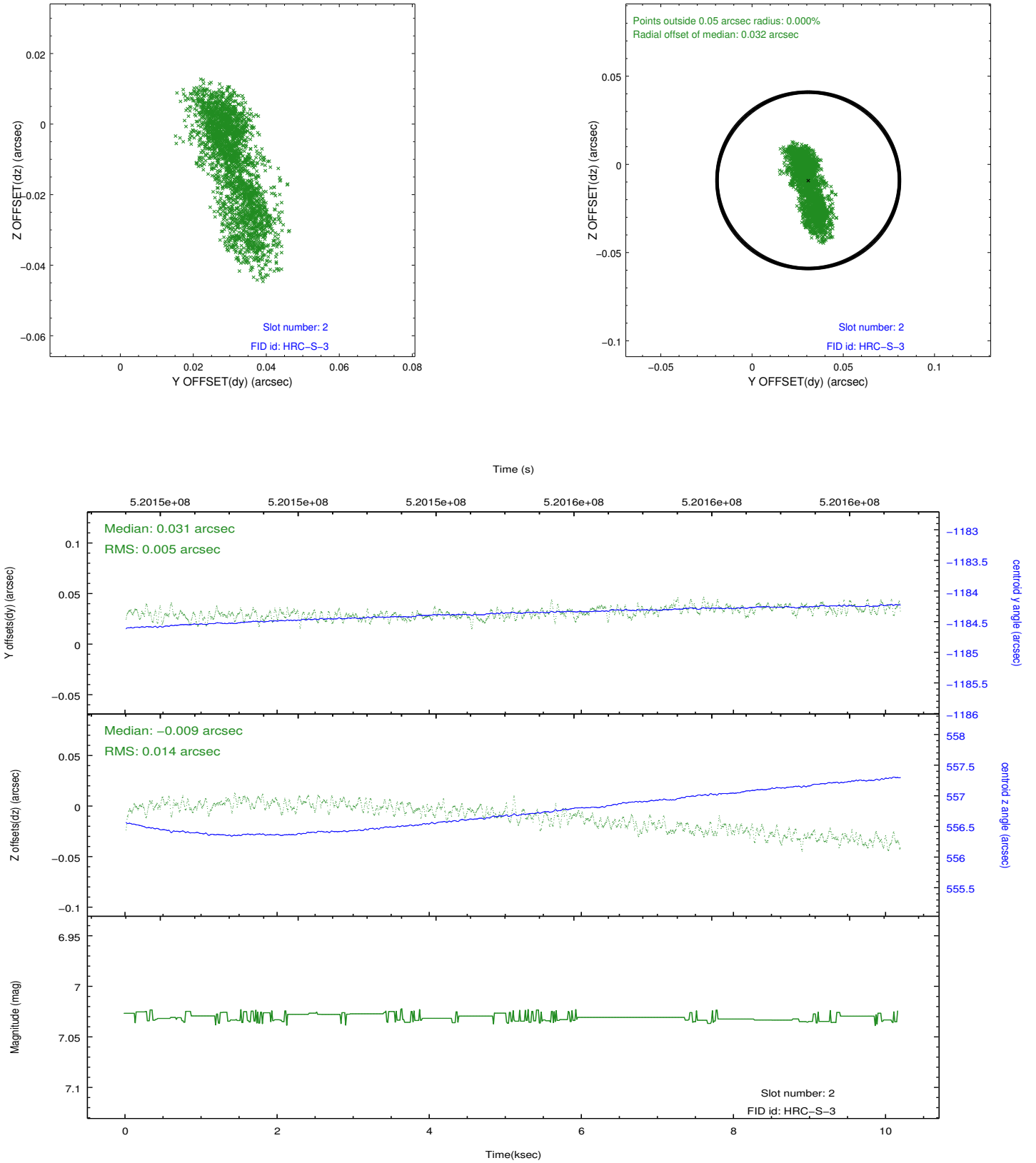
### 2.5.1 Slot 0



## 2.5.2 Slot 1

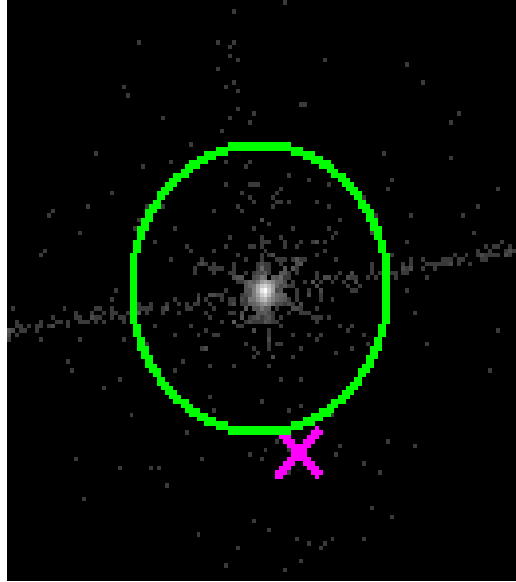


### 2.5.3 Slot 2

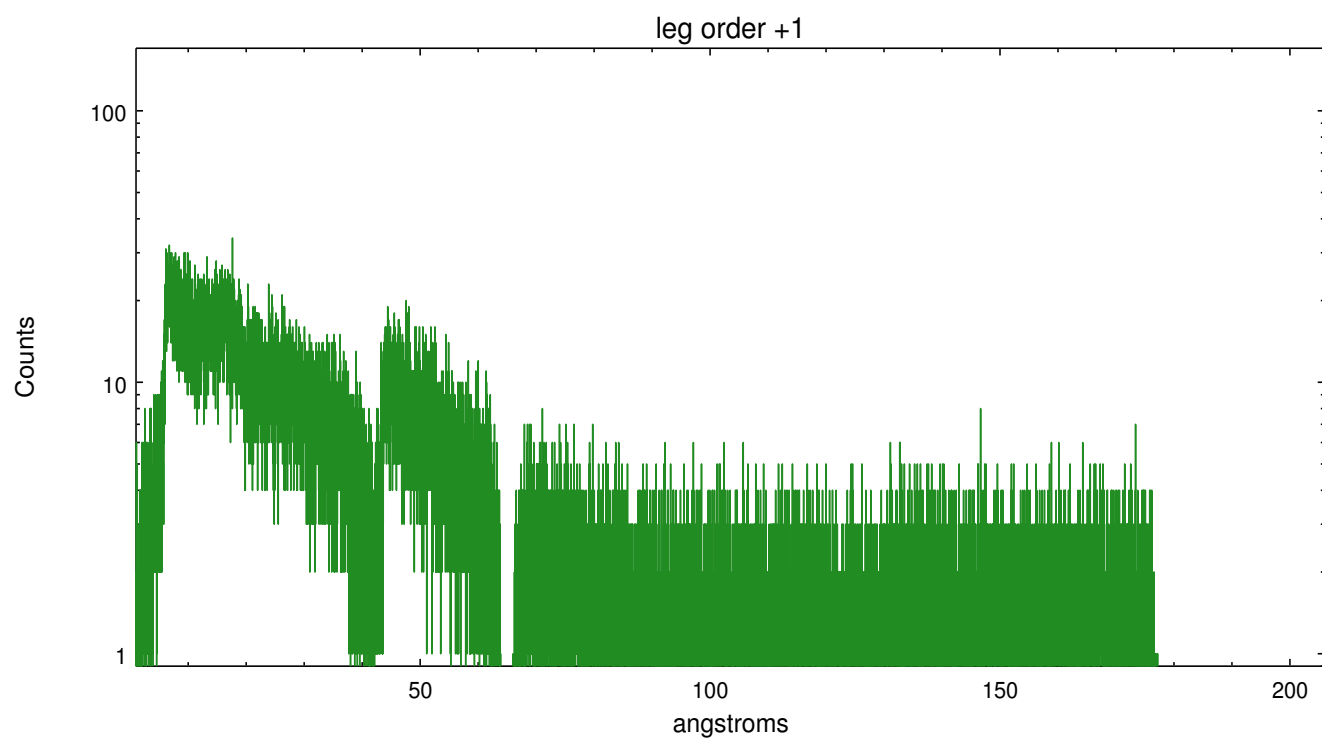
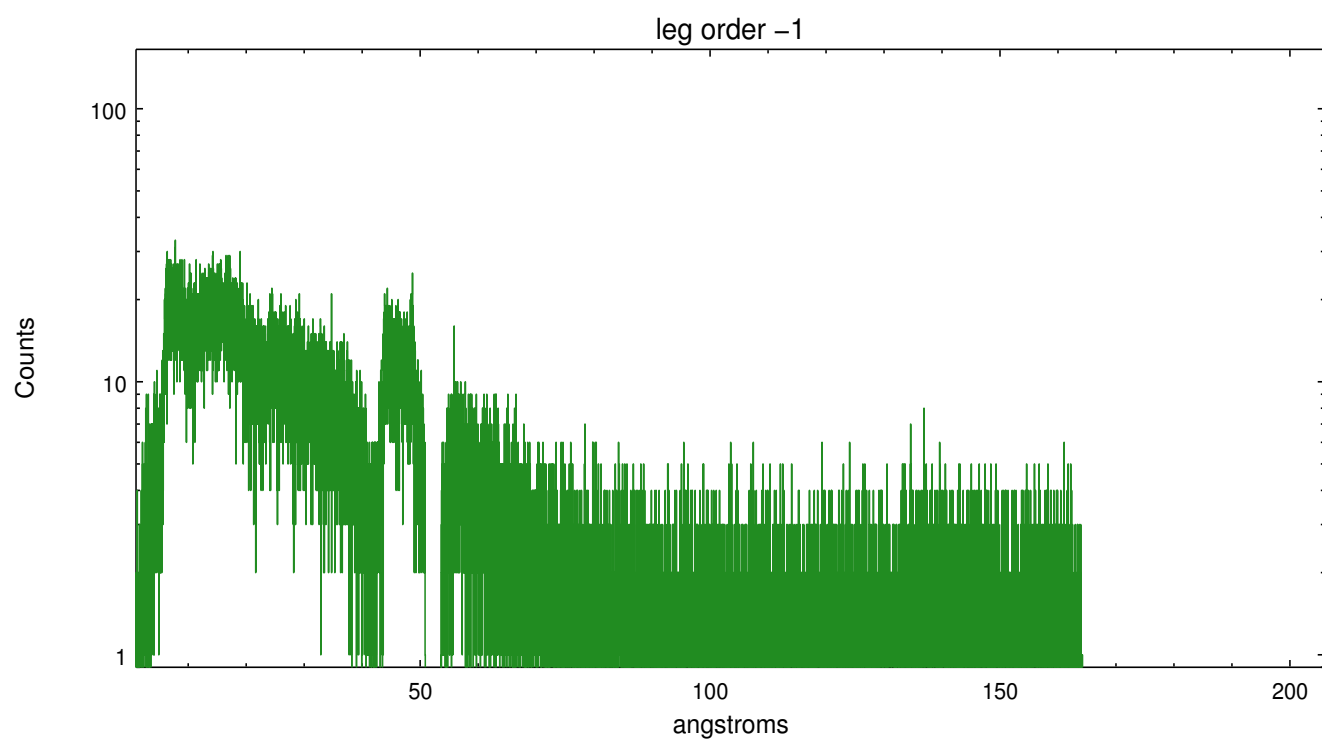


## 3 Gratings

### 3.1 LETG Arm



LETG Zero Order



# A Summary

## A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2015.11.20
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.179531813204

## A.2 Comments

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.