

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 8396 - L2 Version 5  
Chandra X-Ray Center

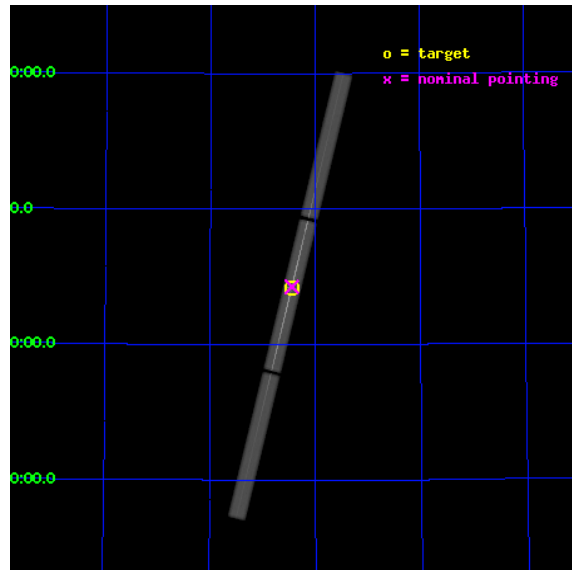
L2 Processing Date : Aug 11 2012

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# 1 Front

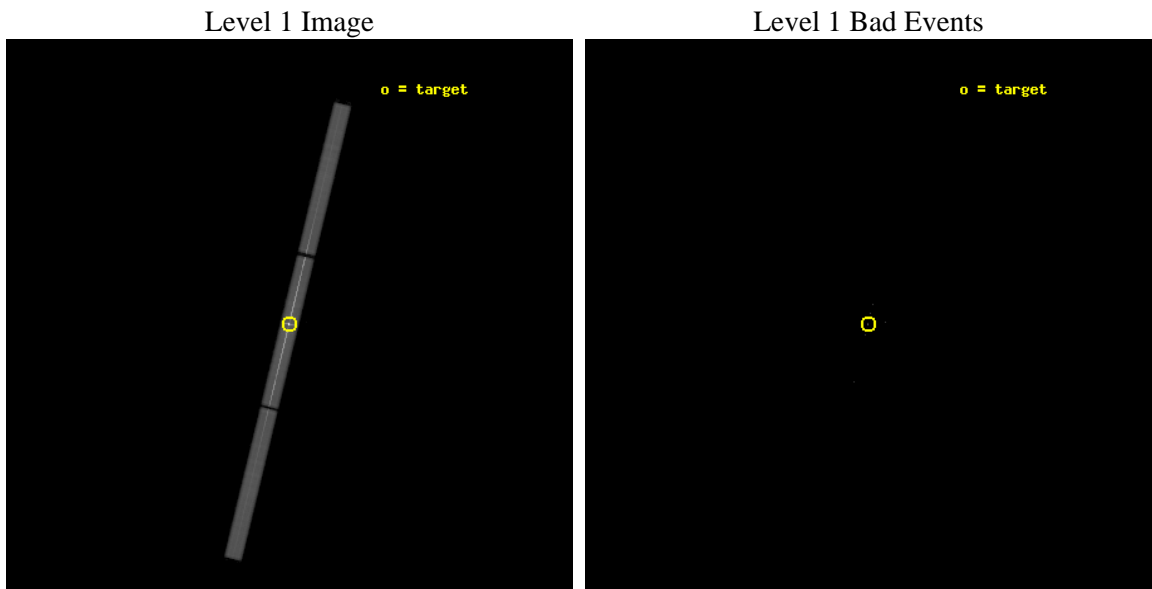
seq_num	790132	Sequence number
obs_id	8396	Observation id
title	AO8 Calibration Observations of Mkn 421 and PKS2155-304	Proposal t
observer	Dr. CXC Calibration	Principal investigator
object	Mkn 421	Source name
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.11193288336	Nominal RA [deg]
dec_nom	38.213426309383	Nominal Dec [deg]
roll_nom	103.66523332059	Nominal Roll [deg]
revision	5	Processing version of data
ontime	29477.720147312	[s]
livetime	29120.777953747	Ontime multiplied by DTCOR
l2events	3472922	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	29300.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	29477.720147312	[s]
caldbver	4.5.1.1	&#160	l1events	4241105	Number of level 1 events
date	2012-08-11T18:26:35	Date and time of file creation			
revision	4	Processing version of data			

### 2.1.3 Events

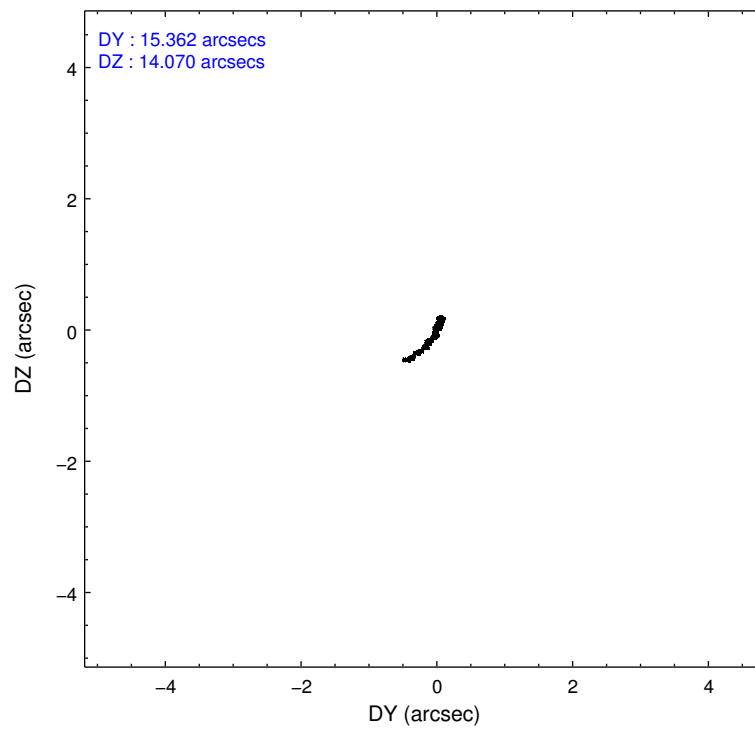
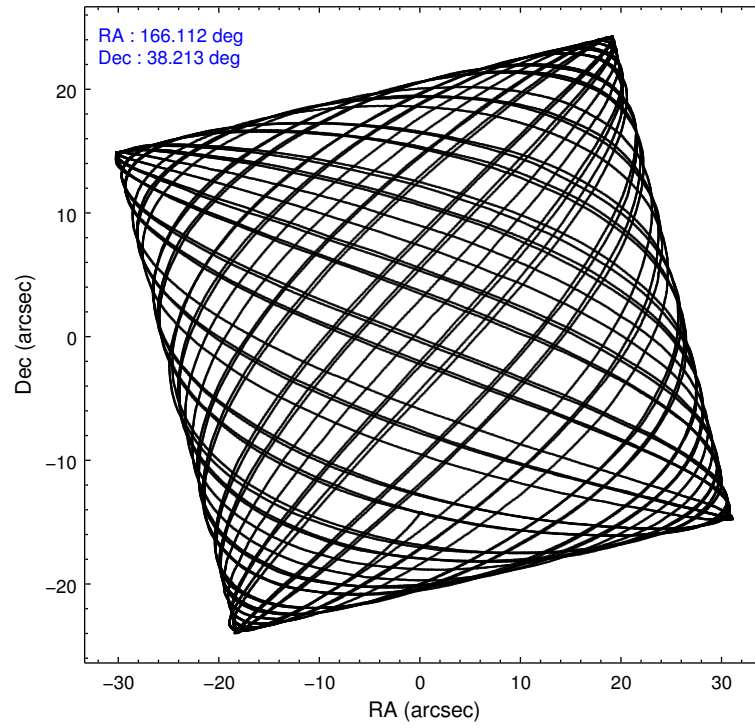
Level 1 Events

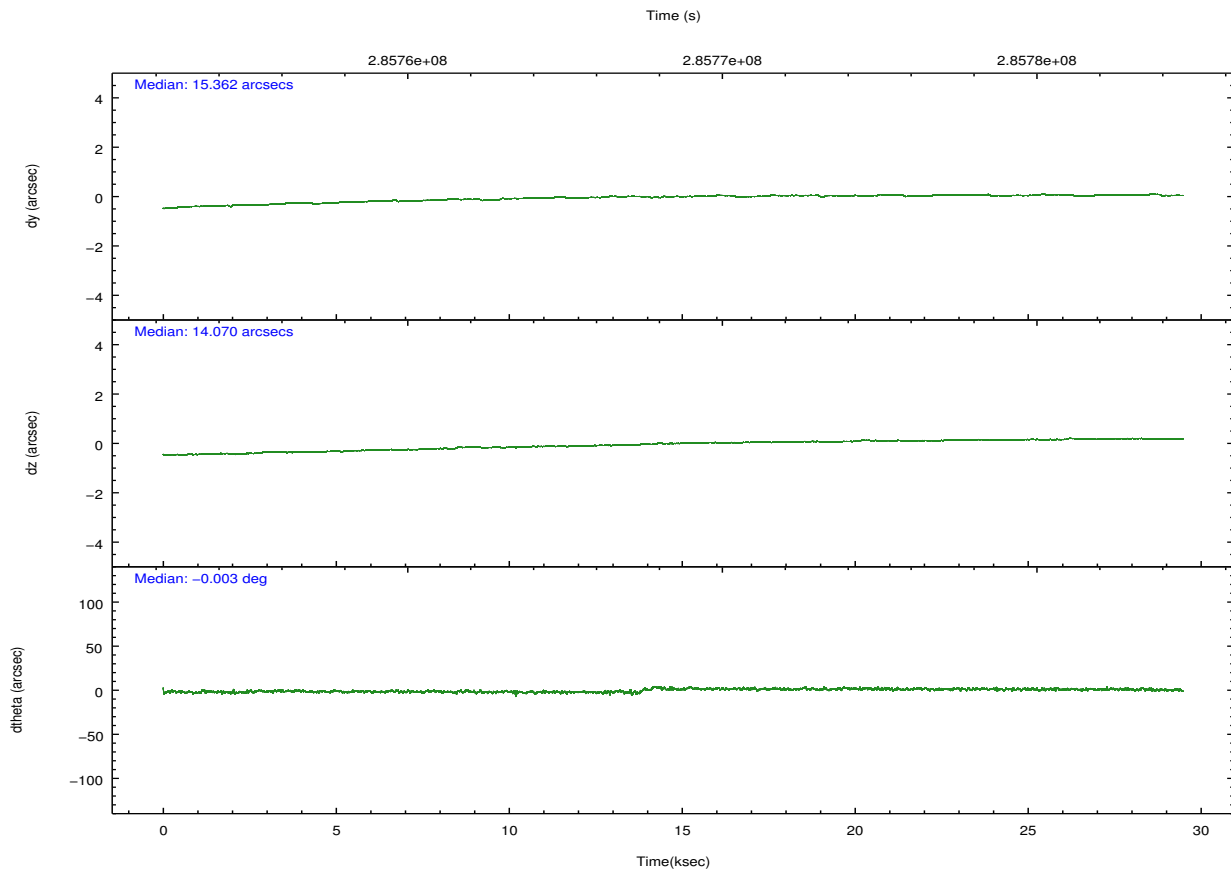
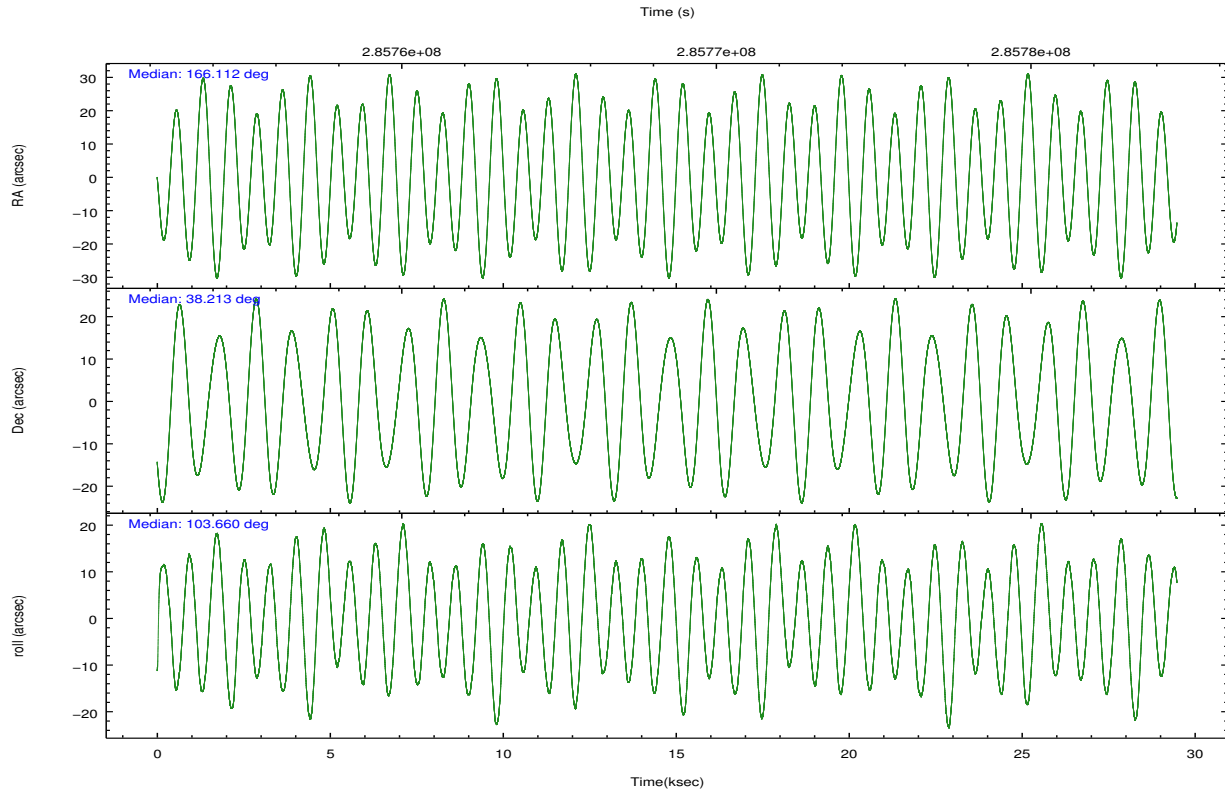
	<b>segment 1</b>	<b>segment 2</b>	<b>segment 3</b>
level 1 events	1042241	2133900	1064964
rejected events	9543	22754	9672
rejected %	0%	1%	0%

## 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	166.138496	166.1119328833579			
[deg] Pointing Dec	38.193693	38.21342630938307			
[deg] Pointing Roll	103.581481	103.6652333205908			
[s] Window start time (MET)	283996865.184000	283996865.184000			
[s] Window stop time (MET)	286588865.184000	286588865.184000			
[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)	285753869.184000	285753244.60082			
Observation start date	2007-01-21T08:03:24	2007-01-21T07:54:04			
[s] Observation end time (MET)	285783169.184000	285784167.82729			
Observation end date	2007-01-21T16:11:44	2007-01-21T16:29:27			

## 2.3 Aspect



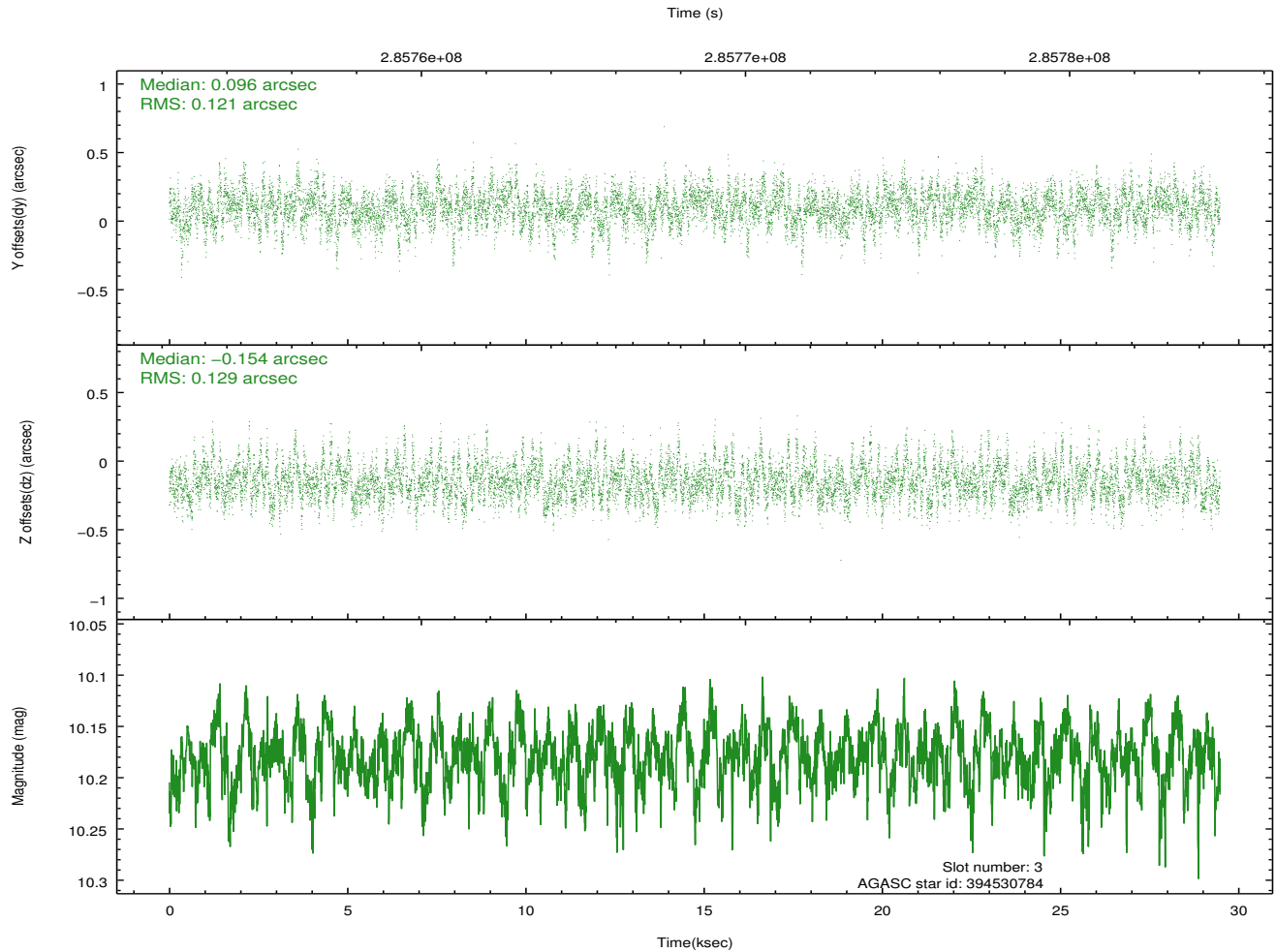
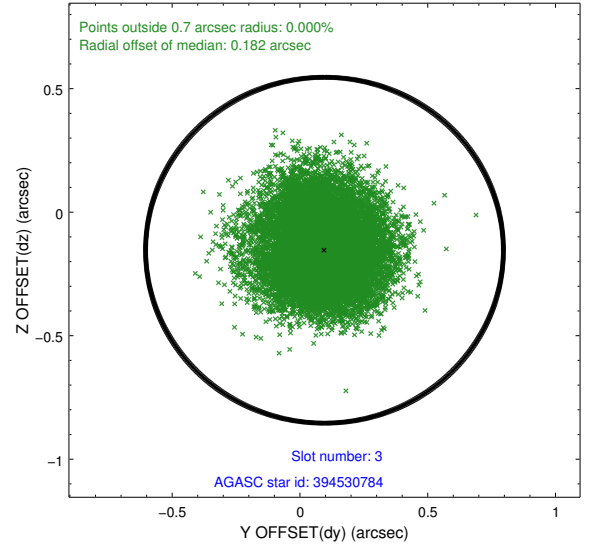
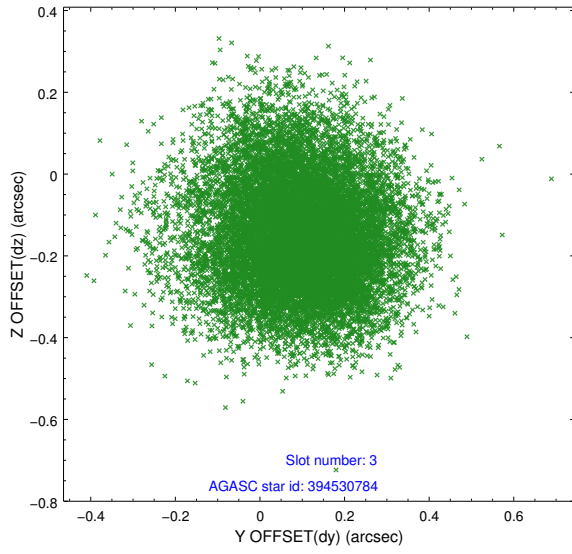


### Slot Statistics

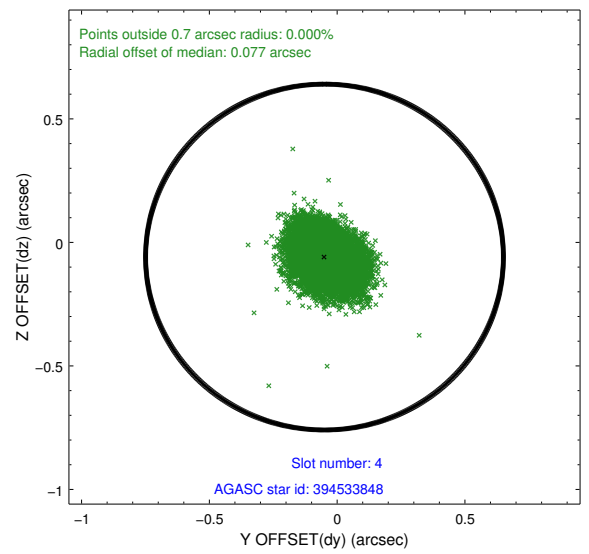
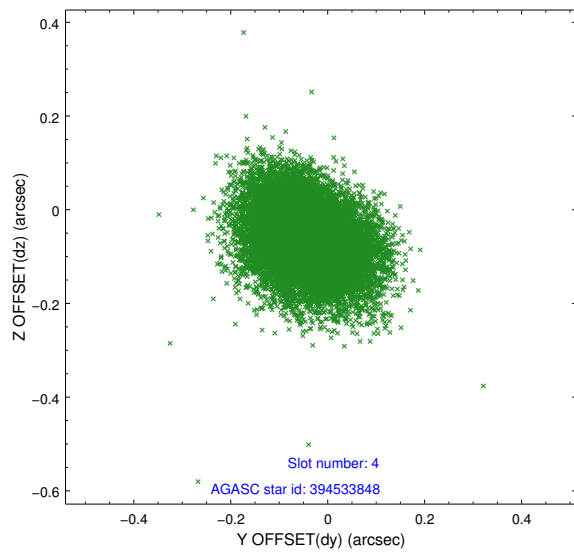
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	HRC-S-1	7.01	7188	0.073	-0.211	0.011	0.023	0.000000	0.000000	-1169.72	-462.87
1	FID	HRC-S-3	7.01	7190	0.112	-0.010	0.015	0.024	0.000000	0.000000	-1172.55	566.80
2	FID	HRC-S-4	6.97	7190	0.203	-0.076	0.010	0.016	0.000000	0.000000	1228.52	569.40
3	GUIDE	394530784	10.18	14351	0.096	-0.154	0.188	0.309	165.569172	38.418674	1169.48	1369.44
4	GUIDE	394533848	8.72	14363	-0.049	-0.059	0.098	0.161	166.382906	38.276007	128.12	-739.05
5	GUIDE	394543960	9.80	14363	0.122	-0.016	0.133	0.248	165.802757	37.787371	-1195.55	1271.33
6	GUIDE	394546712	6.61	14381	-0.116	-0.039	0.073	0.117	166.451462	38.394357	496.50	-1027.78
7	GUIDE	394530152	7.52	14378	-0.052	0.263	0.081	0.132	166.075805	38.868252	2402.16	-399.17

## 2.4 Star Slots

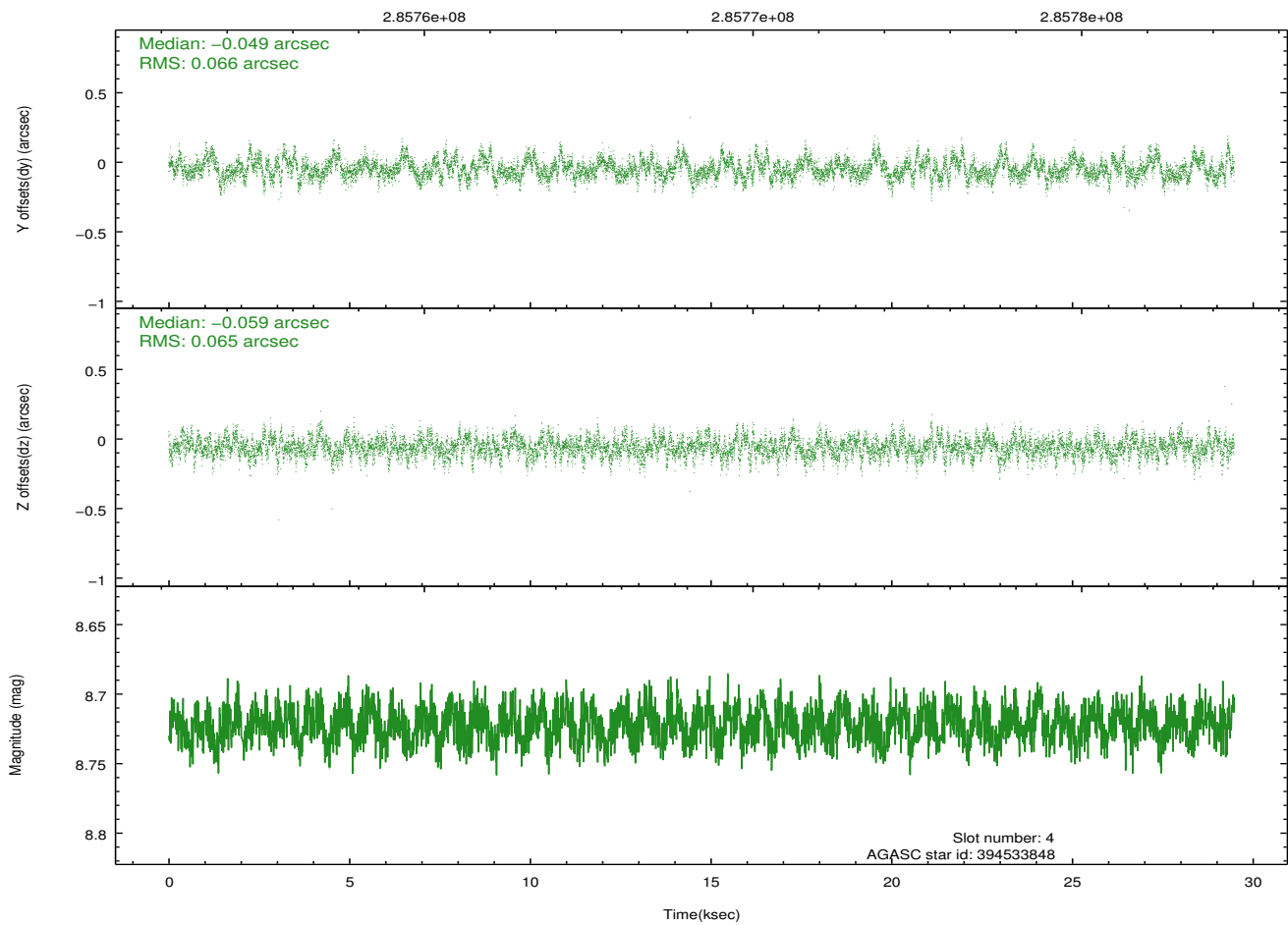
### 2.4.1 Slot 3



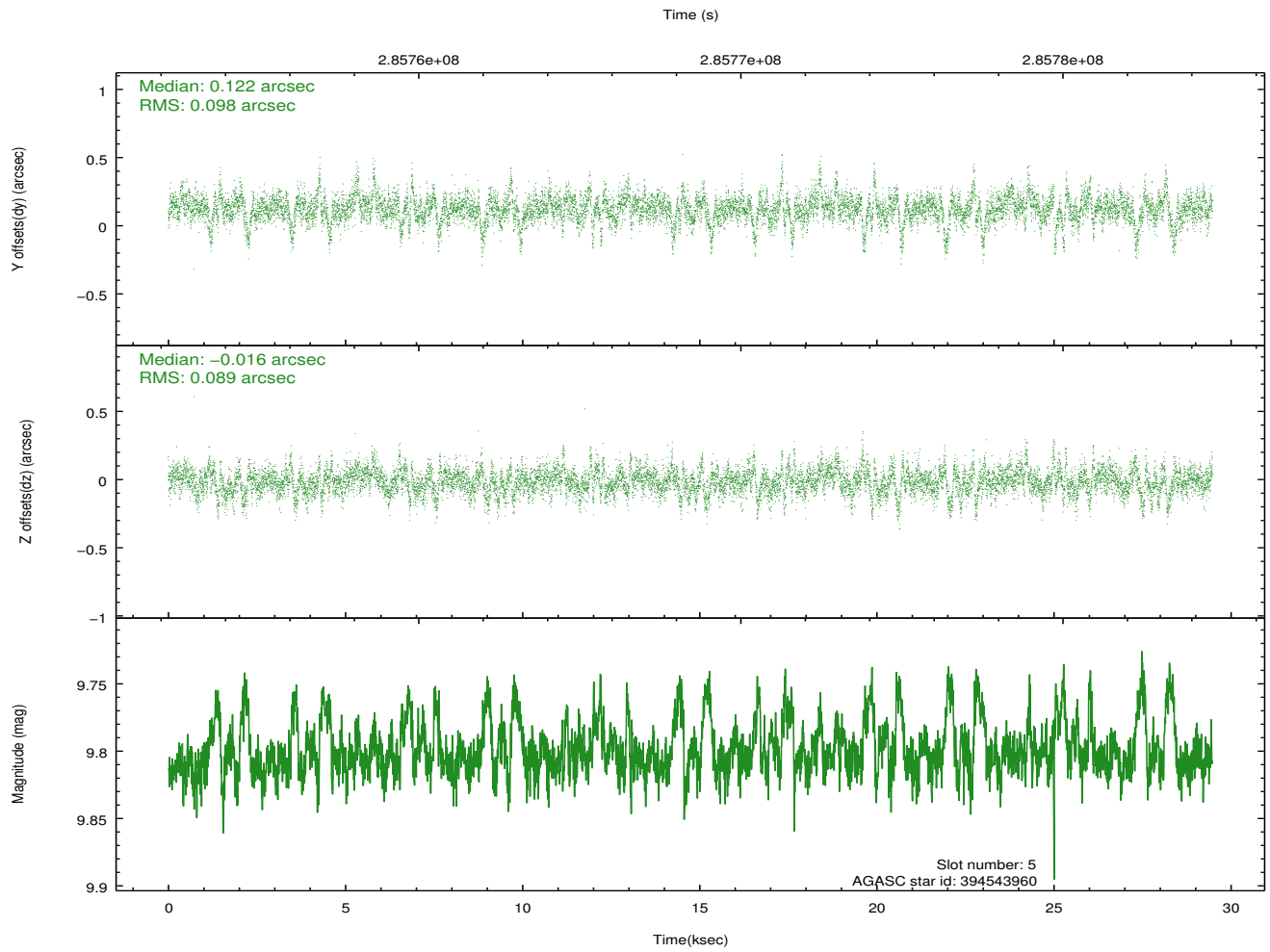
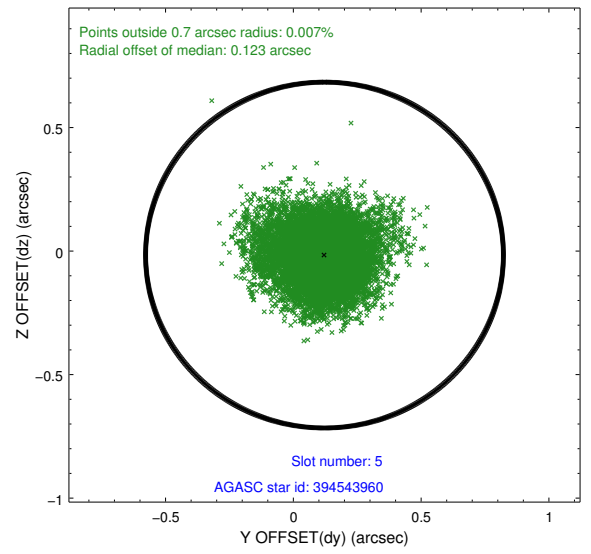
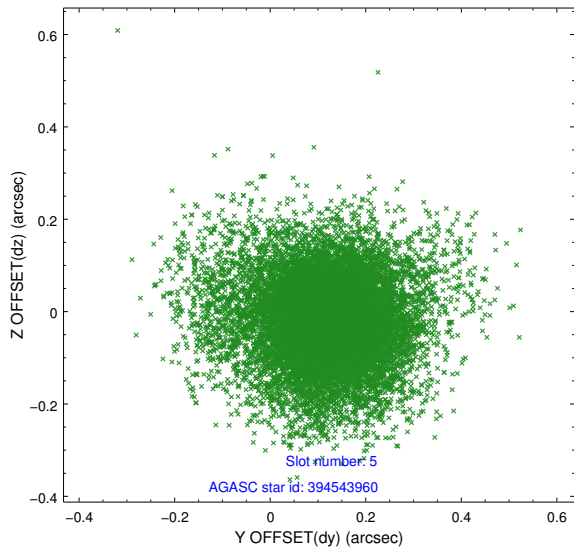
## 2.4.2 Slot 4



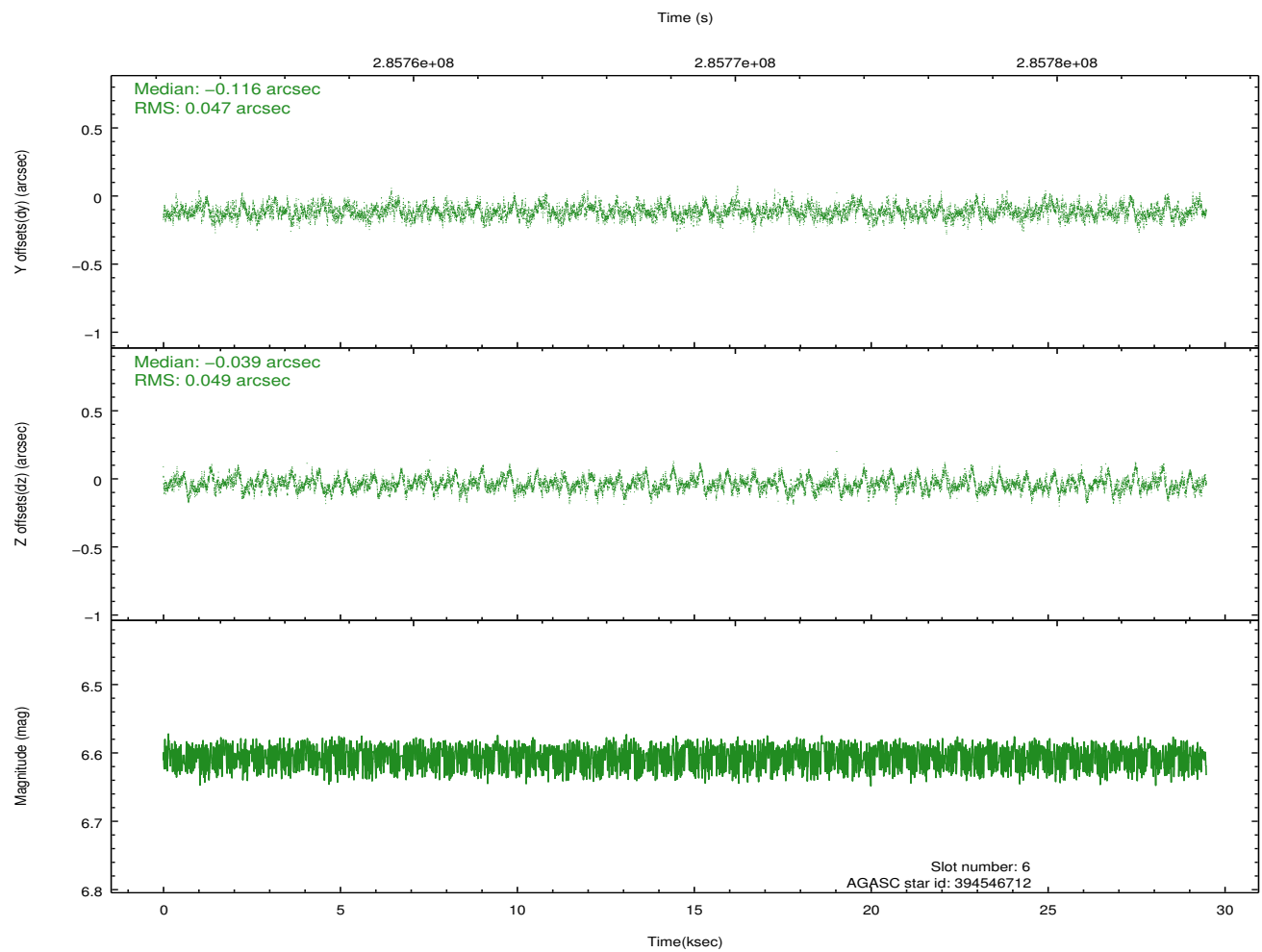
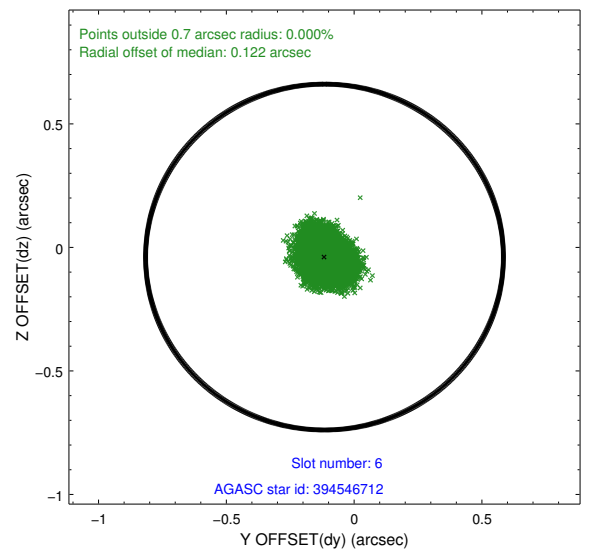
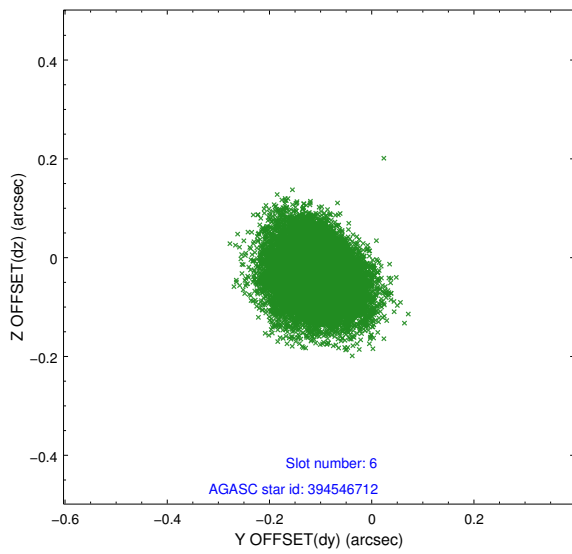
Time (s)



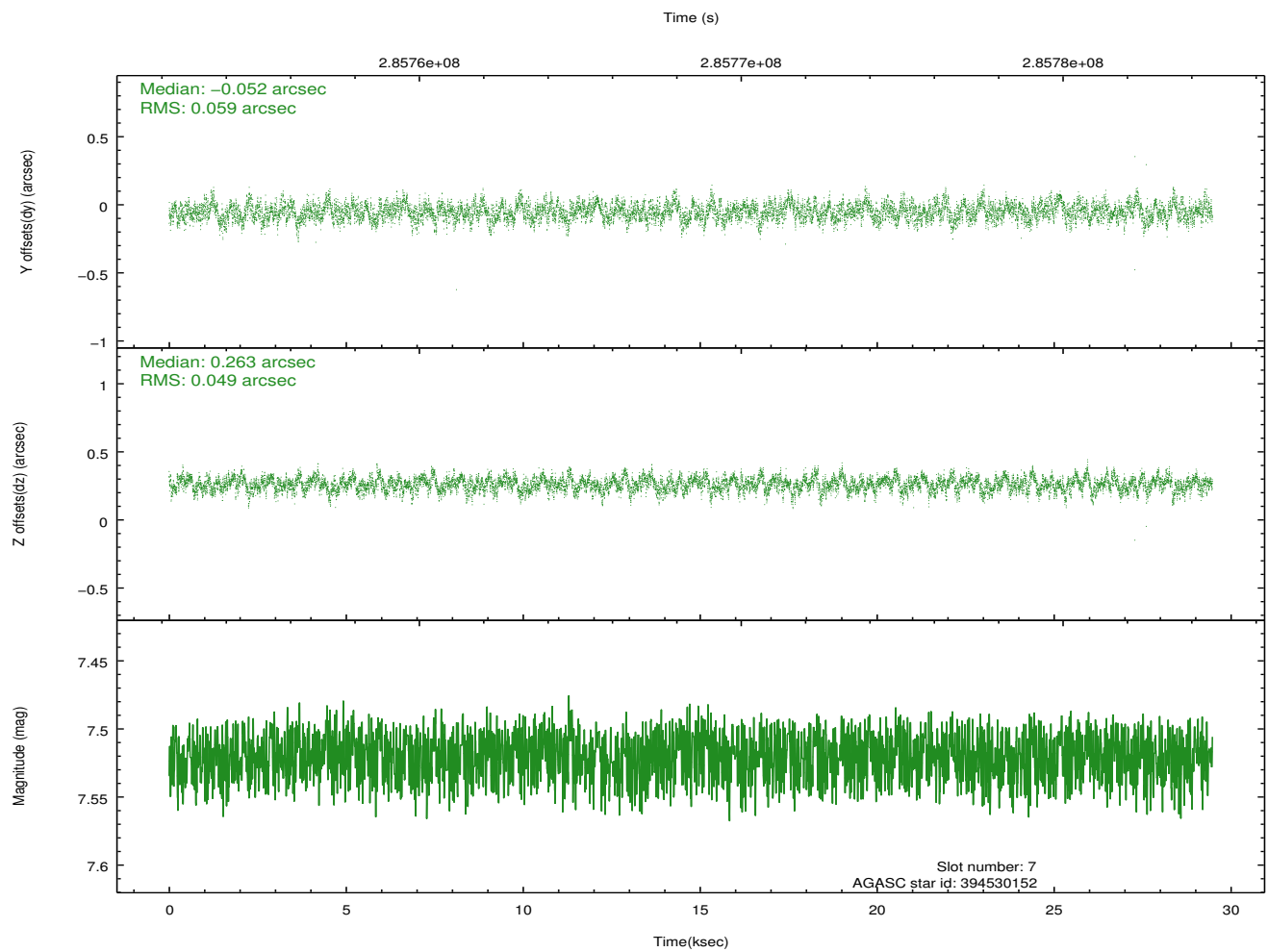
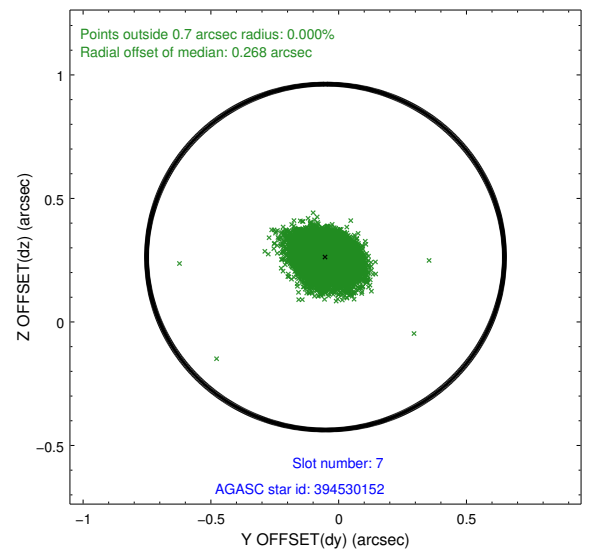
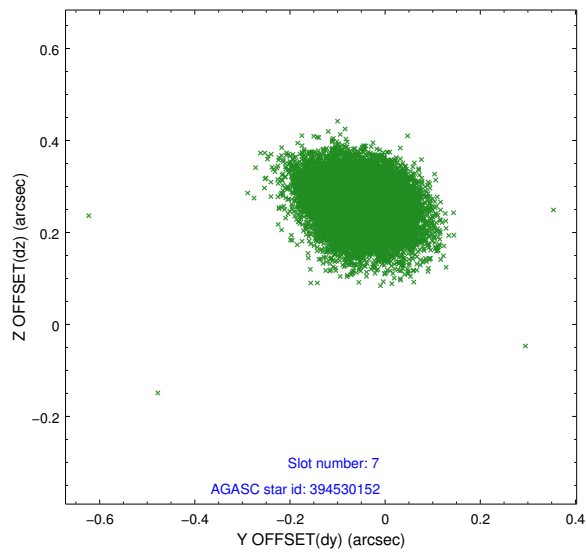
### 2.4.3 Slot 5



## 2.4.4 Slot 6

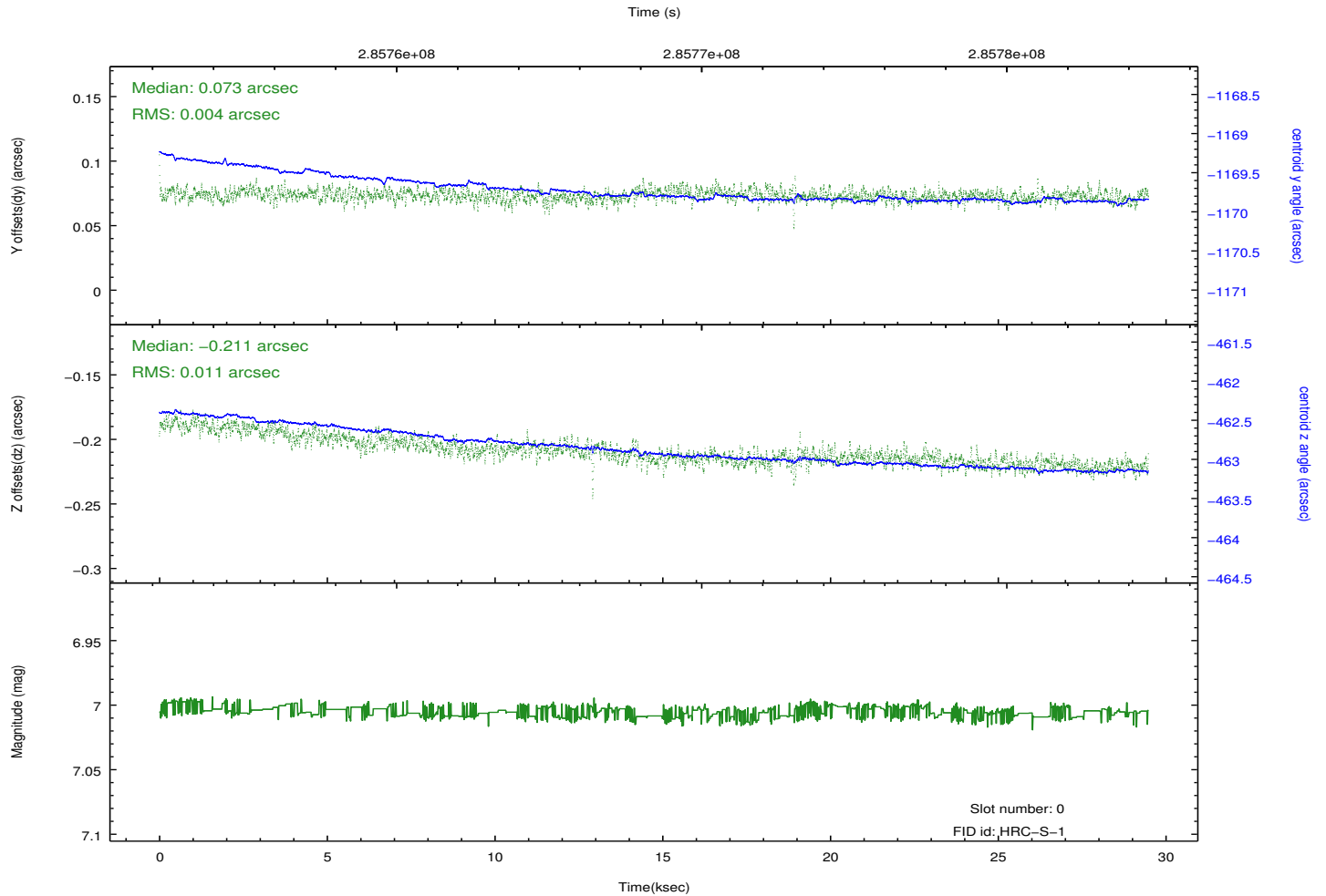
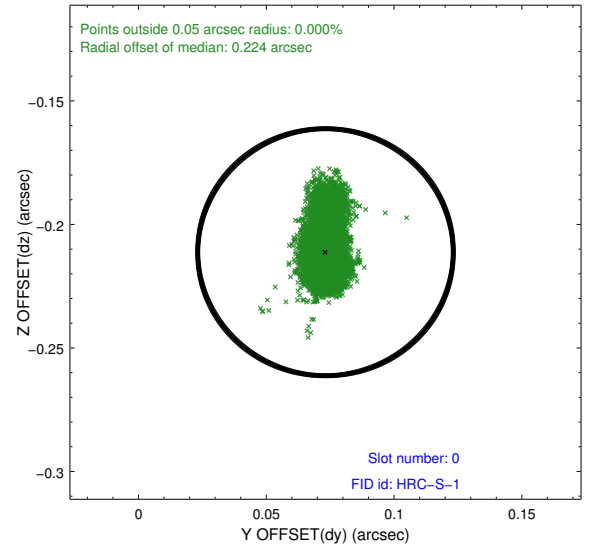
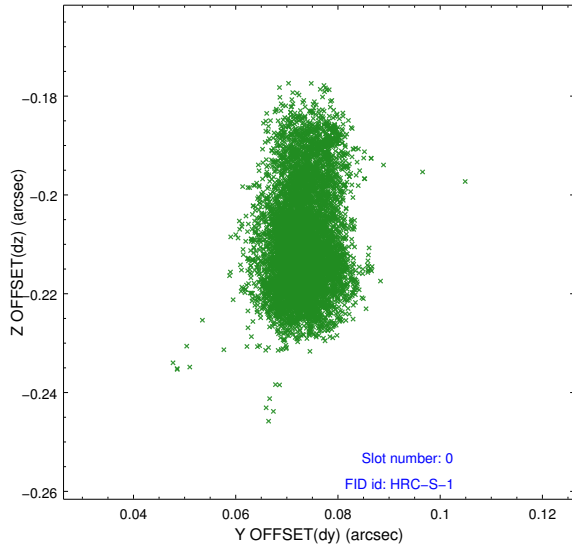


## 2.4.5 Slot 7

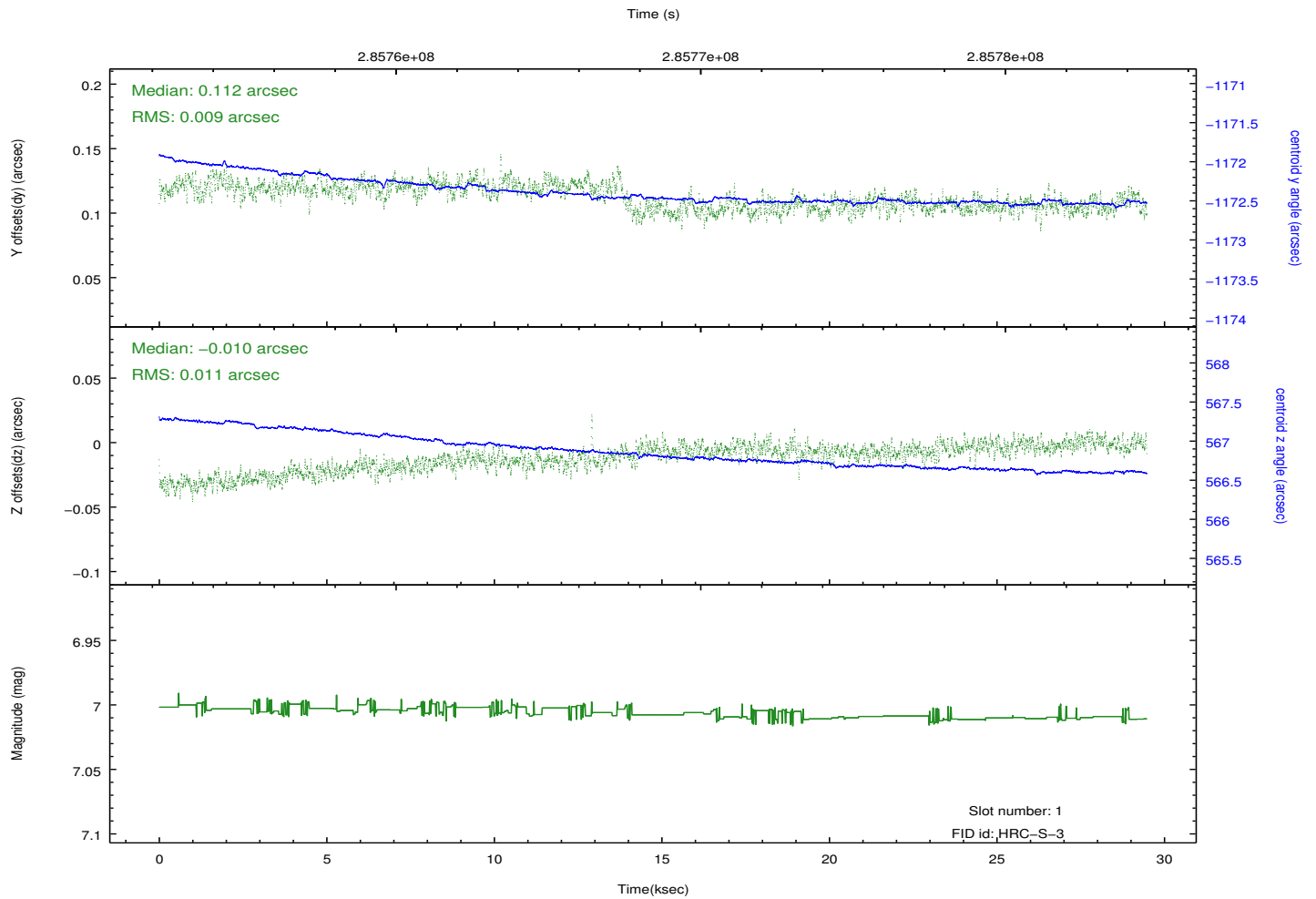
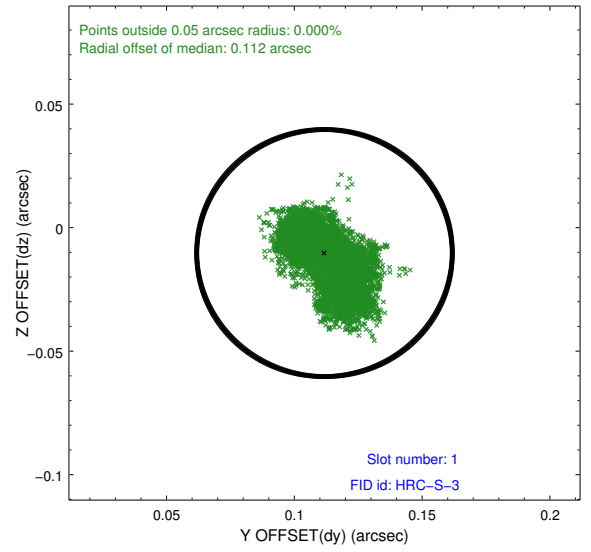
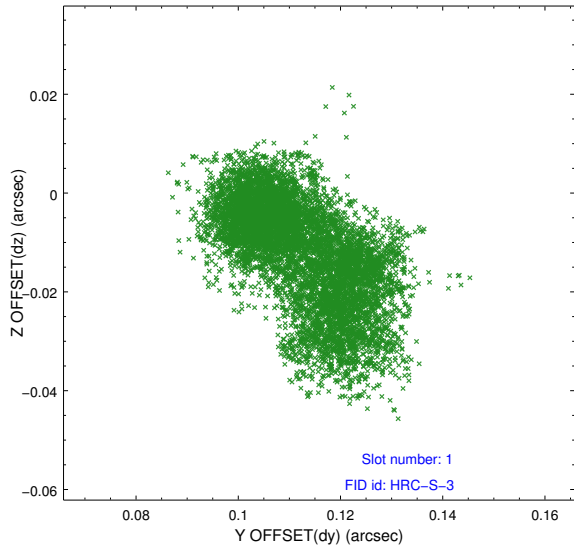


## 2.5 FID Slots

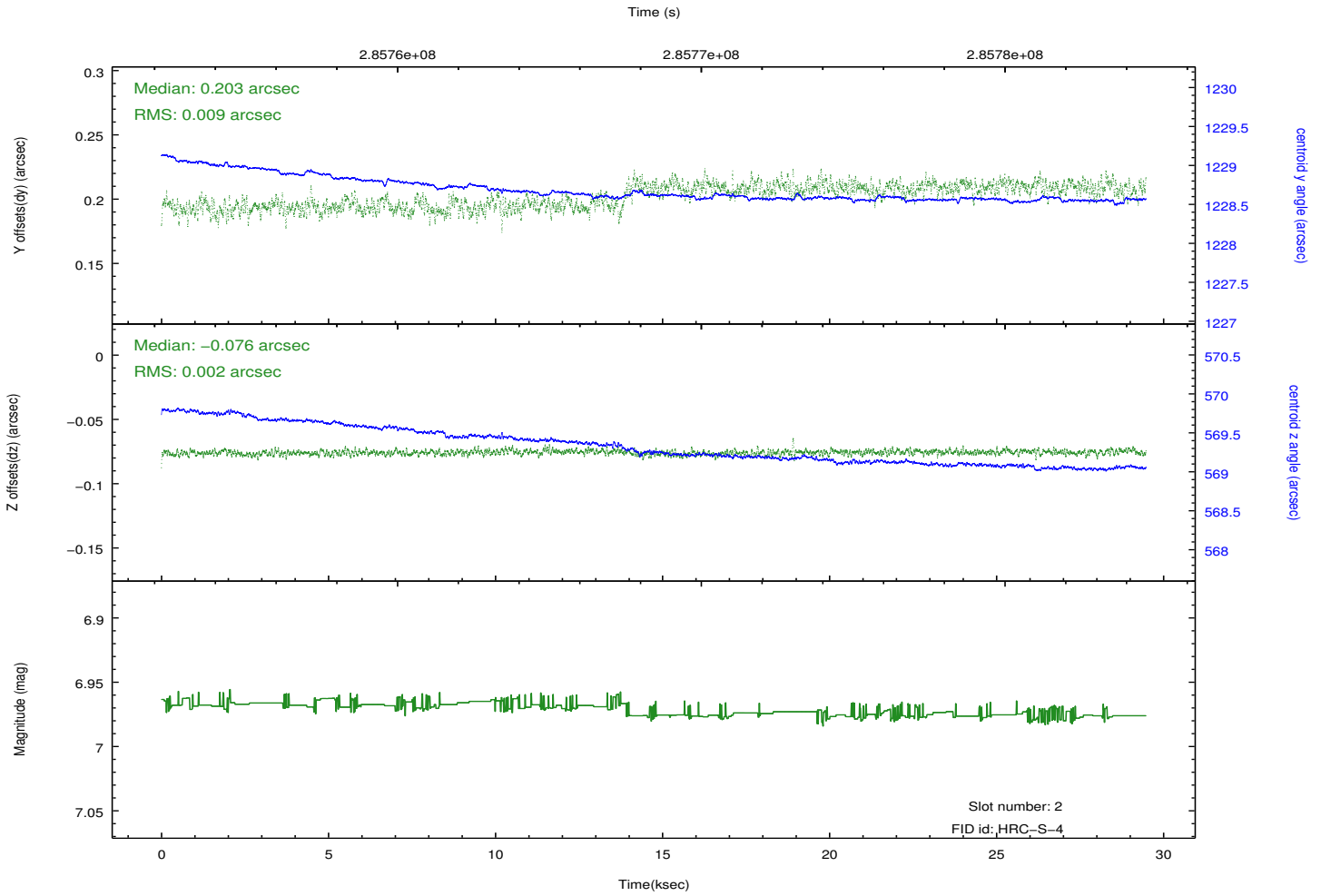
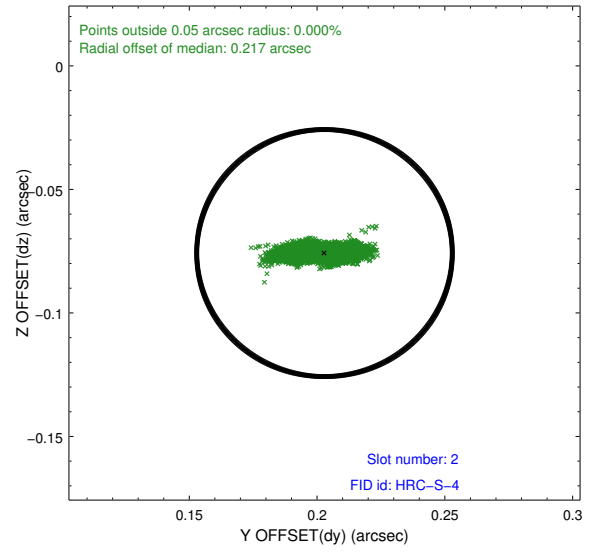
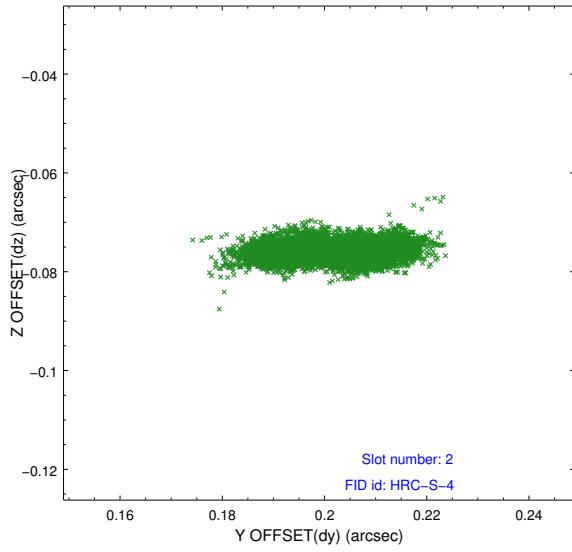
### 2.5.1 Slot 0



## 2.5.2 Slot 1

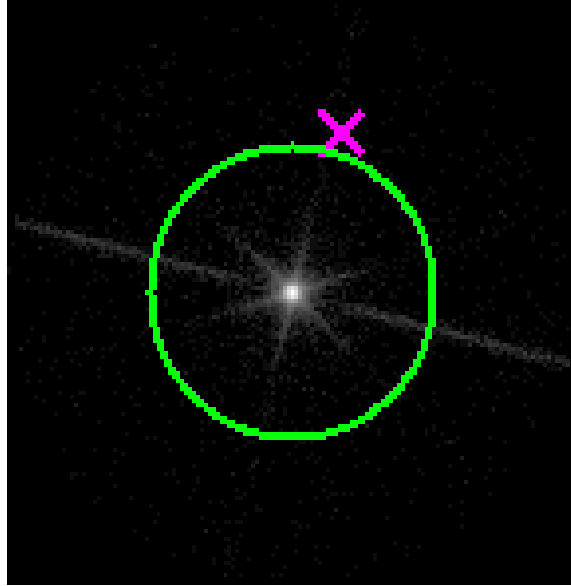


### 2.5.3 Slot 2

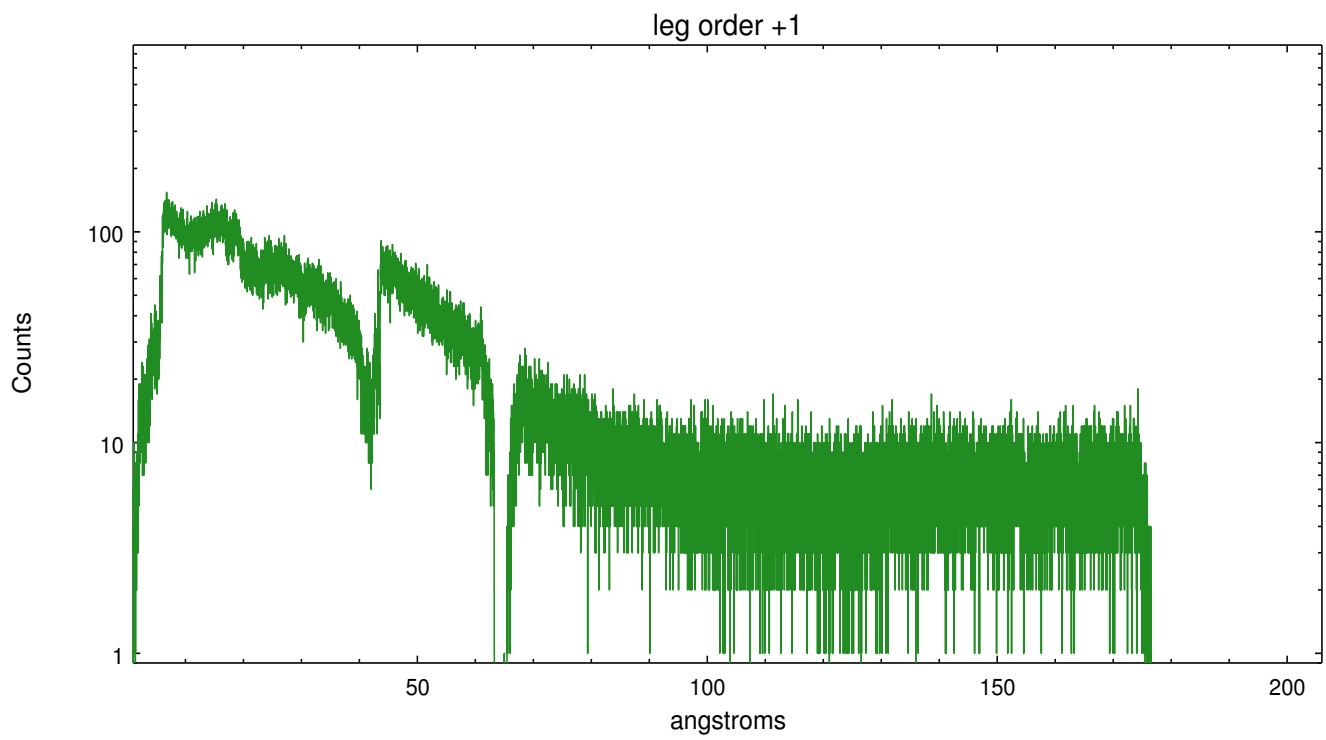
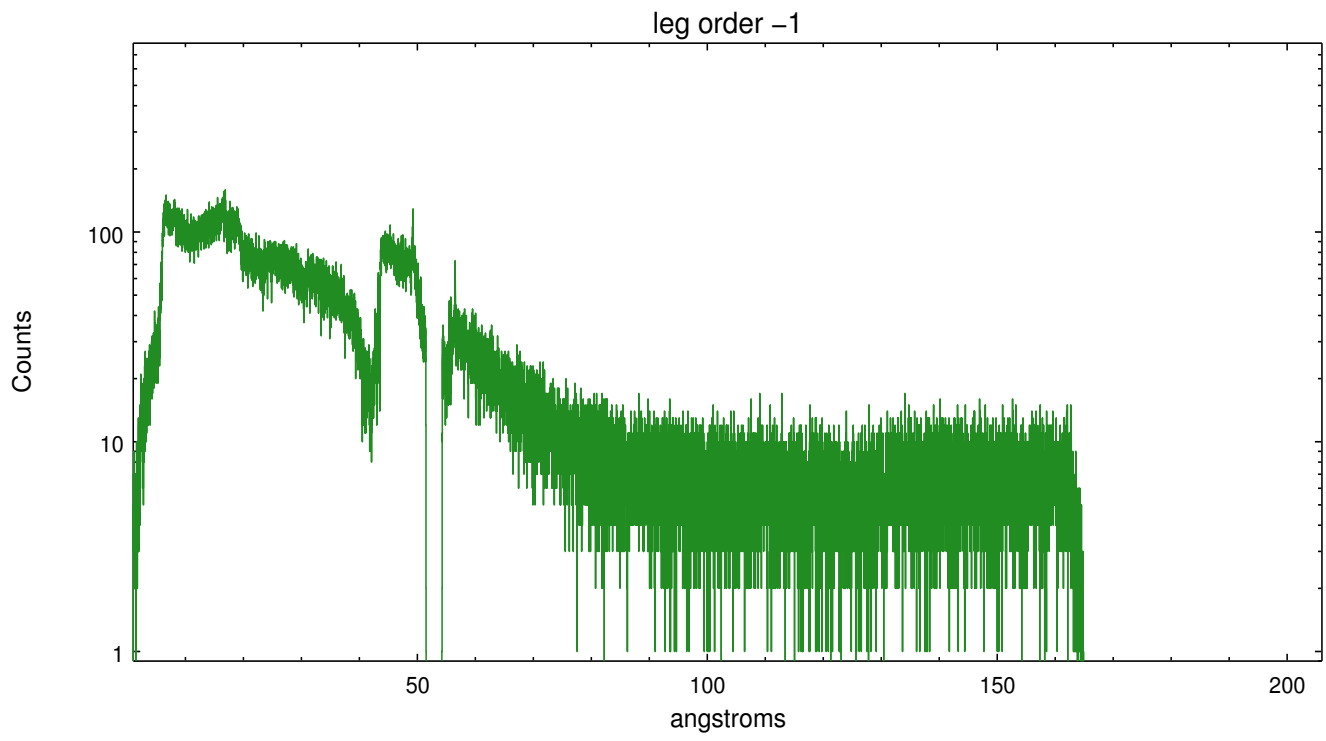


### 3 Gratings

#### 3.1 LETG Arm



LETG Zero Order



## A Summary

### A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.08.17
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.4779763

### A.2 Comments