

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 1015 - L2 Version 4  
Chandra X-Ray Center

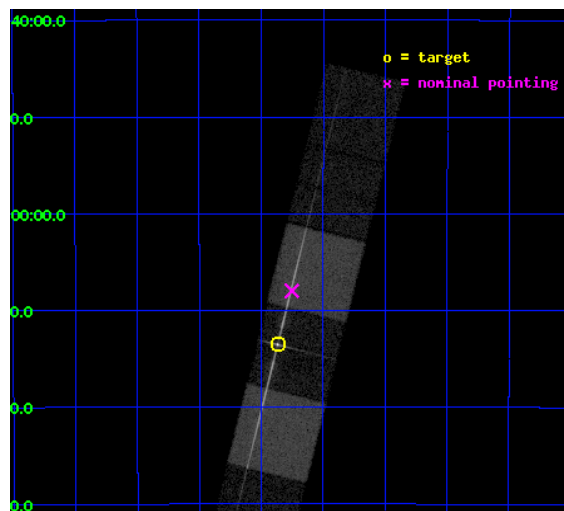
L2 Processing Date : Mar 15 2013

## 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	Bias . . . . .	3
2.1.3	Parameters . . . . .	4
2.1.4	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

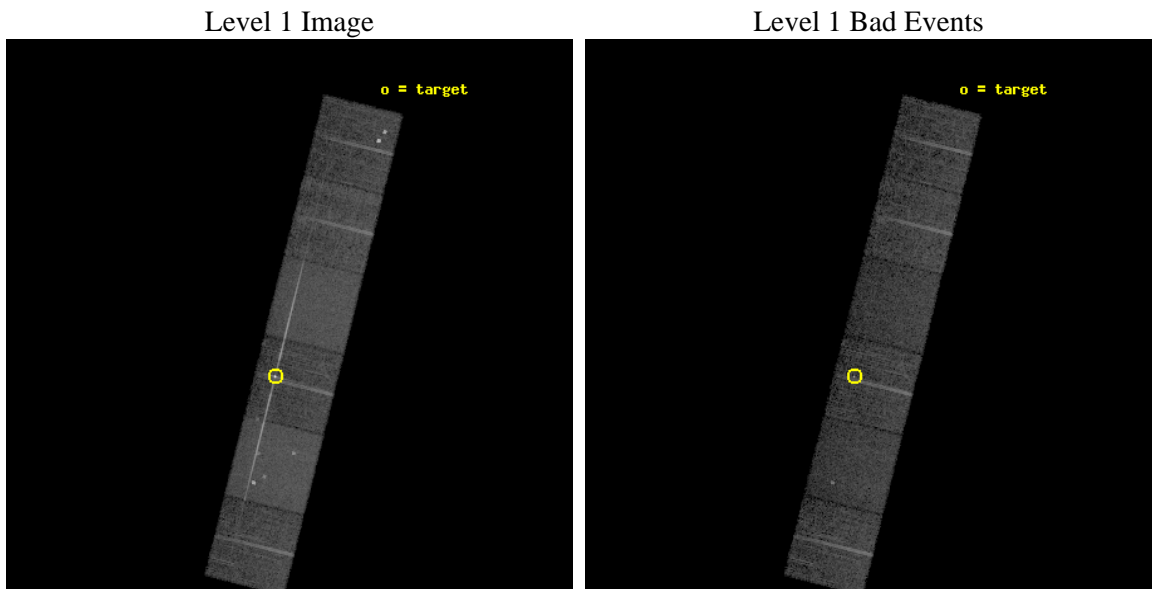
seq_num	390007	Sequence number
obs_id	1015	Observation id
title	GRATINGS CALIBRATION OBSERVATIONS OF PKS2155-304	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	PKS2155-304	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	329.716667	Observer's specified target RA [deg]
dec_targ	-30.225556	Observer's specified target Dec [deg]
ra_nom	329.68811869304	Nominal RA [deg]
dec_nom	-30.132966349057	Nominal Dec [deg]
roll_nom	284.05555655635	Nominal Roll [deg]
revision	4	Processing version of data
ontime	9632.0000089556	Sum of GTIs [s]
livetime	9510.0338251481	Livetime [s]
ontime4	9632.0000089556	Sum of GTIs [s]
ontime5	9632.0000089556	Sum of GTIs [s]
ontime6	9632.0000089556	Sum of GTIs [s]
ontime7	9632.0000089556	Sum of GTIs [s]
ontime8	9632.0000089556	Sum of GTIs [s]
ontime9	9632.0000089556	Sum of GTIs [s]
l2events	145032	Number of level 2 events



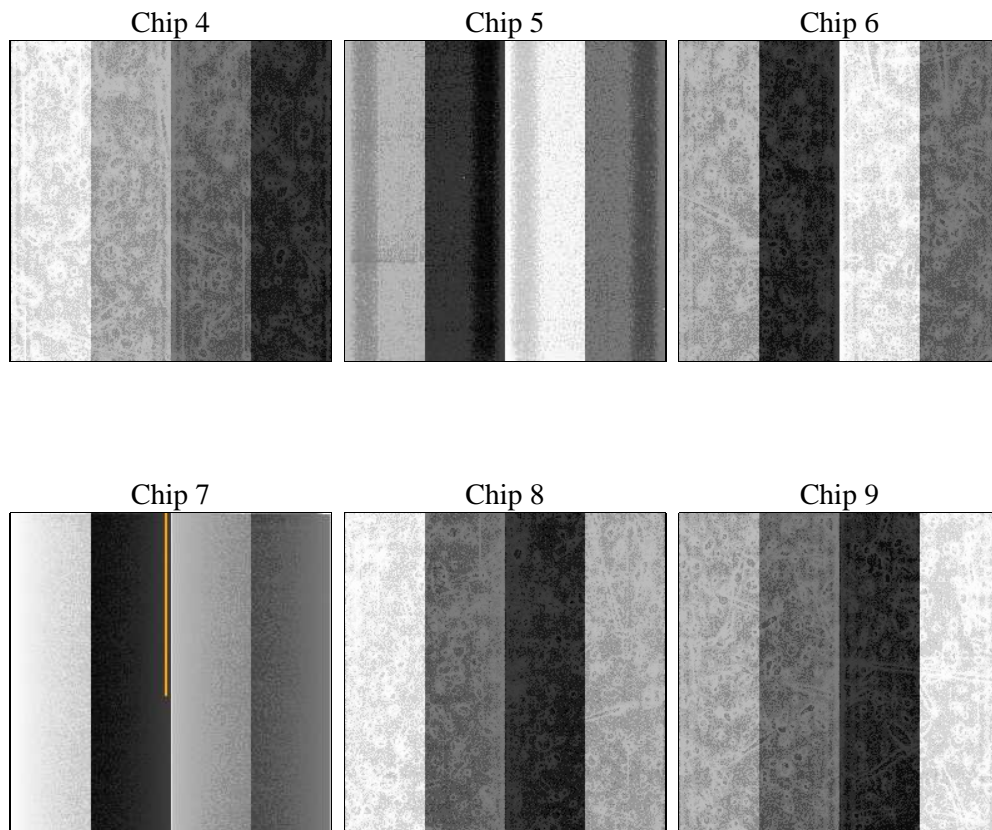
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	9680.236000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	9632.0000089556	Sum of GTIs [s]
caldbver	4.5.1.1	&#160	ontime4	9632.0000089556	Sum of GTIs [s]
date	2012-09-04T04:30:14	Date and time of file creation	ontime5	9632.0000089556	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	9632.0000089556	Sum of GTIs [s]
			ontime7	9632.0000089556	Sum of GTIs [s]
			ontime8	9632.0000089556	Sum of GTIs [s]
			ontime9	9632.0000089556	Sum of GTIs [s]
			l1events	457977	Number of level 1 events

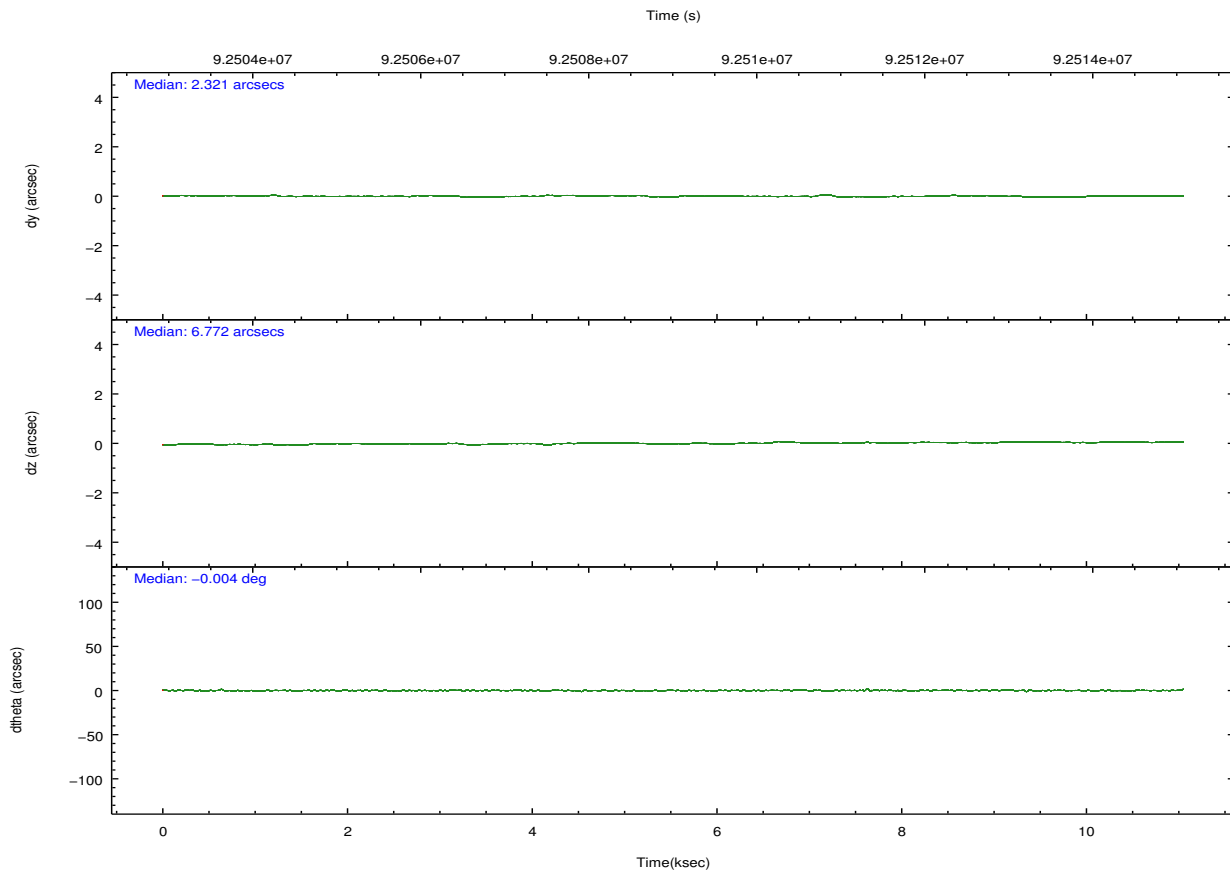
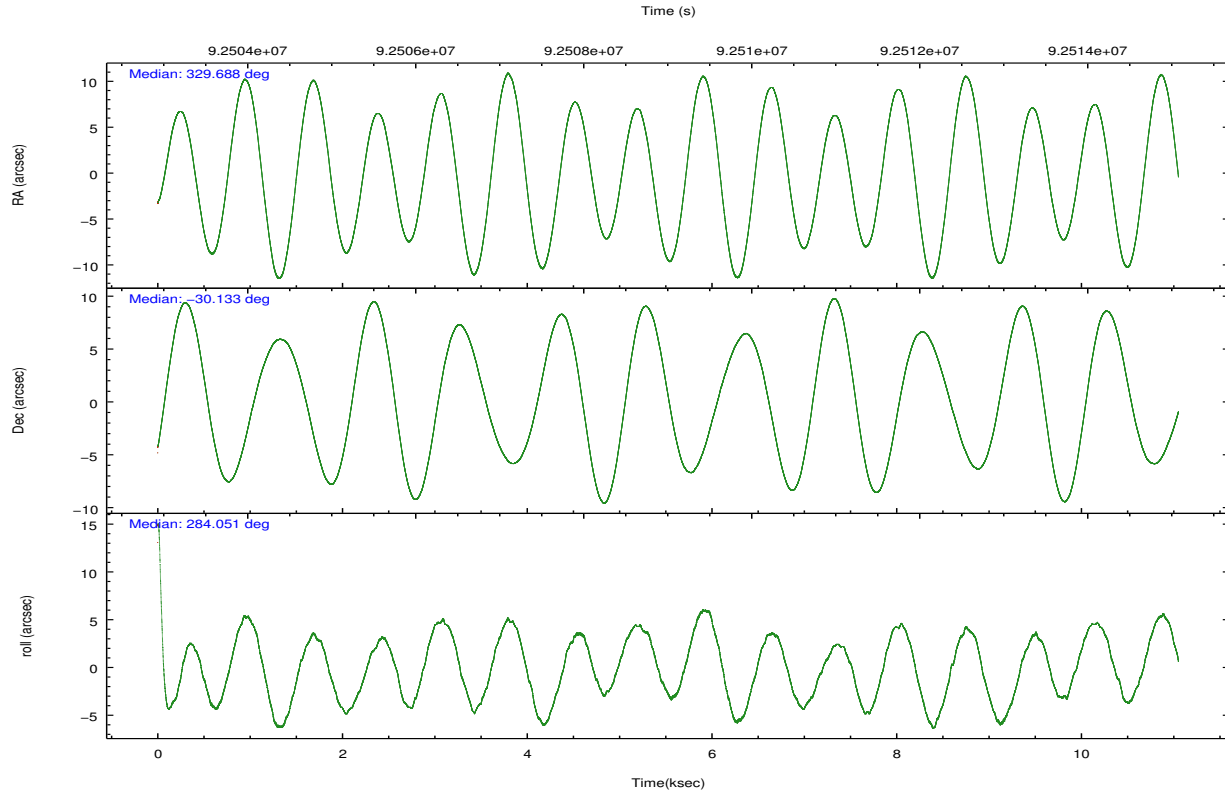
### 2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	58953	97307	80704	89063	69896	62054	grade 0 events	3154	12457	23171	8692	5013	5799
rejected events	51893	42518	49642	40489	55001	46752		5%	12%	28%	9%	7%	9%
rejected %	88%	43%	61%	45%	78%	75%	grade 1 events	26	488	566	62	37	40
								0%	0%	0%	0%	0%	0%
							grade 2 events	1573	15632	3651	10117	3065	7036
								2%	16%	4%	11%	4%	11%
							grade 3 events	652	2873	1332	4555	1543	635
								1%	2%	1%	5%	2%	1%
							grade 4 events	612	2972	1318	4678	1445	647
								1%	3%	1%	5%	2%	1%
							grade 5 events	1963	6022	2471	6684	2814	2381
								3%	6%	3%	7%	4%	3%
							grade 6 events	1072	20891	1610	20560	3839	1198
								1%	21%	1%	23%	5%	1%
							grade 7 events	49901	35972	46585	33715	52140	44318
								84%	36%	57%	37%	74%	71%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	LETG	LETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	329.665916	329.6881186930446	Subarray requested	NONE	NONE
[deg] Pointing Dec	-30.113488	-30.13296634905664	Alternating exposures requested	N	N
[deg] Pointing Roll	283.887765	284.0555565563464	[s] Primary exposure time	0.000000	3.2
[s] Window start time (MET)	89424064.184000	89424064.184000			
[s] Window stop time (MET)	94608064.184000	94608064.184000			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-184.132523	-184.1258238485404			
[mm] SIM translation stage offset	-6	-6.006698734467449			
[s] Observation start time (MET)	92504851.184000	92503305.29245999			
Observation start date	2000-12-06T15:46:27	2000-12-06T15:21:45			
[s] Observation end time (MET)	92514531.184000	92514845.7679			
Observation end date	2000-12-06T18:27:47	2000-12-06T18:34:05			
Read mode	TIMED	TIMED			

## 2.3 Aspect

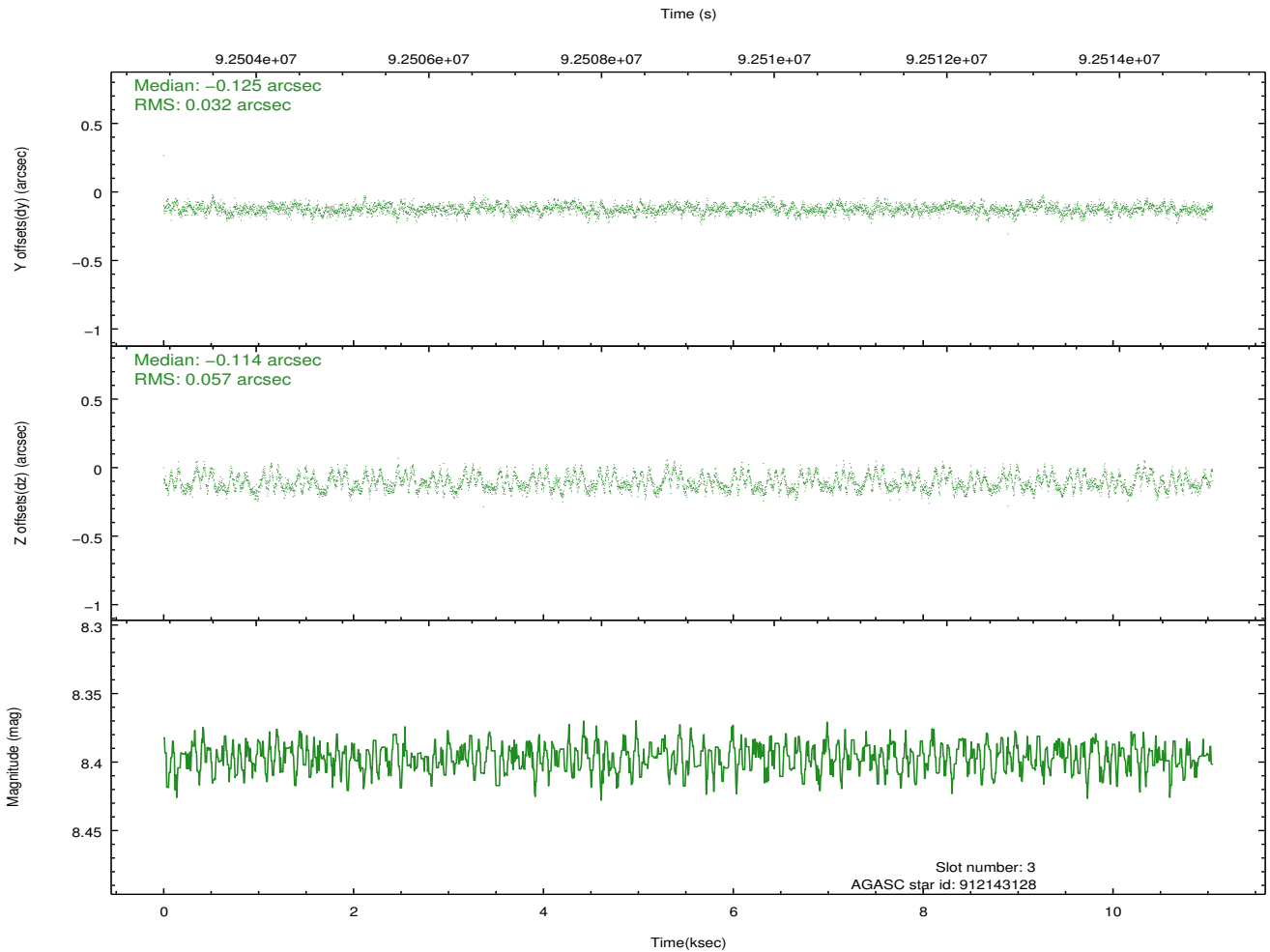
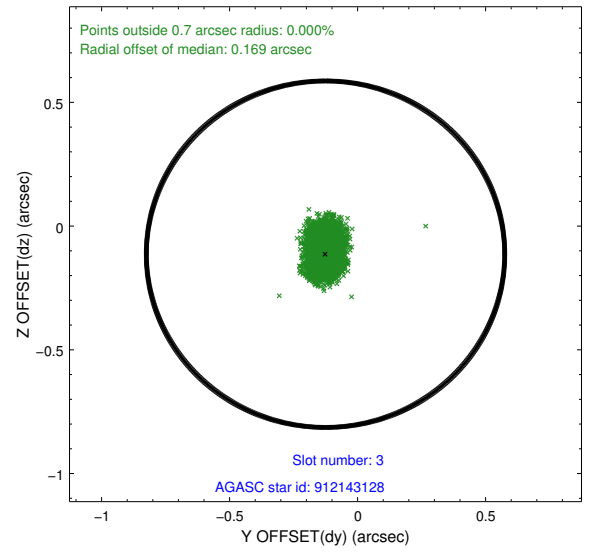
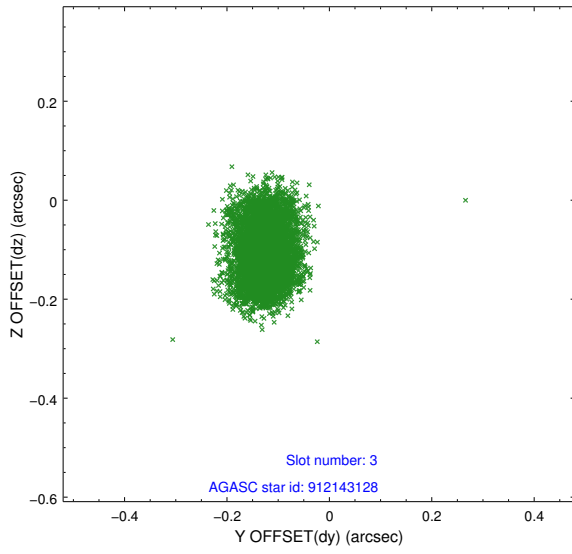


### Slot Statistics

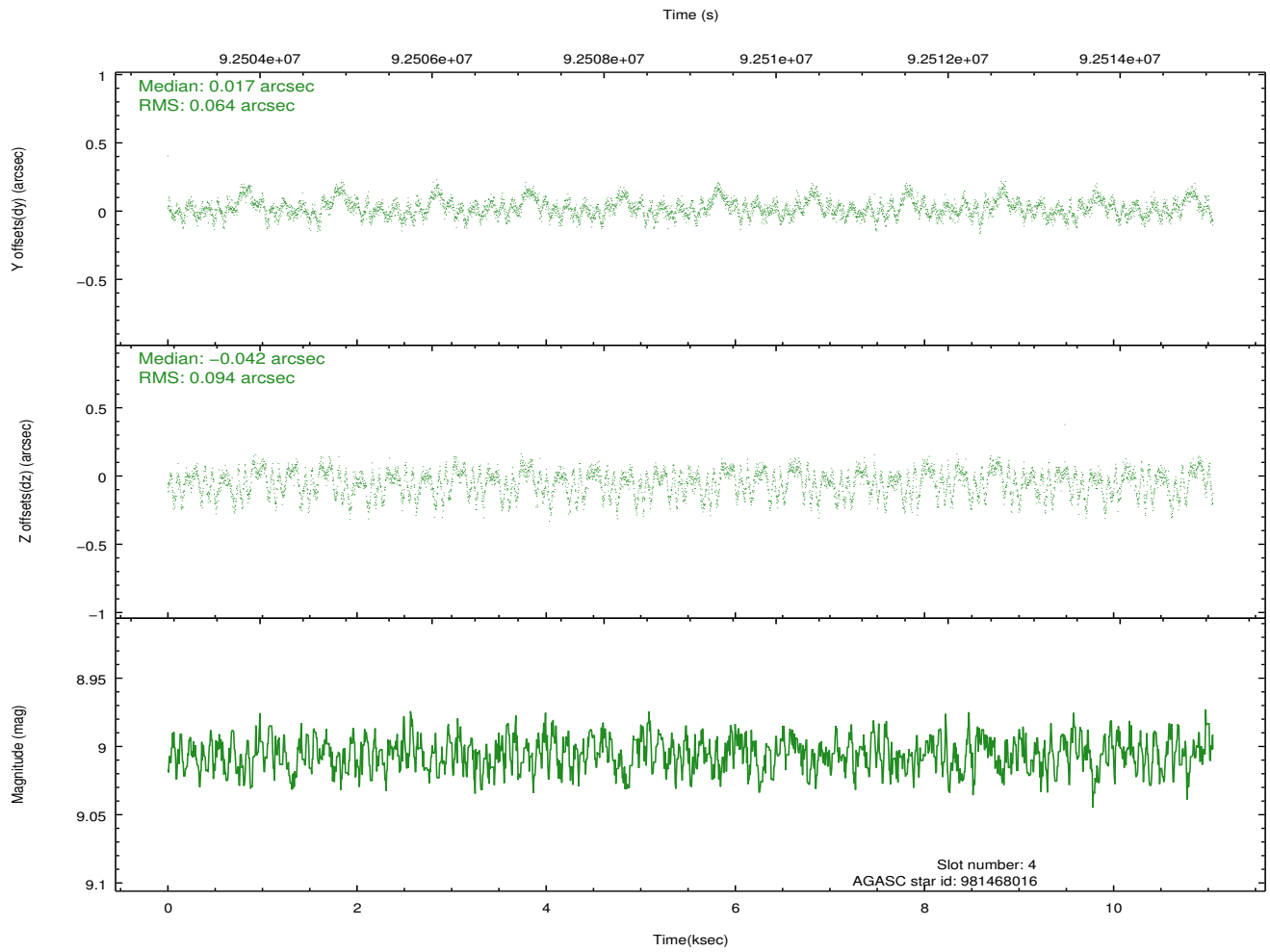
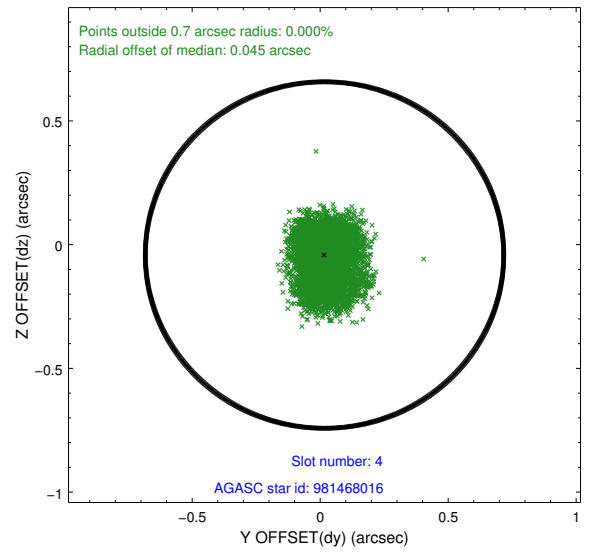
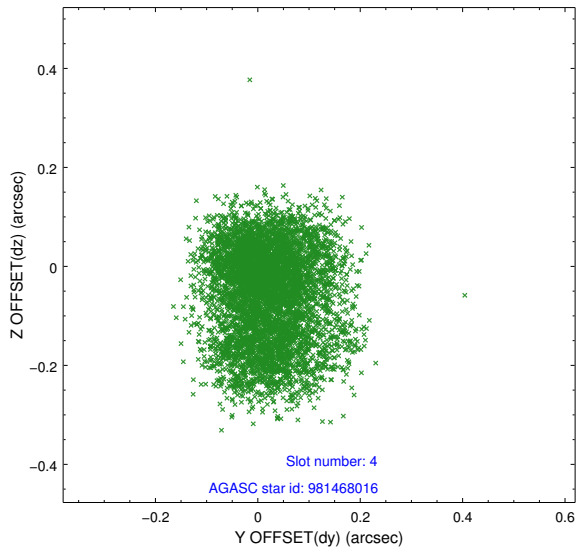
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	2696	-0.070	-0.046	0.007	0.011	0.000000	0.000000	-754.58	-1851.79
1	FID	ACIS-S-4	7.19	2696	-0.007	0.046	0.005	0.010	0.000000	0.000000	2158.54	56.26
2	FID	ACIS-S-5	7.23	2696	0.045	0.008	0.006	0.011	0.000000	0.000000	-1806.72	50.40
3	GUIDE	912143128	8.40	5392	-0.125	-0.114	0.070	0.113	328.924992	-29.706140	-1970.74	-1898.47
4	GUIDE	981468016	9.01	5392	0.017	-0.042	0.123	0.197	328.842457	-30.034984	-880.03	-2425.51
5	GUIDE	912275088	9.05	5389	-0.009	0.028	0.073	0.115	329.619228	-29.738698	-1343.46	182.35
6	GUIDE	981478152	9.41	5391	0.043	0.137	0.074	0.122	329.415589	-30.057192	-381.76	-707.91
7	GUIDE	981468128	9.36	5390	0.069	-0.001	0.080	0.129	329.756350	-30.158334	225.93	235.09

## 2.4 Star Slots

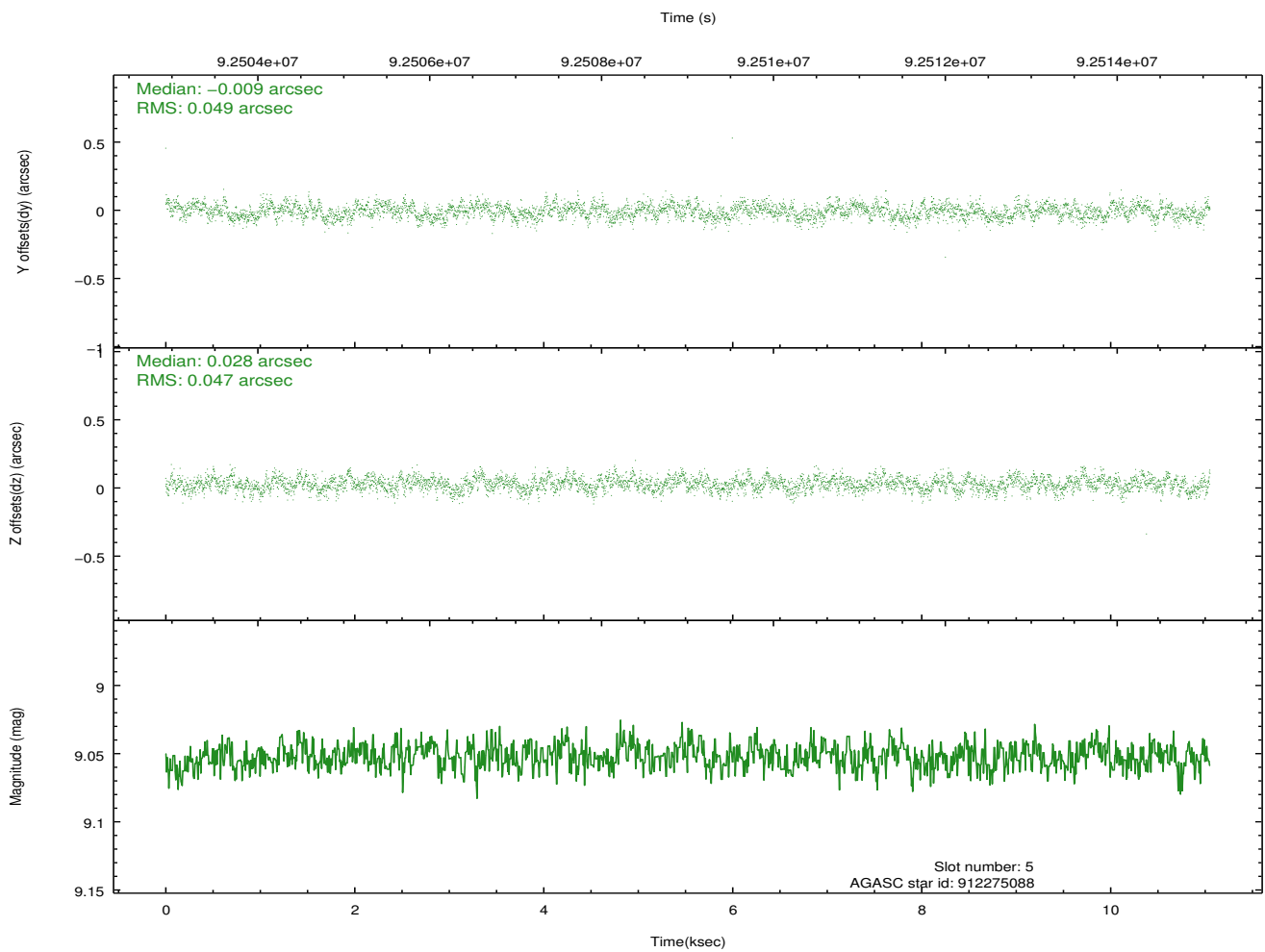
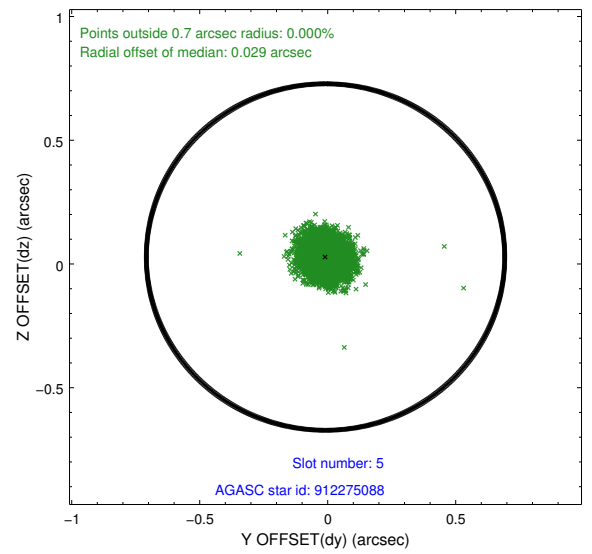
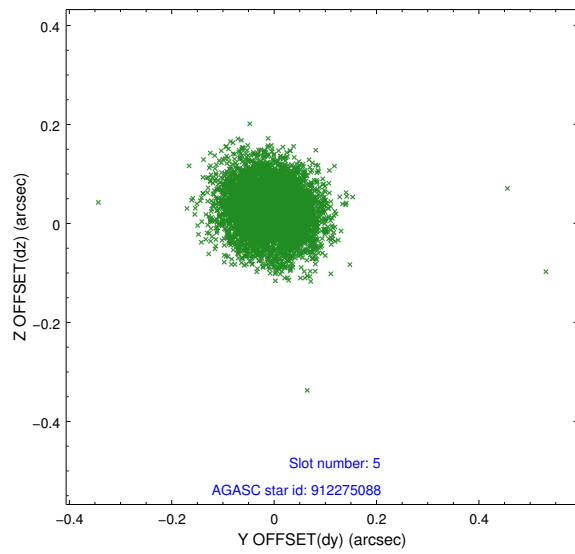
### 2.4.1 Slot 3



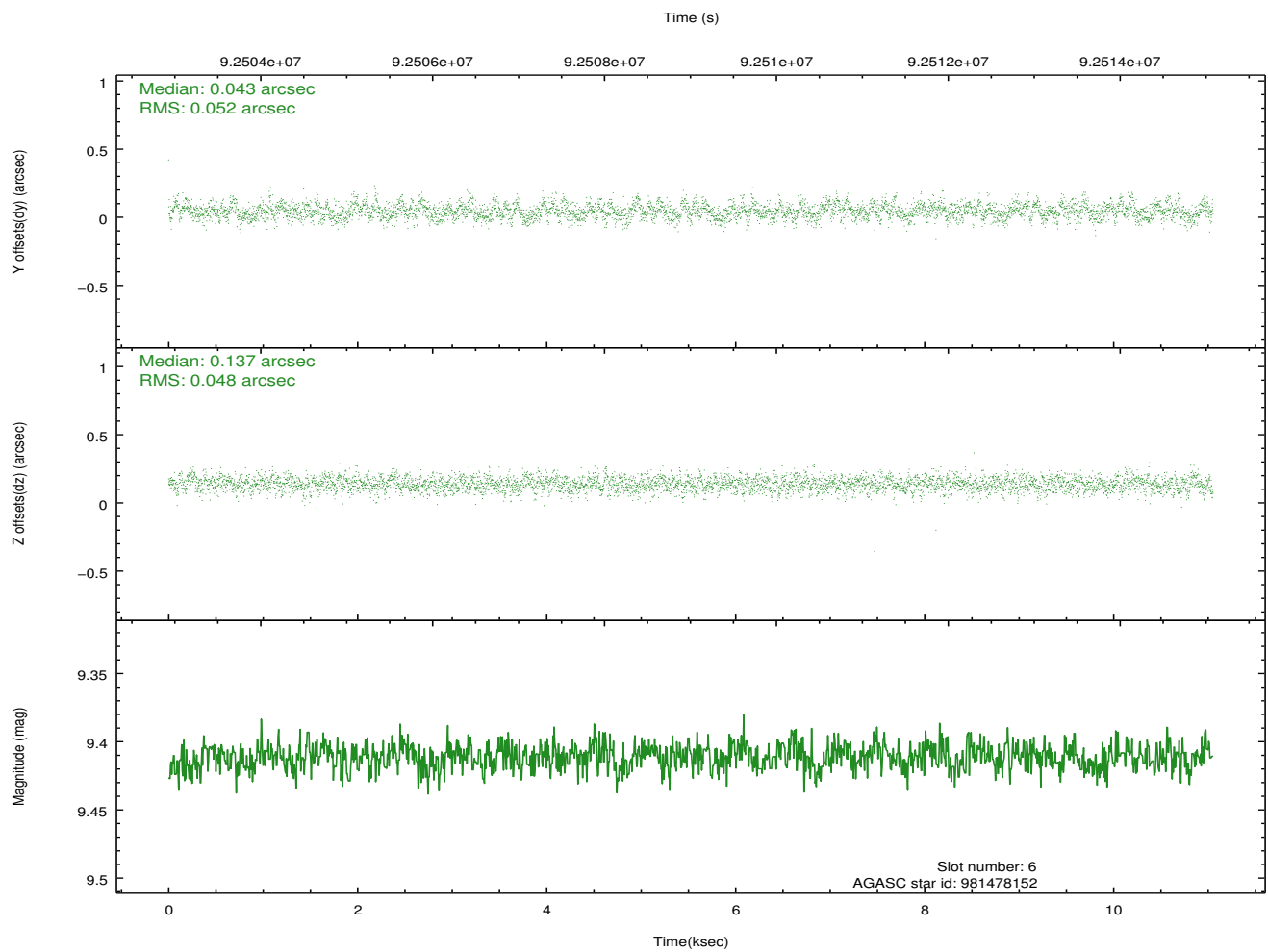
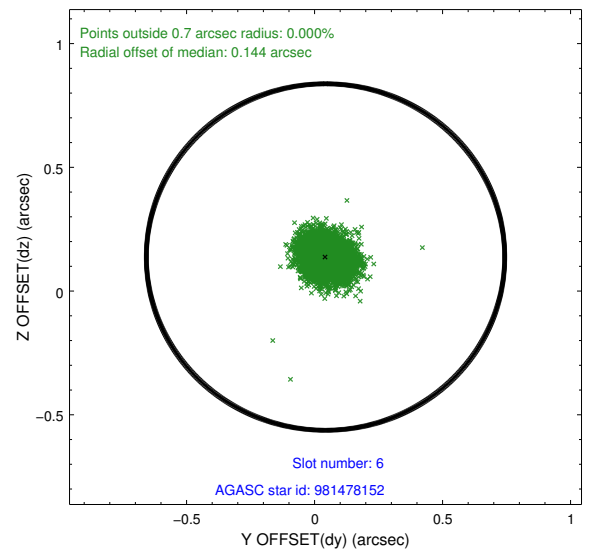
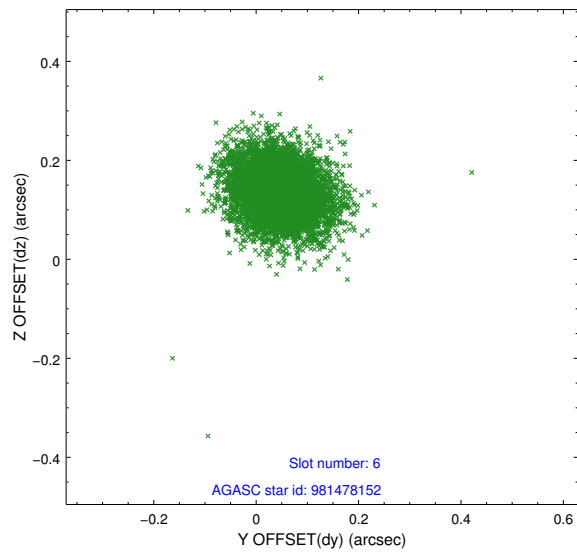
### 2.4.2 Slot 4



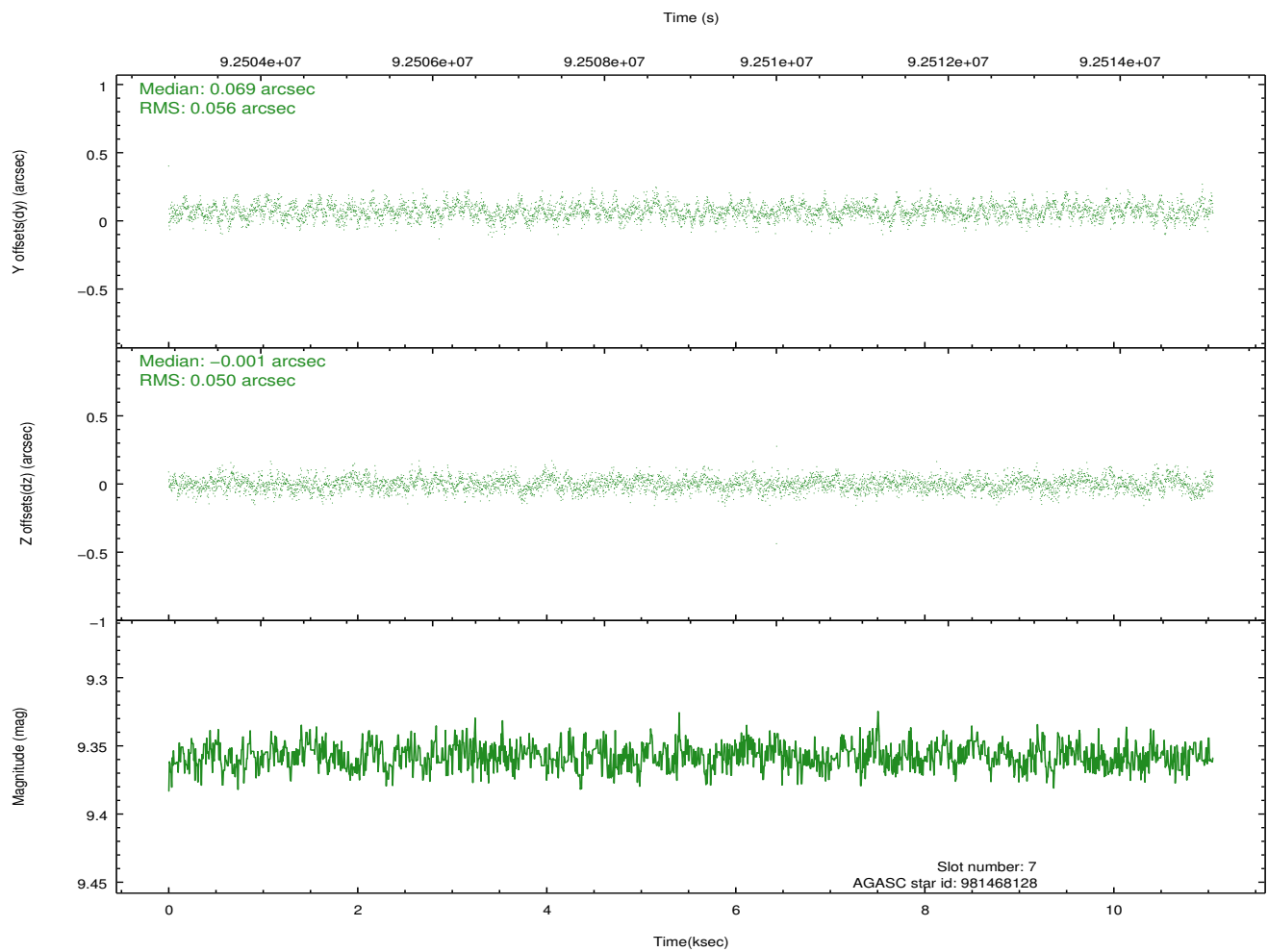
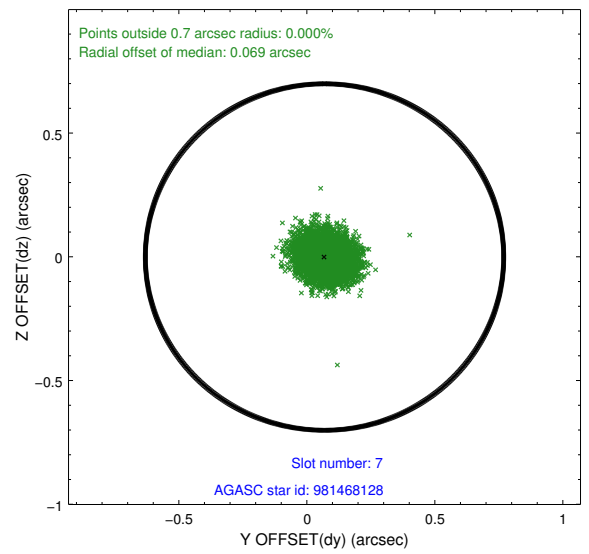
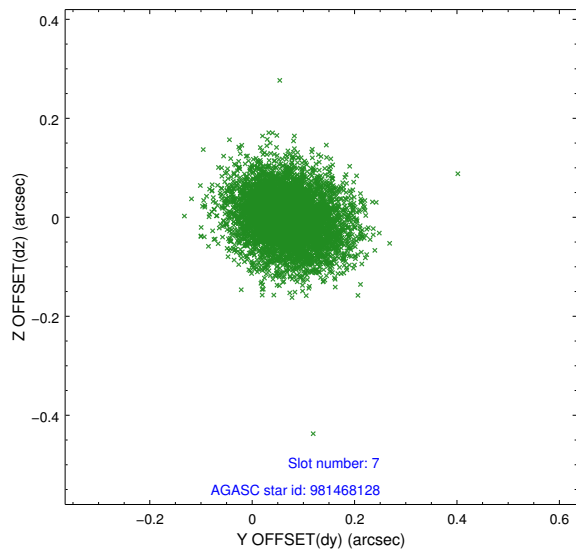
### 2.4.3 Slot 5



## 2.4.4 Slot 6

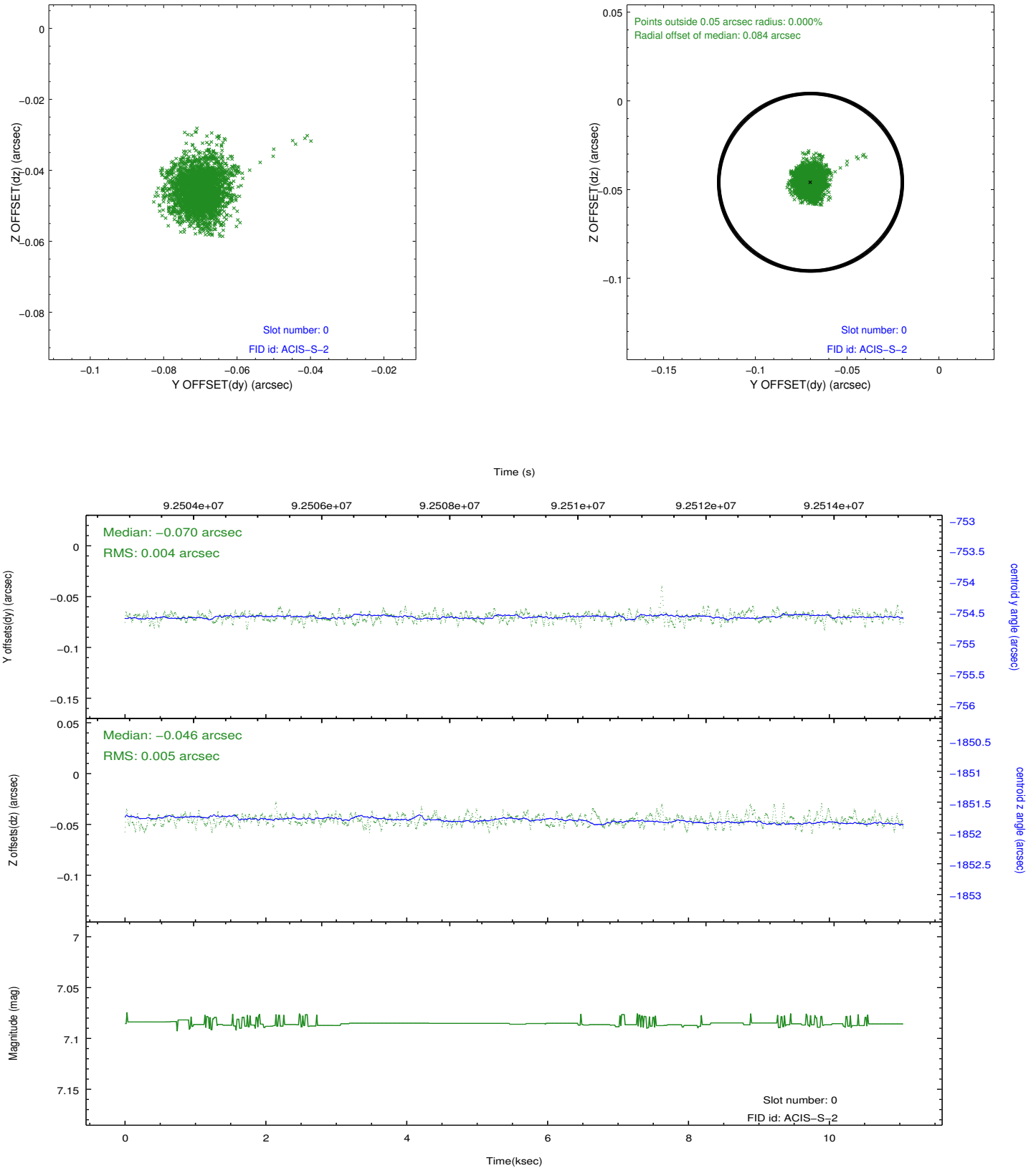


## 2.4.5 Slot 7

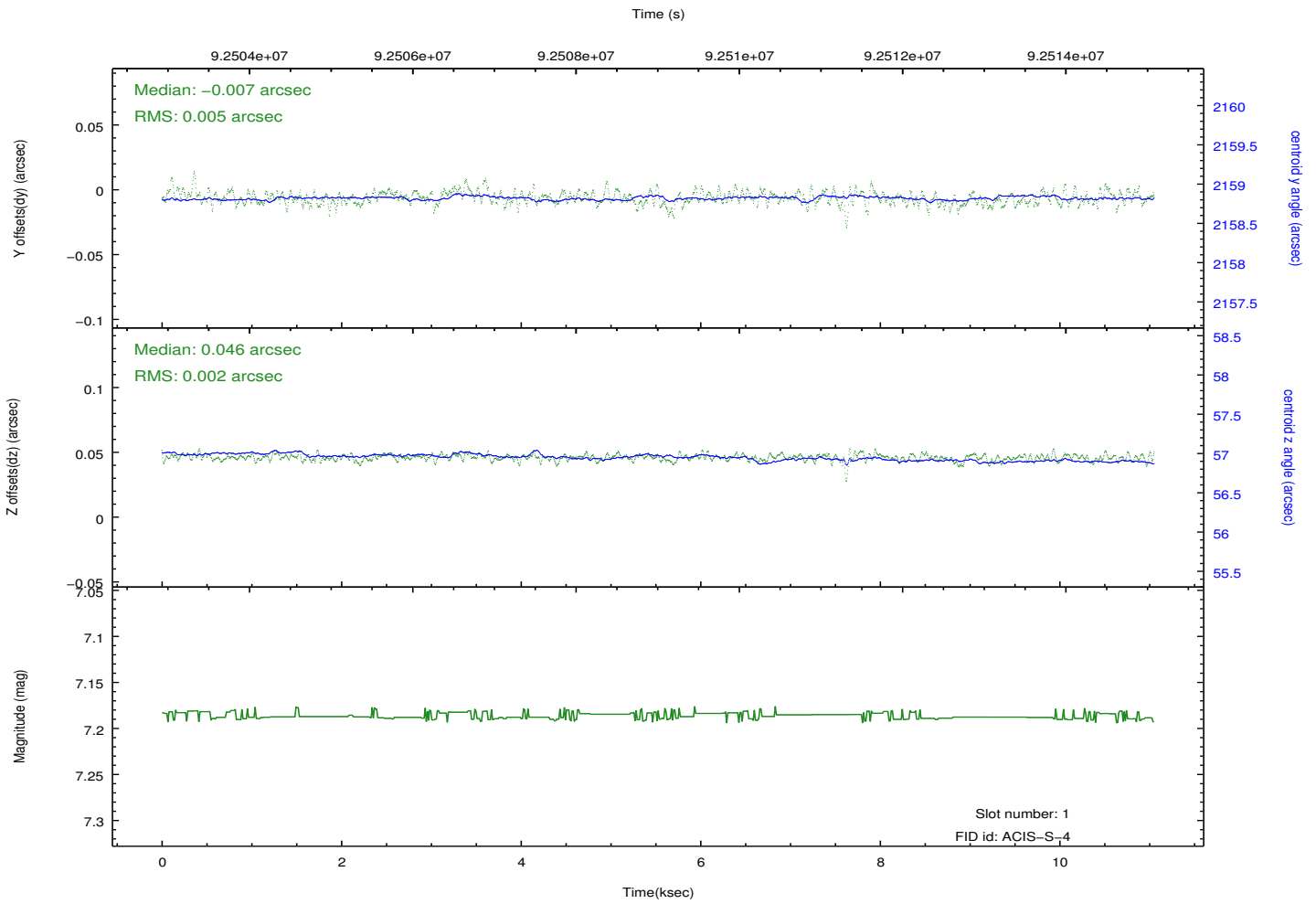
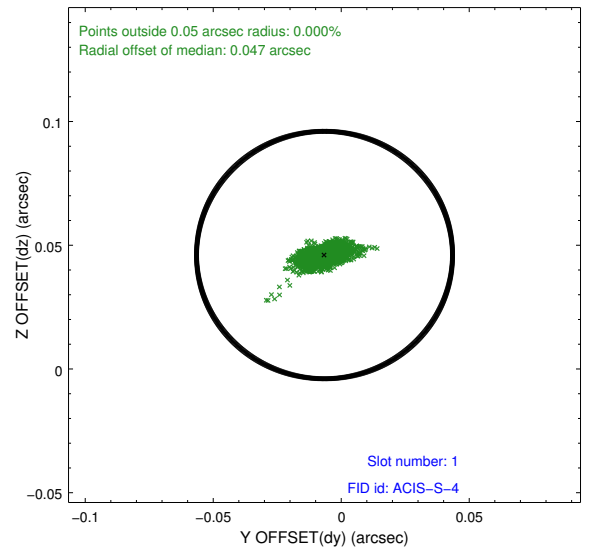
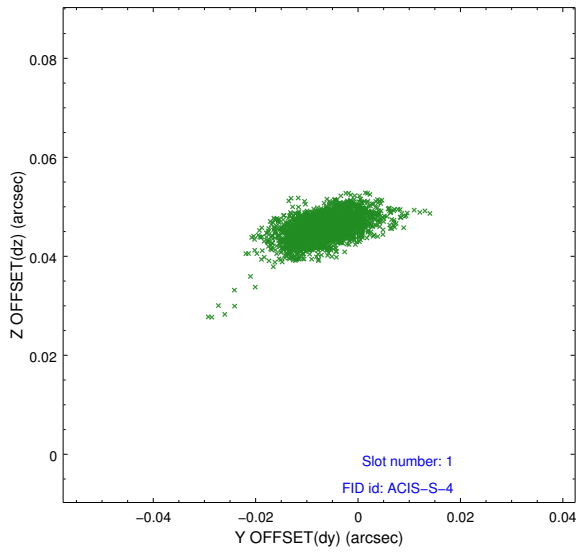


## 2.5 FID Slots

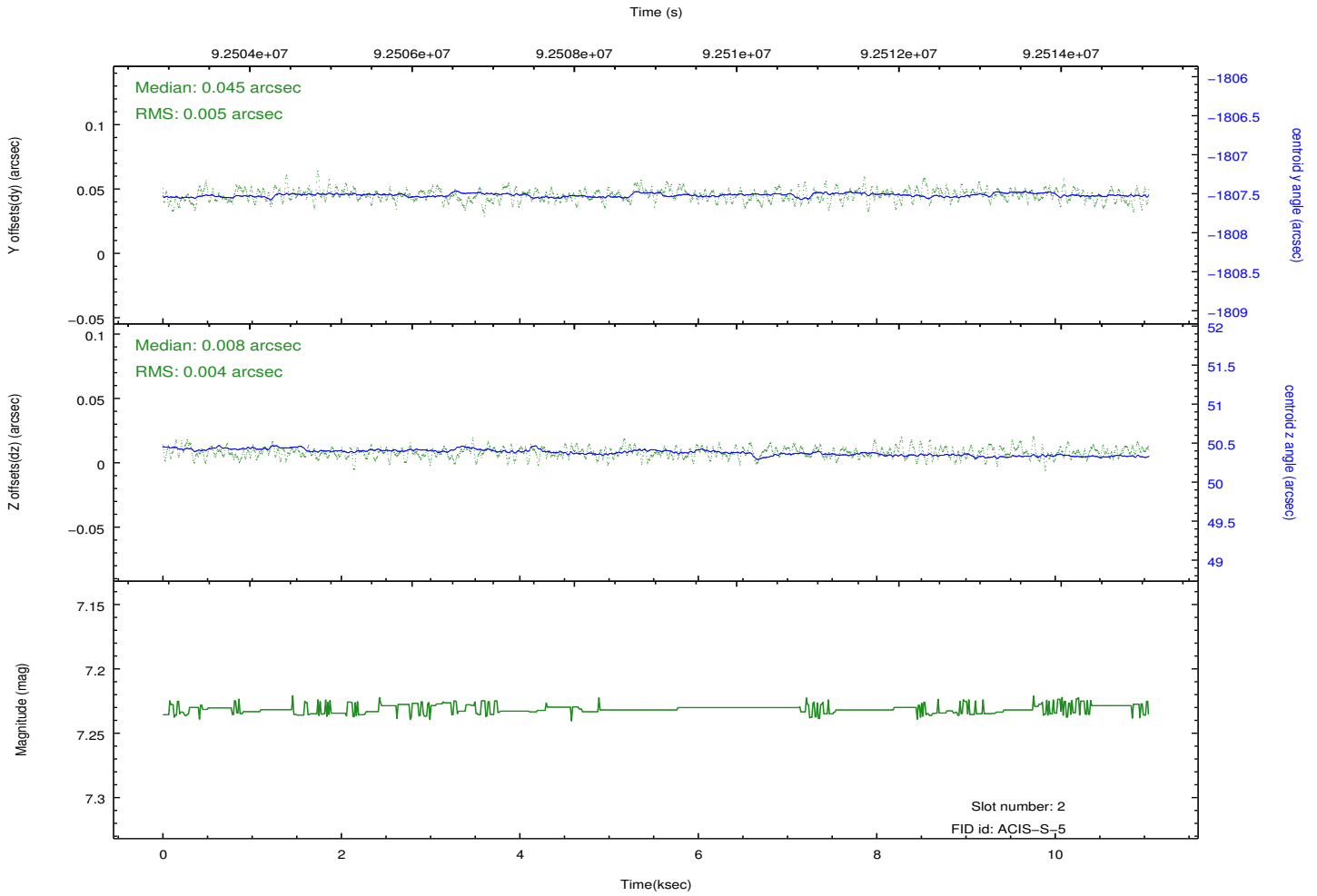
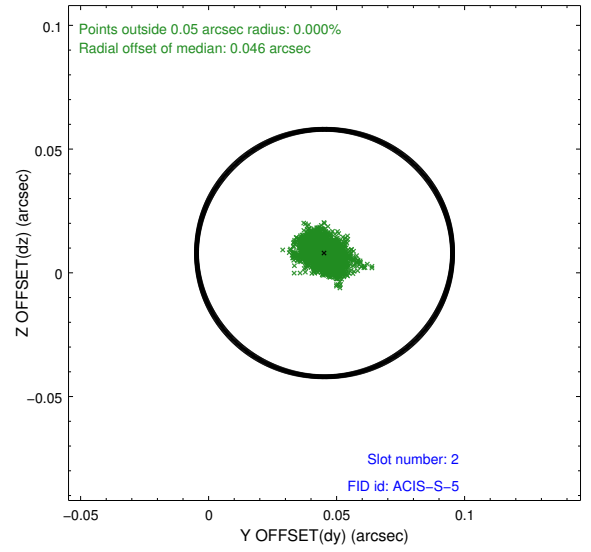
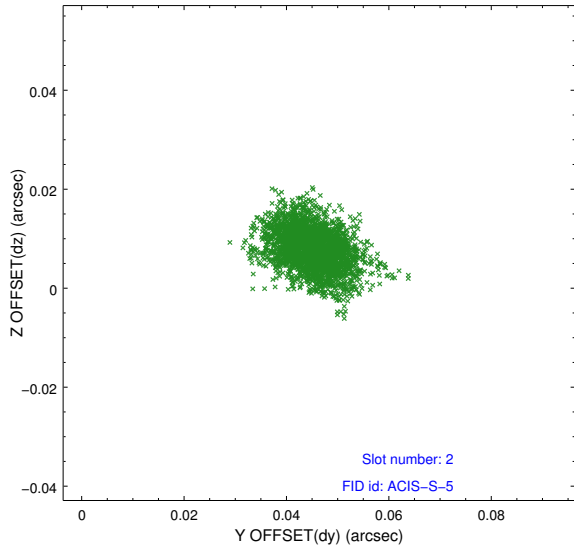
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

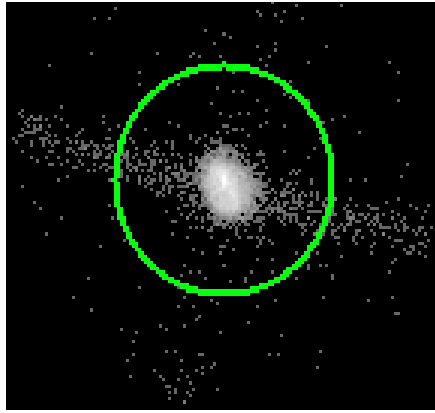


### 3 Gratings

#### 3.1 LETG Arm



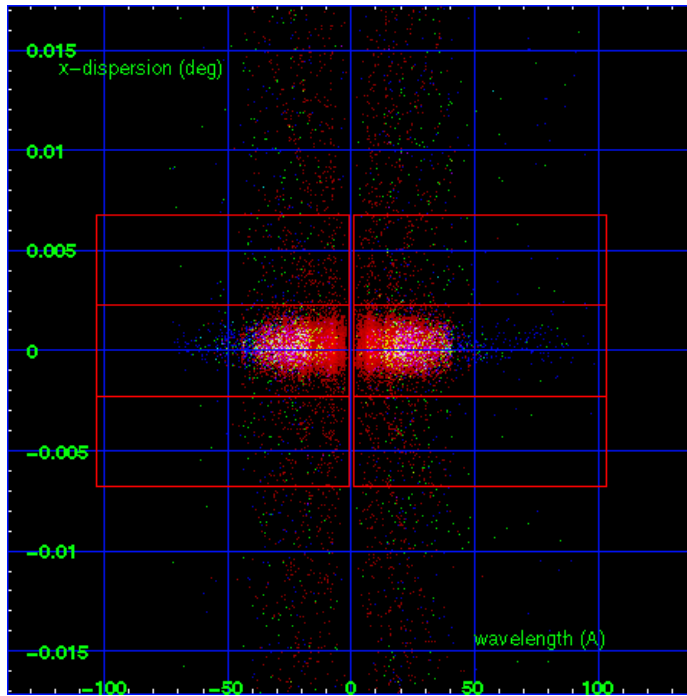
LETG Order Sort 123



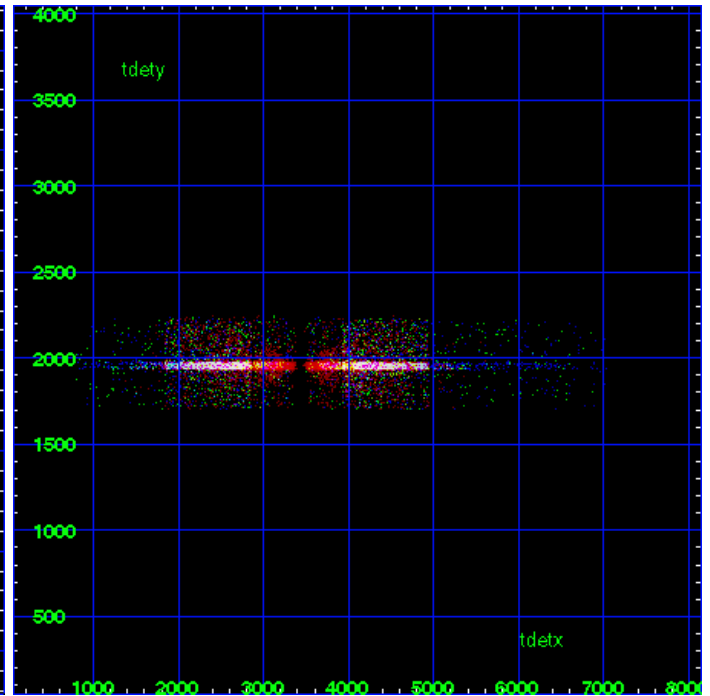
LETG Zero Order



LETG Order Sort ALL

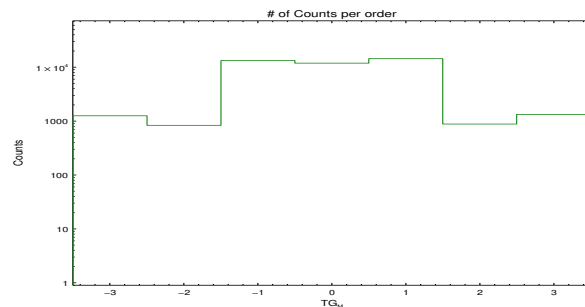


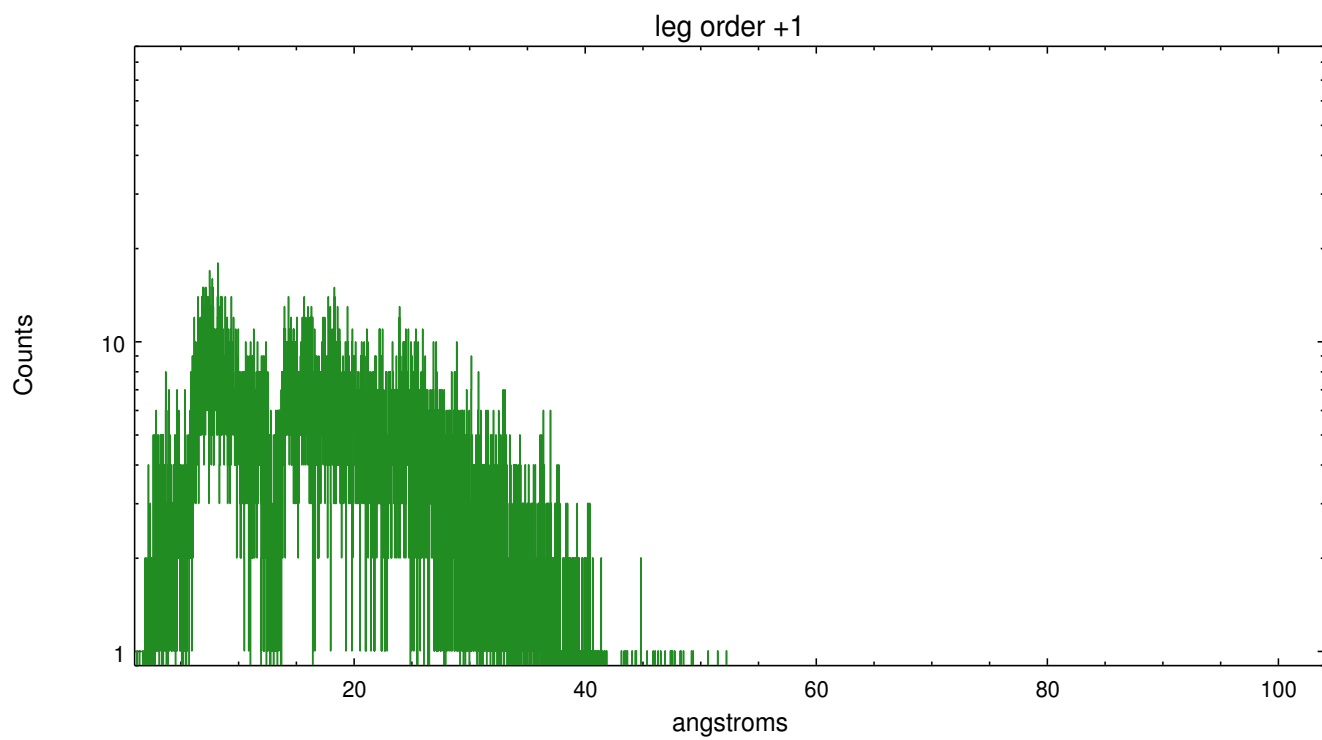
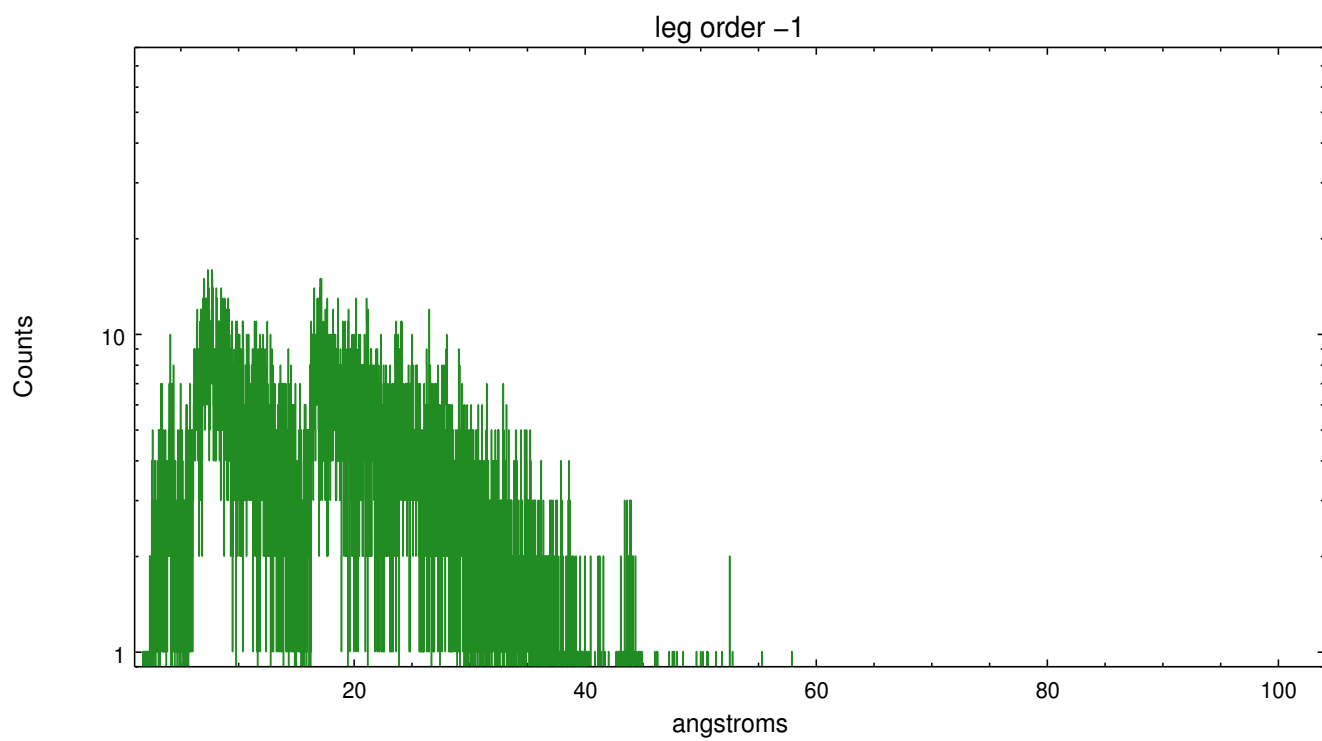
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1261	837	13396	11986	14535	885	1336





# A Summary

## A.1 Status

V&V Scientist	David Huenemoerder
V&V Date (YYYY-MM-DD)	2013.03.20
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.635

## A.2 Comments

warning: far off-axis; there is no grating line spread function calibration for off-axis sources.