

# V&V Reference Report

## L2 ASCDS Version : 8.4.5

Observation 5330 - L2 Version 3  
Chandra X-Ray Center

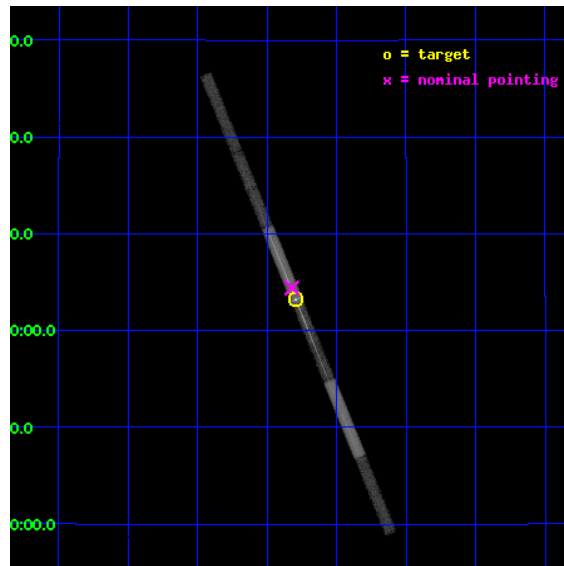
L2 Processing Date : Dec 3 2012

## 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	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

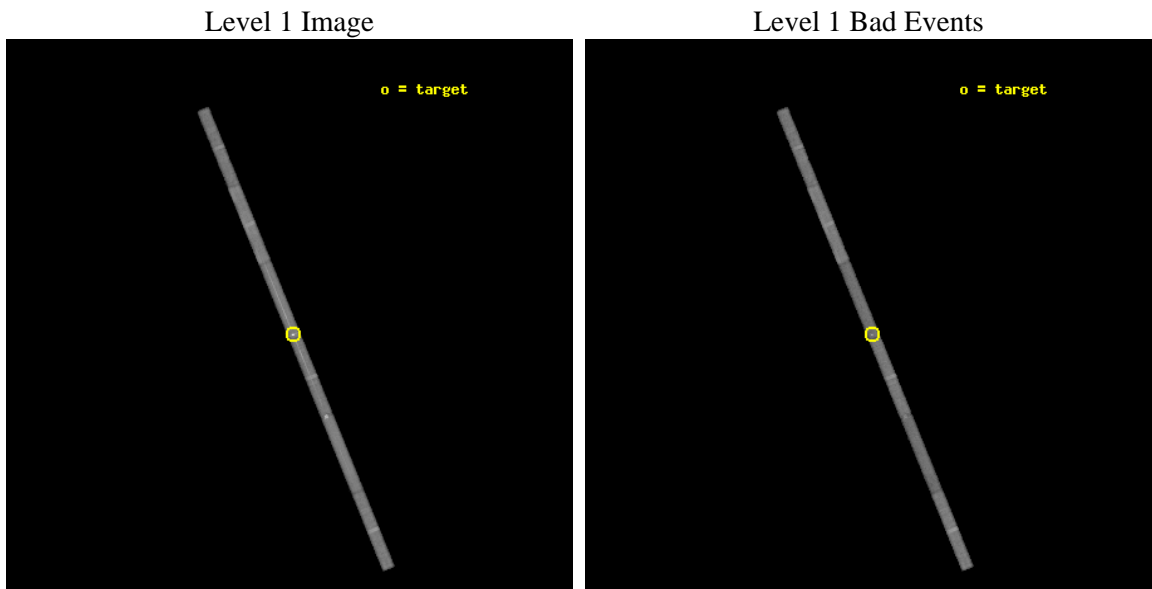
seq_num	700962	Sequence number
obs_id	5330	Observation id
title	Revealing the High Velocity Outflow in PG 1211+143	Proposal title
observer	Dr James Reeves	Principal investigator
object	PG 1211+143	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	183.57375	Observer's specified target RA [deg]
dec_targ	14.053611	Observer's specified target Dec [deg]
ra_nom	183.58040672253	Nominal RA [deg]
dec_nom	14.073617934734	Nominal Dec [deg]
roll_nom	247.71315285677	Nominal Roll [deg]
revision	3	Processing version of data
ontime	45189.199230433	Sum of GTIs [s]
livetime	42686.547907404	Livetime [s]
ontime4	45189.199230433	Sum of GTIs [s]
ontime5	45189.199230433	Sum of GTIs [s]
ontime6	45189.199230433	Sum of GTIs [s]
ontime7	45189.199230433	Sum of GTIs [s]
ontime8	45189.199230433	Sum of GTIs [s]
ontime9	45189.199230433	Sum of GTIs [s]
l2events	112027	Number of level 2 events



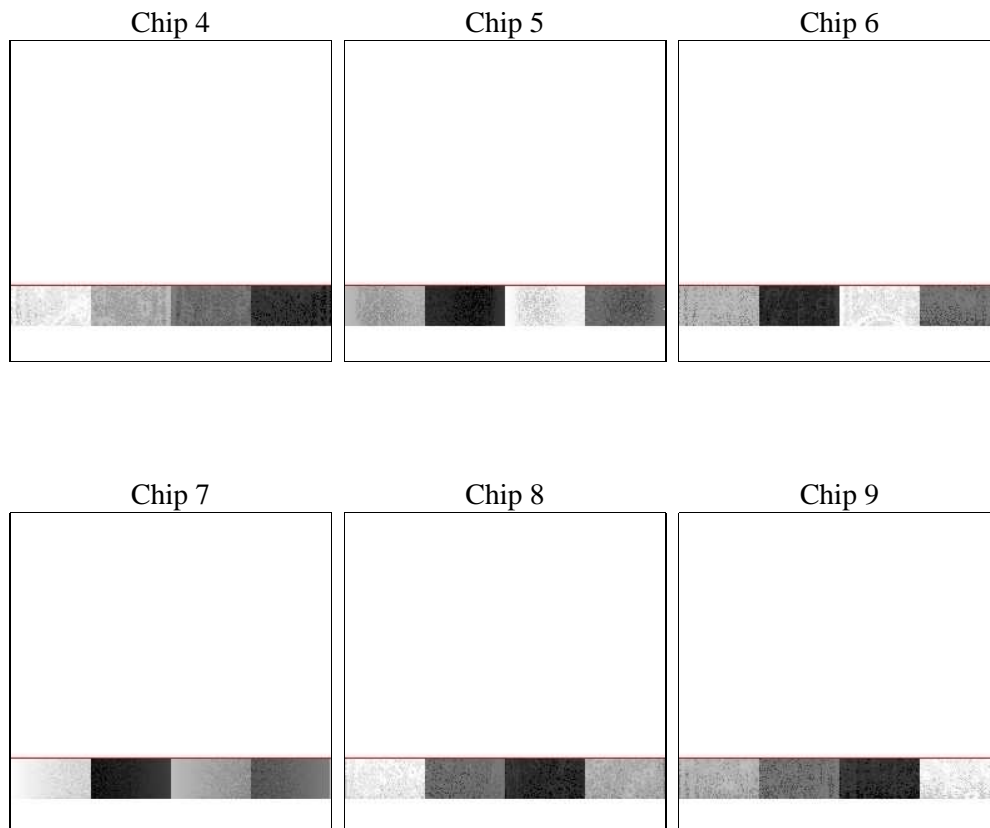
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	45000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	45189.199230433	Sum of GTIs [s]
caldbver	4.5.2	&#160	ontime4	45189.199230433	Sum of GTIs [s]
date	2012-12-03T07:24:11	Date and time of file creation	ontime5	45189.199230433	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	45189.199230433	Sum of GTIs [s]
			ontime7	45189.199230433	Sum of GTIs [s]
			ontime8	45189.199230433	Sum of GTIs [s]
			ontime9	45189.199230433	Sum of GTIs [s]
			l1events	425612	Number of level 1 events

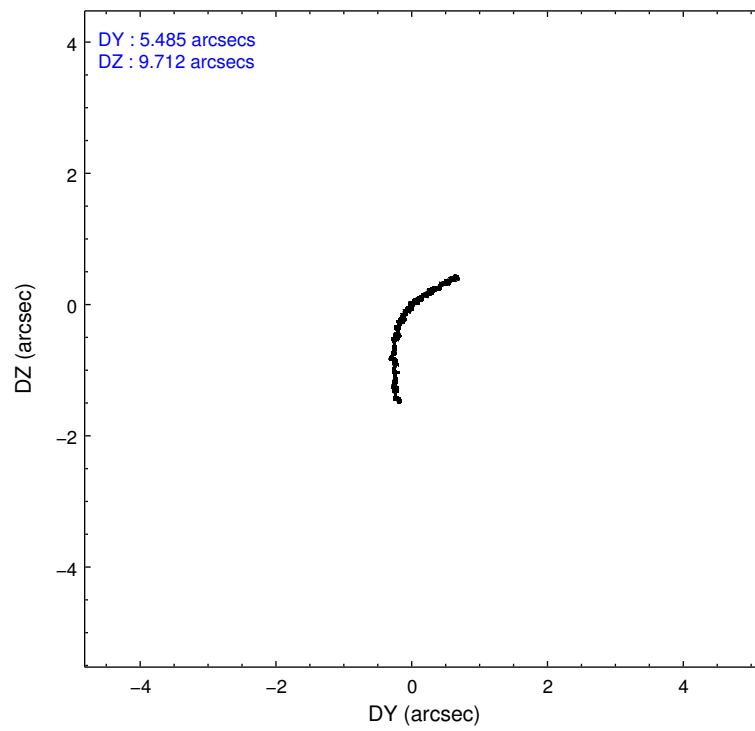
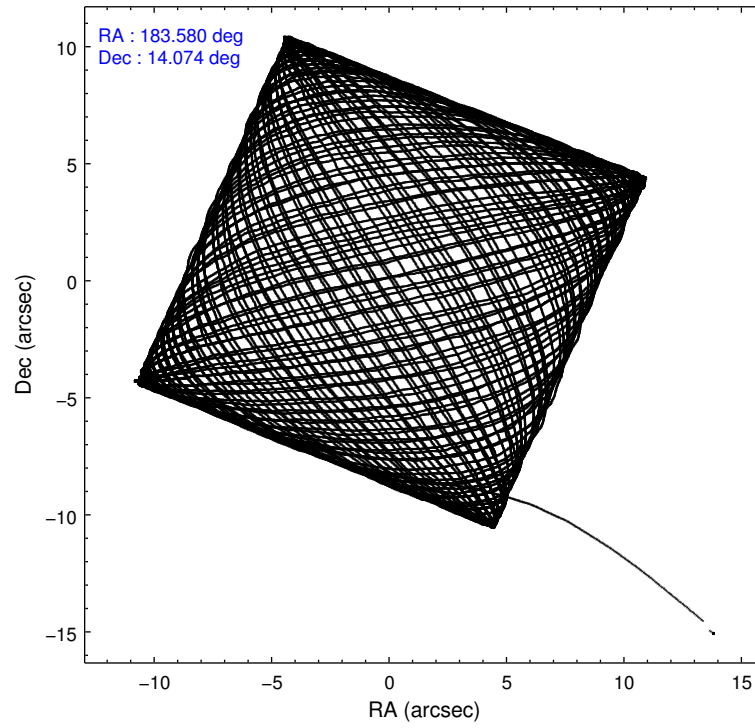
### 2.1.4 Events

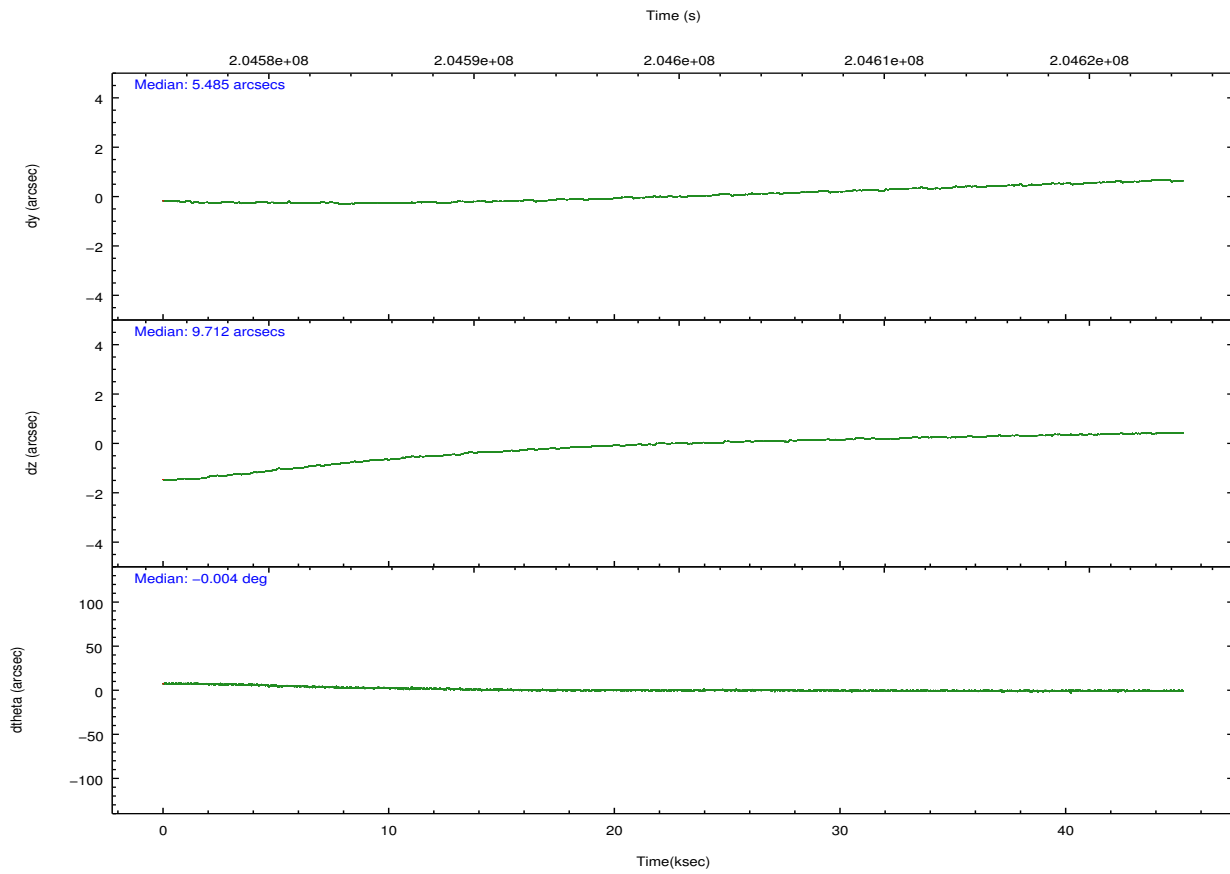
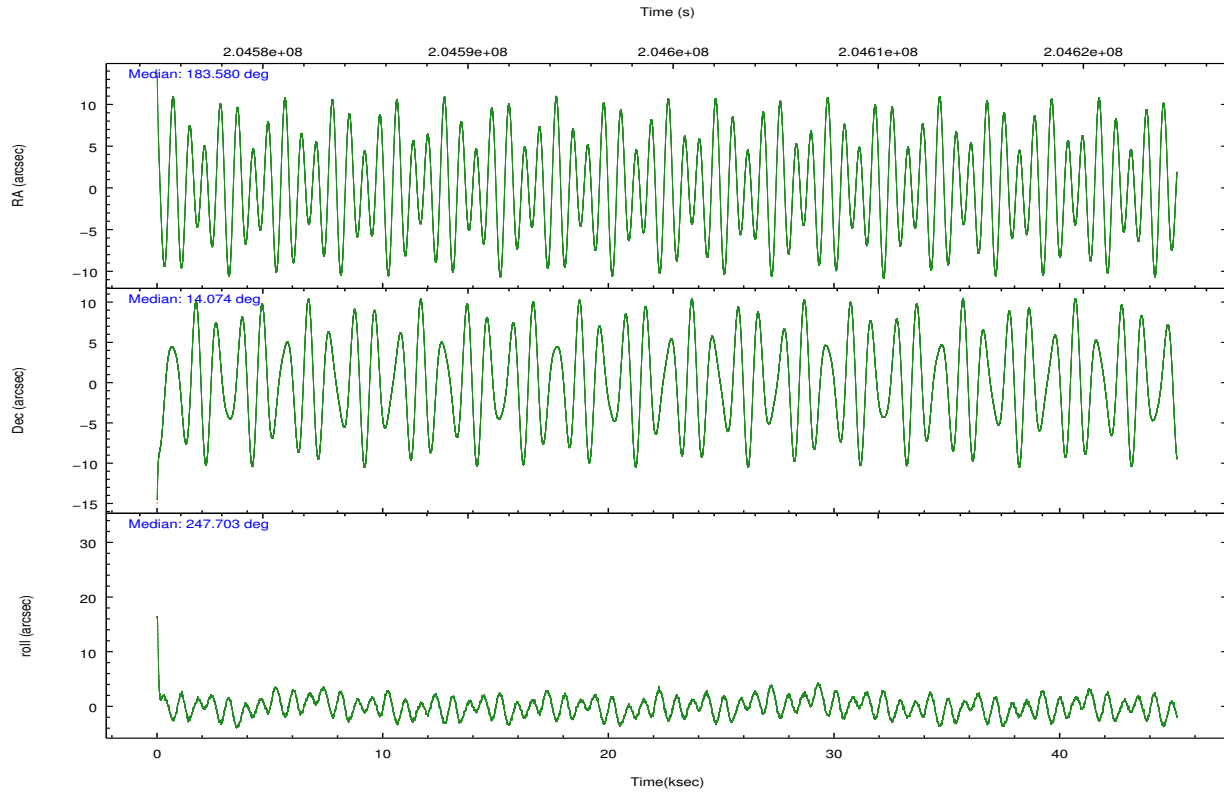
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	65240	74602	64347	89690	79019	52714	grade 0 events	2549	8696	8051	11325	4217	2394
rejected events	58351	37606	51086	36266	64519	46475		3%	11%	12%	12%	5%	4%
rejected %	89%	50%	79%	40%	81%	88%	grade 1 events	20	822	20	192	23	15
								0%	1%	0%	0%	0%	0%
							grade 2 events	1379	8859	1746	12451	2736	1018
								2%	11%	2%	13%	3%	1%
							grade 3 events	1117	3287	1256	6205	1851	1034
								1%	4%	1%	6%	2%	1%
							grade 4 events	1015	3094	1180	5964	1726	982
								1%	4%	1%	6%	2%	1%
							grade 5 events	1859	6127	1852	6030	2448	1881
								2%	8%	2%	6%	3%	3%
							grade 6 events	1088	15353	1273	18494	4500	1021
								1%	20%	1%	20%	5%	1%
							grade 7 events	56213	28364	48969	29029	61518	44369
								86%	38%	76%	32%	77%	84%

## 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	183.576275	183.5804067225294	Subarray requested	CUSTOM	1/8
[deg] Pointing Dec	14.100567	14.07361793473387	Subarray start row	113	113
[deg] Pointing Roll	247.557528	247.7131528567708	Subarray row count	128	128
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	0.7
[mm] SIM translation stage pos	-182.132523	-182.1370004450064			
[mm] SIM translation stage offset	-8	-7.995522138001405			
[s] Observation start time (MET)	204577302.184000	204575427.70642			
Observation start date	2004-06-25T19:00:38	2004-06-25T18:30:27			
[s] Observation end time (MET)	204622302.184000	204623974.27108			
Observation end date	2004-06-26T07:30:38	2004-06-26T07:59:34			
Read mode	TIMED	TIMED			

## 2.3 Aspect



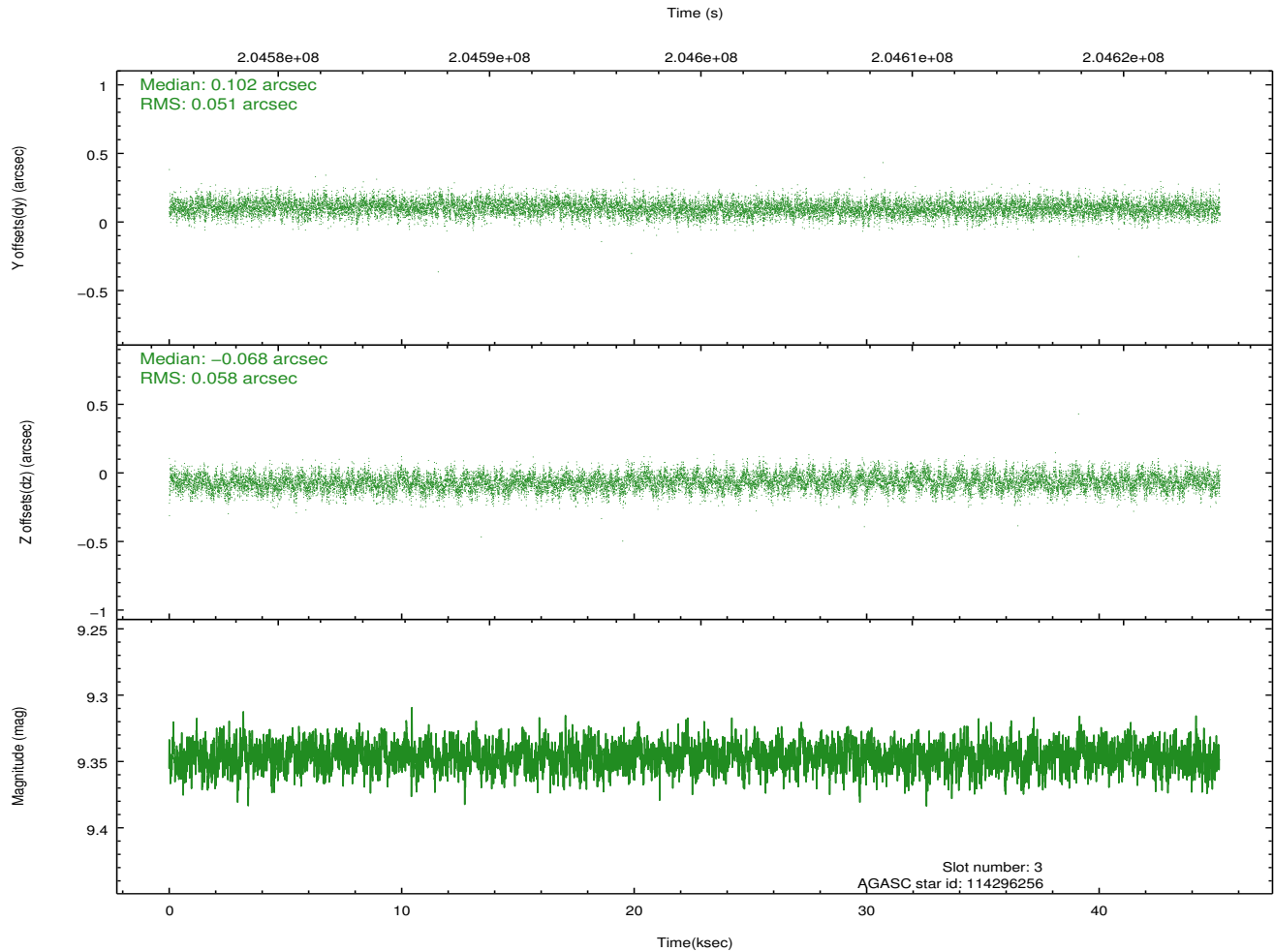
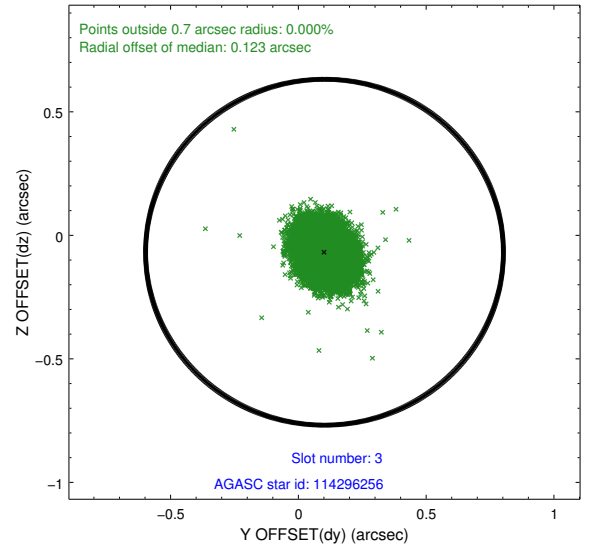
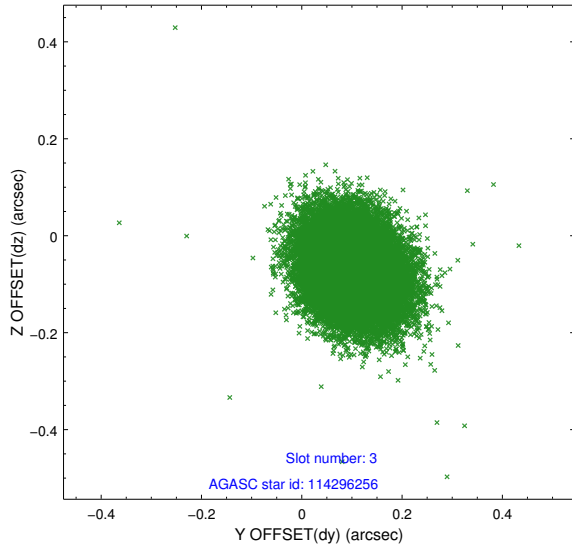


### Slot Statistics

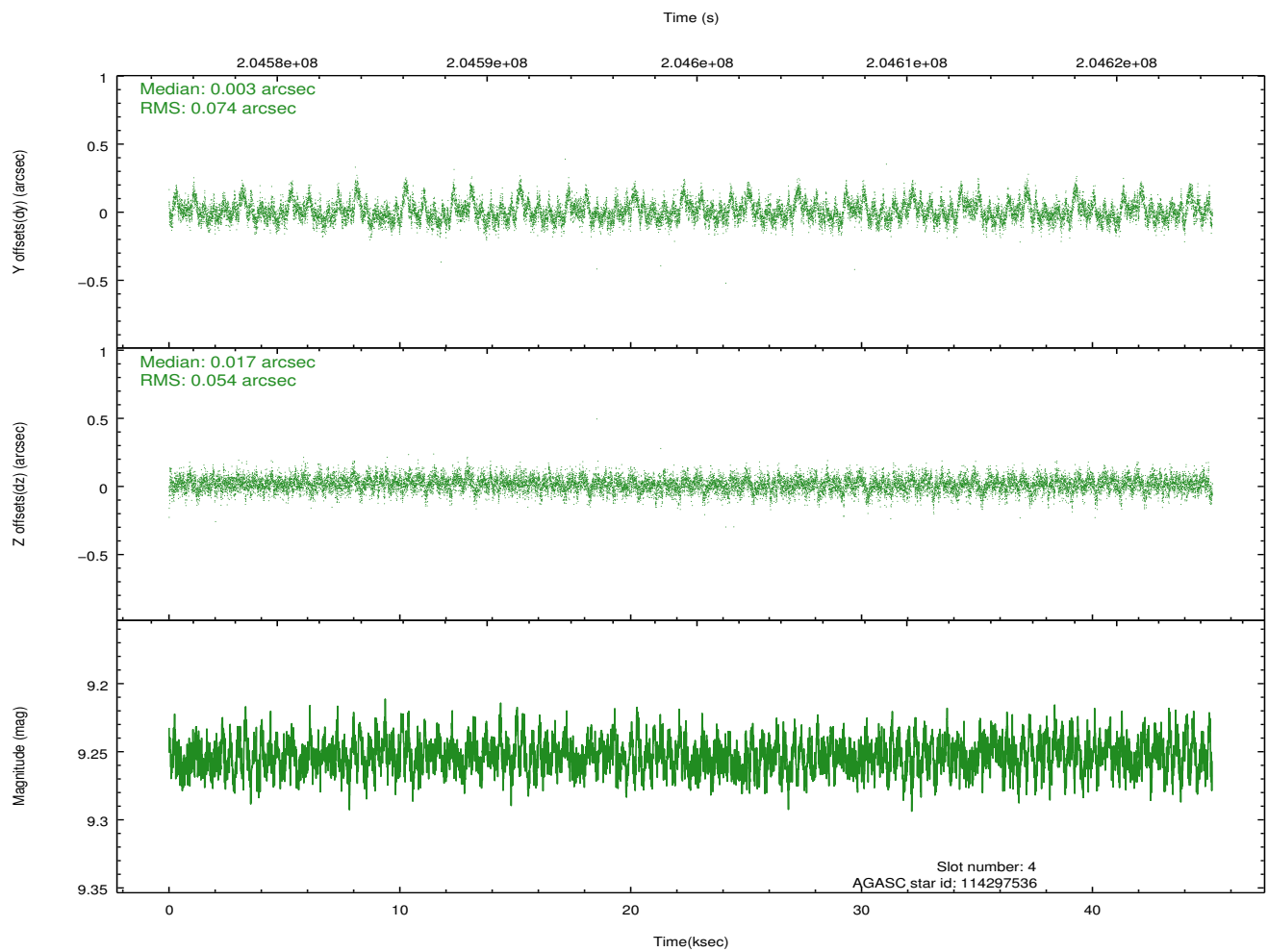
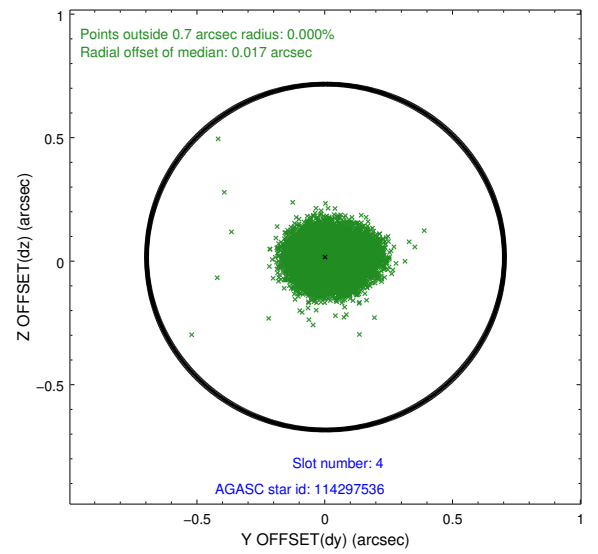
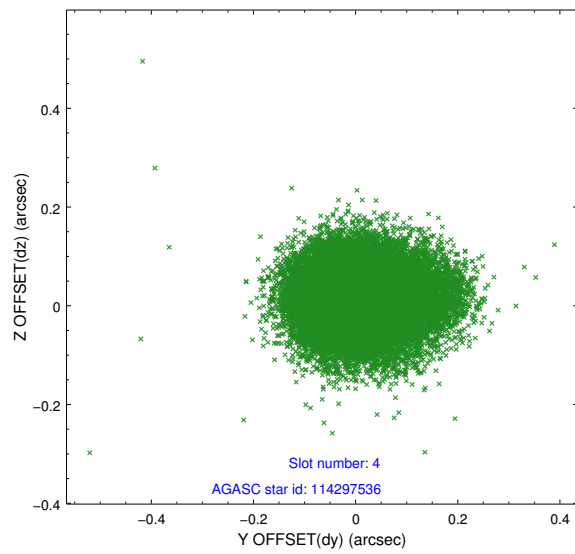
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-4	7.17	11023	0.113	0.041	0.027	0.039	0.000000	0.000000	2155.77	13.21
1	FID	ACIS-S-5	7.23	11023	-0.148	0.030	0.024	0.032	0.000000	0.000000	-1810.70	6.70
2	FID	ACIS-S-6	7.40	11022	0.006	-0.057	0.009	0.015	0.000000	0.000000	403.93	650.34
3	GUIDE	114296256	9.35	22027	0.102	-0.068	0.082	0.134	182.985406	14.017213	1063.55	-1793.37
4	GUIDE	114297536	9.25	22028	0.003	0.017	0.095	0.161	183.757120	14.264956	-787.81	357.40
5	GUIDE	114301168	9.22	22030	0.085	-0.114	0.091	0.147	182.996668	14.071189	868.78	-1830.83
6	GUIDE	114303096	9.30	22036	-0.027	-0.081	0.094	0.148	183.214020	14.515722	-899.67	-1737.89
7	GUIDE	115218912	8.29	22040	-0.170	0.245	0.084	0.131	184.400783	14.442830	-2240.93	2184.36

## 2.4 Star Slots

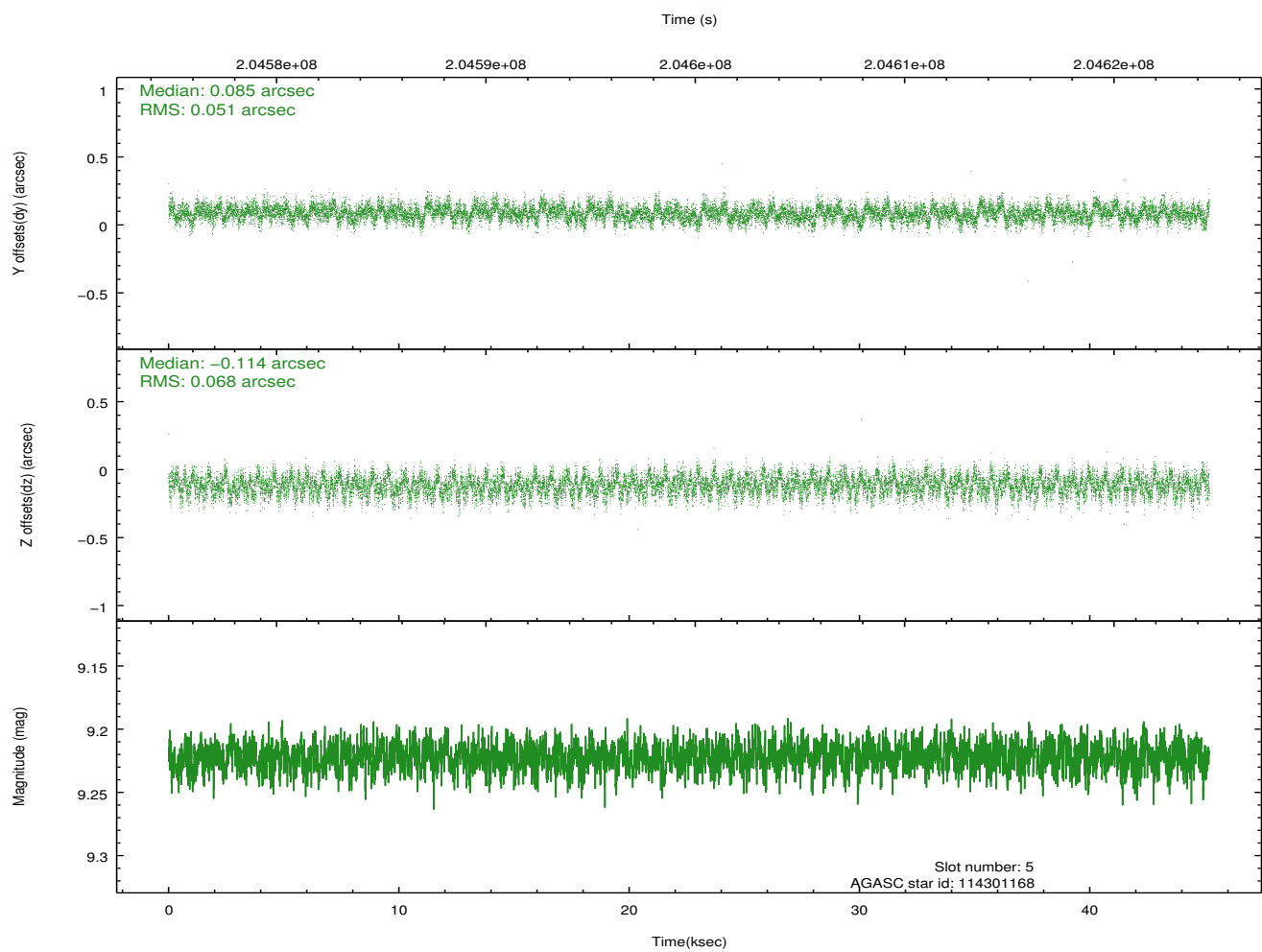
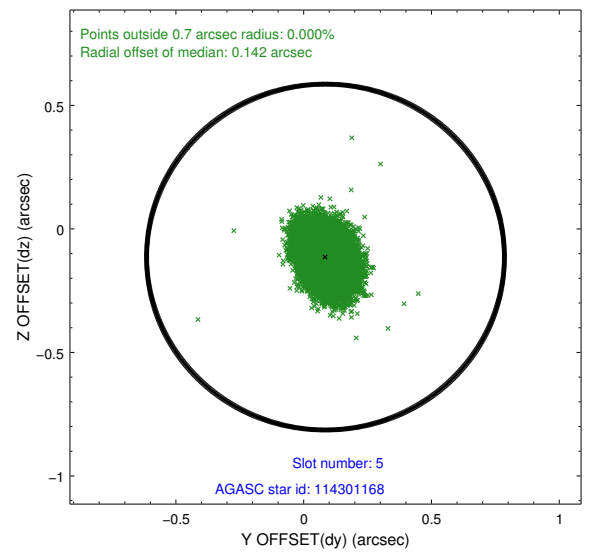
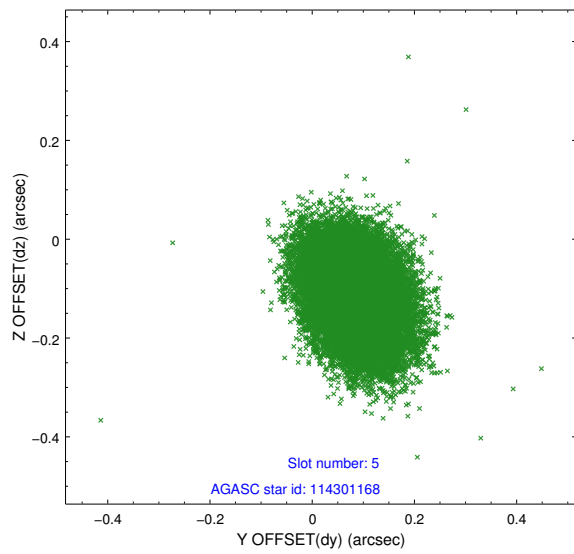
### 2.4.1 Slot 3



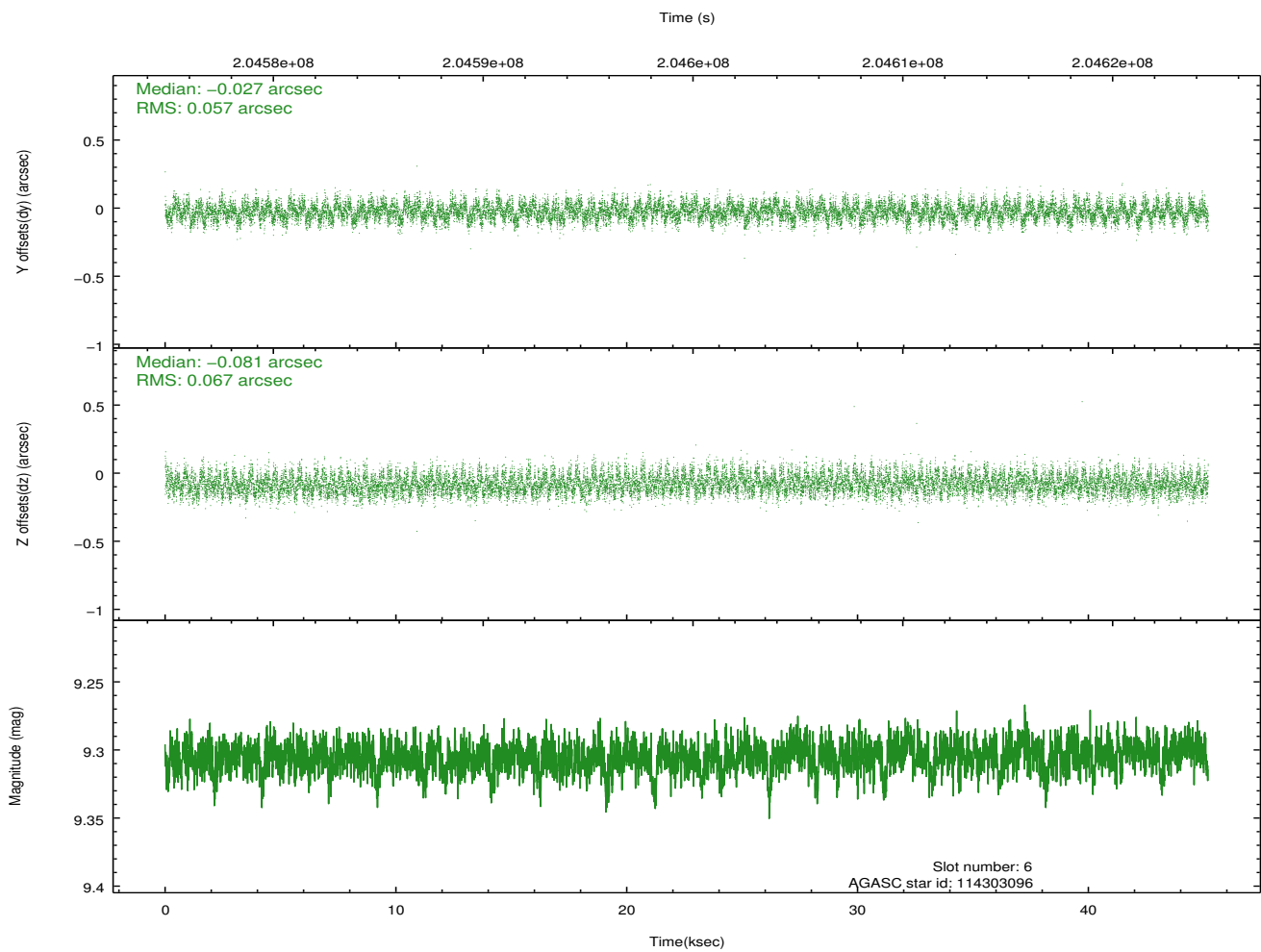
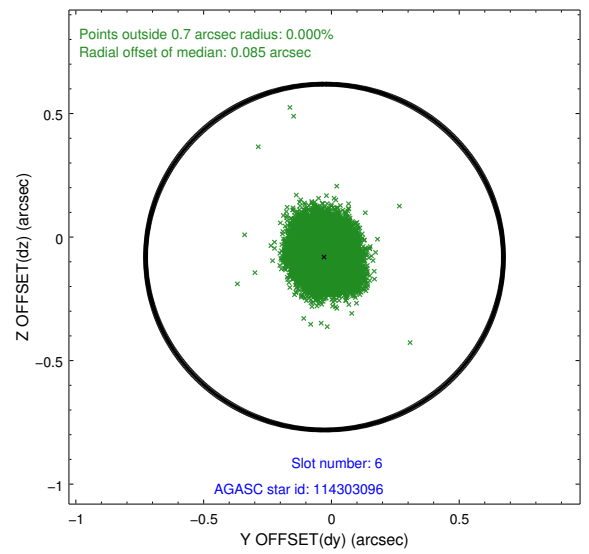
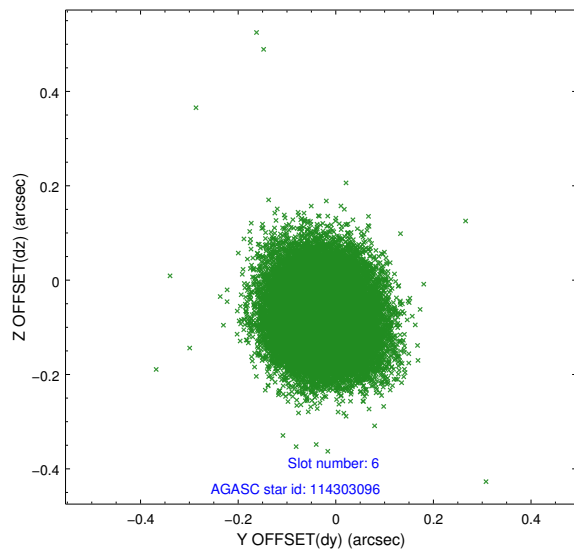
## 2.4.2 Slot 4



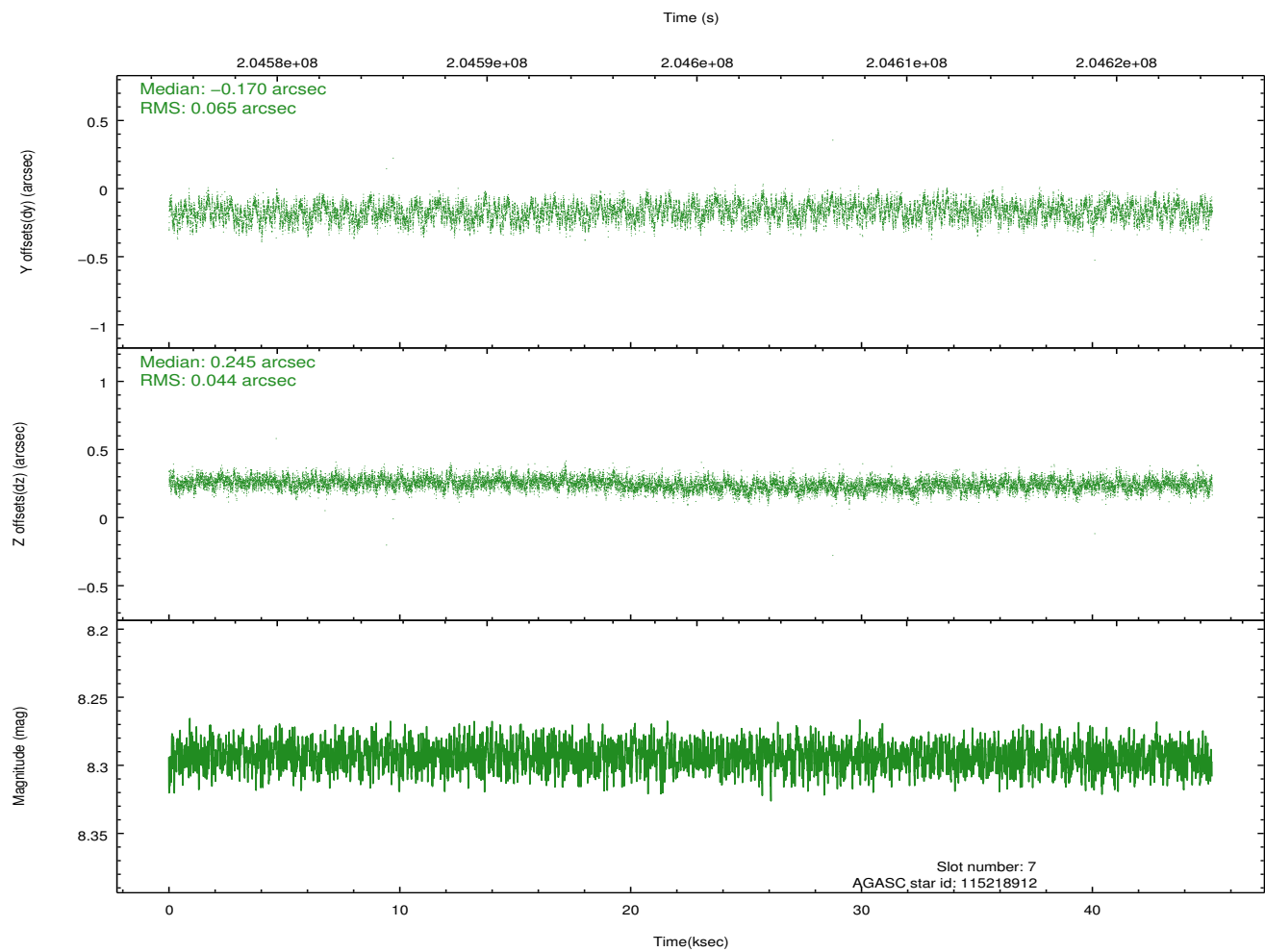
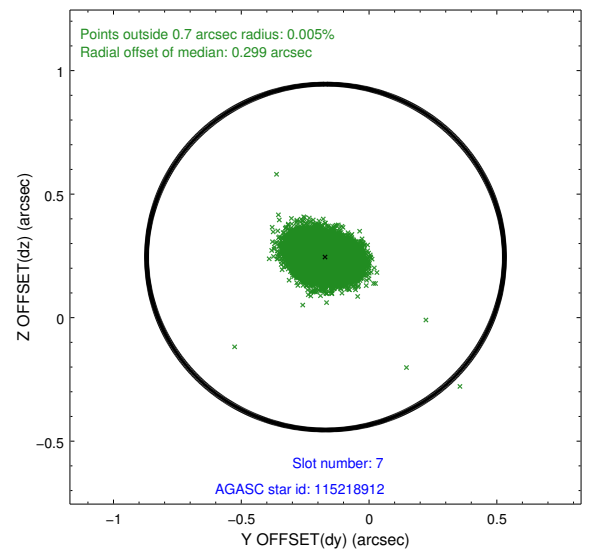
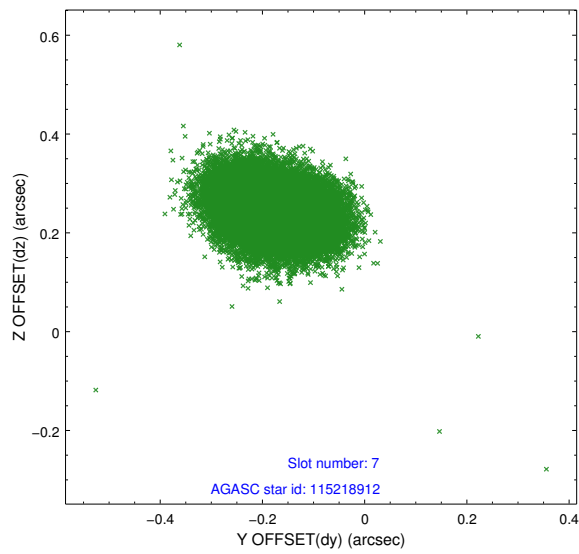
### 2.4.3 Slot 5



## 2.4.4 Slot 6

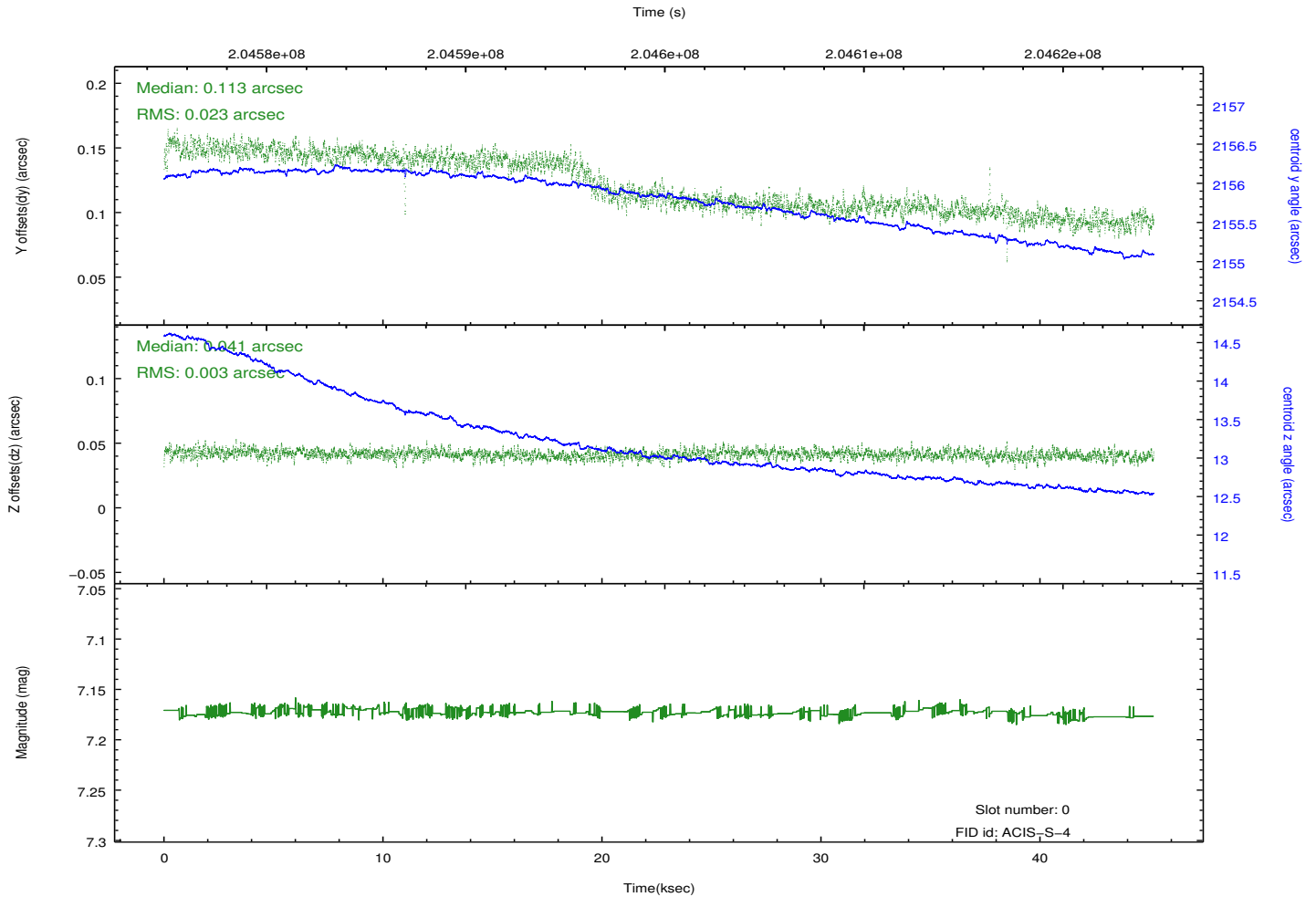
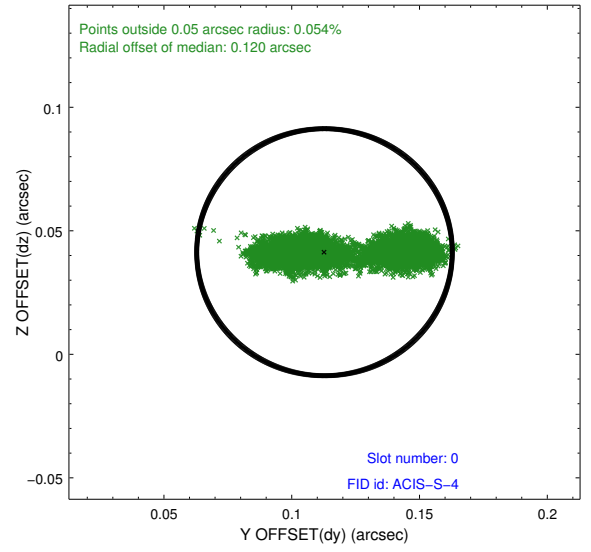
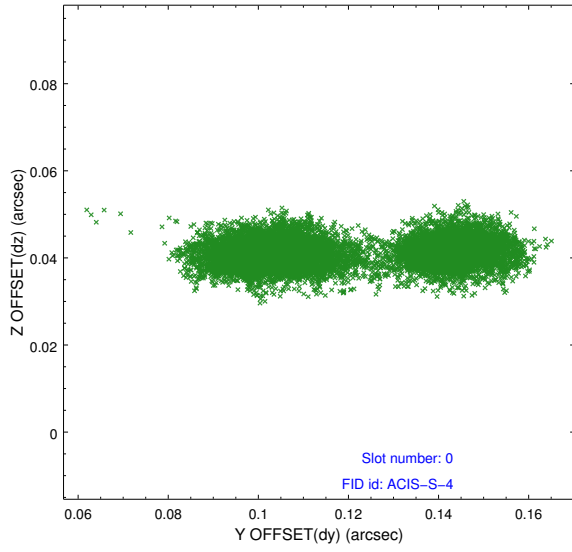


## 2.4.5 Slot 7

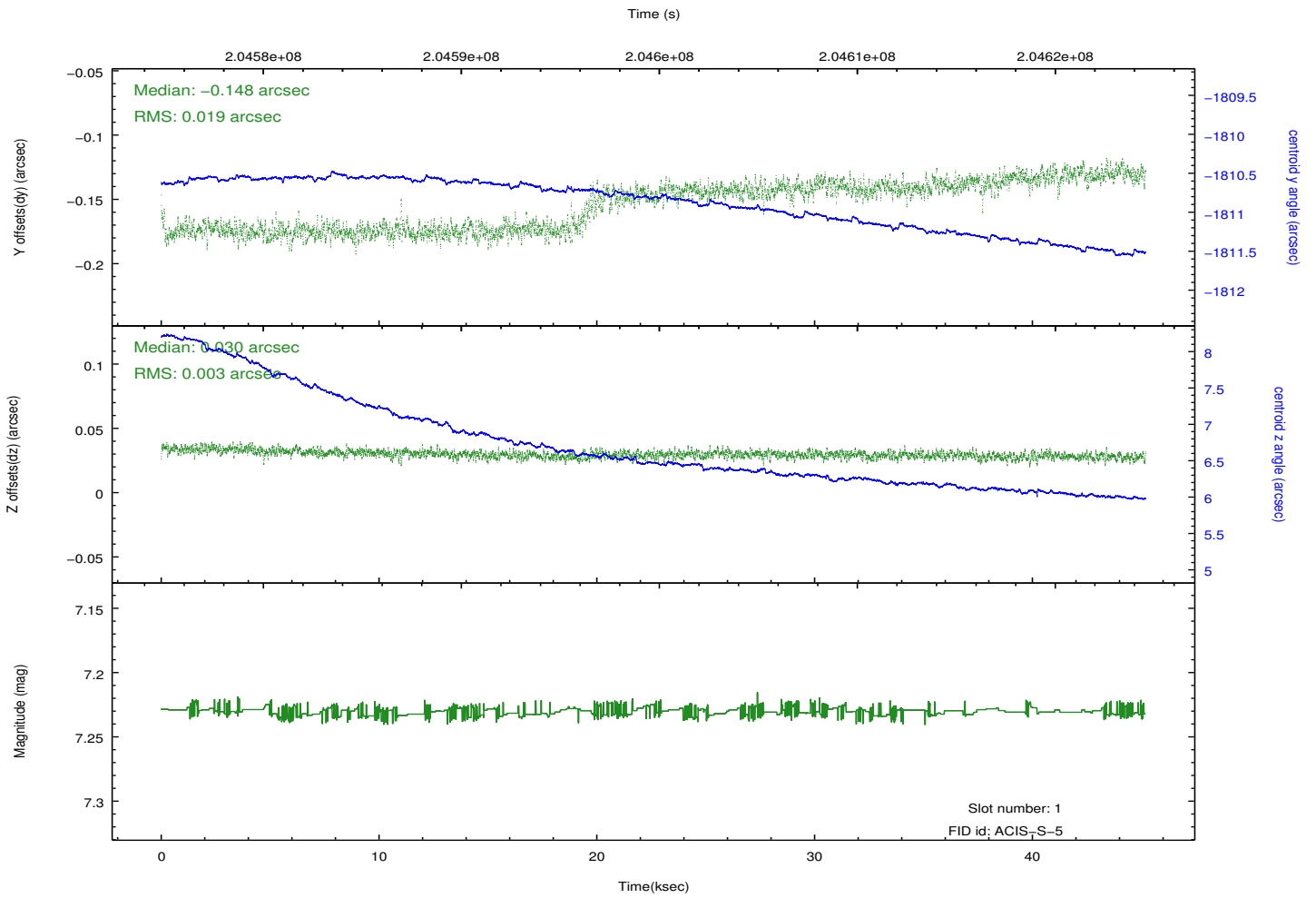
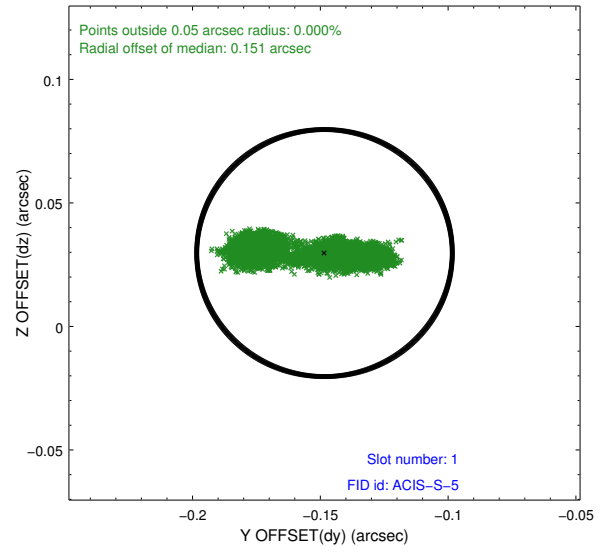
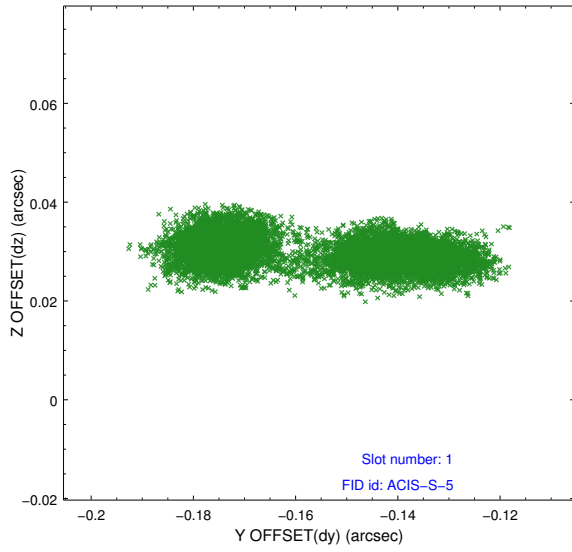


## 2.5 FID Slots

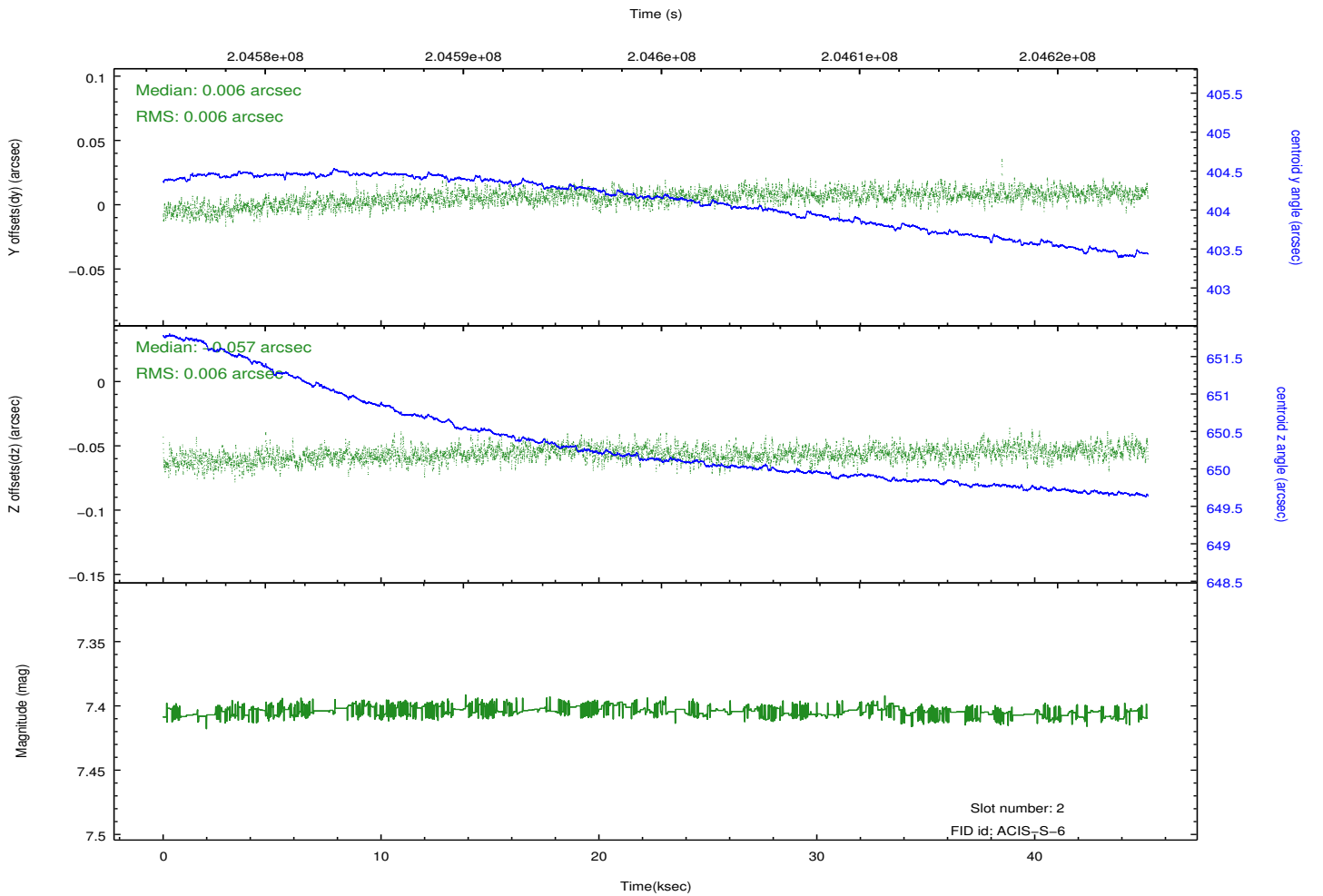
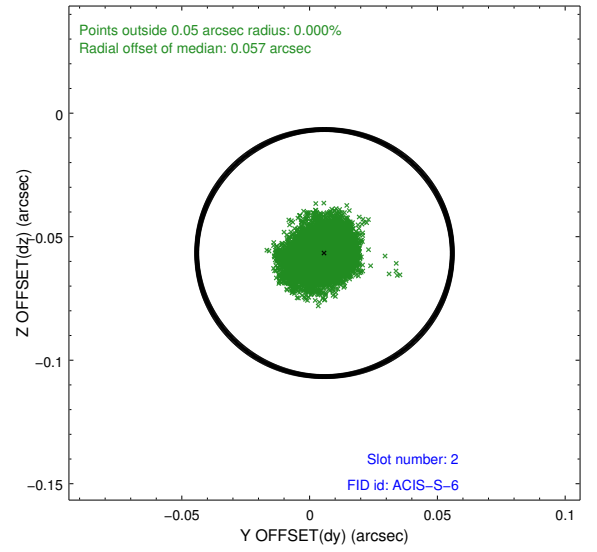
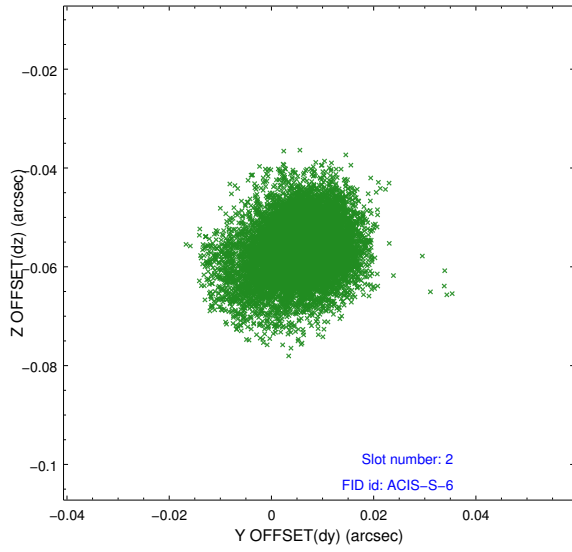
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

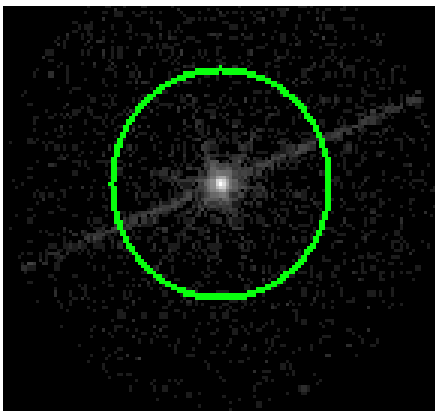


### 3 Gratings

#### 3.1 LETG Arm



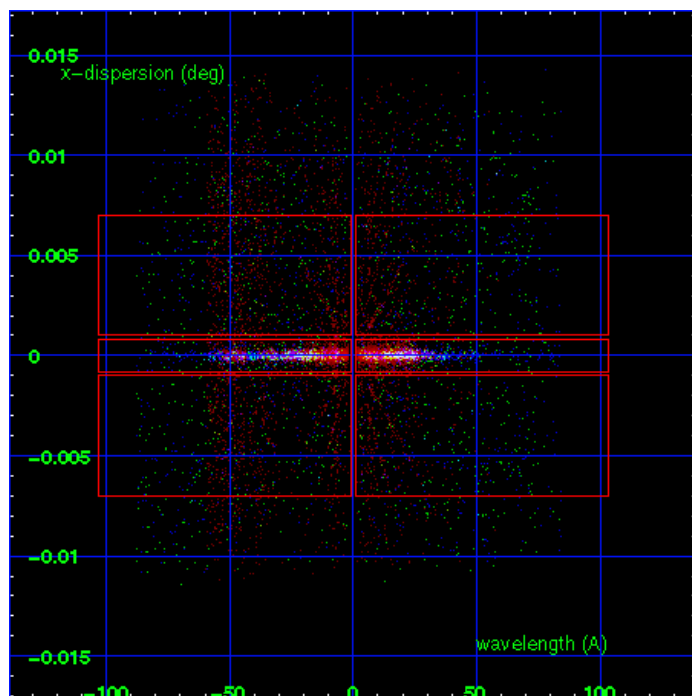
LETG Order Sort 123



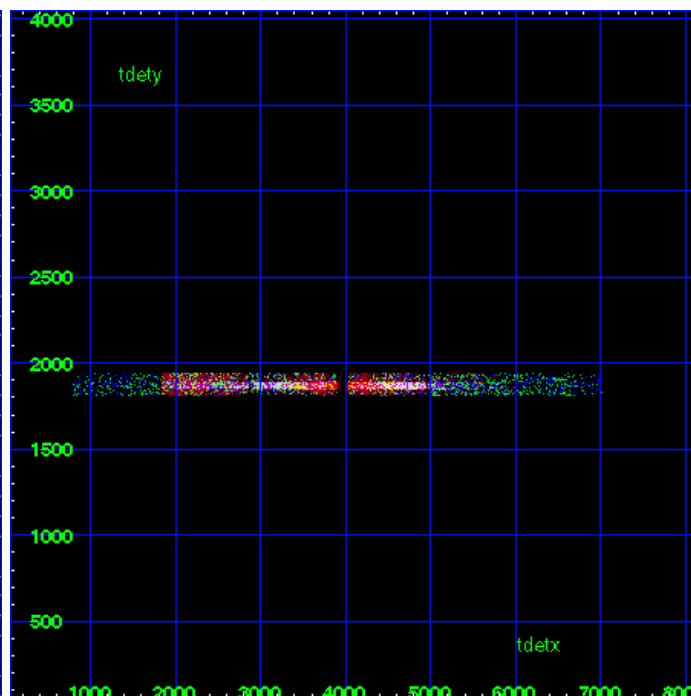
LETG Zero Order



LETG Order Sort ALL

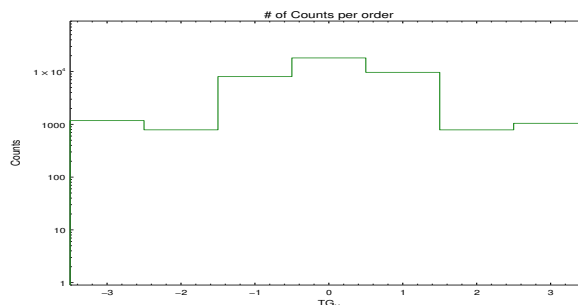


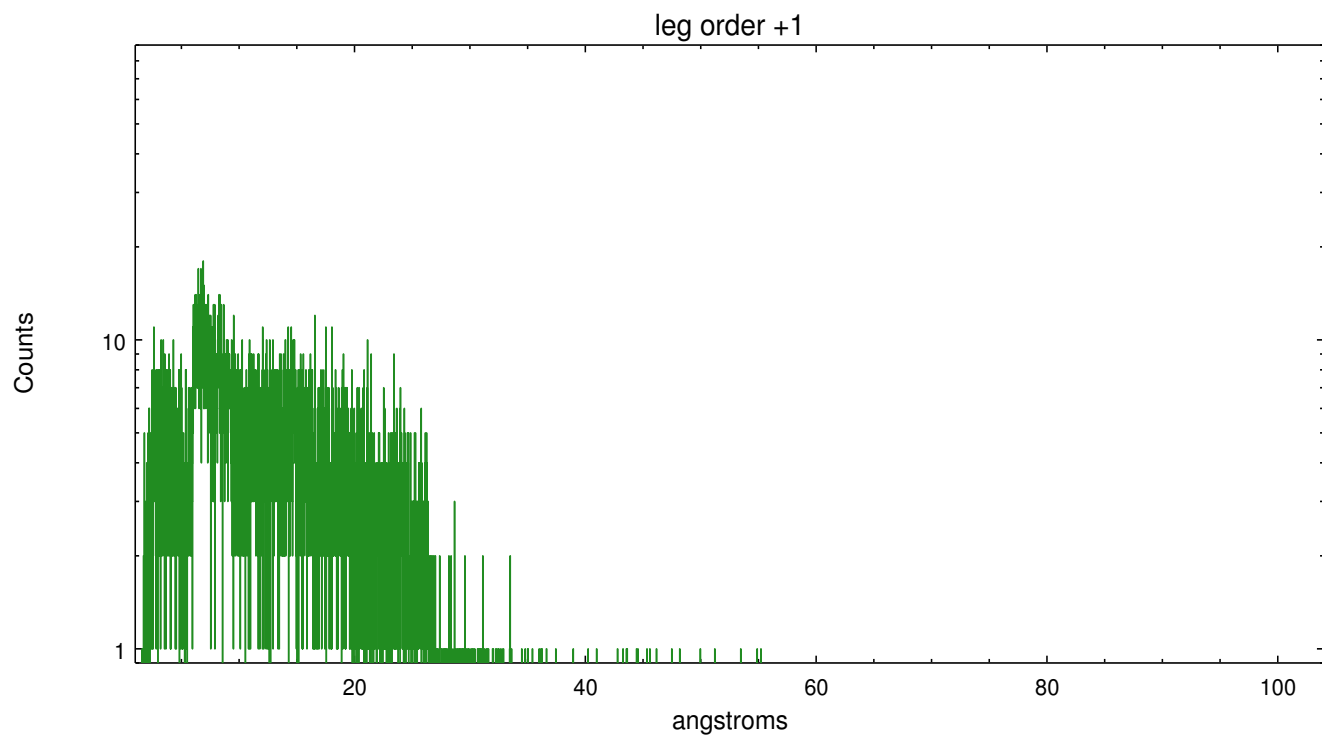
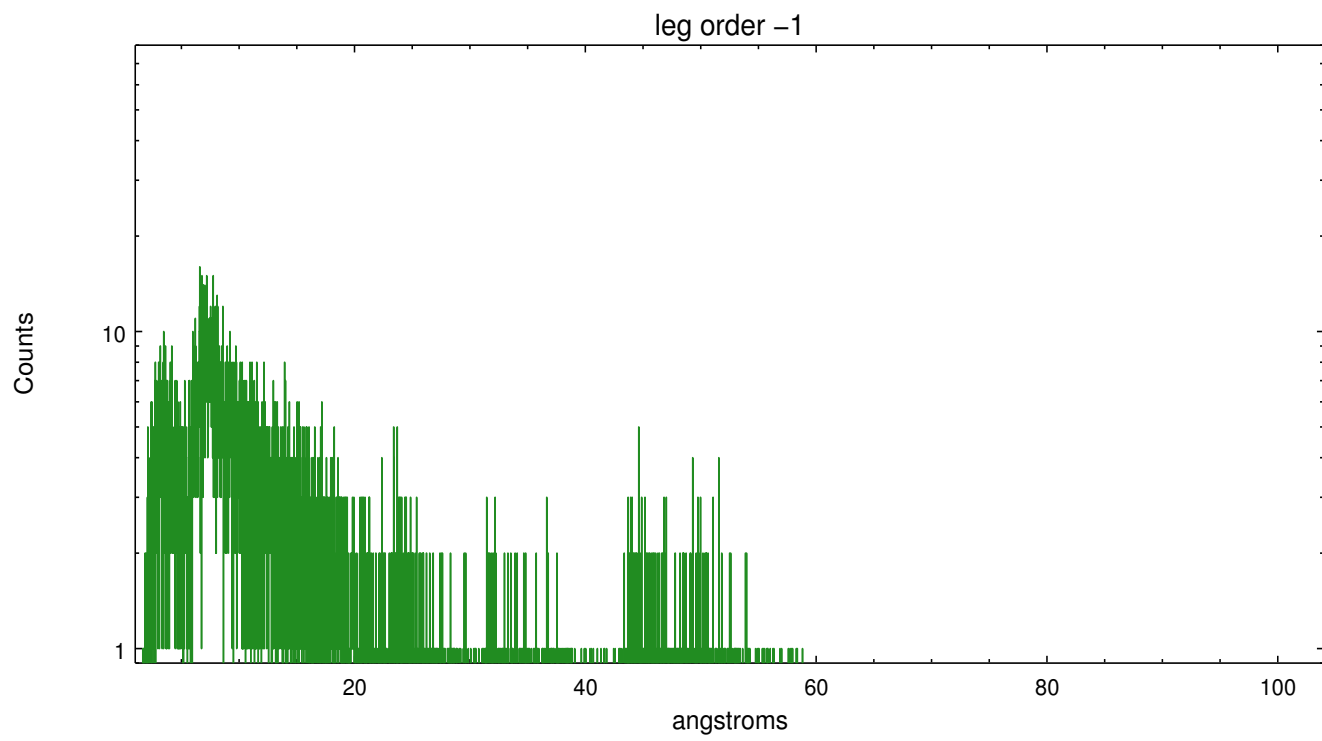
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1177	787	8031	18152	9671	786	1046





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	45.189

## A.2 Comments

Gain and CTI correction are not well calibrated on CCD\_ID 5 (ACIS-S1). Default order sorting can clip some regions, particularly longward of 30A (first order). User-specified custom processing parameters may be required in `tg_resolve_events` (`osipfile=None`, `osort_lo`, `osort_hi ~0.5`) though this can allow more zeroth order background at short wavelengths.