

# V&V Reference Report

## L2 ASCDS Version : 7.6.7.2

Observation 5318 - L2 Version 001  
Chandra X-Ray Center

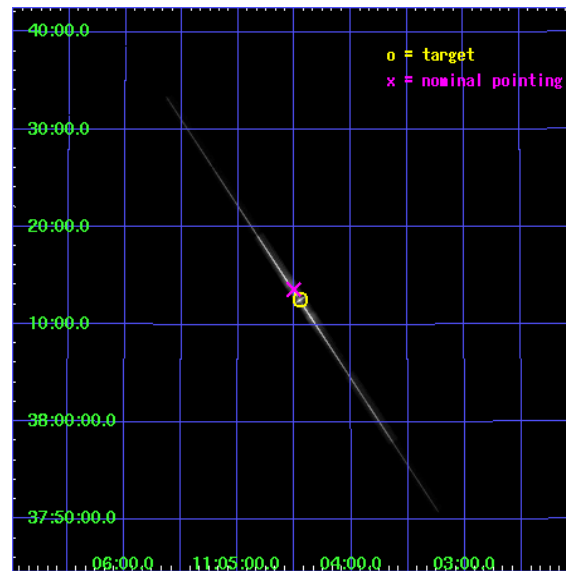
L2 Processing Date : May 18 2006

## 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

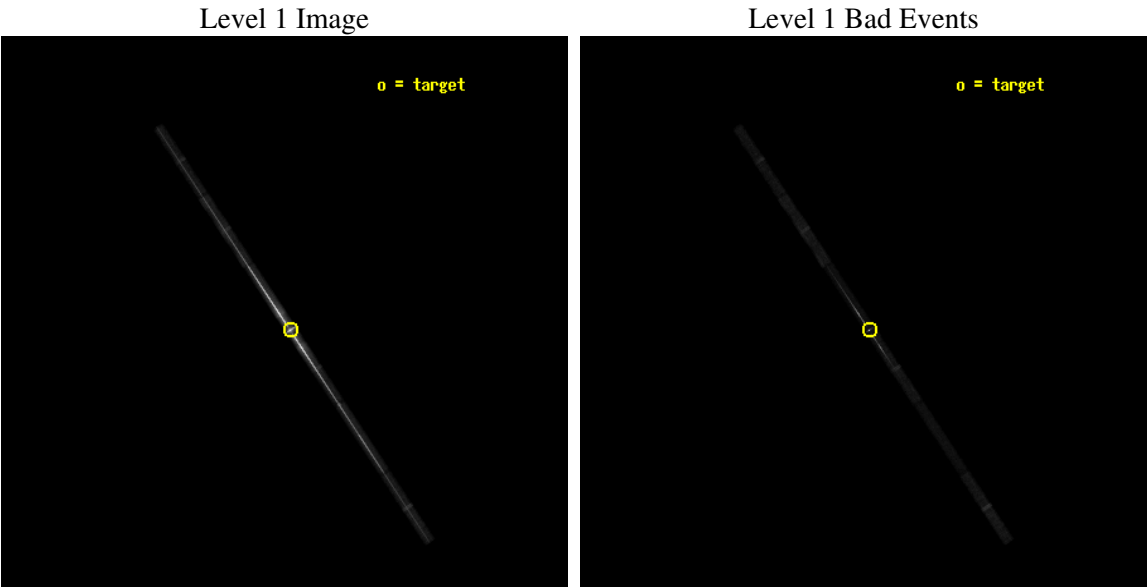
seq_num	790094
obs_id	5318
title	Measuring the depth of the contaminant on ACIS with a LETG/ACIS-S observation of Mkn 421
observer	Dr. CXC Calibration
object	Mkn 421
dtcycle	0
cycle	P
ra_targ	166.113333
dec_targ	38.208806
ra_nom	166.12642137938
dec_nom	38.227169550101
roll_nom	236.38121548352
revision	2
ontime	30160.899486363
livetime	28490.539836519
ontime4	30160.899486363
ontime5	30160.899486363
ontime6	30160.899486363
ontime7	30160.899486363
ontime8	30160.899486363
ontime9	30160.899486363
l2events	1734877



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias

Chip 4

Chip 5

Chip 6



Chip 7

Chip 8

Chip 9



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.7.2
caldsver	3.2.2
date	2006-05-18T19:02:15
revision	2

sched_exp_time	30000.000000
ontime	30882.47914207
ontime4	30882.47914207
ontime5	30882.47914207
ontime6	30882.47914207
ontime7	30882.47914207
ontime8	30882.47914207
ontime9	30882.47914207
l1events	2030790

### 2.1.4 Events

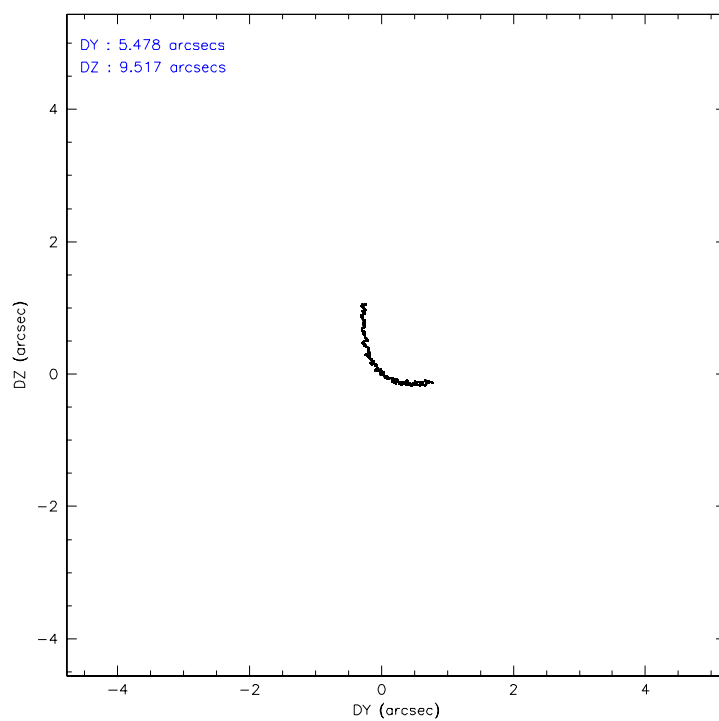
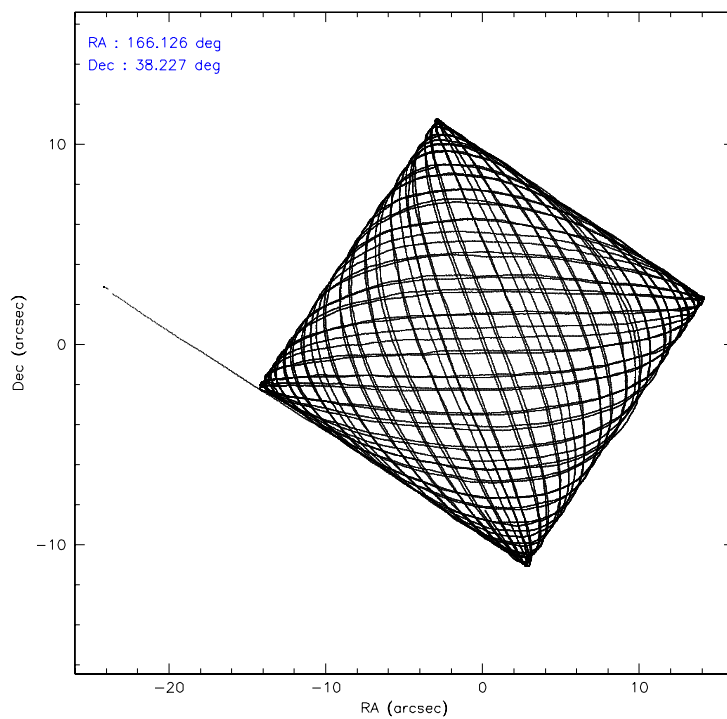
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	58014	140207	659150	1022708	99171	51540
rejected events	37562	24391	46317	70524	41076	29930
rejected %	64%	17%	7%	6%	41%	58%

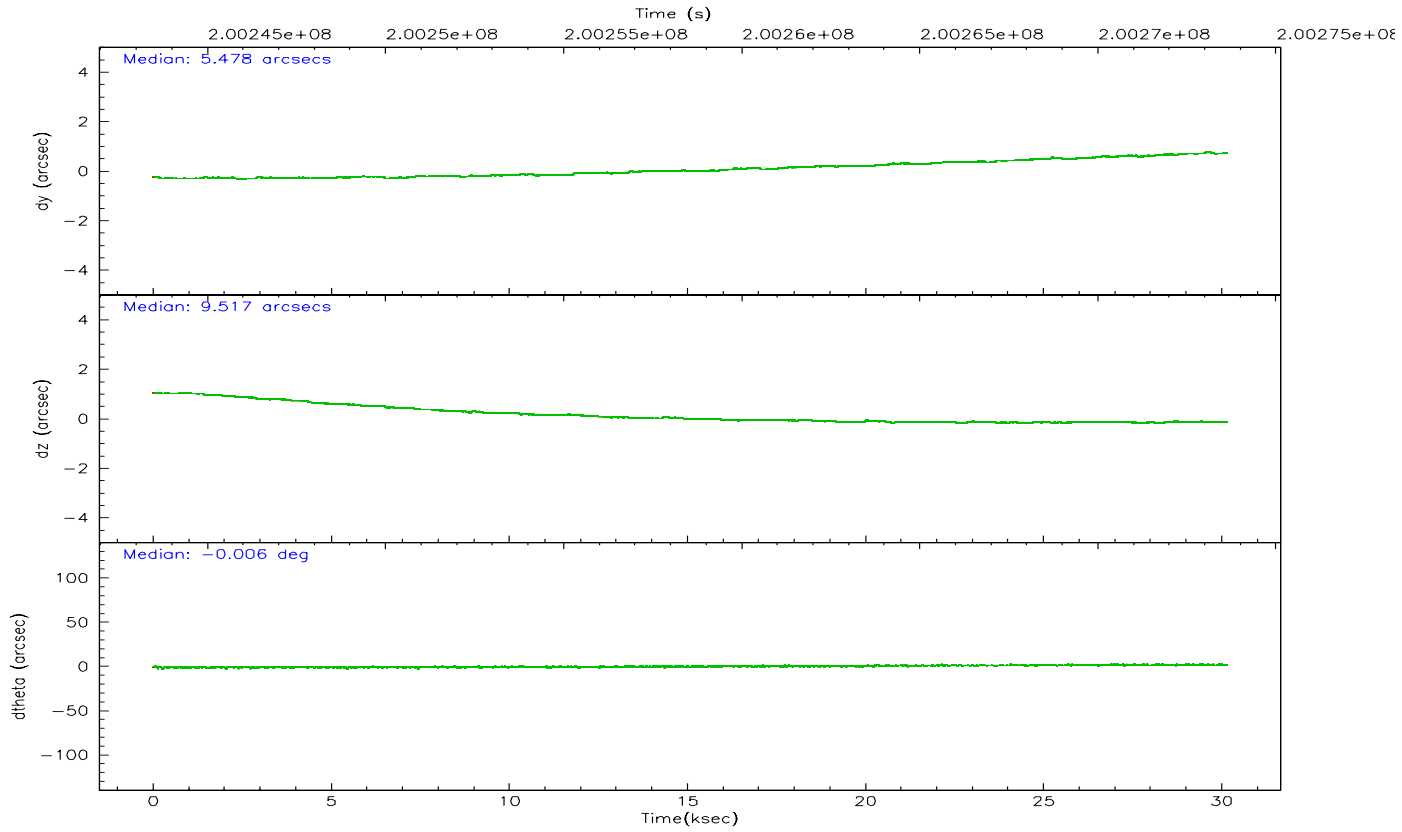
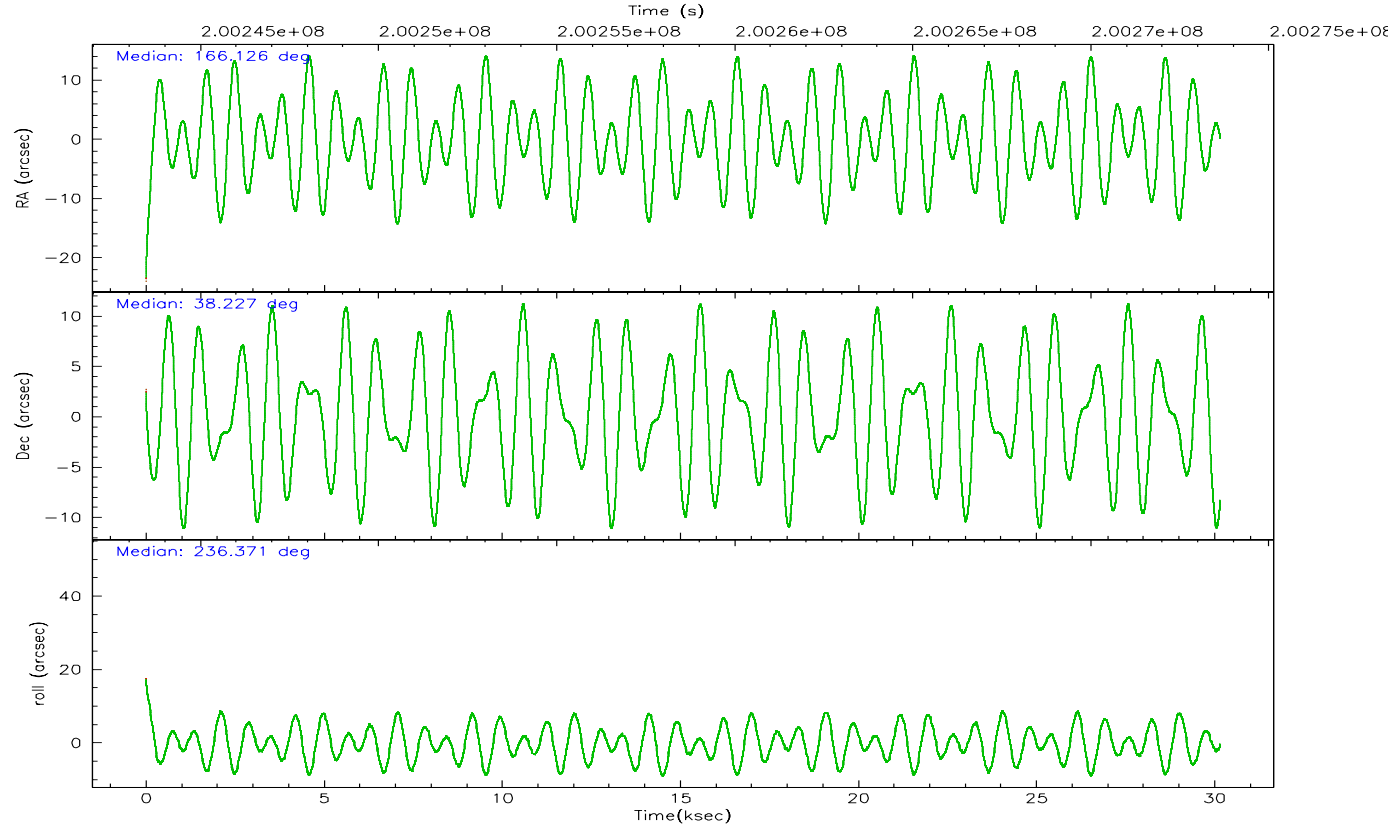
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	15245	57248	484068	236447	43805	16371
	26%	40%	73%	23%	44%	31%
grade 1 events	25	149	6188	4475	78	19
	0%	0%	0%	0%	0%	0%
grade 2 events	2229	25433	66635	249177	6339	2226
	3%	18%	10%	24%	6%	4%
grade 3 events	1109	8221	22542	108869	2475	1089
	1%	5%	3%	10%	2%	2%
grade 4 events	1056	8243	22520	107127	2353	1133
	1%	5%	3%	10%	2%	2%
grade 5 events	1208	3046	5143	21553	1633	1189
	2%	2%	0%	2%	1%	2%
grade 6 events	930	17733	18121	252127	3387	905
	1%	12%	2%	24%	3%	1%
grade 7 events	36212	20134	33933	42933	39101	28608
	62%	14%	5%	4%	39%	55%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
Detector	ACIS-456789	ACIS-456789	Obspar file type	PREDICTED	ACTUAL
Grating	LETG	LETG	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	On-chip summing requested	N	N
Observation mode	POINTING	POINTING	Subarray requested	CUSTOM	1/8
Pointing RA	166.128135	166.1264213793813	Subarray start row	113	113
Pointing Dec	38.254366	38.2271695501009	Subarray row count	128	128
Pointing Roll	236.223525	236.3812154835225	Alternating exposures requested	N	N
Window start time	199324864.184000	199324864.184000	Primary exposure time	0.000000	0.7
Window stop time	201139204.184000	201139204.184000			
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-182.132523	-182.1370004450064			
SIM translation stage offset (mm)	-8	-7.995522138001405			
Observation start time	200243630.184000	200242484.47741			
Observation start date	2004-05-06T15:12:46	2004-05-06T14:54:44			
Observation end time	200273630.184000	200274330.20382			
Observation end date	2004-05-06T23:32:46	2004-05-06T23:45:30			
Read mode	TIMED	TIMED			

## 2.3 Aspect





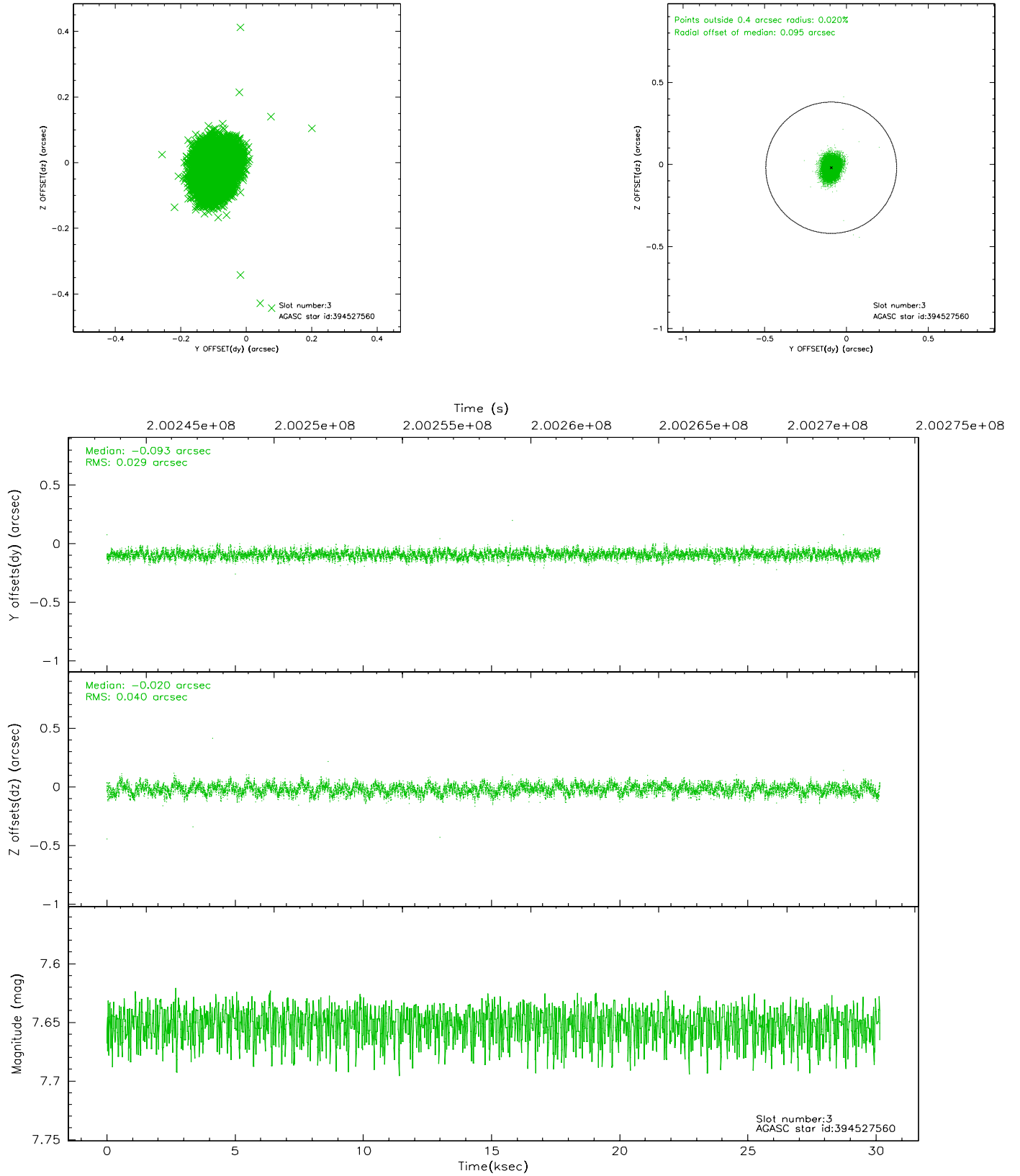
### Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.18	7356	0.016	0.117	0.025	0.032	0.000000	0.000000	938.38	-1891.13
1	FID	ACIS-S-5	7.23	7355	-0.085	0.033	0.013	0.020	0.000000	0.000000	-1810.70	6.18
2	FID	ACIS-S-6	7.41	7357	0.049	-0.142	0.018	0.028	0.000000	0.000000	403.85	650.09
3	GUIDE	394527560	7.65	14711	-0.093	-0.020	0.052	0.084	165.970713	38.960939	-1869.38	-1780.56
4	GUIDE	394528768	8.86	14706	-0.029	-0.004	0.061	0.099	166.180365	38.952248	-2169.45	-1275.30
5	GUIDE	394530152	7.48	14714	0.030	-0.148	0.053	0.088	166.075805	38.868252	-1755.28	-1350.67
6	GUIDE	394533848	8.72	14711	0.169	0.153	0.070	0.112	166.382906	38.276007	-465.26	553.75
7	GUIDE	394546712	6.59	14713	-0.075	0.023	0.058	0.089	166.451462	38.394357	-927.29	477.40

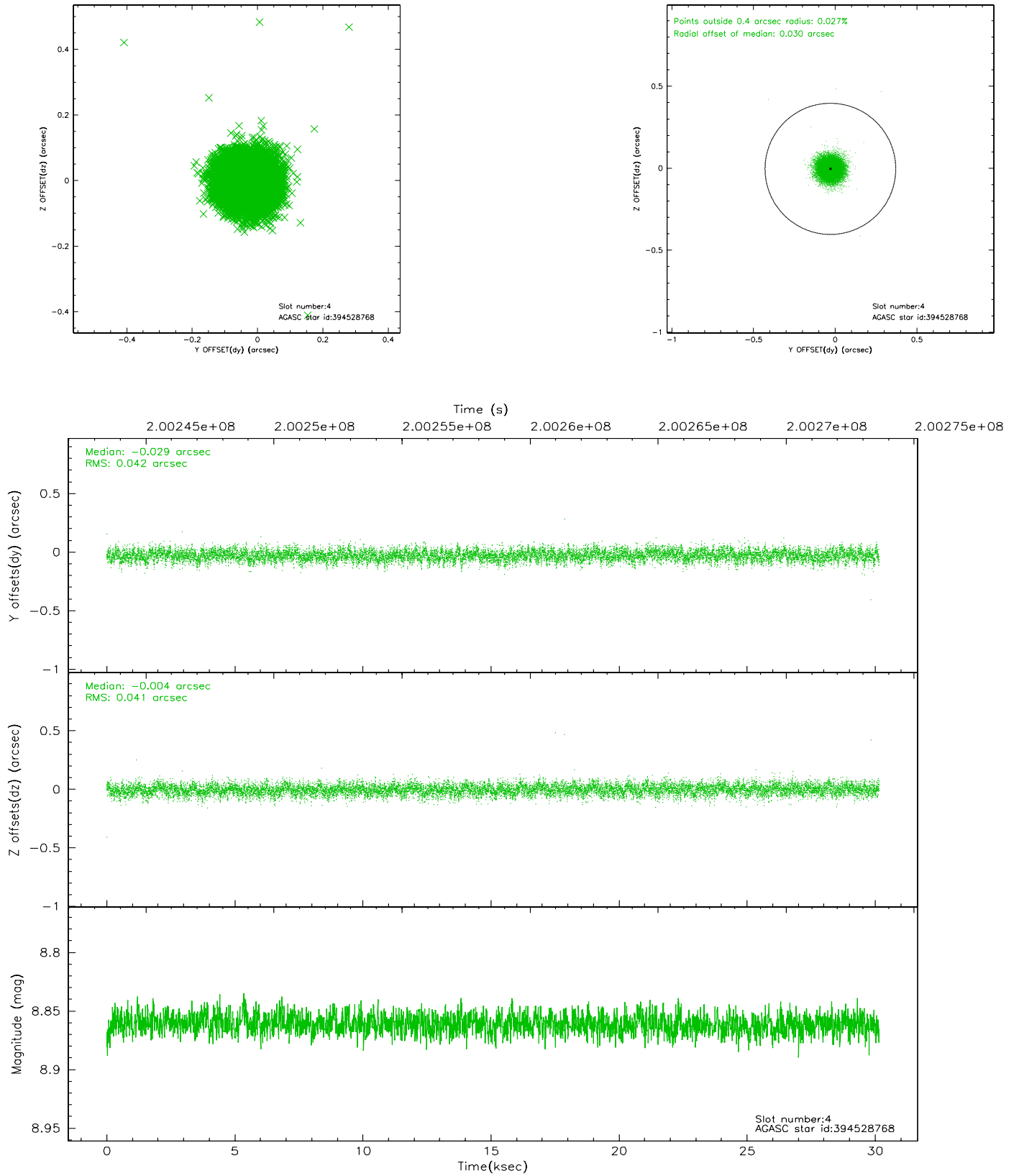


## 2.4 Star Slots

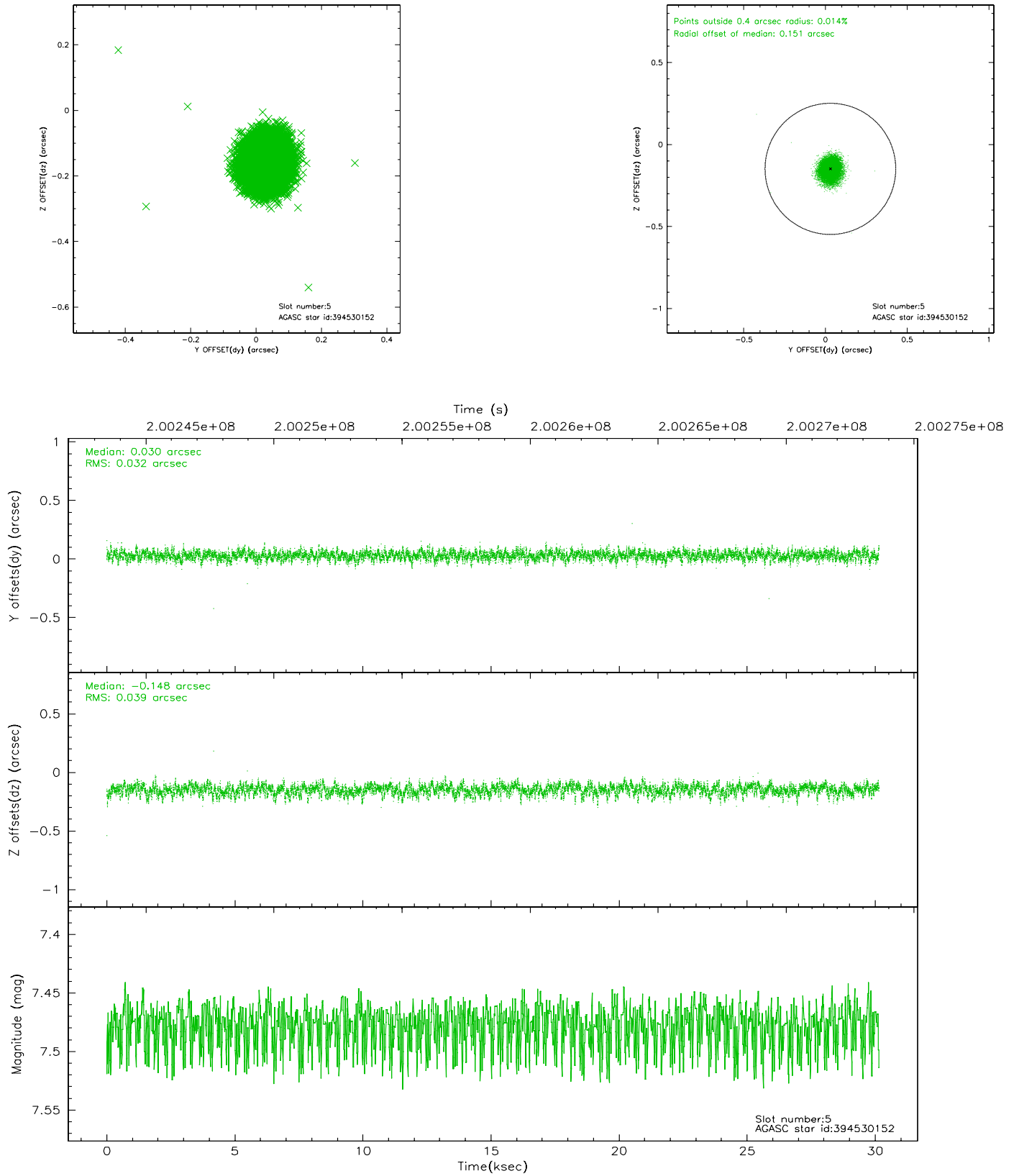
### 2.4.1 Slot 3



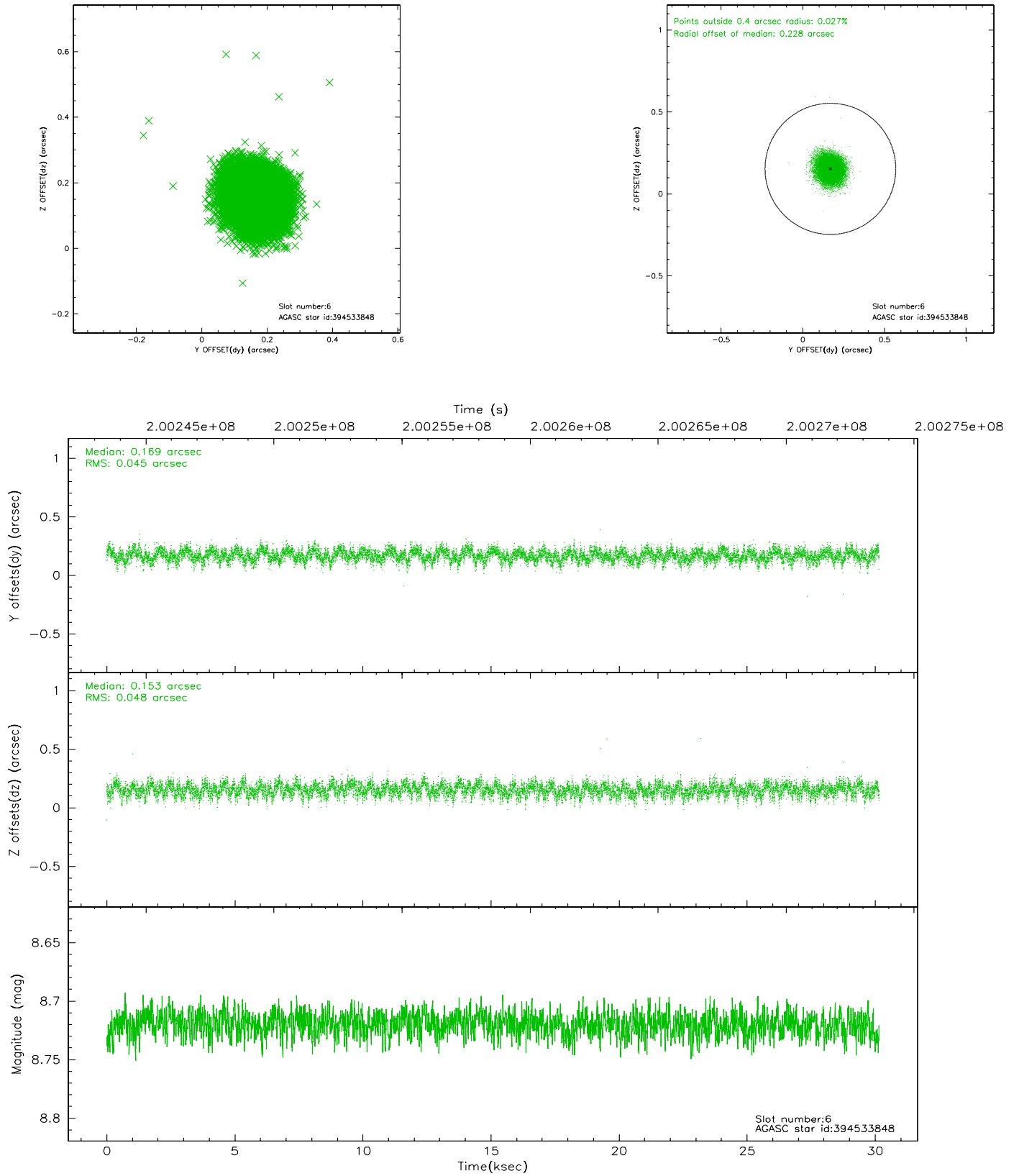
## 2.4.2 Slot 4



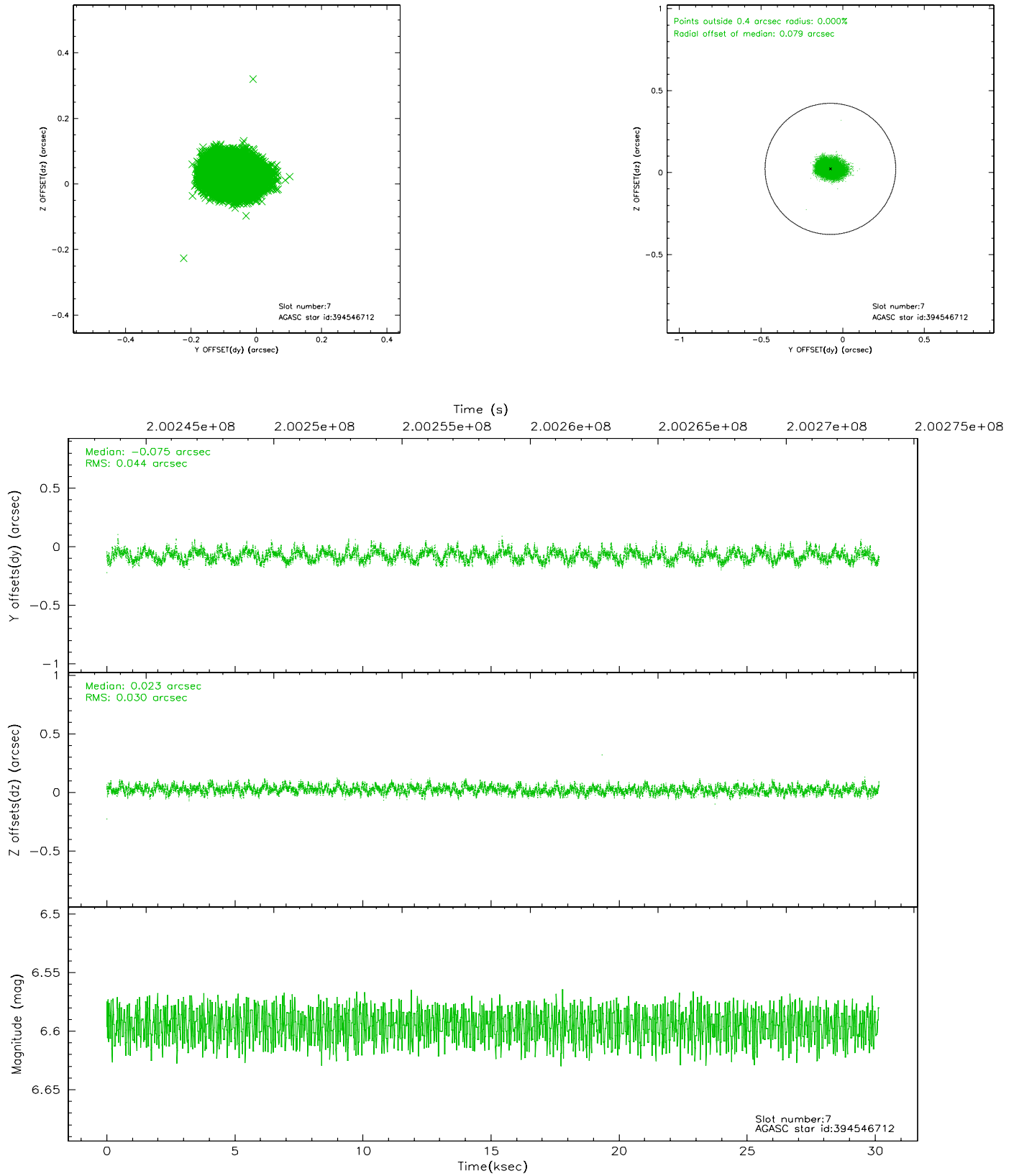
### 2.4.3 Slot 5



## 2.4.4 Slot 6

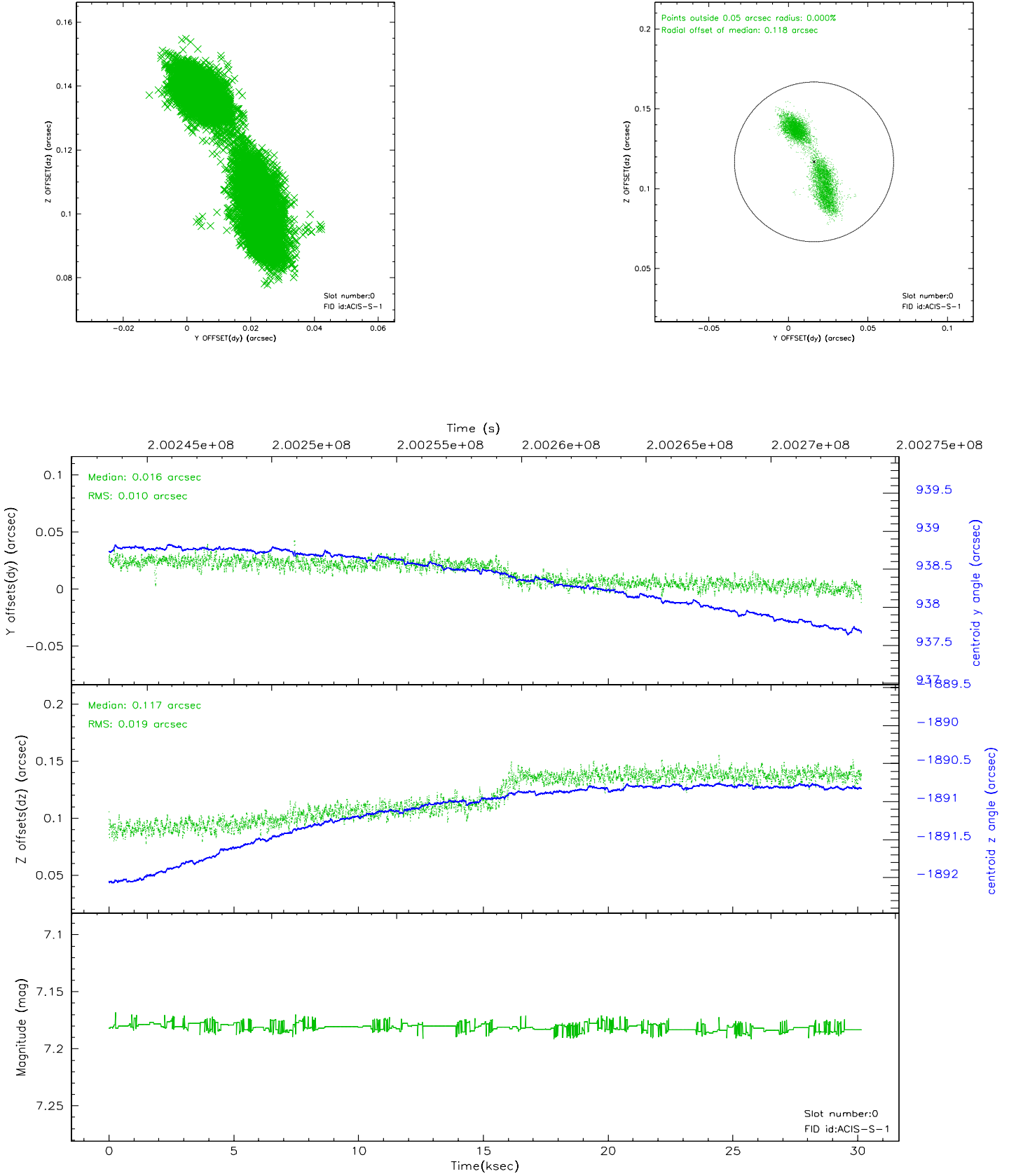


## 2.4.5 Slot 7

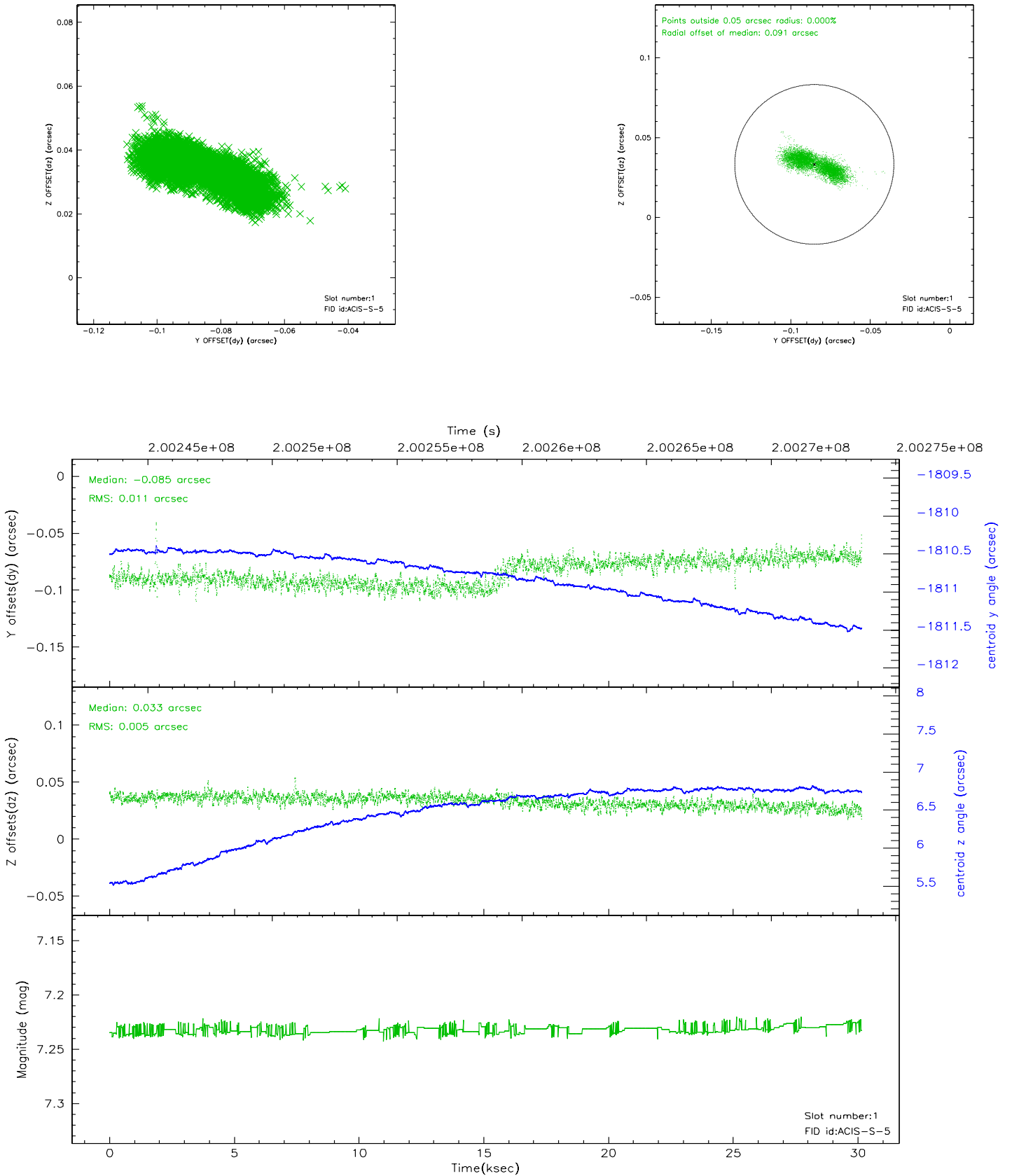


## 2.5 FID Slots

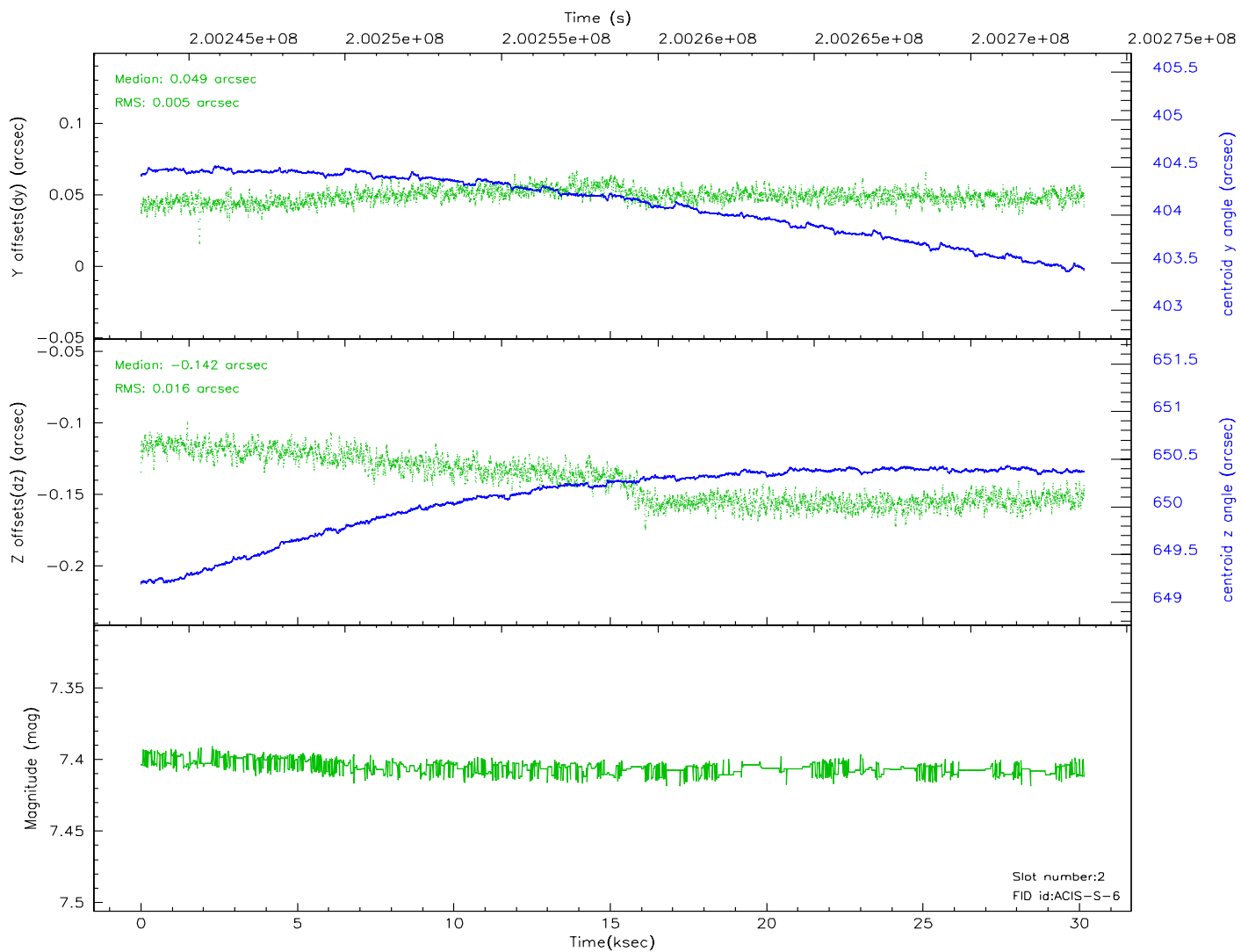
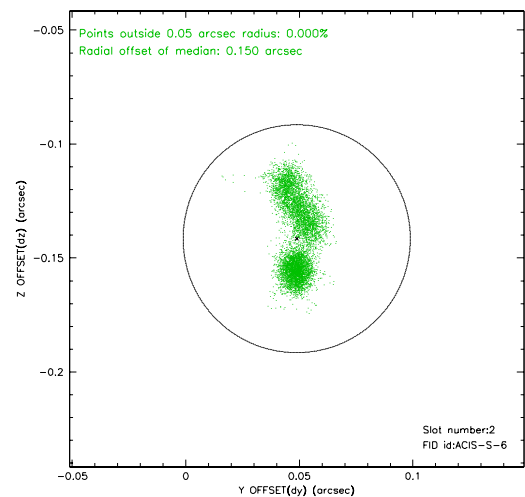
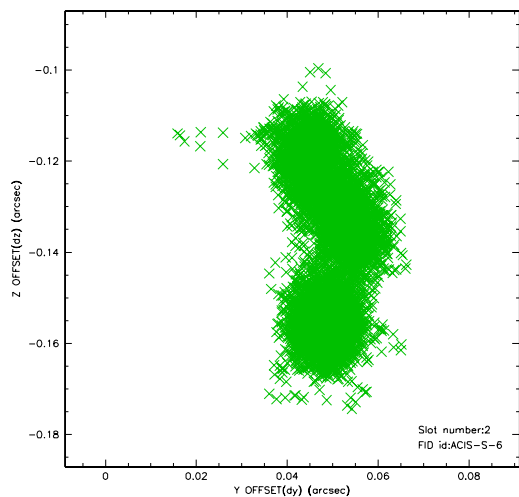
### 2.5.1 Slot 0



## 2.5.2 Slot 1



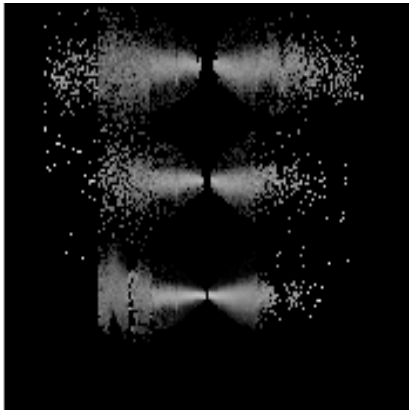
### 2.5.3 Slot 2



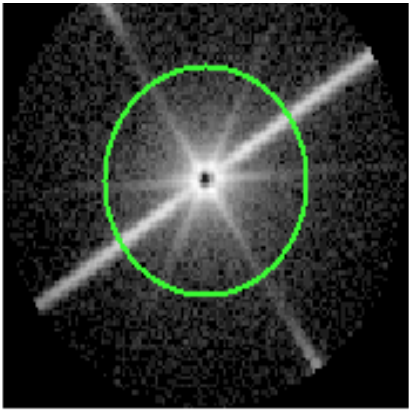


# 3 Gratings

## 3.1 LETG Arm



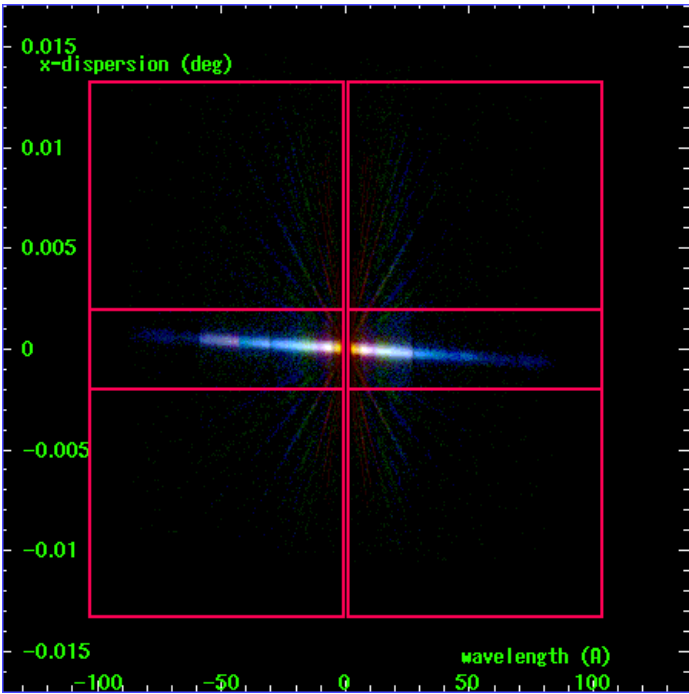
LETG Order Sort 123



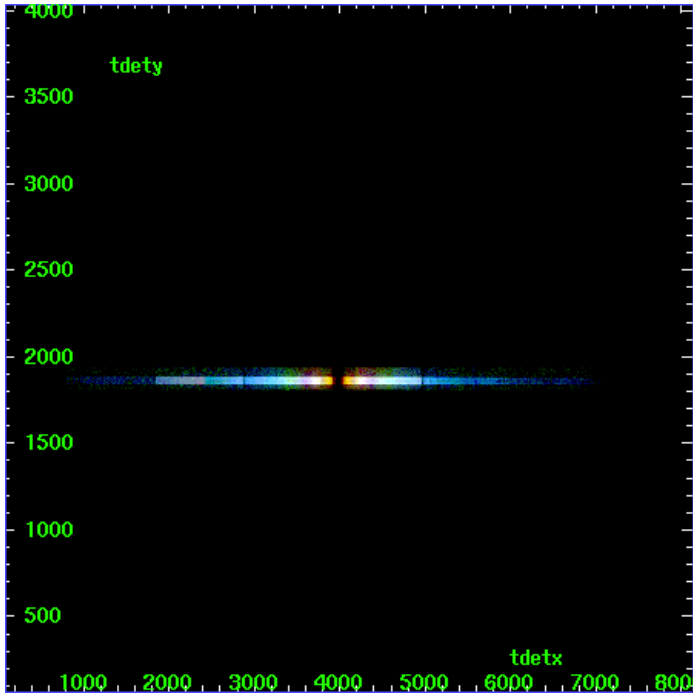
LETG Zero Order



LETG Order Sort ALL

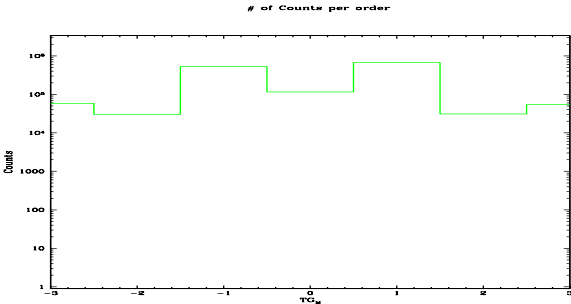


Spot Image LETG

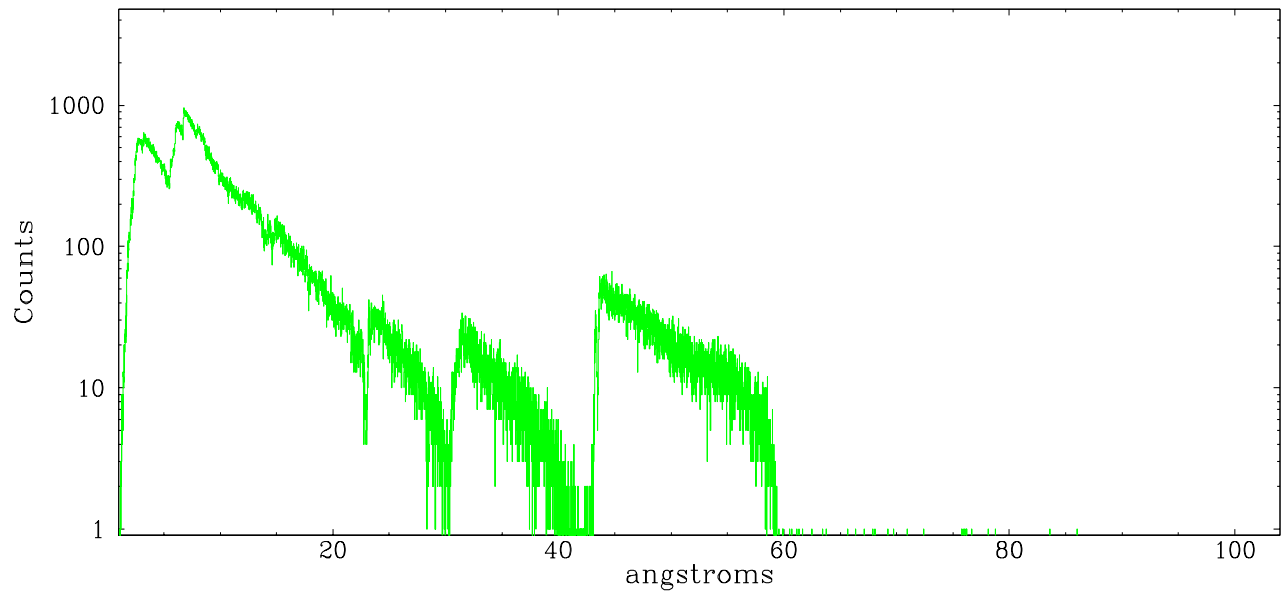


Full Detector LETG

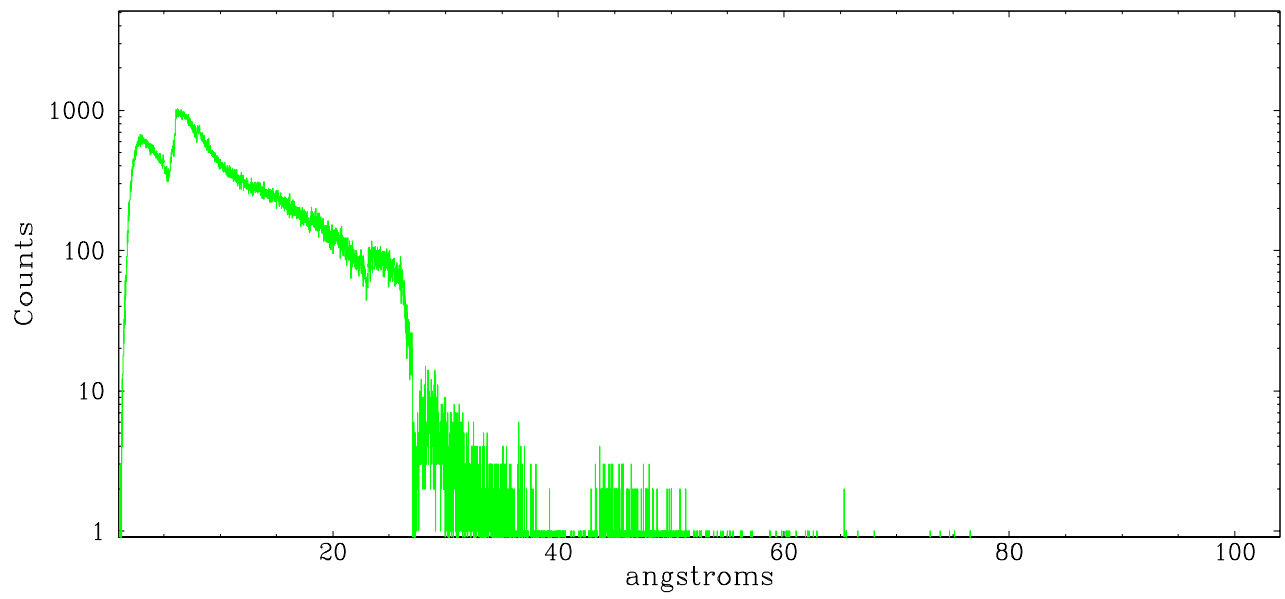
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	58311	30277	526837	115294	670111	31045	53920



leg order -1



leg order +1



# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2006.05.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.16

## A.2 Comments

Window constraint met. The central source is piled up; caution should be used when examining the extracted spectra.